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BY

JOHN B. HAMILTON, M.D., LL.D.

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The Journal of the American Medical Association

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CHICAGO, ILL., JANUARY 4, 1896.

No. 1.

ORIGINAL ARTICLES.

NOTES OF AN EPIDEMIC OF ACUTE ANTERIOR POLIOMYELITIS.

Read in the Section on Neurology and Medical Jurisprudence at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY C. S. CAVERLY, A.B., M.D.

PRESIDENT OF THE STATE BOARD OF HEALTH,
RUTLAND, VT.

The following "Notes" are the result of an investigation undertaken by me in an official capacity at the time of the outbreak, and since continued through private and professional intercourse.

The epidemic was one of an acute nervous disease whose chief distinguishing characteristic was motor paralysis, more or less complete, of one or more members or groups of muscles, and which prevailed in the State of Vermont, chiefly in a single valley, during the summer of 1894. The results of my investigations as far as completed at the time were published in the *Yale Medical Journal* for Nov., 1894, and in the *New York Medical Record* for Dec. 1, 1894. At the time of making these reports it did not seem possible to speak of the epidemic more definitely than as one of "acute nervous disease of unusual type." A further careful study of the complex features of the epidemic, however, and of the subsequent history of many of the cases, together with the corroborative opinions of many able medical men, seems to clear up any doubt that at the time existed as to the correct diagnosis of the essential disease that prevailed.

I may state at once that I am indebted to Professors A. Jacobi, M. Allen Starr and Chas. L. Dana for very valuable aid in arriving at a diagnosis in this series of cases, as well as for notes of the latest pathologic views of poliomyelitis and a literary résumé of that disease. I am also indebted to my fellow practitioners of Vermont who have kindly placed at my disposal the results of their clinical observations of the epidemic. This paper is necessarily largely a recapitulation of the facts heretofore published about this epidemic, with a careful revision of the statistics of the outbreak made from recent observations.

The epidemic, as I have indicated, invaded our valley in the early summer of 1894. It prevailed with increasing severity during July, apparently reached its climax about the first of August, and steadily declined until about the first of October, the last case occurring early in that month.

The early summer was popularly considered unusually hot and dry, though the official figures do not substantially endorse the former opinion. That it was an exceptionally dry season is manifest from the figures of the United States Weather Bureau of the State, which show that the rainfall during the five months from April to August inclusive for this year was one-third less than the average for these months since the opening of the station in the State. The temperature

and humidity statistics show little variation from the average. The territory mainly covered by this outbreak is a portion of the Otter Creek Valley, about thirty miles long and from twelve to fifteen wide, including the sides of the bounding mountains. On the east of this part of the valley is the main Green Mountain range, and on the west the Taconic range, which is a northern extension of the Berkshire Mountains of Massachusetts. Otter creek, the largest stream of water in the State, has its source in the mountains to the south of the affected area, and sluggishly flows in a northerly direction through it, emptying some miles below into Lake Champlain. That part of its course through the affected district is the most populous and likewise the narrowest part of the valley. The city of Rutland is the commercial and geographical center of this area. The towns affected have a combined population of 26,000, of which fully two-thirds dwell in the quarrying and manufacturing centers of Rutland, West Rutland and Proctor.

The starting point of the epidemic, and most of the earlier cases, were at Rutland. In this city occurred 55 of the 132 cases of which I have notes; 27 of the remainder occurred in the town of Proctor, one-sixth the population of Rutland. This town suffered the worst of any in the valley. The remaining fifty cases were scattered over the rural districts in fourteen towns. The most of these cases occurred at considerable elevation above the creek, and many well up on the Green Mountains. Four of these towns with eight of the cases are not in the Otter Creek Valley. The natural drainage of the valley is the creek, and this stream, below Rutland, carries a large amount of sewage. If the disease had shown any preference for those houses immediately on the stream below Rutland, it might at once be inferred that the low water in a sewerage-contaminated stream had some bearing on the etiology of the disease. But such did not appear to have been the case, except, possibly, in the town of Proctor, which is six miles below Rutland and is built on the abrupt bluffs above the stream. Drainage defect in general did not seem to influence the distribution of the disease. The water supply was excluded as an etiologic factor, it being largely from wells in the rural communities, and in the villages from mountain streams and springs. That the general sanitary surroundings and methods of living were in anywise responsible for the outbreak is also more than doubtful, since the disease showed no partiality to that class of the population whose habits and surroundings are the most unsanitary. The so-called laboring classes were oftenest affected, but not out of proportion to their numbers. These classes here, whether among the farming population or in the mills and quarries, have usually pure air, food and water. Hence, general sanitary conditions did not seem to have any influence on the epidemic.

The geologic formation of the valley is not peculiar.

iar. The prevailing formation is limestone, and in the range that skirts the western border of the valley is found the chief marble deposit of Vermont. The valley as a whole is an old lake basin and is pronounced by Prof. G. W. Perry, the State Geologist, as a very ordinary valley.

The outbreak of which I speak consisted of upward of 130 cases of disease in which the commonest clinical manifestation was some degree of motor paralysis of widely varying extent. It will not surprise any one that so large a number of cases presenting a bewildering variety of initiatory constitutional symptoms, as well as local paralyses, should have proved a very knotty problem for the diagnostician. It was long a question whether this was an epidemic of one, two, or more diseases, and along the established lines of symptomatology and pathology there was no solution of the problem. I have been able to collect histories more or less complete of 132 cases directly affected in this epidemic, and this number probably represents at least 90 per cent. of the whole number.

Case 1.—Boy, 3 years, American. Hygienic surroundings good; previous health good; active child; stronger than his brother two years older. No apparent cause. Fell sick June 20. Moderate fever, coated tongue, loss of appetite, sluggish bowels. His condition was confidently ascribed to indigestion, and after two or three days the continuance of the symptoms, though in decreasing severity, proved troublesome of explanation. On the third day his parents insisted that he could not use his legs. It was soon evident that this was the case. His reflexes were normal, sphincters unaffected, no anesthesia or noticeable hyperesthesia. The weakness was most marked in the large extensors of the thigh. After the entire subsidence of his febrile symptoms, his muscular weakness began to improve, at first very slowly. In three weeks he had gone on to full recovery.

This case is an excellent illustration of the mildest type of the disease, a type that included about forty cases.

Case 2.—Boy, 3½ years, Irish. Hygienic surroundings fair; sturdy child; most active of a family of three children. Only apparent cause playing too hard on a hot day. Taken with high fever, temperature 102° to 104° F., nausea, general restlessness and headache. Had incontinence of urine, no albuminuria. On third day acute symptoms subsided except the incontinence of urine. It was then noticed that he had lost the use of his legs. Patellar reflexes diminished and considerable hyperesthesia of the legs. There was also diminution of faradic irritability. The left leg improved rapidly, the right slowly. After six weeks was able to stand and take a few steps by taking hold of chairs. After three months the paralysis and wasting were confined to the right glutei and lower spinal muscles. His efforts to walk have brought on a slight spinal curvature. The incontinence of urine continued in this child until Feb. 1, 1895, when it was relieved by circumcision. The paralysis, however, persists in the glutei and lower spinal muscles and promises to be permanent.

This case illustrates a very common phase of this epidemic, and in most of these cases there is probably some permanent impairment of certain muscles.

Case 88.—Practice of Dr. Gale, Rutland. Girl, 6 years, American. Previous health had been frail. Had had a spinal curvature since she began to walk. Taken suddenly with high fever, nausea, head- and backache. On the fourth day of the attack she was paralyzed in all the extremities and one side of the face. Febrile symptoms subsided at this time. There was extreme hyperesthesia of the whole body and obstinate constipation from seeming lack of power in the abdominal muscles. Facial paralysis speedily passed off. Hyperesthesia and pains in the joints required the use of morphin for several weeks. After nine months she is still paralyzed in all the extremities, being able to flex the fingers and toes slightly and raise the head. The hyperesthesia has passed off.

Case 116.—Practice of Dr. Swift, Pittsford. Boy, 4 years, Italian. Taken with headache, drowsiness and slow hobbling

pulse. Little fever. After four days developed strabismus. Improved speedily and at the end of four days was apparently well. Three days later, after playing too hard, had a return of the original symptoms. Headache, drowsiness, no fever, pulse 45. In two days from this time had a convulsion and speedily died.

Case 32.—Practice of Dr. Marshall, Wallingford. Woman, 21 years. Married and one child of 16 months. Apparent cause fatigue from nursing sick child. First had head- and backache. Pulse 80, temperature 98.6°. On third day pulse 100, temperature 103.5°. Some opisthotonos; bowels regular; urine, 2 pints in twenty-four hours. No albumin, no sugar. Urticarial blotches on the body. During the next three or four days temperature ranged from 100.5° to 102°, pulse about 100. Was unable to speak or swallow. Answered questions by moving the head; in no pain. Sixth day temperature 98.6°; pulse 60. Remained in this condition five days. On the eleventh day complained of severe pain in the stomach, and neck became rigid; pulse 100, temperature 98.6°. During the next two days pulse became very irregular. Complained of severe pain in the right side of the head and right eye. Died at the end of the second week.

Case 4.—Practice of Dr. Fox, Rutland. Boy, 6 years, previous health fair. On two or three occasions had convulsions, presumably due to gastro-intestinal disturbance. Was seized with convulsions while playing on the street; they continued for nine hours. Moderate fever, rapid pulse, vomiting and rigidity of muscles of the neck and back. No paralysis noted during conscious intervals. Retention of urine during the last three days of illness. Death on the sixth day.

These four cases represent various types of the severe form of the disease, and among these cases there were eighteen deaths.

There were a great many cases exhibiting rare and interesting phenomena, a detailed report of which would consume too much time. One of these, during an attack of broncho-pneumonia, had loss of speech for two weeks, and paralysis of one arm which recovered in five weeks. One developed paralysis of both legs in connection with pneumonia. The paralysis in one case was confined to the external rectus of one eye. Several, after apparently recovering from the acute symptoms, were again attacked more severely than at first. Two cases, in which the legs were paralyzed, had a concurrent fever with the characteristic typhoid curve. One case was that of a boy of 6 years who had been at the seashore during the summer, and returning to the town of Proctor after the epidemic was apparently on the wane, on Sept. 5, was attacked with the typical symptoms of poliomyelitis on Sept. 30, and is left with impairment of the extensors of one thigh and the glutei. This case is interesting as showing possibly the length of the incubation period of the poison if we class the disease among the infectious disorders.

Without detailing further individual cases, a condensation of my notes presents the following clinical picture of the epidemic:

Age and Sex.—Ninety cases were under 6 years of age; 39 were boys and 22 girls; sex of the remainder not stated. Fifteen cases were between the ages of 6 and 14; 5 were males and 6 females; sex not stated in 4 cases. Fifteen cases were over 14 years; 9 were males and 6 females. In one series of cases, 7 in number, the age is stated as between "a few months and 9 years," and the sex of none is given. In another of 5 cases, neither age nor sex is stated. It is interesting to note in this connection that there were 9 cases in adults upward of 21 years of age. One of these was a man of 70 who had the familiar symptoms of the milder type of these cases with paralysis of both legs, which passed off in ten days. The other 8 cases were in persons from 21 to 38 years of age. These figures as to age and sex do not differ

from those usually given for poliomyelitis. While it is chiefly a disease of childhood it is not exclusively so. Males are vastly more liable to it.

Nationality.—In those cases in which the nationality is stated 41 were American, 17 Irish, 6 French, and one each was Hebrew, Italian and Swede. I know of no significance to attach to these figures.

Previous Health.—Of the 46 cases in which the previous health of the sufferers is given, in 35 it is given as good, and in 11 as poor. It is quite certain that the strong, healthy children preponderated.

Immediate Cause.—The immediate apparent cause is stated in 37 instances. Of these overheating is mentioned 24 times, chilling of the body 4 times, trauma 4 times, while fatigue, typhoid fever, pneumonia and whooping cough are mentioned. There was a general absence of infectious disease as an etiologic factor in this epidemic. The element of contagium does not enter into the etiology either. I find but a single instance in which more than one member of a family had the disease, and as it usually occurred in families of more than one child, and as no efforts were made at isolation, it is very certain that it was non-contagious.

Initial Symptoms—Fever.—In most of the cases there was a perceptible rise in temperature at the start, though a few are said to have had none. Of the 56 cases in which the temperature is noted, 27 had a temperature at some time of 103°, or more, while in 26 it ranged from 99° to 103°. Three are said to have had "no fever." The duration of the initial fever, where given, varied from a few hours to two weeks. The four cases, however, that are said to have had a fever for more than a week, probably suffered from some complication or some intercurrent disease. Twenty-six cases had a febrile stage lasting from four to seven days, 7 lasting from three to four days, 6 lasting two to three days, 2 lasting one to two days, and four for one day or less.

Digestive Organs.—Nausea was a very common symptom and is mentioned as occurring twenty-six times. It was often the first symptom noted and was probably one of the commonest. Gastralgia occurred in few cases. Thirteen cases were said to have had obstinate constipation, and six had a diarrhea.

Urinary Organs.—Two cases had incontinence of urine and in ten cases there was retention. In no case is albuminuria mentioned.

Skin.—Thirty cases are said to have had a simple erythema, and two had urticaria. There was an entire absence of herpetic and purpuric eruptions.

Nervous System.—Convulsions occurred in 12 cases, all under 14 years of age. Muscular rigidity of the neck or back muscles or both is said to have occurred in 20 cases, of which 5 were fatal. It is a very significant fact that 36 cases are noted as having hyperesthesia of the skin. Only one is said to have had any anesthesia of the paralyzed member. In several instances soreness of the joints of the affected limb was a very painful symptom. Nine cases are said to have suffered from headache alone, 2 from pain in the back and 23 from both head- and back-ache. These symptoms were probably commoner than the figures indicate. There was no general tendency to impairment of the special senses. Two cases are said to have had double vision, 3 strabismus, one was blind and one deaf.

Initial Paralysis.—The paralysis which was the leading and most common characteristic of this series

of cases, occurred in 119 instances. Of the remaining 13, 7 died before paralysis had time to develop, or it could not be determined whether there was really paralysis or not, and the remaining 6 that had no paralysis, all had a group of symptoms very common in the initial stage in those which were paralyzed, such as headache, fever, convulsions or nausea, one or all. In those cases in which the exact day of the paralysis is noted, it is stated to have occurred four times on the first day, eight times on the second, ten times on the third, five times on the fourth, three times on the fifth, once on the sixth, four times on the seventh, and once on the tenth day of illness. It is quite likely that the actual duration of the premonitory symptoms prior to the appearance of the paralysis was often overestimated, since loss of power in the extremities, especially in children, might easily go unnoticed for some time, unless the physician or friends were looking for it. In several instances the loss of power in the legs was the first symptom noticed. The initial paralysis was located as follows:

Both legs	69 cases.
Arm and leg, same side	10 "
One arm	5 "
One leg	7 "
Both legs and one arm	4 "
Tongue and throat	2 "
Both arms	3 "
All the extremities	4 "
Extensors of one thigh	2 "
"Variouly in the arms and legs"	8 "
External rectus of one eye	1 "
One side of the face	1 "
One arm and the opposite leg	1 "
All the extremities and abdominal muscles	2 "
Stated to have had no paralysis	6 "
Not determined	7 "

Of the six cases that are said to have had "no paralysis" all had distinct nervous symptoms explainable only on the supposition that they belonged to this epidemic. All the seven cases in which it was not certain whether they were paralyzed, died early, often with convulsions, and their occurrence at this time seems to warrant their being included in this series.

Of those cases that are known to have fully recovered according to the latest information I can obtain—

Both legs were paralyzed in	43 cases.
Arm and leg, on same side, in	4 "
One arm in	1 "
One arm and both legs in	1 "
External rectus of one eye in	1 "
One leg in	1 "
There was no paralysis in	5 "

That there have been more complete recoveries than this, viz., 56, is quite certain, but I have not been able to trace them.

Fatal Cases.—Eighteen deaths occurred as follows: 1. Boy, 10 years; died within twenty-four hours with convulsions. 2. Boy, 6 years; died on sixth day with convulsions. 3. Boy, 10 months; died on sixth day, paralyzed in both legs. 4. Boy, 4 months; died on sixth day, all the extremities paralyzed. 5. Girl, 11 years; died on third day, no paralysis noted. 6. Girl, 1½ years; died on sixth day, no paralysis noted. 7. Female, 21 years, died on thirteenth day, no fixed paralysis. 8. Male, 19 years; died on fifth day, both legs paralyzed. 9. Sex and age not stated; died with convulsions. 10. Male, 21 years; died on third day, all extremities paralyzed. 11. Sex and age not stated; had paraplegia. 12. Sex and age not stated; had hemiplegia. 13. Girl, 7 years; died on seventh day, all

extremities paralyzed. 14. Boy, under 1 year; no paralysis noted. 15. Boy, 4 years; died on second day of relapse, no paralysis of the extremities, but strabismus. 16. Male, 22 years; died on third day, both legs paralyzed. 17. Male, 38 years; died on sixth day, both legs paralyzed. 18. Girl, 1½ years; died on fourth day.

It will be seen that 10 deaths were among males and 5 among females, and that the sex is not stated in three cases. Seven of those that died are known to have been under 6 years, three between 6 and 14 years, while one died at 19 years, two at 21 years, one at 22 years, and one at 38 years. The percentage of deaths among adults is seen to have been very high.

A further analysis of the deaths shows that five of the cases were paralyzed in the legs, three in all the extremities, and one was hemiplegic. I might state that in the great majority of fatal cases the diagnosis was meningitis. Such a diagnosis was usually not at all inconsistent with the clinical features of the disease. Deducting from the whole number of cases, those which are known to have terminated fatally, and in recovery (74 in all), there remain 58 cases to be accounted for. Just how many of these are still and probably permanently paralyzed, I am not able to state. It was a common experience for a part of the initial paralysis to clear up within the first month, leaving a single member or a single group of muscles weak and wasted. Thus, many cases that at first seemed to be paralyzed in both legs soon improved as to one, and the permanent lesion was seen to be in the other limb or in a few of its muscles. The extensor muscles of the thigh, the glutei, ileo-psoas, calf muscles, and anterior tibial group, in the lower extremity, and the deltoid and extensors of the forearm, were frequent sufferers.

Permanent Paralysis.—Of the 58 cases which my report left unaccounted for, I have been able to get reports of 30 which are still maimed, from six to nine months after the initial attack. Of these 16 are stated to be males, and 12 females. Eighteen are under 6 years, 7 are between 6 and 14 years, and 5 are over 14 years of age. Here again we see the high percentage among the older patients. Of these 30 cases—

All the extremities are paralyzed in	1 case.
Both arms in	1 "
Extensors of one thigh in	6 "
Glutei and lower spinal muscles in	1 "
Both legs in	6 "
Extensors of one thigh and one leg in	2 "
One leg in	6 "
Glutei alone of one side in	1 "
One foot and ankle in	1 "
Extensors of one hand in	1 "
Both legs, thighs and hips in	1 "
One arm in	2 "
Complete hemiplegia in	1 "

The muscular atrophy in most of these cases is marked though combatted by the usual treatment of rubbing, massage and electricity.

During this epidemic and in the same geographical area, an acute nervous disease, paralytic in its nature, affected domestic animals. Horses, dogs and fowls died with these symptoms.

The only reliable facts which I am able to give of the pathologic conditions in these cases among the lower animals are from examinations of the cord of a horse that died paralyzed in the hind legs, and from that of the cord and brain of a fowl which was paralyzed in its legs and wings. Dr. W. W. Town-

send, of Rutland, who made the examination of the horse, says that the examination of a section of the lumbar portion of the cord showed a "granular degeneration and pigmentation of the ganglion cells of the anterior cornua, and atrophy of the anterior nerve roots." He further states that there was no meningitis in this case. Dr. Charles L. Dana, who made the examination of the fowl, with the aid of Dr. Dunham, of the Carnegie Laboratory, found "an acute poliomyelitis of the lumbar portion of the cord and no meningitis." A bacteriologic examination of the same cord by Dr. Dunham gave negative results, and it was found that the inoculating needle did not strike the diseased parts.

It was not infrequently remarked by physicians practicing in this valley at the time of this epidemic, that the usual diseases of children were accompanied with exaggerated nervous symptoms. Headache, convulsions and delirium were common.

It is recorded by Medin, in an epidemic of poliomyelitis which he reports, and to which I shall presently refer, that polineuritis prevailed with poliomyelitis. The pain, hyperesthesia, and tenderness of the extremities suggest such an explanation in some of our cases. Gowers is also cited by Putnam (*American Journal of the Medical Sciences*, March, 1895), as speaking of the combined occurrence of poliomyelitis and neuritis. It will be readily seen that it would be quite impossible to reconcile the widely varying phenomena of this epidemic with the established characteristics of any one disease. So it is not strange that local observers differed in their diagnoses. In collecting notes of this epidemic I did not seek any disease by name, endeavoring only to secure histories of such cases as had had well-marked symptoms of acute nervous disease, the paralysis usually being the test symptom. Meningitis, poliomyelitis and neuritis were mentioned with varying frequency, and it is only a careful study of the epidemic as a whole, giving due weight to the predominating symptoms, the paralysis, of course, being the most striking, together with a knowledge of the latest pathology of these diseases, that seems to warrant the conclusion that the essential disease was poliomyelitis. Some of the commonest symptoms seen in our epidemic were entirely foreign to this disease as long described. Likewise, too, its epidemic character and the simultaneous affection of the lower animals. I am especially indebted to Dr. M. Allen Starr for notes of the latest views of the pathology of poliomyelitis.

In *Zeitschrift für Klin. Med.*, 1892, Goldschneider's views, founded on such cases as ended in autopsies, are given as follows: "The disease begins with a very intense congestion of the central arteries of the spinal cord which come up on each side of the central canal and spread out in the gray matter of the posterior horns, but the posterior horns are chiefly supplied with blood from the peripheral arteries, and hence, are less affected when the inflammation is limited to the distribution of these central arteries. After the engorgement of all the arterial twigs, diapedesis occurs and the surrounding nervous tissue is permeated by small cells and by serum. It is this choking of the gray matter by the inflammatory products which leads to the suspension of functional activity, and when, as in many cases, from impoverished nutrition the cells of the anterior horns are actually disintegrated by the inflammatory products,

permanent destruction of the nerve tissue ensues. Goldschneider believes, therefore, that the primary condition is a congestion in the domain of a definite set of arteries, quite comparable to the condition occurring in the lung in pneumonia and in the intestine in typhoid fever.

Siemerling, in an article on the "Pathology of Infantile Paralysis" in *Archiv für Psychiatrie*, January, 1894, says: "After a careful review of all the literature we reach, therefore, the following conclusion, that in the pathogenesis of infantile paralysis the inflammatory lesion of the interstitial tissue in connection with a distension of the blood-vessels, especially in the region of the anterior spinal arteries, plays the chief rôle. A primary inflammation of the ganglion cells in the sense given by Charcot is not to be admitted."

In view of this newer pathology, showing as it does that the initial lesion is not confined to the anterior horns, but that there is a simultaneous invasion of other portions of the cord, the exceptional symptoms seen in our epidemic are rendered explainable.

The results of autopsies made by Rissler were even more striking. He found an acute parenchymatous inflammation of the anterior horns in the cord with degeneration of the ganglion cells and secondary degeneration of the nerve fibers in the association tracts, in the anterior columns and in the anterior nerve roots; also in the nuclei of the hypoglossus, vagus, facial and abducens nerves. In most of the cases the anterior horns were particularly affected; in other cases, also the peripheral nerves and brain cortex. It was possible that all the nerve nuclei in the medulla and pons should be affected. In the light of these recent pathologic researches taken in connection with the most noted clinical features of this outbreak, viz., the season of the year, the preponderance of cases among children, the widely varying and almost universal paralysis and the low mortality, the conclusion seems unavoidable that the essential disease was poliomyelitis. Under this classification the epidemic at once assumes great importance in several particulars:

1. From the simple fact that it was an epidemic of poliomyelitis.
2. From the great number of cases occurring.
3. From the simultaneous affectation of the lower animals.

While epidemics of poliomyelitis are not unknown or unrecorded, recent authorities speak only vaguely of their occurrence. It has not thus far found a definite place in the descriptions of this disease. The fact that poliomyelitis may occur epidemically, suggests, of course, an infectious origin, a view of the nature of the disease which has only been recently discussed.

I have been able to find the following reference to outbreaks of poliomyelitis of epidemic character, largely through the assistance of Prof. Jacobi.

In the transactions of the Tenth International Congress (Berlin, 1891), Vol. II, Prof. O. Medin reports that Bergenholz in Sweden observed and reported thirteen cases occurring near Lyons, France, four of which were fatal. Medin also cites Eichhorst, who speaks of observations sometimes made of several cases occurring in the same neighborhood. G. Lotmer (*American Journal of the Medical Sciences*, 1843) was told by the parents of a child treated by him for poliomyelitis (teething paralysis), that in a

place where they previously lived eight or ten cases had been known within three or four months. Medin's epidemic, however, is the most extensive of any of which I find a record, and bears in many respects a close resemblance to the Vermont epidemic. The disease appeared in Stockholm in the month of May, 1887, and by Aug. 9 had assumed an epidemic character. Medin saw twenty-nine cases between the latter date and Sept. 23, and knew of forty-four during the summer from May to November. Three of his cases were fatal in the acute stage. "There were noticed paralysis of the abducens in five cases, disturbance of speech in a few; in one case paralysis of the tongue, in several of the accessorius; in others, symptoms referable to the vagus. Disturbance of the voice and paralysis of the muscles of mastication and vasomotor paralysis were seen in two fatal cases. In one ophthalmoplegia externa. At the time of the Stockholm epidemic during August and September, polineuritis appeared and was thought to be due to the same cause. This neuritis was followed by considerable tenderness. These neuritis cases, however, showed no wasting."

It will thus be seen that Medin's observations are very similar to those here recorded, and together with the latest pathologic views of the disease, will seem to mark the neuritis of which he speaks as a varying manifestation of poliomyelitis.

Putnam (*Boston Medical and Surgical Journal*, Vol. CXXIX, p. 509) speaks of the unusual prevalence of poliomyelitis in and about Boston during the latter part of the summer of 1893. Twenty-six cases had come to his notice during that season.

That a disease occasionally prevails epidemically suggests a specific poison, a definite toxin, and this phase of the etiology of poliomyelitis has recently received attention from foreign observers as well as from Dana, Putnam and others in this country. Thus far, however, there does not seem to have been any substantial progress made toward isolating any specific microorganism peculiar to this disease.

Our epidemic with that of Medin suggests, though on purely clinical grounds, the possibility of such a cause. The unfortunate absence of an autopsy in our cases, though strenuous efforts were several times made to secure them, prevents us from throwing any light on this part of the subject. That domestic animals suffered with human beings in our epidemic is a noteworthy fact and one, so far as I can learn, hitherto unobserved. That such was the case can not be doubted. It has long been known that animals were often attacked by meningitis during an outbreak of that disease in epidemic form. Poliomyelitis has been produced artificially in rabbits and guinea-pigs, but so far I have been unable to find an instance of its spontaneous occurrence simultaneously with the disease in man. This fact again emphasizes the possible infectious character of the disease and lends additional interest to the epidemic here recorded.

DISCUSSION.

DR. J. F. BURNSHED—The paper of Dr. Caverly I consider to be one of very great importance because it deals with an epidemic which will go down in history. This epidemic was not confined to Vermont. Where I lived in New York State, we had what I considered to be an epidemic of poliomyelitis at the same time as that which existed in Vermont, and it was a matter of much concern to us until the literature began to come in.

RIGHT HEMIPLEGIA WITH APHASIA—A CASE.

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY H. M. LASH, M.S., M.D.

INDIANAPOLIS, IND.

On Nov. 14, 1894, about 12 m., Mr. L., age 35, married, habits excellent, health previously good, was, without any warning or prodrome, while sitting at his office desk, stricken with complete loss of the use of the right side and with entire loss of voice.

I reached him at 12:40 p.m. Dr. J. T. McShane, who was with him, had noted his condition and had prescribed for him. He had then recovered, in part, the use of his hand, so that he could write his name, as he did to some checks and several letters which he had that forenoon dictated. With a little help he could use his leg sufficiently to walk out to the street and get into a carriage. Soon after he did so, however, he again lost the use of both the arm and the leg. This condition remained until just before the carriage reached his residence, when he recovered for the second time the normal use of them, and got out of the carriage and walked unaided into the house. This was at 1:15 p.m. So far he had not spoken, but had uttered a slight unintelligible sound when the motion of the limbs returned the second time. His overcoat was removed and he lay down upon a couch. Within a few minutes after doing that, his voice came back and he was able to converse in his usual manner, and talked the situation over with me in an intelligent way. But this lasted only about twenty minutes, when the hemiplegia and aphasia both returned with their full force. Aside from the loss of the use of his right arm and leg and his voice, there was no other abnormal condition present. There was no loss of sensation, partial or complete, in any part of the body. His intellect was unimpaired. He understood and knew the meaning of words, and made correct answers by nod or shake of the head to all questions asked. His tongue protruded readily and in a straight line. His sight and all other special senses were undisturbed. The reflexes were all normal. He did not appear to be sick in any way; had not felt dizzy, and at no time had he been for a moment unconscious.

He was put to bed and quiet enjoined. I visited him at 7 p.m. At that time found the temperature 99.6 degrees F., pulse 86. Complained of some dyspnea, and had to be propped up in bed. His urine had passed freely. He could make himself understood by using a few simple words, such as "yes" and "no." Next morning at 7:30 I saw him again. His sleep had not been very good; had been troubled a little with dyspnea. Speech better. Was called at 3 p.m. Had to use a catheter, and this was kept up each day until Nov. 24. Temperature and pulse normal; neither were afterward abnormal. Ordered saline cathartic. Bowels responded and their action was easily kept up from that on by enemas. Dyspnea had disappeared and he was not again troubled with it. His speech gradually improved until on January 1 he could talk almost as well as usual.

The first appearance of motion in the right leg was on Nov. 24, ten days after the attack, when it was found that he could move the toes and foot a very little. On Nov. 26, he could move the entire leg, but to a very limited extent. On Dec. 12, he began sitting up and could then bear some weight on the right leg and take a few steps. Christmas day, with a little help, he walked to the dining room. The improvement has continued, and he now walks about very well with the aid of a cane.

The first indications of motion in the arm were noted on Jan. 1, when he could make some use of the biceps and triceps muscles, slightly flexing and extending the arm. On Jan. 24, it was found that he could use the thumb and index finger a very little, and that there was increased muscular action of the upper arm muscles.

On Feb. 6, improvement in the use of the right thumb and index finger, as well as the whole arm, was observed, and he could slightly move all the remaining fingers on the right hand.

This is quite a well-defined case of right motor hemiplegia with ataxic aphasia, having a strong tendency toward recovery. The improvement has been gradual but steady, and is still going on. The prognosis, therefore, may be regarded as fairly favorable.

In regard to diagnosis, there is very good ground for differences of opinion concerning the nature and seat of the lesion. It must be conceded, however,

that it is cerebral, and located somewhere on or in the left side of the brain.

My own diagnosis on the beginning of the trouble was an embolism of the left middle cerebral artery. I have found no reason since to change it. In my judgment it is a typical and clearly marked case of that condition. The suddenness of the attack and its purely motor character, pointed to the left cerebral motor area and Broca's center as the seat of difficulty.

Hemiplegia may result from cerebral or high up cord lesions. If from cerebral lesion, the paralysis is on the opposite side of the body; if from spinal lesion, it is on the same side. This is the rule, and to it there are very few and rare exceptions.

The hemiplegia from intra-cranial lesions may result from apoplexy or brain clot, tumors, softening, abscesses, traumatic or inflammatory compression, thrombosis and embolism.

A brain clot may be cortical or subcortical. If subcortical, it may be located in the white substance, the basal ganglia, the internal capsule, the motor bundles of the crus and pons, or in the anterior pyramids of the medulla. These are all entitled to consideration in the general discussion of this question, but the method of reaching the right cause in a given case, as in the one reported, must be by exclusion.

In the case presented, the cause is not a cortical surface clot, because it is not likely it would occupy so much space and select only the motor area and Broca's center, without producing other and striking manifestations of its presence.

There is probably not a subcortical clot because in that event there would likely be disturbance of sensation of some of the special senses, particularly that of vision, an implication of the facial muscles, with mental aberration, loss of consciousness and muscular rigidity. This observation applies to any of the subcortical tracks or basal ganglia.

It is difficult to conceive of any of these that would cause only the motor paralysis on one side. The possible exception might be a lesion of the internal capsule. Motor fibers, sensory fibers, fibers of the speech tract and fibers of the optic tract pass through the internal capsule. A lesion might only affect the motor fibers. But as the relation of these fibers from before backward is as follows—viz.: (1) motor fibers, (2) sensory fibers, (3) fibers of the speech tract, (4) optic fibers—it would be next to impossible to have a lesion there producing only motor paralysis and motor aphasia without some disturbance, to say the least, of sensation and probably vision. And then the speech difficulty would more likely be a paraphasia instead of an ataxic aphasia.

A lesion of the basal ganglia lying on either side of the internal capsule, if sufficient to press upon its fibers, would produce similar results.

A lesion in the pons or medulla would produce, besides hemiplegia, hemianesthesia, incoördination, strabismus, facial paralysis, paralysis of the third and seventh nerves, difficulty of deglutition, irregular respiration, convulsions, coma and death.

Tumors, softening, abscesses and inflammatory products are really excluded from the discussion of this case, because there is no history of any brain disease or indication of it whatever. So also of thrombosis, in which there is a gradual occlusion of a blood vessel caused by the development in the vessel at a fixed point of an obstruction that finally fills it up

and cuts off the circulation, which is attended by prodrome and evidences of brain disease.

Motor aphasia is due to a lesion of the third frontal convulsion—Broca's center—or a cutting off by pressure or otherwise, the fibers of the motor speech tract.

In the case mentioned, if there was only motor aphasia without hemiplegia, I think we could only conclude that the difficulty was with Broca's center, for the reason that at no other point could a lesion exist, producing ataxic aphasia without complications.

In our case there is a pure motor hemiplegia of the right side and a true motor aphasia. A consideration of either separately would lead to the opinion that the cause was cortical. That view is certainly greatly strengthened when they are considered together, since it is reasonably certain that they could not have any other common acting lesion.

Broca's center and the left motor area of the cortex are supplied with blood from the inferior external frontal and the ascending frontal branches of the left middle cerebral artery. They have a common point of origin, and sometimes the inferior external arises from the ascending frontal. An embolus at that point would cut off the arterial circulation to both areas and thereby arrest the function of each at the same time. Apparently this is just what occurred to our patient.

As to the source of the embolism I am in the dark. Dr. Theodore Potter at one time saw the case with me, and we were unable to find any disease of the heart or blood-vessel leading toward the brain.

The progress toward recovery in such cases is given as follows: 1. Return of speech. 2. Motion in the leg, beginning with the toes and foot. 3. Motion of upper arm. 4. Motions of fingers and hand. Precisely just this course was taken in the case reported.

The circulation to the center of Broca, was probably reestablished, first partially, and secondly quite completely, by release of that arterial branch from the obstruction. Collateral circulation seems to be taking place in the motor area. The arrangement of the arterial blood-vessels in this part of the brain would favor its establishment in the order already named, and thus explain the steps toward recovery. Whether this patient will regain perfect use of his limbs is a matter of some doubt. That he will, at least, have fair use of them is already assured.

Beside the strictly motor character of the one-sided paralysis and the loss of speech, in this case, there are several other accompanying interesting points to be noted.

Because of the favorable arrangement of the vessels, the left middle cerebral artery is the favorite seat of an embolism—another argument in favor of the diagnosis in this particular case.

The interrupted or wavy character of the trouble at its incipency may be accounted for on the theory that the arterial plug had not yet become so fixed or wedged in its position as to prevent, when it changed its location, the flow of enough blood to the areas to nourish them during the intervals of return of speech and motion.

It has been noticed all along that such acts as yawning or stretching produced marked feelings of motion in the paralyzed limbs. Gowers explains this on the ground of associated movements. A distinct effort to do something with the unaffected hand or foot causes a similar effort in the corresponding paralyzed limb.

The retention of urine for a time I attributed to the shock the brain received, and to the recumbent position he was required to maintain.

The treatment for the first few weeks was light doses of bromid of potash, care in diet and absolute quiet. Later he was given iodid of potash in doses of 5 to 7.5 grains, three times a day for several weeks.

Recently there has been very little medication. The use of the faradic current and massage were begun at proper time and are still being kept up.

18 East Ohio Street.

DISCUSSION.

DR. F. W. LANGDON.—This paper is one of considerable interest and brings up questions that we frequently have to decide as to the location of a lesion and the ultimate prognosis of the case. Being a young man the prognosis is of much more importance than if it was a more or less senile patient, and I think those cases require really much more care on account of the different conditions which prevail in the two classes of patients, the young and the old. The Doctor says the patient is thirty-five, and probably by reason of not reading the full paper we are not informed as to whether there were other lesions which might contribute very materially to a more exact diagnosis, as for instance a preceding rheumatism leaving an endocardial condition which might be the source of an embolus which the Doctor has assumed affects the middle cerebral artery. Other conditions which might produce a cortical lesion would be syphilitic endarteritis with thrombus resulting. In the absence of definite history in these respects, I would say that while the Doctor's diagnosis is quite definite as regards the side of the brain affected, I should be inclined to consider the possibility if not the probability of the lesions being sub-cortical rather than cortical. We have an involvement of areas which, if the lesion was cortical, could hardly fail to be attended by marked mental impairment, by convulsions and active symptoms of cortical irritation at the start, which, if I understand aright, were absent. Again, there are apt to be meningeal symptoms following a cortical lesion if there be a hemorrhage. I should be inclined to exclude the cortical lesion in this case. A sub-cortical lesion can be considered of a very limited character. There may be rupture of a blood-vessel or a thrombus, with small irritation. The suddenness of the attack might exclude a thrombus, but while it might favor the embolic theory, the embolus must be very small. It would seem as if the symptoms must be accounted for by an exceedingly limited involvement in the area of the internal capsule.

WAS HAHNEMANN INSANE ?

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY W. W. PARKER, M.D.

RICHMOND, VA.

Nothing but a high sense of public duty will justify a man in attempting to prove another insane, it matters not whether he be dead or alive. The great leading men of the past belong to their posterity. They are valuable lessons to the young, both as warnings against evils and incentives to duty. Biography has always been interesting to me. When nine years old I had read "Plutarch's Lives" more than once. From this kind of study we select our ideals. For this reason the Bible is an invaluable book; it presents us with so many noble ideals on all great moral questions. Some three years ago I read a pamphlet on "The Rise and Decline of Homeopathy," before our State Society, which has had quite a wide circulation. Last year I had a newspaper discussion with the homeopaths of Richmond. Each fired a gun and retired from the field. These things have caused me to study more closely Hahnemann's character, and his unique dogmas. The hot and cold water cures had some common sense in them, but were narrow and on the one-idea theory. Homeopathy, as I

stated in my essay, is transcendentalism; it is not physics, but metaphysics. Hahnemann was a hard student, honest doubtless, and a lover of his kind. His character is above reproach; he was in no sense a quack. His insanity was of a "delusionary" character, well known to alienists. Dr. Young would have called him "a dreamer of gay dreams." True, medicine is practical. We speak of it "as the practice of medicine," not the theory of medicine. Some men are even pleased to call medicine an "art" and not a "science." Too much theory has been the bane of practice. Medicine began with experimentation. However carefully made, experiments must yet be received with great caution. There should be great care also in generalizing from doubtful premises. This error has caused the world much sorrow. We have only to read the numerous pamphlets circulated through the mails to-day with hundreds of certificates of medical men of the marvelous effect of some new drug, to be satisfied that the day of hasty conclusions has by no means passed.

Hahnemann was a singular man. He practiced medicine twenty-eight years and changed his residence twenty-three times. He must have been an unsuccessful practitioner. Perhaps he did not stay long enough in one place for his infinitesimal doses to do their work. By his method it would take a year or two to get one drop of laudanum into his patient's system. A delusion is perverted idea on any subject. It is a very common form of insanity. Some years ago I met a lady at McBride's Private Hospital in Philadelphia, who took me to a door leading into an adjoining room, and said her husband was nailed up in the door casing. I did not attempt to argue with her, as I saw at once she had lost her reason. Hahnemann's "delusion" was on the subject of numbers and forces. He had lost the relation of weight and measures, of little and big, of great and small, of dynamics and statics. To say the smaller the dose—the nearer it was to nothing—the greater its effect, if given in infinitesimal doses, is absurd upon its face, to a man of common sense; to say that only a billionth drop if given every ten minutes will have a better and more certain effect than if given in one drop doses, two or three times a day, is gratuitous; besides, there can be no way possible of proving the proposition. The only way to convince a man holding these absurd views is to satirize him. This Hood and Holmes and others have done:

Well, Doctor,
Great concoctor
Of medicines to help in man's distress;
Diluting the strong to weak
And making ev'n the weak more weak,
"Fine by degrees, and beautifully less."

Suppose a felon doomed to swing
Within a rope,
Might friends not hope
To cure him with a string?
Suppose his breath arrived at a full stop
The shades of death in a black cloud before him,
Would a quintillionth dose of the New Drop
Restore him?

But would it mend his case
To be decillionth dosed
With something like the ghost
Of an emetic!

What shall support the body in its trial,
Cool the hot blood, wild dream, and parching skin,
And tame the raging malady within—
A sniff of Next-to-Nothing in a phial?

Dr. Oliver Wendell Holmes has also satirized him.

I do not remember whether the following is from him or some other American poet:

Take a little rum,
The less you take the better,
Pour it in the lakes of Wenner and of Wetter,
Dip a spoonful out,
Mind you don't get groggy,
Pour it in the lake of Winipisogee,
Shake the mixture well—
Lest it prove inferior,
Then put half a drop
Into Lake Superior.

Every now and then
Take half a drop in water;
If not better soon,
At least you ought to.

What is insanity? An expert says: "It is a delusion or a false concept, an idea which is the product of defective data and defective reasoning and held in spite of the presentation of corrected data and corrected reasoning. This distinguishes it from a common delusion, an error of belief remediable by suitably put evidence." A more simple definition it seems to me would be this: A perverted understanding habitually, though not necessarily at all times, or on all subjects or objects, ignoring common sense and observation, and the plainest relations between cause and effect. The delusion may be upon one subject only.

Were I to see a man driving a nail in the fence and find him tapping it with great delicacy for two or three hours, and were I to say to him, "give the nail two or three vigorous blows and you will do the work," and were he to reply, "this is the best plan, I am satisfied of it," I would at once consider he was insane. Were I to find a man watering his garden with a small watering-pot and only putting one or two drops on each plant, and I should urge him that he was not half doing the work, and he should reply, "the smaller the quantity the better," I would be certain he had lost his reason. Or were a man to claim that two pounds of guano to the acre was better than one ton, I would conclude he was insane. These men might be sound on plowing and cultivating their crops, but certainly unsound upon the quantity of water and guano. If a man were to tell me he was going to London and say that he had but five dollars, and that was enough, I would say at once he was crazy. To say in physics that the nearer you get to nothing, the greater will be the effect and power, is to state an absurdity on its face. Hahnemann said that the nearer you got to the "spiritual" or non-visible or non-ponderable, the greater the power of the drug on the sick man. Is it possible for any man to propound a more absurd proposition in physics? The argumentum ad absurdum is the only mode of replying to such reasoning. Hahnemann had perhaps seen too much physic used, and concluded if he could by some gentle process carefully insinuate his medicine imperceptibly into the system it would less disturb the economy and have better results.

The human body is a strong, well-built machine, enduring great strain and fatigue, and is affected like all other machines by physical agents. We know that one drop of castor oil will not purge, while one ounce will; that one drop of ipecac will not vomit, but two drams will. If we want to produce effects we give what we know from trial will produce results in a reasonable time. This is plain, common sense. We know that the germ of smallpox is very minute,

but we have proof positive that in six or eight days it brings on fever. This is demonstration. Under the system of Hahnemann this sort of proof is impossible. His mode of "testing," as he calls it, is not proof. Its effects are too remote and vague. In the present wild search after germs some may think we have proof of the potency of small forces; but Hahnemann ignored pathology, nor did he seem to inquire into the cause of disease. He said, "If you put liquid medicine in a well-stopped bottle and shake it violently for a while, the patient will feel the effect of the drug on his system." No shaking of the bacillus could get it through the glass bottle into the patient's system. Many germs act quickly and powerfully. If it were necessary, I could easily prove that most homeopathic writers and journals have long since abandoned Hahnemann's wild theories. The homeopathic doctors now give real medicine. A druggist in town has a recipe from one of them for five grains of quinin and one-fourth of a grain of opium, but in the use of medicine for family purposes, put up by the New York Drug Company, authorized by the leading homeopaths, there is no medicine in it worthy of the name. A dose of these pills is from two to four, as a rule. I gave to a man as an experiment forty every two hours for ten days without the least effect. I gave what was known as the most active and energetic poisons. The man swore before a notary public he never felt the slightest effect of the medicine, and the truth of his statement was verified by the temperature and pulse, taken every two hours. Had Hahnemann's disciples adhered to his dogmas his school would have long since died out here as it has in Germany and France. (It is now dying out in England.) Common sense had to assert itself. An English homeopathic journal some time ago proposed the union of the two schools, and frankly asserted that no serious case was attended throughout by homeopaths without resort to drugs. I referred in my pamphlet to a 3-year-old child in Gloucester County, Virginia, who took \$8 worth of homeopathic medicine, the entire supply for the whole family for a year, at one time, and received no damage at all. This is another demonstration of the complete inertness of the medicine. There was no cause of disturbance, hence there was no effect.

In conclusion let me say that I am 71 years old, am the friend of all men engaged in the healing art, more so than ever in my life; that I would not willingly hurt any man's feelings or insult his understanding; my whole purpose is to get at what is sound and sensible in physic. We know but little perfectly. I do not remember in my life to have heard any sensible doctor boast of the perfection of his medical knowledge. That was a sad saying of Paul's to his enemies, whom he truly loved and tried to help, "Do I offend you because I tell you the truth?" Would it be just and right to tell you a lie and mislead you? Two years ago, by authority of the Governor of Virginia, I visited all the lunatic asylums in the state at the head of a commission, and can frankly say that in my best judgment, of the 2,000 lunatics examined I did not see one man more lost to reason (in medicine) than Samuel Christian Friedrich Hahnemann. I see it has been proposed to build a monument to him on American soil, and would I be true to my convictions to hold my peace? In no sense is insanity a crime; it is a sad misfortune, exciting our profoundest sympathy.

CHRONIC MIDDLE EAR SUPPURATION COMPLICATED WITH SUPPURATING MASTOIDITIS.

PAINFUL DRESSING AFTER OPERATION UNDER HYPNOTIC SUGGESTION.

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY FRANK C. TODD, M.D.

FORT WORTH, TEXAS.

Jessie C., aged 10, was brought to me by her father with the following history: Chronic middle ear suppuration for three years, complicated by a suppurating mastoiditis on either side which had been discharging through large ragged fistulæ. The discharge was profuse, and the child had been obliged to wear a bandage around her head constantly.

The character and chronicity of the affection had caused the child to be very fretful and impatient; though she was not in the least hysterical; and her parents, who were very sympathetic, had humored her to such an extent that she was indeed a spoiled child. The father informed me also that their family physician, who had been directing a cleansing treatment, had been unable to exercise any control over her whatever. Every time he attempted to do anything the child would cry and say she would not let him touch her; whereupon he would give up the attempt and let her go in the same condition as he had found her.

I therefore recognized that I had a very refractory patient to deal with, and I thought that the management of the disease was not going to be the hardest part of the treatment.

And the first day I found that she came to me with the intention of dealing with me as she had so successfully dealt with my predecessor. It was with some difficulty that I succeeded in making any examination this first day, but I purposely took only a superficial survey on this occasion, finishing my entire exploration only after several visits; making her believe, however, at the end of each séance, that I had done all I desired to. Occasionally I had to inflict discomfort or pain upon her, but before doing so I always informed her that there was to be some pain, and when she objected I reminded her of former incidents when I had finally accomplished my purpose in spite of her remonstrances, after which reminder she would allow me to do as I chose. However, up to the time of the first dressing, two days after performing a mastoid operation I had given her little pain, and I had realized in the beginning that when it became necessary to unpack a tightly packed, fresh granulating wound, irrigate, and repack again with gauze, there was going to be considerable pain and much more trouble. It was with this painful treatment in view that I had spent so much time in training my patient to my subjection.

She had fought against the administration of the chloroform preparatory for the operation, and this had aroused in her the old spirit of obstinacy, so that when we got her on the table and things had been made ready for the dressing, we found that we were going to have more than we could do to hold her and accomplish our object. The two female nurses were unable to keep her still, either by mental or physical persuasion; she threw her arms about and kicked fiercely. I could not coax her and she knew that I could not hold her and dress her wound at the same

time, so she resolved to have her own way. But when she saw me come toward her with the evident intention of compelling her to obey, she seemed to lose heart, though she continued to scream loudly and apparently resisted all she thought she could.

I placed my left hand on her forehead and passed my right arm over her body, inclosing her arms, and laid her flat on her back, where I held her as in a vice. I then said, "You can not move; you are fastened down." Seeing that her attempts were feeble, I released my hold and repeated the suggestion. This time there was not even an attempt, and she lay as I held her, but continued to scream. I then said: "Stop crying." She obeyed instantly. Again, I said: "You can not move nor cry, no matter how hard you try." She did neither, while I took time to prepare my hands again and to make a thorough dressing. After I had completed I told her to sit up, as I had finished, which she did immediately. I had told her also that she would feel no pain, and she said afterward that there was none, though the next time I dressed the case, when there would normally have been less, she complained a great deal; this time however it was not necessary to hypnotize her.

This case demonstrates Moll's statement that disobedient people, when hypnotized, are often the easiest to manage.

I have purposely made prominent the fact that this patient was brought under control against her desire and in opposition to her strongest efforts. This is somewhat different from any of the cases you mentioned in your recent article—nevertheless an exemplification of your claim that some people can sometimes be hypnotized against their will.

THE NEURON IN MEDICINE.

Delivered before the Tri-State Medical Society held in Des Moines, Iowa, Oct. 1, 2 and 3, 1895.

BY SANGER BROWN, M.D.

CHICAGO.

Some experience in post-graduate teaching has convinced me that the rank and file of the profession pretty generally believe that neurology consists mainly of an intricate tissue of technicalities which only neurologists can understand, if, indeed, the subject is not past all understanding. It ought to be said that this remark applies more properly to students who passed through college, say, prior to seven or eight years ago than to those who are now passing through; because the science has now advanced so far that much of what before was speculation and hypothesis is now susceptible of demonstration, and both student and teacher have shown a correspondingly increased interest. This has been all the greater, because as the science has unfolded, its importance in medicine has been more and more recognized and appreciated.

It is the purpose of this paper not to trace the science of neurology, step by step, from its humble origin to its present eminence, but simply to direct attention to one feature of comparatively recent development which has gone a great way toward facilitating a clear view regarding the etiology, the pathology and treatment of diseases of the nervous system. This feature consists in conceiving the nervous system to be composed of an aggregation of units very similar in character, and in the thorough study of these units.

It is important at the outset to have a name which

shall appropriately designate this entire unit, and I have adopted Waldyer's term of neuron to which, however Prof. Schäfer of London, objects; and while his reasons for putting forth a nomenclature of his own are sound, I think Waldyer's term is so familiar and its application so readily understood and accepted that it will come into universal use.

Improved methods of staining, together with close application and great natural aptitude on the part of several students, have resulted in demonstrations which have added much to our knowledge of the neuron.

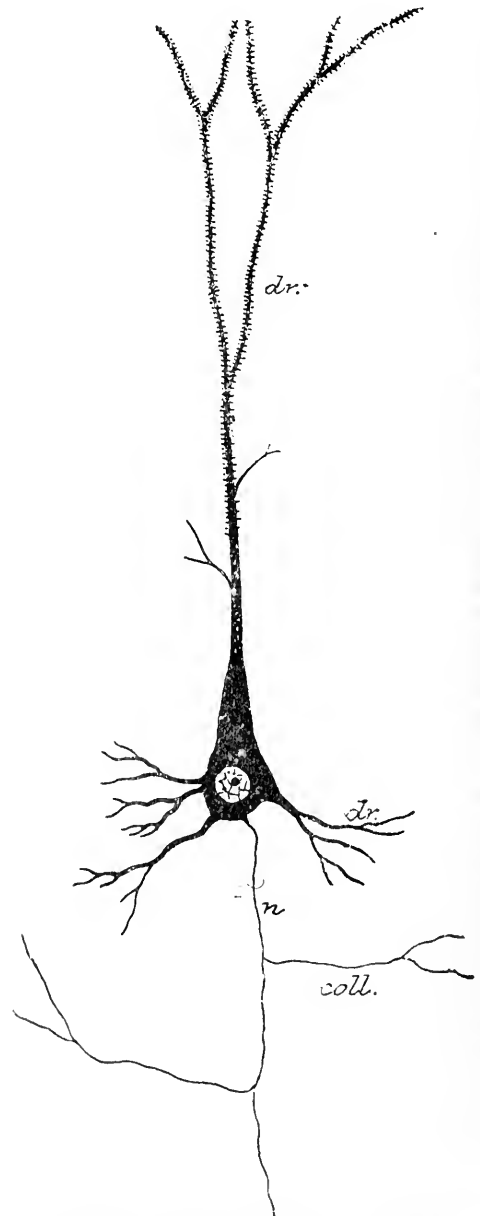


Fig. 1. A projection cell of the cerebral cortex (Schäfer); *dr.*, protoplasmic processes; *n*, axis-cylinder process; *coll.*, branch of axis-cylinder process.

Fig. 1, which represents a cell, the body of which is situated in the motor area of the cerebral cortex, may be taken as an illustration of the neuron. It will be seen to consist of a cell body and two processes. The cell body is seen to contain a prominent nucleus which is large in proportion to the cell body, and the size of both generally bears a distinct relation to the length of the processes which emanate

therefrom. It may be observed here that the nucleus always bears a conspicuous nucleolus.

The processes emanating from the cell body are of two kinds, which are characterized by different names and are certainly quite different in appearance and probably in function. The first and only essential kind is the axis-cylinder process. The other is designated the protoplasmic process and is not essential because many nerve cells are entirely destitute of it.

The axis-cylinder process consists of a long and slender fibril which does not diminish much in size

as it proceeds and, after extending from a fraction of an inch to several feet, ends in a terminal arborization. This arborization may either connect with an ultimate muscular, sensory or glandular element or with another neuron; of this latter connection more remains to be said. Contrary to former teaching these processes have branches, called collaterals, which are given off nearly at right angles and probably end in arborizations connecting them with other neurons.

The protoplasmic process is always comparatively short, has a rough outline, begins to branch close to the body of the neuron and the branches are given off at an acute angle so that the identity of the original fiber is soon lost in the smaller branches.

Though generally the body of a motor neuron is larger than that of a sensory neuron, the neurons of the cerebro-spinal axis have not recently been classified according to this difference; they have been classified, however, according to the number and length of the axis-cylinder processes. Neurons with long axis-cylinder processes, whether motor or sensory, are termed projection cells or neurons, while those with short axis-cylinder processes are called intermediary cells or neurons.

In Fig. 2, 6 and its process is a sensory projection-neuron, and so is 17, but 18 is an intermediary neuron, because it may be regarded as an intermediary link between the centripetal or sensory impressions brought to a nerve center by sensory neurons and the motor or centrifugal impressions which must proceed along 1, 2, 3 and 5, the motor projection cells or neurons.

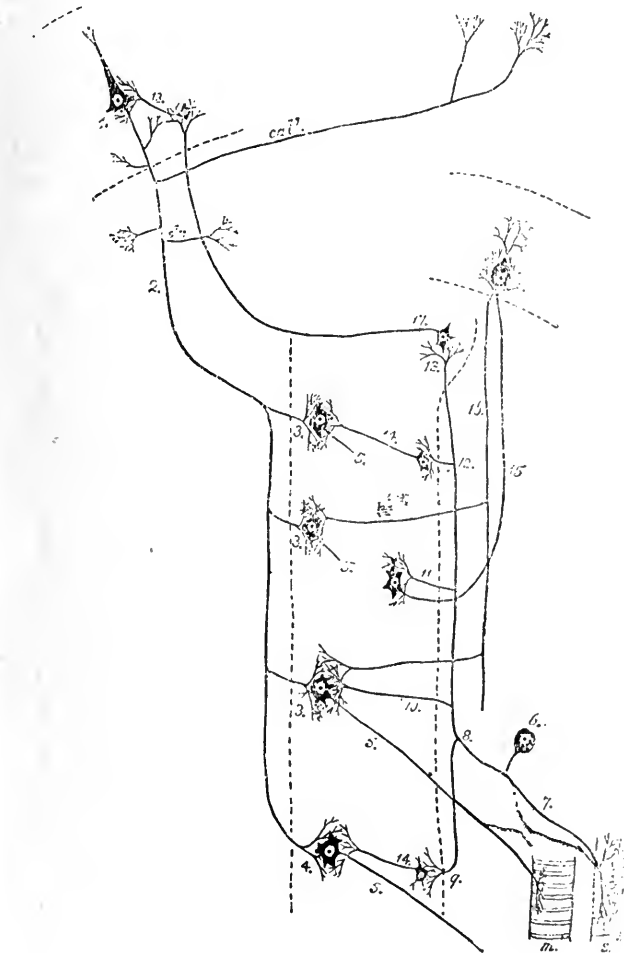


Fig. 2.—Diagram showing the probable relations of some of the principal cells (neurons) of the cerebro-spinal system to one another (after Schäfer). 1, body of a neuron of the cortex cerebri; 2, its axis-cylinder process passing down in the pyramidal tract and giving off branches, some of which, 3, 8, end in arborizations around the bodies of other neurons in the anterior horn of the spinal cord, the main fiber having a similar ending at 4; *coll.*, a branch passing in the corpus callosum to the cortex of the opposite side; *str.*, a branch passing into the corpus striatum; 5, axis-cylinder process of peripheral neuron in anterior horn passing to form a terminal arborization in the end-plate of a muscle fiber, *m*; 6, body of neuron of one of the spinal ganglia. Its axis-cylinder process bifurcates and one branch, 7, passes to the periphery to end in an arborization in the sensory surface, 8. The other branch bifurcates after entering the cord (at 8) and its divisions pass upward and downward (the latter for a short distance only); 9, ending of the descending branch in a terminal arborization around the body of a neuron of the posterior horn, the axis-cylinder of which again ends in a similar arborization around the body of a neuron of the anterior horn; 10, a branch passing from the ascending division directly to envelop the body of a neuron of the anterior horn; 11, one passing to envelop the body of a neuron of Clarke's column; 12, a branch having connections like those of 9; 13, ending of the ascending division of the axis-cylinder process emanating from 6 around one of the bodies of the neurons of the posterior columns of the bulb; 14, 14, axis-cylinder process of the neurons of the posterior horns passing from an arborization around the bodies of the motor neurons; 15, an axis-cylinder process of the ascending cerebellar tract passing up to form an arborization around the body of a neuron of the cerebellum; 16, axis-cylinder process of this neuron passing down the bulb and cord and giving off branches to envelop the bodies of the neurons of the anterior horns; 17, axis-cylinder process of the neurons of the posterior columns of the bulb passing to the cerebrum and forming a terminal arborization around one of the smaller cerebral neurons, which may be regarded as an intermediary neuron; 18, axis-cylinder process of this cell, forming an arborization around the central projection-neuron 1.



Fig. 3.—A neuron from the superficial layer of the cerebral cortex (after R. y. Cajal). *n, n*, axis-cylinder processes; *dr, dr*, protoplasmic processes.

Continuity of fibers ever so fine have never been observed forming a connection between two neurons. Such a connection must be regarded as a physiologic one and takes place by the adjunction of the arborized process of one neuron with the body of another neuron, or by the adjunction and interlacement of the arborized process of one neuron with a similar process of another neuron, as may be observed in the olfactory glomerule shown in Fig. 4. Indeed, the gray matter in which the bodies of the neurons lie imbedded is doubtless made up of the interlaced fibrils forming the arborizations above described. In cutting through the gray matter numerous points are seen, resulting from a cross section of the fibers comprising these arborizations; hence the Germans have designated it the punkt substance, and refer to it as a highly important part of the nervous system which, indeed it is, since in it a nervous impulse may be transferred from one neuron to another.

It is a general law applicable to every cell that when any part of it is separated from the nucleus that part dies. This applies to the neuron and is not affected by the direction in which impulses traverse the part separated, say the axis-cylinder process. Right at this point, I wish to insist upon the importance of regarding the neuron with all its processes

simply as a cell, no matter how widely it may differ in various respects from the current conception of a cell. When it is remembered that it is the function of the cell nucleus to preside over the nutrition of the cell processes, it can be readily understood how slight a cause affecting the nutrition of this nucleus might affect profoundly the nutrition of the delicate axis-cylinder process at a distance of several feet from its nutritive center.

Though I shall return to it again, I may here call attention, by way of parenthesis, to the probability that lead palsy and diphtheritic paralysis are respectively due to the action of a mineral poison in the one case and a bacterial toxin in the other acting upon the nucleus of the nerve cell.

The essential function of the axis-cylinder process is conduction of nervous impulses. It is pretty evident that in some cases this impulse passes through the body of the neuron, as, for instance, where two axis-cylinder processes emanate from its opposite sides as shown in Fig. 3. But it is no less probable that a nerve impulse may be transmitted the whole length of the axis-cylinder process without traversing the cell body, as may be understood by reference to the neuron 7, 6, 13 in Fig. 2. Indeed, experiments

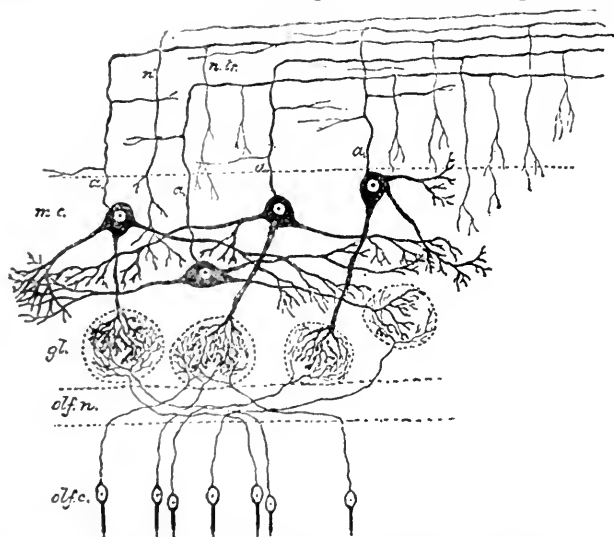


Fig. 4.—Diagram of the connections between the olfactory sense organs and the brain (Schäfer). *olf. c.*, olfactory neurons sending their axis-cylinder processes, *olf. n.* into the olfactory glomeruli, *gl.*; *m. c.*, "mitral" neurons of olfactory bulb sending axis-cylinder processes into the glomeruli and axis-cylinder processes, *a, a*, into the olfactory tract, *n, n*; *n*, an axis-cylinder process derived from a cerebral neuron ending in the olfactory bulb.

made on the higher vertebrates might be cited strongly confirmatory of this view, while it seems certain that in the earthworm, sensory impulses are brought from the skin to the central nervous system where they are converted into motor impulses without traversing the nucleated body of a neuron at all as shown in Fig. 5.

The view that the nucleated body of a neuron may act as an automatic generator of nerve impulse is very commonly entertained, though direct proof of it is lacking. The so-called automatic action of the respiratory centers in the medulla can not fairly be taken as proof, for this is known to depend upon the circulation through the medulla oblongata of venous blood.¹

¹ For many valuable and interesting facts regarding nerve impulses, and much else of interest regarding the neuron, I refer to the admirable address of Prof. E. A. Schäfer, F.R.S., as President of the London Neurological Society, to which I am much indebted for many of the statements herein made. (See "The Nerve Cell Considered as the Basis of Neurology," by E. A. Schäfer, F.R.S., *Brain*, vol. xvi.)

Though the service which this conception of the neuron renders to psychology can not be regarded as inferior to that which it yields to neurology, I can not at this time consider it in relation to mental operations; but keeping in view the statements already made, I wish to make some practical applications of it to the subject of neurology and will in the first place call attention to a few well-known facts regarding reflex action.

The motor path, from the so-called motor region of the brain to the motor end organs, consists of two neurons or segments, an upper or central neuron and a lower or peripheral neuron. The body of the central neuron is in the brain. The body of the peripheral neuron in the spinal cord, hence the term central or peripheral disease, should refer to the central or peripheral neuron, notwithstanding the central neuron is partly in the brain and partly in the cord, and the peripheral neuron is partly in the cord and partly in the peripheral nerve.

When a movement results from the direct action of the lower or peripheral sensory neuron upon the

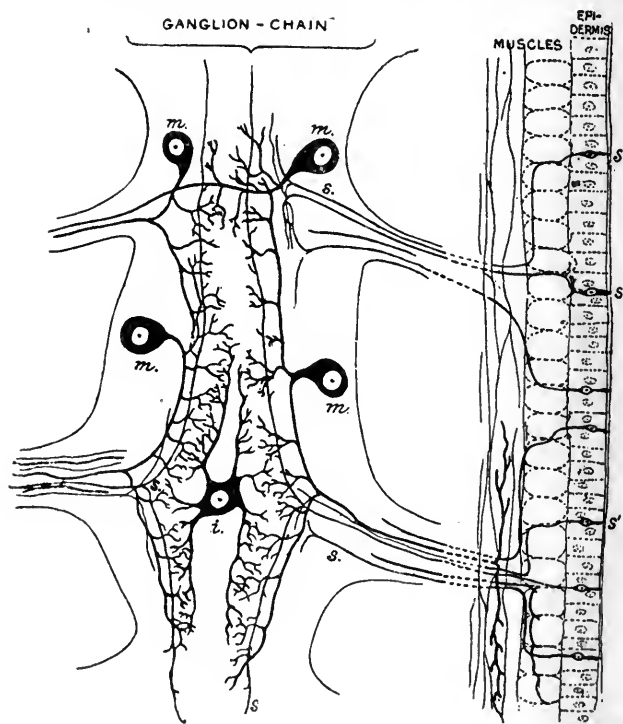


Fig. 5.—Diagram of the nervous system of *Lumbricus* (after Lenhossek and Retzlus); *m.*, motor neuron; *i.*, intermediary neuron; *s.*, sensory axis-cylinder processes proceeding from *s'*, sensory neurons in the epidermis.

lower or peripheral motor neuron, such movement is designated by the term reflex; on the other hand, when a movement results from the action of the upper or central sensory neuron upon the upper or central motor neuron, such movement is designated as voluntary, whether conscious or not. In health, the upper or central motor neuron or segment has a marked inhibitory influence over the lower or peripheral motor neuron or segment. Therefore, when the influence of the upper motor neuron or segment is impaired or destroyed by disease, if the reflex arc remain intact the reflexes will be increased. I might explain that by the reflex arc I mean the path which is taken by an impression made upon a sensory apparatus along a peripheral sensory neuron directly to a peripheral motor neuron, and thus outward to a motor mechan-

ism as illustrated by Fig. 2. 7, 3, 5. Disease in any part of this arc will impair or destroy the corresponding reflex.

Before proceeding to apply the facts for purposes diagnostic, it should be stated that the upper segment or central neuron is never connected directly with any end organ, but always with a second neuron; and also that the nucleus of the lower motor segment or peripheral neuron presides over the nutrition of the muscle to which it is distributed. It only remains now to enumerate those pathologic processes which commonly affect these several segments, and first the upper or central motor neuron or segment 1, 2, 3 may be considered in Fig. 2. In the main the processes are traumatism, hemorrhage, embolus or thrombus, tumor, abscess and lateral sclerosis; excepting during the period of severe shock the symptoms due to injury of this neuron would be paralysis and increased reflexes without atrophy; and to this might be added spasm in case of an irritating lesion as a gumma. So far as the ultimate symptoms are concerned, it makes no difference to what part of the neuron the destructive agency is applied.

Next, we will consider some of the pathologic processes which affect the lower or peripheral motor neuron, 5 in Fig. 2. They are acute or chronic inflammation of the cell body in the anterior horn of the spinal cord and also the action of metallic poisons or microbic toxins upon it, transverse myelitis, peripheral neuritis and trauma. The symptoms due to disease affecting this neuron are paralysis, muscular atrophy and loss of the reflexes.

A pathologic process affecting the upper or central sensory neuron, 17 in Fig. 2, would affect sensation but would have no influence over the reflexes. With the exception of chronic degenerative change the same processes as were enumerated as affecting the upper or central motor neuron may affect this one, though the course of its axis-cylinder processes nor the position of the bodies are not so definitely known.

Lastly, the lower or peripheral sensory neuron, 13, 8, 6, 7 in Fig. 2, may suffer in the part of the axis-cylinder above the cell body in the cord from the effects of acute inflammation as in transverse myelitis, and from degeneration as in locomotor ataxia; below the cell body from inflammation (neuritis) or traumatism. If the lesion involve that part of the neuron which serves to form part of the reflex arc, then in addition to lost or impaired sensation there will be lost or impaired reflexes. Where a lesion involves several neurons with different functions the symptoms will be correspondingly combined, excepting of course where the lower segments are involved; there is then no way of interrogating the upper segments.

It remains to apply this conception to diseases affecting the cerebellum and the sympathetic system. While I do not underestimate the importance of these parts of the nervous system, a sufficient number of definite anatomic and physiologic facts have not yet accumulated to render such an attempted application feasible. I can not refrain, however, from calling attention to a very ingenious not to say useful hypothesis which has been recently put forward by Profs. Lepine and Duval, of Paris, and which, from the conception of the neuron, affords a rational explanation of the organic basis for various so-called functional manifestations of the nervous system. Everyone is familiar with the so-called amœbic

movements of cells, and by assuming that, by reason of such movements the contiguity which one neuron bears to another and which is essential to the transference of an impulse is so far broken that such transference does not take place, various phenomena are accounted for; thus in sound sleep such contraction and separation of neurons may be regarded as very general and complete; the upper neurons being almost completely isolated from the lower; while in light dozing and somnambulism a greater or less connection of varying character may be supposed to remain. In simple insomnia, from some obscure nutritive defect, this spontaneous contraction which causes the separation, producing normal sleep, does not occur or may not long enough continue and, similarly, in hysterical paralysis with its sudden recoveries, these amœboid movements or their absence will explain pretty well the phenomena.

It may be supposed that in a normal individual the request to rise from a chair and walk would cause a sufficiently strong impression upon the neurons of the brain ordinarily concerned in mental operations to cause their processes to elongate, and so bring them into such physiologic relation with the lower segment as would set in operation such muscles as might be necessary to the proper performance of the movement, while in a person affected with hysteria such elongation might not occur and hysterical paralysis would be present.

But suppose in this latter case an unusual stimulus be applied to the upper segment or neuron, such as an ignorant, credulous and superstitious person might be conceived to obtain at the hands of a so-called miracle-worker, then the necessary contiguity might result and thus a miraculous cure be effected; inasmuch, however, as according to this hypothesis the paralysis depended primarily upon a defect in the upper or central neuron, it might be expected that such a cure would not be permanent, and experience amply justifies this expectation, for we know full well how frequently recovery from hysterical paralysis is followed by relapse.

I can not at this stage discuss at length the bearing that this conception has upon the pathology of the nervous system, but will cite a few instances where, in my opinion, it is conducive to clearness of view.

In the toxic palsies, unattended with pain, it seems much more reasonable to assume that the poison acts on the body of the neuron than that it has a selective influence for the peripheral part only of the axis-cylinder process. It is at all events manifestly improper to designate these processes by the term neuritis, for none of the characteristics of inflammation attend the process, as pain, heat and swelling. According to this conception it is not fair to assume that the primary lesion in locomotor ataxia consists of disease of the nerve fibers, for in that case it must be maintained that the axis cylinder on one side of and near to its nutritive center degenerates, while that on the other remains comparatively healthy, which is unreasonable. Therefore, the view already held by many that the disease begins in the adventitious tissue and involves the nervous element subsequently finds strong confirmation in this conception.

Recent demonstrations and hypotheses concerning the neuron have done much to render therapeutic measures more rational, if they have not yet developed anything new. For instance, it can be under-

stood how a drug, by causing contraction of the sensory neurons, might abolish pain and even produce artificial sleep. In this connection opium, chloroform, etc., might be mentioned.

In the so-called toxic palsies, whether the toxin is supposed to act more intensely upon the part of the axis cylinder that degenerates or upon the body of neuron is not material, the therapeutic problem is the same, namely, to prevent the further formation or introduction of the substance into the system and promote the elimination of that already present.

If it is a fact that locomotor ataxia begins as a proliferation of the connective tissue in the spinal cord and affects the nervous elements secondarily, then direct stimulation to the spinal cord by means of electricity, with a view of promoting the nutrition of the defective tissues and thus their return to health, is an eminently rational process. Enough cases have been reported where strong galvanic currents to the spine have produced a myelitis, to make it certain that a proper degree of stimulation may in this way be applied. So that recent researches tend to support the assertion made some time ago by my distinguished colleague, Dr. Dr. R. Brower, at the International Medical Congress held in Copenhagen, that the he had treated cases of locomotor ataxia successfully by the application of strong galvanic currents to the spine, although when he made it it was received in some quarters with considerable skepticism. Though some effort may be required on the part of those who learned their neurology before these demonstrations and hypotheses were brought forward to recast their conceptions in accordance with the new order of things, I think whoever makes the attempt will be amply repaid, and, so far from finding his work obscure and unsatisfactory, will find it fairly clear and interesting.

THE VALUE OF SHARP CURETTES IN THE REMOVAL OF SEPTAL PROJECTIONS.

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ST. LOUIS, MO.

Many and various are the mechanical plans and devices for the treatment of cartilaginous and bony projections from the nasal septum. Not unnaturally, for the great influence which these conditions have upon the pathology of the nose is a matter of such positive scientific acceptance, that inventive genius in this particular is properly stimulated.

While within the short compass of a paper one could not be expected to give a complete review of the various instruments, it may be well in connection with the subject of the paper to glance at the more important instruments devised for the removal of septal projections, ridges, spurs, and the like. The literature of this subject is very striking, in one particular especially; viz., that deflections of the septum and exostoses and ecchondroses growing from the septum are considered by most writers as if they were identical conditions. They have many points in common; their pathology, however, is unlike; at least no one seems to have fully solved the problem of their relationship. Their treatment is so manifestly different that much confusion, at least to the inexperienced, would be obviated if the two conditions were considered under different headings.

For this reason septal deflections are ignored in this paper and reference is made to the treatment of spurs and ridges alone.

MacDonald¹ advises a linear incision over the projection, followed by turning up the perichondrium with a raspator, and removal of the superabundant cartilage with a saw or gouge. He considers a trephine preferable for the removal of small spurs. It is undoubtedly true that it is better to remove these small spurs with a trephine than by the means advocated by MacDonald; there are, however, certainly more satisfactory instruments for this purpose than the trephine.

The same author recommends certain forms of gouges which act in a somewhat similar way to the instrument about to be described in this article. A double set (right-sided and left-sided) is required—a decided disadvantage. These gouges are of service, yet they are manifestly unequal to the sharp curettes in strength, simplicity and accuracy of operations.

The practice which Jarvis² recommends, of transfixion and snaring, is not readily applicable to many cases, and when it is used the operation is needlessly prolonged.

Seiler's dental engine³ and Curtis' electro motor⁴ have accomplished much in making the removal of septal projections a matter of little difficulty and technique. Some cases, however, do not admit of this form of operation; in addition many rough places frequently remain upon the septum, however careful the operator may be. To this fact numerous writers have testified. In this connection it may be well to mention that Jarvis⁵ insists that nasal drills should be used with great circumspection. No instrument which operates like these drills and trephines can be expected to leave a smooth surface where tissue is no denser than that of septal projections. If the spur or ridge were as hard as the teeth, it would be a different proposition; then such instruments would be ideal as they are in dental work. To clear away the rough places remaining after these operations, the instruments presented by the writer are very pleasing, so that by using the motor first, and the sharp curettes afterward, a most perfect result may be obtained.

Seiler advocates a method not very different from that of MacDonald. He cuts away the mucous membrane and then with a gouge and mallet removes the projection. Cheval⁶ mentions a gouge with a handle at 90 degrees to the shaft, which he considers useful to trim down projections. The handle being at right angles there is no interference to the view.

The most serviceable instrument in the great majority of cases is the saw devised and popularized by Bosworth.⁷ With it the operation may be most expeditiously performed, a smooth surface almost invariably remains and healing is rapid.

There are, however, many projections from the septum for which from their very nature saws are not applicable. Many present too obtuse an angle to the septum, while others are too far from the anterior nares, either posteriorly or superiorly. Some are situated beyond a deflected portion of the septum, which prevents a proper application of the saw.

¹ Diseases of the Nose, p. 203.

² Archives of Laryngology, vol. III, p. 200.

³ Diseases of the Nose and Throat, p. 248.

⁴ New York Medical Journal, 1887.

⁵ Burnett's System of Disease of the Ear, Nose and Throat.

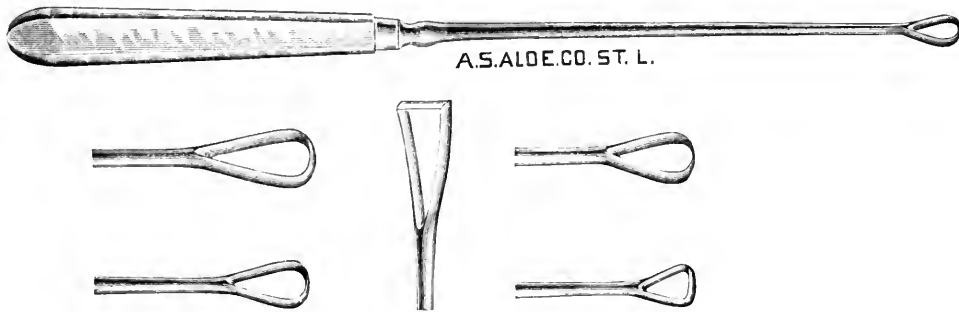
⁶ Revue de Laryngologie, 1893, 533.

⁷ Diseases of the Nose and Throat, 303.

Still others are so small that one can not obtain sufficient purchase for the saw. What is true of the saw is also true of the other instruments which have been mentioned. In all these cases the instruments devised by the writer come into play. They are not unlike the ordinary uterine curettes in form, but being highly tempered and sharpened they are readily capable of cutting the cartilaginous projections from the septum. Several varieties have been used, differing slightly in shape, size and inclination to the shaft.

The principle is the use of a circular or straight blade from 2 to 6 mm. long, attached to the shaft in such a manner that an opening remains for engaging the offending projection. Where the circular blades are used, the opening appears as a triangle with a concavely curved base; with the straight blades it is almost a straight triangle, the most acute angle being toward the shaft.

The cut which accompanies this paper shows their character and appearance. The curettes have been made by the A. S. Aloe Company, St. Louis, whom I must thank for assistance in the experimental stage of these instruments. They will be found very useful in the removal of small spurs especially, one application of an instrument being frequently sufficient. The operator will be pleased with the rapidity of the operation and the smoothness of the surface which remains after the application of the instrument.



Spurs that are high up are easily reached and removed. Projections forming an obtuse angle with the septum are excised with ease and convex ridges are trimmed down with great rapidity. It is sometimes necessary to use the curette several times, taking off a small slice of the cartilaginous projection at each effort. When spurs far back are to be removed the curette is especially indicated. In this particular at least no instrument in my hands has ever been so satisfactory. After sawing, drilling and trephining, nothing is better for paring off the rough edges, as one may be sure that a smooth surface will remain.

The force used must be a pulling force which can not be considered in anywise objectionable. The amount to be used must be gauged according to circumstances, a matter, however, which will require no study on the part of one familiar with nasal operations.

In elderly persons, the instruments are quickly dulled on account of the calcareous nature of the tissue to be removed. The same thing takes place in projections from the bony septum of younger adults. It is therefore often necessary to re-sharpen instruments, but as this may be done without difficulty there can be no serious objection upon that score.

An important consideration is the ease with which these instruments may be cleansed and sterilized.

There are no rough surfaces to which general surgeons entertain such disapprobation; every portion is susceptible to thorough aseptic procedures.

I have not found it necessary to use handles at a right angle to the shaft, as advocated by MacDonald, Cheval and others. So far, at least, a handle in the same plane as the shaft has not seemed to interfere with vision. It is doubtful if right angle handles would be as serviceable as a straight handle, from the fact that the availability of the instrument greatly depends upon the precision of the pulling force which the operator exerts.

The amount of hemorrhage that occurs does not differ, so far as I am able to judge, from that occasioned by any other instrument for similar purposes. The instruments may be used on either side of the nose, the anterior, posterior, superior or inferior part of the septum.

My observations lead me to believe that it is unnecessary to take the mucous membrane into consideration, unless an unusually large amount might be removed. The scabbing which sometimes follows septal operations seems to be more dependent upon the lack of smoothness of the surface after operation than upon the coincident removal of the mucous membrane.

After an experience of five years, I consider that I am justified in presenting this for my colleagues'

consideration. I do not, however, desire to place myself in the position of advocating that these instruments should replace others in septal operations, for I make frequent use of almost all that have been suggested. I simply present these as being worthy of use in the special class of cases enumerated in this paper.

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ILEUS.

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The subject of intestinal obstruction has always been one of great interest and will continue so until our methods and results in diagnosis are greatly advanced. Before entering into the details of the subject, let us take a view of the mechanism of the intestinal tract from the pylorus to the sphincter ani. We have here a long muscular tube of varying size with natural constrictions in certain positions, either from *a*, a special muscular development (sphincters), or *b*, from abrupt changes in the course of

the canal (flexures), or *c*, from gradual diminution in the size of the canal, as of the lower end of the ileum. This canal has, besides its physiological functions those of secreting, absorbing and excreting, the power of propelling its contents by its own muscular contraction. It can readily be seen that a fecal stasis could be produced:

1. By the absence of muscular contraction—paralysis. This paralysis may be of spinal origin, may originate in the afferent nerve, or there may be a local paralysis, as from infection at the terminal filaments.

2. From tonic contraction, as from mineral poisonings, lead and from certain ptomaine poisoning, as tyrotoxin.

3. It may result from mechanical causes, as constriction in the calibre, bending at a sharp angle, occlusion by a foreign body, as a gall-stone or a neoplasm; compression from without, etc.

With this short consideration of the mechanism of obstruction we will take up the subject of ileus in general. By the term ileus is meant not a definite pathologic entity, but a complex of symptoms produced by very different causes. The characteristic symptoms of ileus are abdominal pain, inability to produce bowel movement, vomiting and meteorismus (tyimpanites). These symptoms may be produced by adynamic, dynamic or mechanical causes. We have therefore adynamic, dynamic and mechanic ileus.

SCHEME.

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ADYNAMIC ILEUS

Is always the result of paralysis of a larger or smaller portion of the intestine from the following causes:

1. Paralysis from extensive operations on the mesentery, disturbing its circulation.

2. Paralysis of a loop returned after prolonged strangulation, particularly from femoral hernia.

3. Injuries to the spinal cord, as fractures, bullet wounds and punctures.

4. Injury to the afferent nerve.

5. Reflex paralysis, as that produced by the passage of gall-stones into the ducts, renal calculi, strangulated omentum or compression of an ovary.

6. Septic paralysis from peritonitis, cholecystitis, salpyngitis, embolism of mesenteric artery, etc.

In the first class, where extensive operations have been performed on the mesentery for the removal of tumors, the repair of lacerations, etc., there is always danger of paralysis and gangrene of the dependent coil as a result. I have endeavored to determine by experiment to what extent we are permitted to resect or destroy the circulation in the mesentery, without endangering the bowel, with the following results:

Experiment 1.—Large dog; aseptic laparotomy; ligation of the mesenteric vessels supplying three inches of the intestinal tract, after having emptied the intestine and ligated it so as to occlude its calibre, being careful not to include the parallel artery of the bowel; abdomen closed. Examination forty-eight hours later showed the intestine in good condition. The same experiment was repeated, and it was found that when a

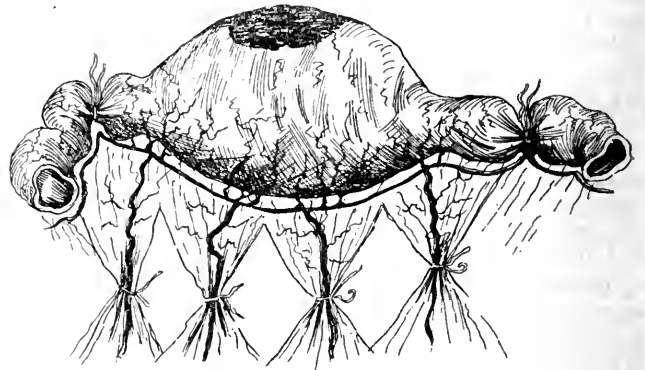


Fig. I

greater segment than six and one-half inches was included in the ligatures, gangrene took place on the convex side of the segment near its center (Fig. 1). This shows that the parallel vessel will supply the intestine with sufficient blood to retain its vitality for forty-eight hours, even though the mesenteric supply were completely shut off for that length of time.

Experiment 2.—Ligation of the mesenteric vessels and the parallel vessels of the bowel, without closing the caliber of the bowel, could be made to the extent of one-half inch. When more than this was included gangrene ensued.

The following is of interest:

Experiment 3.—Dog; aseptic laparotomy; mesenteric vessels ligated, supplying a segment of seven inches; segment

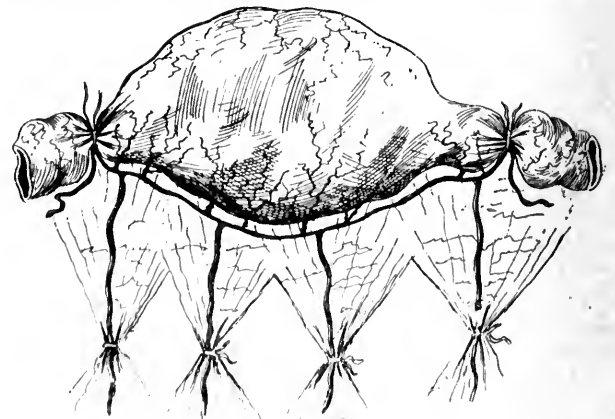


Fig. II

emptied; parallel vessel and intestine ligated (Fig. 2). □ Dog died forty-one hours after operation. Post-mortem: The ligatures around the intestine were still in position, the contents had not escaped. The segment resembled a blood clot, and all evidences of organized tissue had disappeared (Fig. 3). The disintegration was so complete that I can not attribute it to any other cause than auto digestion. The peritoneum was universally denuded of its endothelium and the cavity contained a considerable quantity of blood.

It is shown by these experiments that the parallel artery must be given the greatest consideration in

operating on the bowel and mesentery. When it is injured, as by a bullet or in an operation, resection should be made of that portion from which its blood supply is cut off.

Ileus following the return of a bowel that has been strangulated for a considerable time, and particularly the severe strangulation of femoral hernia, is due to thrombosis of the veins, a local paresis or ischemia from the occlusion of the parallel artery, and not infrequently causes a fatal termination in cases where appearances promised a restoration to the function of the bowel when returned. This form of ileus must not be confounded, however, with that following reduction of hernia *en bloc*, which will be considered later.

A rare cause of ileus is an embolism of the mesenteric artery, producing an ischemia, paralysis and gangrene.

Pathologic lesions and injuries of the spine, as fractures, produce a paralysis of the intestine, followed by great meteorismus, which may continue for several days after the injury. It is one of the most unpleasant complications following fractures of the spine. The abdomen becomes enormously distended; interferes greatly with respiration, and may even produce prolapsus recti. Under favorable conditions it subsides on the fourth or fifth day after the injury. It may also be caused by spinal hemorrhage following traumatism without fracture.

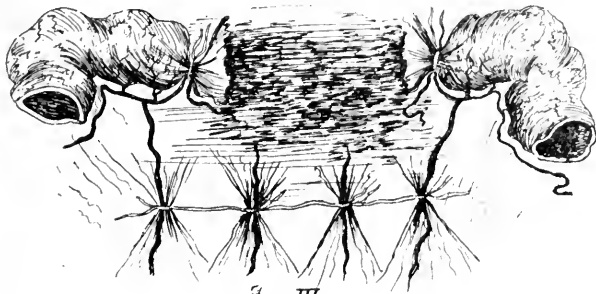


Fig III

The following case illustrates:

Male, age 32, brought to Cook County Hospital; history given as follows: In a quarrel a few hours previous patient was shot in the neck from the front; immediately following the discharge of the gun, he fell to the floor paralyzed and remained so, though he was quite conscious. Examination: A small bullet wound just outside the cervical vessels and an inch below the angle of the jaw; there was no wound of exit; the paralysis of all the extremities was complete and he was aphasic; thirty-six hours after he became unconscious; his respiration was purely diaphragmatic; his abdomen became enormously distended and peristalsis was absent; priapism was marked. These symptoms continued until the end of the fourth day when he succumbed. Diagnosis: Penetrating bullet wound of cervical portion of spinal cord. Post-mortem showed the spinal canal full of blood extending its entire length and compressing the cord. The tympanitis in this was extreme. I firmly believe an operation would have saved this man, as death was caused by compression of the cord with blood.

Injury to the afferent nerve supply, as a blow upon the epigastrium, may produce a paralysis and all the manifestations of obstruction; a bullet wound in the mediastinum may have the same effect, as is illustrated in the following case, which occurred during my service at Cook County Hospital in the spring of 1890:

A police officer was pursuing a burglar upstairs when the latter turned and fired downward. The bullet passed into the mediastinum at the right sterno-clavicular junction. There was no evidence of injury to the lung, large blood-vessels nor

stomach, but the patient gradually developed the symptoms of ileus; pain in the abdomen, not severe; slight tenderness; vomiting persistent; enormous distension of the abdomen; complete absence of peristalsis; inability to produce bowel movement. These symptoms continued for seven days; patient's pulse was then 140; temperature 99°; respiration 46; facial expression bad, and death seemed imminent. Diagnosis: Perforative peritonitis. Laparotomy. The intestines enormously distended, but not congested in the least; no inflammation at any place in the peritoneum; a small quantity of transuded serous fluid was present in the most dependent portion of the cavity. The fluid contents of the bowel gravitated with alteration of position and explained the cause of the change in the location of dullness noticed before operation, viz., that dullness was present always in the dependent portion of the abdomen, but the operation showed it was not due to free fluid in the cavity, but to fluid that gravitated to the dependent portion of the intestine on account of the complete paralysis. The abdomen was closed. The stimulation of the operation produced an active peristalsis, which was soon followed by the passage of gas and feces; vomiting ceased, pulse improved, facial expression changed, and the patient made a rapid and uneventful convalescence. This is a typical case of ileus from afferent nerve paralysis.

Reflex ileus may be produced by: *a*, Strangulation of omentum; *b*, gall stone obstruction in the cystic or common duct; *c*, impaction of renal calculus in ureter, and *d*, by compression of an ovary.

In strangulated omentum the symptoms of ileus are very pronounced and continue for a considerable time in the early stages, and it is difficult to make a differential diagnosis between it and mechanical obstruction of the intestine.

In obstructions to the cystic or common duct the symptoms of ileus are also pronounced and continuous. I have in the last two years seen three cases in which the patients were prepared for laparotomy for intestinal obstruction where this condition existed in the cystic duct. Ileus from renal calculus is of shorter duration than the other varieties mentioned.

Occasionally an ovary is compressed between the bony wall of the pelvis and a fibroid or other tumor, producing the symptoms of ileus, which continue with greater or lesser severity until the ovary is released.

Ileus from sepsis or infection ileus: *a*, peritonitis general; *b*, peritonitis local. The peritonitis may be of chemical or bacterial origin. An infection of the peritoneum can occur from a perforation, through impaired resistance of the wall, as an ulcer in the appendix or intestine, through a diseased tube or gall bladder, or from a suppuration contiguous to it. We have in the peritoneum as a result of this infection either an acute, rapidly destructive type, where the symptoms of obstruction are pronounced at the onset and continue until a few hours before death, when relaxation takes place and there are frequent fluid bowel discharges. This is characteristic of peritonitis, and does not occur in mechanical obstruction. The post-mortems show the peritoneum red, denuded of its endothelium, with but a small quantity of exudate and no flakes nor pockets of pus. There are multiple capillary hemorrhages, the gloss is absent and bowel greatly distended. This is the variety which occurred very frequently after operations in the peritoneal cavity in the pre-antiseptic period, but now, fortunately, it is very rare.

In the subacute and circumscribed inflammations of the peritoneum the symptoms of ileus are less pronounced and pass away in about forty-eight hours after the onset of the attack. In these cases the laparotomies and post-mortems show the bowel covered with a fibro-purulent exudate, many adhesions and often circumscribed accumulations of pus. The more

acute the attack the more the pathologic phenomena manifest themselves. The infiltration of the intestinal wall produces a paralysis of peristalsis, and the more virulent the poison the more complete and lasting the paralysis.

Uremic ileus.—In one of the varied forms of uremic manifestations—the intestinal variety—we have symptoms very clearly resembling those of mechanical intestinal obstruction. The physical signs of intestinal obstruction, as increased peristalsis, tympanites, circumscribed areas of dullness are absent, while the vomiting and inability to produce bowel movements are persistent. No other uremic symptoms may be present to suggest the diagnosis, but an examination of the urine demonstrates organic disease of the kidneys. It must be remembered that intestinal obstruction can occur in an uremic and, on the other hand, that a small percentage of albumin is often present in mechanic ileus.

DYNAMIC ILEUS

is produced by a tonic contraction of the circular muscular fibers of the bowel. This contraction may continue for days. It may be caused by poisoning with lead, tyrotoxin, etc.

MECHANIC ILEUS

or mechanic obstruction: 1, Strangulation of intestine, internal and external (hernia); 2, invagination; 3, obturation, internal (neoplasms, volvulus) and external (incarcerated hernia).

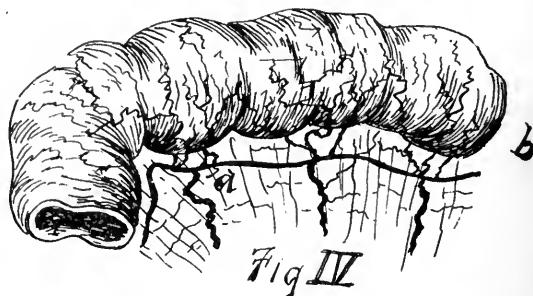
1. By strangulated ileus we mean that not only is the intestinal tract impermeable to its contents, but that the circulation is impeded or suppressed, the nutrition of the coil is shut off and its necrosis is imminent. The mesenteric vessels are the first to yield to the pressure, but the parallel vessel keeps up the blood supply for a long time after, as it is so thoroughly protected against pressure by its position. (Fig. 4 and 5.) In the first variety we have strangulated hernia, inguinal, femoral, umbilical and internal strangulation by diverticula, pseudo ligaments, adherent appendix vermiformis, appendix epiploica, adherent omentum, etc.; strangulations through openings in the omentum and mesentery, retention in peritoneal pockets, or by a twisting of intestine on its axis (volvulus). All of these conditions can produce complete strangulation and necrosis. The danger is great and they run their course rapidly.

2. Invagination holds a middle place between strangulation and obturation, as well for the severity of its symptoms as the tendency to local necrosis and danger to the life of the patient. The symptoms are, as a rule, less pronounced, but of longer duration. Often the invaginated portion may escape necrosis, and should it become necrotic, may slough off and pass through the bowel without causing death. In obturation ileus the symptoms come on slower, the local destruction is more gradual and the danger to life is more distant, depending upon the degree of obstruction and the cause, whether it be simple contraction of the lumen of the bowel, a gradual compression of its caliber by an occlusion from within, an occlusion by a foreign body, as a gall stone, an intestinal fibroma or polypus, a gradual filling and compression from carcinoma or sharp bending of the canal.

Ileus from tonic contraction of the circular muscular fibers of the intestinal wall may produce obstruction with all its concomitant symptoms, lasting for many days.

After this short review of the pathologic conditions we will take up the diagnosis.

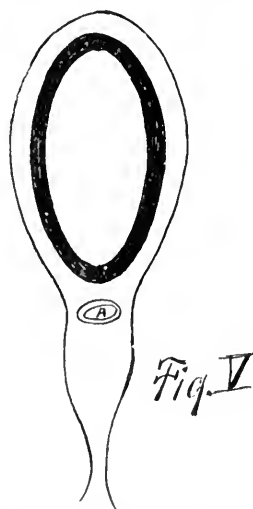
Diagnosis.—Can we differentiate with any degree of certainty at the bedside between the various forms of ileus, or between the various groups? This can safely be answered in the affirmative. When we consider that the complexus of symptoms included under the term ileus occurs under so many distinct and different pathologic conditions, it is easily understood why the practice of physicians differs; why the statistics of various men differ; why one class of doctors finds that 100 per cent. of the cases of ileus not operated die, and that another class finds that 34



per cent. of them recover without operation. The reason for these apparent discrepancies is that different pathologic conditions are included under the name of ileus by the various observers.

We will now endeavor to draw attention to the history, the etiology and the clinical course of ileus.

The history will assist us greatly, indeed, if not assure us of a diagnosis of intestinal paralysis following operations on the mesentery, the return of a long strangulated hernia, injuries to the spinal cord, injuries to the afferent nerve supply and strangulated hernia and aids us somewhat in making a diagnosis of thrombosis and embolism of the mesen-



teric vessels. In the reflex paralysis, gall stone colic with or without jaundice, or renal colic, the history of previous attacks aids in the diagnosis. The history is of less value in the inflammatory and mechanical varieties. Here the clinic course, symptoms and signs, will have to be relied upon. The abdominal pain is recognized as a manifestation of irritation of the terminal nerve filaments of the peritoneum, and will vary in intensity, continuity and locality, depending upon the lesion present. Inability to produce bowel movement has already been explained

and may be due to many causes, which will be given in detail in reference to the different groups.

Of the explanations of the mechanism of vomiting, and particularly the fecal vomiting, that have been given, the two most important are the following: 1, that it is due to reversion of peristalsis; 2, that it is due to an overflowing of the accumulations on the proximal side of the obstruction; the increase in quantity is due to decomposition of the contents and transudation from the irritated mucous surface. Schlange has given his support to the latter theory, but it is not the only cause, for in attacks produced by gall stone and renal calculus we have no occlusion of the bowel, nor accumulation on the proximal side to produce an overflowing; still the vomiting is often very persistent, and it is my belief that here a reflex cause is the most potent factor in producing vomiting. Fecal vomiting, when it occurs, always comes from a mechanic obstruction of the intestine, but it has no definite relation to the position or nature of the obstruction. In the literature on the subject we find records of cases where formed feces were vomited. The accurateness of this observation I question. It is a rare occurrence to find material vomited which has the distinct odor of feces. There is an odor different from the fecal, that of decomposition of the intestinal contents which occurs in intestinal obstruction. I have seen but two cases in which a distinct fecal odor was present, and both were obstructions of descending colon. Formed feces could come only from the large intestine, and I believe this has never occurred. The material which has been considered formed feces, is mostly a caseous material, curdled milk which has received its color and odor in the stomach from the regurgitated contents of the intestine.

Meteorismus occurs in three places in the intestine: Above the seat of obstruction, in the occluded loop, or in the paralyzed portion—the latter may be that coil or the entire intestinal tract. The contents of the distended intestine differ materially in the three different conditions. With mechanic occlusion on the proximal side in close proximity to the obstruction the intestine is usually full of liquid feces, principally transudation from the mucosa. With strangulation or occlusion of a coil it is distended about one-third with gas and two-thirds with liquid. The source of this fluid and gas I have demonstrated conclusively by the following experiment to be transudation and decomposition.

Experiment 4.—A dog, weight forty pounds: aseptic laparotomy; six inches of small intestine drawn out, mesenteric vessels supplying six inches of the intestines ligated with silk; segment completely emptied: lumen of bowel closed above and below this portion, precaution being taken to pass the ligature between the muscle wall of the intestine and the parallel vessel, allowing the latter to be free. Examination forty-eight hours after showed the coil very much distended, the wall edematous, slightly discolored over a small area about the size of a nickel on the convex side of the center of the segment. Caliber of bowel about two-thirds full of fluid and one-third gas. This experiment was tried three times, each time with the same result, which demonstrated that the gas was generated within the segment, and that the fluid was a transudate. The same result was obtained, except the quantity of transudation was less when the mesenteric vessels were not ligated, but the intestine itself ligated. Quite another result was obtained when the mesenteric vessels were ligated and the intestine, including the parallel vessel, was closed, as shown by experiment 3.

In the latter experiment after twelve hours there was but a very small quantity of gas and still less

fluid in the coil; it was dark and gangrenous. In less than forty-eight hours with these same ligatures the segment was entirely disintegrated. This shows: 1, that the nutrition of the intestine in strangulation is kept up for a longer time by the parallel vessel; 2, that the gas in the strangulated loop is generated within the coil; 3, that the fluid within the coil does not enter from above nor from below, but is a transudation from the mucous membrane and continues as long as the blood supply from the parallel artery remains, as this artery has no accompanying vein; 4, when the strangulation is rapid and complete, as in Littre hernia, there is no transudation into the coil and but slight generation of gas.

The shape and position of the distended coils will be found to be of great service in making accurate diagnosis of the location of the strangulation. The inability to produce bowel movement is due either to mechanical obstruction or paralysis, the latter may be local, reflex or of central origin. Its phases will be considered in the analysis of the various groups.

Of the constitutional symptoms, one deserving particular attention is the excretion in the urine of phenol and indican. They are the products of absorption of decomposed proteids from the intestinal tract. The indican is present in occlusions of the ileum and absent in obstructions of the large intestine. Albuminuria is very commonly present in intestinal obstruction. In making differential diagnosis the symptoms should be carefully considered in the order of their onset, in the comparative degree of their intensity, the location of their most pronounced manifestations, their continuous or interrupted course, and their relations to physical signs at the various stages of their progress.

Next in importance is a careful physical examination. Inspection, palpation, percussion and auscultation should be practiced systematically in every case of intestinal obstruction, as they have a very positive value in assisting us in making a diagnosis. By these, in intestinal lesions, we recognize the changes in form, in resistance, position and movement of the intestinal coils.

We will now consider the particular forms of ileus.

First. Ileus from paralysis following extensive operations on the mesentery can be at once recognized by the operator and managed better from a prophylactic standpoint than from any other, that is, by a resection of the portion of the bowel where the circulation has been compromised at the time of the operation.

Second. Paralysis from long standing strangulation, I will mention when considering hernia.

Third. Embolism of the mesenteric artery has no pathognomonic train of symptoms or signs, but the history of previous sepsis aids very much in leading to a diagnosis of this rare condition.

Fourth. Paralysis of the intestine from injuries to the spinal cord is readily recognized.

Fifth. Injuries to the afferent nerve supply from direct contusion or from bullet or stab wounds produce ileus where the abdomen has not been involved by the traumatism directly; this variety is usually accompanied by retention of urine, while in perforation of the viscera this symptom is not present. Reflex ileus from renal calculus is recognized by the spasmodic character of the pain, its location in the loin and course of the ureter, its intensity, its reflex

on the bladder and testicle, its duration, the position of tenderness, the progressive change of its location and the information obtained from an examination of the urine. The same symptoms are of value in recognizing periodical hydronephrosis.

In hepatic calculus there is greater difficulty in making a differential diagnosis. First, when the gall stone is still within the gall bladder, the pain gradually increases and reaches its greatest intensity about an hour after the onset; it continues for a few hours and subsides to return again in a short time. It is commonly designated by the doctor and patient as "gastralgia"; the bowels can be moved as a rule within a few hours after the attack begins, and there is always local tenderness in the region of the gall bladder. If a mild cholecystitis be present, there is slight elevation of temperature to $99\frac{1}{2}^{\circ}$ or 100° . The pain often subsides suddenly after a severe effort of vomiting. The patient usually gives a history of having had repeated attacks of the same character. The tenderness remains for two or three days after the attack, depending upon its severity. The following case is a good illustration:

K. P., female, age 32 years. For several years has had several attacks of the following character: First, a sense of fullness and discomfort in the right hypochondriac region; within fifteen or twenty minutes this increased to pain, in one-half an hour the pain was severe and nausea set in. This was succeeded in from thirty to forty minutes by vomiting. If the vomiting was mild the pain would continue; if severe, it would subside. The temperature usually reached 100 degrees; slight tympanites. The patient believing that the attacks were due to biliousness, resorted to cathartics for relief. It always required large and repeated doses to produce an evacuation when pain was present, while under ordinary circumstances a mild cathartic acted freely. Tenderness was present and increased resistance over area of the gall bladder, and when all the symptoms would abate a small tumor could be detected over, but separated from the kidney. Tenderness would increase for three or four days after the attack had subsided, according to its intensity. Albumin in the urine. Patient had never been jaundiced. Diagnosis: Cholelithiasis; impaction of the gall bladder; operation, cholecystostomy; gall bladder enlarged; neck impacted with large gall stones; recovery; cessation of symptoms. The above symptoms contrast markedly with the symptoms of cystic duct impaction, as is illustrated by the following case, which is typical of its kind:

Mrs. Z., aged 36 years, married, six children; excellent health up to 22 years of age. At that time she had a short attack of severe epigastric pain and vomiting. From that time on she had suffered from digestive disturbances and tenderness in the right hypochondriac region. Four years ago she had a similar seizure of longer duration, and during it there was inability to move the bowels. Henceforth the seizures returned every five or six weeks, and for the last five months the pain and tenderness in the hypochondriac region had been constant, with periodic exacerbations. Patient had never been jaundiced. Examination during an attack revealed tenderness in the right hypochondriac region; induration; tympanites, temperature 100 degrees. Diagnosis: Cholelithiasis; impaction of cystic duct. Operation cholecystenterostomy by means of an anastomosis button; gall bladder packed with gall stones; a dozen or more were removed and many allowed to remain; recovery; cessation of symptoms.

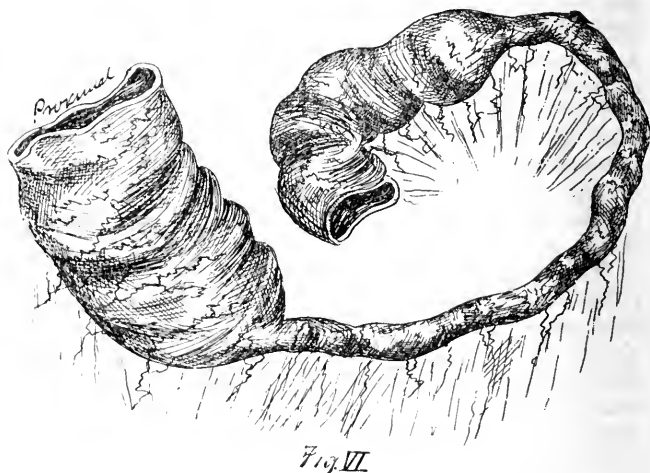
When the common duct is obstructed the onset is more sudden, the pain more intense, always accompanied by bile in the urine, often jaundice, depending upon the duration of the obstruction and other symptoms well recognized and familiar to all physicians.

A third variety of reflex ileus is that produced by compression of an ovary, as by fibroids; it may be recognized by the history of the case and the location of the pain, which can be lessened or increased by certain movements of the fibroid and frequently relieved by changing the fibroid from its impacted position.

Dynamic Ileus.—Dynamic ileus or ileus from spasmodic contraction of the muscular wall occurs, first, from ptomaine intoxication, as that obtained from cheese, milk, ice-cream, oysters, etc., and second, from chronic lead poisoning. In the former the pain is intense and often relieved by pressure. The vomiting is incessant; tenderness absent; abdomen retracted; inability to move the bowels; patient collapsed; these symptoms may continue until death, which occurs from toxemia. If the patient survives the immediate effect of the poison, it is usually followed by severe gastro-enteritis.

In making a diagnosis of lead poisoning we have to assist us the occupation of the patient, the history of previous attacks, the blue line of the gums, etc.; but the increased peristalsis, the local meteorismus, the distinct localization of the pain, make it difficult to exclude mechanical obstruction, as the following case illustrates.

Male, aged 40 years; admitted to the Alexian Brothers' Hospital June 10, 1894, and referred to me for operation by the attending physician. Patient gave the following history: Five days previous was attacked with pain of a spasmodic character in the abdomen, followed by vomiting and inability to move the bowels. The abdomen became greatly distended and the symptoms continued up to the time of admission. All efforts to



move the bowels by cathartics, stomach and intestinal irrigation were futile. The physician in charge, who had treated him through a number of attacks of lead colic before, believed this attack differed materially from the others, particularly in its duration, which was five days, and the degree of depression. The physical signs showed the abdomen decidedly tympanitic, and an enlarged coil of intestine could be recognized leading up to the right hypochondriac region, where it suddenly terminated. The patient located the pain at this point. It was decided that a laparotomy would be less dangerous than to allow the patient to remain longer with a possible mechanical obstruction. Median incision; omentum withdrawn, and the hand passed up to the right hypochondriac region, the enlarged coil of intestine was grasped, drawn into the wound; with it came eight inches of a contracted portion, which resembled a solid cord three-eighths of an inch in diameter and was as stiff as a rope of that size. (See Fig. vi.)

At first I believed it to be an organic stricture. The intestine above it measured over two and one-half inches in diameter and was distended with gas and fluid feces. Below, the intestine was empty, soft and pliable. After ten minutes' exposure to the air the spasm at the proximal end began to subside and dilatation gradually advanced to the distal. After twenty minutes the intestine had expanded to about one inch in diameter, was returned and the abdomen closed. The bowels moved within three hours. The patient did not have an unpleasant symptom and left the hospital in ten days. The theory of lead colic advanced, has been that it was due to a tonic contraction of the muscle of the bowel; but from a superficial review of the literature on the subject, I can not find a case recorded

where this theory was verified by observation and examination of the contracted portion as I have noted in this case.

Infection ileus. Ileus from peritonitis occurs under two conditions, namely, that from a circumscribed local inflammation, and from a general peritoneal infection. In ileus from circumscribed inflammation we have the symptoms so commonly observed in circumscribed suppuration at the seat of the appendix. The pain occurs suddenly and may be either local, referred or general, but is most severe at one point. The nausea and vomiting are of short duration, usually not more than one-half hour, and within six or eight hours there is elevation of temperature to 100 degrees, or more, and not infrequently a chill. The information obtained from the pulse is of little significance. Marked resistance of the abdominal muscles and tenderness is present over the seat of inflammation. On the other side of the abdomen the hand can be pressed in without causing pain or inducing resistance. The tympanites is limited. The apparent induration is circumscribed; the deep percussion note is resonant in the early stage. The piano percussion note is flat, and this method of percussion I consider the most important in eliciting dullness when small inflammatory exudates are present. The smallest quantity of fibro-purulent or serous exudate can be outlined by the latter method. Auscultation shows an absence of peristalsis over the region of inflammation, with peristalsis moderately active over the remaining portion of the abdomen. In making a careful examination with the stethoscope and the use of an indelible pencil, it is interesting to note how perfectly the area of adhesion and exudation can be outlined by the absence of peristalsis and subsequently proven in the operation. The symptoms of ileus pass off with these local inflammations in from twenty-four to forty-eight hours, when a free bowel movement can be produced by the use of cathartics. These same symptoms only less pronounced, occur with circumscribed adhesive peritonitis from cholecystitis and tubal infection, and in each case can be differentiated by its location and history.

Note what a great contrast this is to the ileus of general peritonitis. In this variety the pain is intense and extends all over the abdomen; the nausea and vomiting are persistent for days; the temperature elevated to above 100 degrees except in the presence of collapse; the pulse frequent, small and thready; the skin cold; the countenance depressed; anxious expression; enormous and uniform meteorismus; absence of respiratory movements in the abdomen; knees flexed. On palpation resistance is greatest over seat of origin; muscles are firmly contracted; deep percussion note uniformly resonant; piano percussion note dull over area of adhesion and exudation; complete absence of peristalsis. An uniform splashing sound with each respiration, caused by motion of fluid in bowel must not be mistaken for peristalsis. In this the sound is uniform with every respiration; in peristalsis it varies constantly. It is impossible to induce a bowel movement; the obstruction is as complete as if the intestines were ligated, and remain so until a few hours before death, when relaxation takes place. To the inexperienced this is considered an indication of relief of the "obstruction," but it is really a sign of impending dissolution. The cause of the ileus in these cases is a peripheral paralysis.

What should our treatment be in cases of ileus from circumscribed and general peritonitis? It should be immediate laparotomy. By this means in cases of circumscribed peritonitis the cause may be eliminated and the inflammation prevented from becoming general, not that all cases would die immediately as a result of the disease, but that the immediate and remote dangers without operation are very much greater than with operation. In general peritonitis the danger is great both with and without operation, but it is my firm conviction that an early operation, that is an operation within twelve or twenty-four hours after the onset of the symptoms, will save a large percentage of the cases. An operation in the late stage, when the patient has cold extremities, is pulseless at the wrist and dissolution is imminent, should be discouraged, as it does no good for the patient and brings discredit on surgery. The importance of early operation in general peritonitis is illustrated in the two following cases:

Case 1. Referred to me by Dr. James G. Berry. G. F., aged 19, weight 220 pounds. On the morning of Sept. 8, after breakfast, he was attacked with severe pain in the abdomen. This was shortly followed by vomiting. The pain and discomfort were sufficient to compel the patient to remain in the house, but not in bed. On the following morning at 10 o'clock, twenty-six hours after the onset of pain, he walked a couple of blocks and consulted a druggist as to his condition. He was advised to see a doctor. About 3 o'clock he was seen by Dr. Berry, when a diagnosis of appendicitis was made. At 4 o'clock his condition was as follows: Pulse 140; temperature 102°; tympanites excessive; tenderness most marked on deep pressure over appendix; peristalsis absent; inability to produce bowel movement; patient's facial expression good. He expressed himself as feeling tolerably comfortable. Respiratory movements of the abdomen absent; deep percussion note resonant; superficial dullness over the entire abdomen. Immediate laparotomy. The abdomen was opened two inches to the right of the median line parallel to the external border of the rectus. On opening the peritoneum, a sero-purulent fluid escaped. There were no adhesions. Pus was found in all directions, a large quantity of it being in the pelvis. The cause of the peritonitis was found to be a pressure atrophy of the appendix with perforation. There were no adhesions around the appendix; no gangrene of the mucous membrane. The peritonitis was produced by a direct perforation of the appendix from pressure from a calculus. The pus was sponged out, drainage glass tube and gauze. Normal gloss of the intestine was not disturbed in the least by the presence of pus; the surface was not even red. The patient made an uninterrupted recovery.

Case 2. Referred to me by Dr. D. R. Connell, Oct. 21, 1894. B. P., female, aged 21. Ten o'clock on the night of Oct. 20, the patient experienced severe pain in the abdomen, followed by nausea and vomiting, great tenderness and a temperature of 100.6 degrees. Diagnosis appendicitis. Operation thirty-six hours after the onset of symptoms. At the time of operation the abdomen was uniformly distended and tender, absence of peristalsis, inability to produce bowel movement, patient still vomiting, pulse 120, and temperature 100.5 degrees. Deep percussion note resonant; superficial (piano) percussion note on the lower part of abdomen dull, on the upper resonant. Celiotomy. No adhesions of peritoneum; the coils of intestine in all directions were covered with pus. Half a pint of pus was found in the cul-du-sac of Douglas. Intestines not eroded, slightly congested, still glistening; appendix adherent; a few flakes of lymph on its surface; an ulcer of the mucous membrane, but no perforation present. The source of infection was evidently the appendix, infection traveling through the wall at the seat of the ulcer or by the lymphatics. The pus was sponged out, no irrigation, glass and gauze drains in all directions. Rapid recovery.

The result in these two cases shows what can be accomplished in early operation for suppurative peritonitis; but this favorable outcome must not be expected from the dry, ecchymotic, excoriated peritonitis from streptococcus infection.

Cases of adynamic ileus have only recently been brought to the attention of the surgeon, but from the

illustrations of the varieties given it will be seen that there is a fertile field for intelligent surgical interference, based on accurate diagnosis.

(To be continued.)

PRIVATE DISPOSAL OF HOUSEHOLD GARBAGE.

BY D. H. GALLOWAY, PH.G., M.D.

CHICAGO.

One of the first problems which engaged my attention on taking charge of Dr. Bayard Holmes' Private Hospital, was the disposal of hospital and kitchen refuse.

It was imperative that soiled dressings should not be put with other garbage to be hauled about the city and be handled by many persons. Even throwing them into a metallic vessel, to be carried from room to room and to be handled at least once more when the vessel was to be emptied, was repugnant to me. That ever-present article—at once a nuisance and of unlimited usefulness—the old newspaper, seemed to be "indicated."

When a soiled dressing was removed from a wound it is was immediately rolled up in a newspaper and put into a receptacle provided for the purpose. When the morning dressings were all done these small packages were made into large ones with more paper, and in this way conveyed to the furnace room. All repulsiveness and danger were thus obviated. This led me to contrive a way to dispose of all hospital and household refuse which has been in use in this hospital, with perfect satisfaction ever since. It is simple, inexpensive and effective.

I require that all garbage of whatever kind be wrapped into packages with newspaper or other paper as the butcher wraps up a steak. Tin cans and other non-combustible material, of course, not included. A wire basket drains as dry as possible all garbage containing water. When the furnace is not in use it is prepared by closing all registers as well as dampers in hot air pipes, and opening all drafts. A small amount of kindling is put in the furnace and on this the packages are piled. When the furnace is full the kindling is ignited and it is left to itself. Next day the furnace will be found empty except for a small quantity of fine ashes. Even melon, lemon and orange rinds, cobs and husks of green corn, potato parings, coffee grounds, etc., are completely disposed of in this way. Sometimes I have found it necessary to light a newspaper on top of the garbage in order to start a draft up the chimney, but ordinarily there is no trouble, little heat, no odor and no smoke is noticed about the building. This applies to the summer when the furnace is not in use. I found it a little more difficult in winter, and once I thought I should be obliged to give it up. After some trials, however, I found the following method entirely satisfactory. In the morning all drafts are opened, the fire is shaken down and fresh coal put on, then the packages of garbage are put in on top of the coal. After ten or fifteen minutes the drafts are arranged as they would be if no garbage had been put in, and the next time the furnace needs attention the garbage has disappeared. After putting the packages in the furnace they should never be broken up or stirred with a poker. At first sight it would seem that a considerable amount of fuel would be required, but such is not the case. Our family consists of

from twelve to twenty persons, and such a family will make a large amount of garbage each week; yet during the entire summer I did not use altogether a dollar's worth of kindling. Fruit baskets, berry boxes and other readily combustible material furnished most of the fuel necessary.

This method has been in use in this hospital for more than a year, and in that time absolutely not a pound of garbage has been put into the street, nothing but ashes, tin cans, broken glass and crockery. The secret is in the packages. The difference between these and loose garbage in the matter of combustibility is the same as the difference between lump coal and slack coal, the one will burn where the other will extinguish a fire. How to dispose of the garbage of cities is one of the most vexing of the great economic problems of this age. Burning is a wasteful process and dumping into lakes or water courses is disgusting and at all times a menace to the health of the community. All refuse organic matter, whether animal or vegetable, should be returned in some form to the soil as fertilizer. It is a mine of wealth wantonly wasted. If given an opportunity nature's laboratory would transform the nauseous stuff and return it to us in fruits and flowers and a thousand other attractive forms. The present method of disposing of this vast portion of nature's labor is a heavy draft on our inheritance which must sooner or later be stopped; unless the chemist realizes his dream of making animal food in the laboratory direct from the inorganic world.

If, however, it must be destroyed, it should be by fire and not by being piled up in great dumps to breed disease, nor thrown into water where it may be conveyed to great distances spreading pestilence by the way. If it is to be burned, then the nearer the source of supply—the household—the less offense and expense will it cause. It is produced in greater or less quantity by every family, but how few exercise any care about its disposal. It is carried into the street or alley, thrown into a wooden box and then left to stew and rot and stink until the scavenger comes along and gathers it up. Even then the offense is not removed for the box continues to emit foul odors and is a culture ground for all sorts of disease-producing germs. Waste paper is one kind of garbage which every one ought to be able to dispose of without throwing it into the street. Yet I have literally seen hundreds of newspapers and pieces of wrapping paper from dry goods stores, groceries, and meat markets, the last covered with grease and flies, piled about a large flat-building so that if one had set fire to the rubbish it would have seriously menaced the building. The tenants in such buildings, using steam heat and gas ranges, have no facilities for burning even waste paper, but there is always a furnace in the basement and provision should be made for conveying to the furnace and there burning it. Many of the tenants of these large buildings make a practice of throwing all waste paper out of the windows. This practice is an offense to the rest of the community and should not be tolerated. A few arrests with a nominal fine of a dollar and costs, and due notice of such arrest and fine in the daily papers, would greatly stimulate a healthy public sentiment against the practice of throwing rubbish into the street.

One very windy day I saw a woman sweep out of a vacated store enough waste paper to make a good-

sized wagon load, and this paper littered the street for a mile in the time it took me to ride that distance on a bicycle.

A most provoking, because unnecessary, nuisance is the rubbish brought by the wind and deposited in dooryards and passageways. Every householder who has any regard for the appearance of his lawns must gather up this litter two or three times a day, and only the person who gathers it up can form any conception of its great quantity. The man who deliberately throws upon the street something which he knows another must go straightway and pick up, exhibits a selfish disregard of the rights of others which is evidence of moral degeneration or arrested development. There is one other thing to which I wish to call attention. Horses are driven about the streets dropping filth which is dried in the sun, powdered by passing vehicles and blown by the wind into our mouths and nostrils, onto our tables and into our food. Why not require that every horse carry, attached to its harness, a receptacle into which the dung would fall? Such a thing could be of leather and not overly conspicuous. Would this not be cheaper, to say nothing of the other considerations than to hire an army of men to go about and gather it up? No doubt this will bring an incredulous smile to the face of many a reader. People are prone to submit to anything, no matter how disgusting or dangerous, if it is time-honored. There is a feeling that because an evil *has not* been corrected it *can not* be corrected. A few years ago the bicycle was considered an interloper upon the streets which were held sacred to the horse. In a few more years I expect to see the tables turned by the bicycle and other machines for locomotion and transportation, and then the man who drives a horse will be compelled to take some such precautions as mentioned or be confined to certain streets or alleys.

26 39th Street.

CEREBRAL LOCALIZATION IN THE LIGHT OF RECENT HISTOLOGIC RESEARCHES.

BY CHARLES K. MILLS, M.D.

PHILADELPHIA.

A year or two ago, we were inclined to think that the subject of cerebral localization had been practically settled, and that we were not likely to get much new light upon mooted questions.

Recent histologic investigations—brought together in a valuable paper in *Brain*, by Andriezen, which paper also contains much original work—have divided and subdivided the cortex into new layers and sublayers, and have determined and traced the constituents of these layers in a manner which a few years ago would have seemed utterly impossible. The resulting generally accepted histologic subdivision of the cortex is into four layers—the molecular ambiguous, great pyramidal and polymorphic. The molecular layer, which is the most superficial cortical strip, has been subdivided into strata, and more than a dozen cell and fiber systems have been traced to it and within it. Practically, the standpoint which I have always taken with reference to the question of sensory and motor localization, is that which is still held by Bechterew, Ferrier and others; namely, that just as we have separate auditory, visual, gustatory, olfactory and motor zones, so we have

a separate cortical localization for what is sometimes termed common sensibility; in other words, for the representation of such cutaneous and muscular sensations as touch, pain, temperature, pressure, and the location of a limb or part.

According to Andriezen, the terminals and collaterals of the main portion of the fillet radiations, that portion which conveys cutaneous and muscular sensory excitations, pass into one of the strata of the molecular layer, of the Rolandic as of other portions of the cortex, to there come into contact with the apical processes of the great pyramidal and ambiguous cells. Andriezen would therefore call these cells the first sensory cells of the cortex, no matter where they are situated. This view might therefore be regarded as making a sensori-motor region of the area around the central fissure; or rather, if carried to its logical extreme, as making the entire cortex simply a region for the reception of sensory impressions.

For the practical purposes of the physician and surgeon, no matter what view may be taken of the nature of the processes going on in the cortex, it would seem best to still hold to the view of the separate localization of areas for the special senses, for motion, and even for muscular and cutaneous sensibility. Lesions of these areas produce phenomena of vision, audition, motion, sensation, etc., which are not produced when the lesions are situated outside of the special areas to which the functions above mentioned are assigned. The fillet radiations for cutaneous and muscular excitations, as a compact bundle, probably reach or most closely approach, the outer layer of the cortex in the postero-parietal convolutions and in the limbic lobe. Whether we should regard the cells and fibers which bring about communication between these regions and the motor cortex as true sensory terminals or as simply constituting a field of conjunction, the only cortical and subcortical lesions which will produce pure and marked sensory symptoms will be those occurring in these areas. "These incoming messages," says Andriezen, "which inform the brain of the movement of the limb, arrive (strictly speaking) not in the pre-Rolandic but in the post-Rolandic (ascending parietal) convolutions. In the pre-Rolandic or ascending frontal convolution, and in the adjoining posterior portions of the three frontal convolutions as well as the prolongation of these areas on the mesial (marginal) convolution, we find the last term in the cortical series, the finally disposed executive mechanisms."

It would perhaps be best to define the cortical area for cutaneous and muscular sensations, as that part of the cerebrum where the fillet radiations most nearly approach the surface of the brain, before their final ramifications in the molecular layer, still holding to the old view with reference to the motor cortex. Andriezen, as already stated, speaks of the pyramidal and ambiguous cells as the first sensory cells of the cortex, because the terminals of the fillet radiations or their extensions, first touch the apical processes of these cells, and therefore these cells first receive sensory impressions from the periphery of the body. It would be better, following Forel and Nansen, to disregard entirely the subdivision into the cells of sensation and motion, and take the broad ground that we are simply dealing with the greatest and highest of sensori-motor areas, and that in the region posterior to the area usually recognized as motor, the last stage in the sensory process is reached,

while in the Rolandic cortex the first stage in the motor portion of the process begins.

DISCUSSION.

DR. J. F. BURNISHED, of Long Island City, New York—The subject brought up by Dr. Mills is of great importance, not only to the specialists in nervous diseases, but also to the general practitioners, to which latter class I belong. I have had some twelve cases of trephining to do and I know what puzzling conditions will beset a man in regard to cerebral localization. Any studies which will throw more light upon this subject will be eagerly availed of by the general practitioner.

THE ETIOLOGY OF TINNITUS AURIUM.

Read before the Society of Ophthalmology and Otology of Washington City, Oct. 8, 1895.

BY S. O. RICHEY, M.D.

WASHINGTON, D. C.

Impaired hearing and tinnitus aurium are the two most common and distressing subjective symptoms of affections of the ear for which our aid is sought. Often the individual has reconciled himself to the impaired hearing, but is urgent for relief from the persistent torturing sounds of which he has the monopoly. The character of the tinnitus exciting most complaint is the ringing, buzzing, twittering, ticking or grating sound, which is as constant as the chronic progressive deafness with which it is associated, varying only in power or intensity at different times.

Of the many causes of tinnitus aurium a number are promptly recognized, and have only to be understood to be relieved, viz., small objects on the drum membrane, or in the external meatus; obstruction of the Eustachian tube, or of the external auditory meatus; overdoses of quinia or of the salicylates; the use of tobacco or alcohol in some persons; worms, fluid in the tympanic cavity, polypi and tumors of the cervical region; in none of which is the tinnitus of the distinctive character above described.

The cause of tinnitus is not always so apparent, nor when discovered so tractable to our efforts for its relief; as in hyperemia and anemia of the brain and the deeper structures of the ear; from the menopause or menstrual irregularities; from nervous shock, hysteria, mental excitement, worry or over-fatigue; from concussions and from morbid conditions of the heart, liver or kidneys. Ankylosis of the ossicula auditus, especially of the foot-plate of the stapes in the foramen ovale, is an active factor in the etiology of tinnitus. Ankylosis of the other articulations, while difficult to relieve, does not offer the formidable embarrassment which attends ankylosis of the foot-plate of the stapes, because they can be reached through the Eustachian tube by means of vapor of iodine and the joints rendered movable by this means and by the *tapotement* inseparable from inflation of the tympanum. They are cases which may be, and are, relieved by such treatment; those which are not so influenced will be found to depend upon ankylosis of the stapes in the oval window.

The operation of excision of the drum membrane with the incus and malleus does not reach the seat of the trouble, and in the instances in which tinnitus has been relieved by it (as in the case of Burnett, of Philadelphia), the ankylosis of the foot-plate of the stapes, being yet very slight, was unintentionally disturbed by inadvertent manipulation, in separating the incus from the stapes. Such relief must necessarily be temporary, as the ankylosis will recur.

To repeat, if the tinnitus be due to ankylosis of the malleo-incudal or the incudo-stapedal articulations, it may be relieved by proper manipulation short of excision.

Stapedectomy was promising, but the results were disappointing, owing to the fact that instead of detaching the stapes in its entirety, the crura were usually broken off, leaving the foot-plate still engaged, for in the affection considered, the crura become very brittle. Even if the foot-plate had always been removed with entire relief, the improved condition could not last, unless such treatment were adopted as would stay the further progress of the cause, which has been shown by Politzer¹ to be a "circumscribed primary affection of the labyrinthine capsule, exhibiting, post-mortem, in the region of the niche of the oval window, more or less sharp bony protuberances, covered mostly with normal mucosa, the neoplastic bony tissue gradually pushing aside the normal bone and attacking the oval window and stapes, producing ankylosis of the stapes. The round window may also be very much contracted."

The sixteen cases dissected, after a history which offered the clinical symptoms and usual course of what is called chronic dry catarrh of the middle ear, show that the foundation of the deafness and tinnitus is not in the mucosa at all, but is referable to a neoplastic hyperostosis of the bony envelope of the labyrinth. The development of the deafness dated mostly from many years back. Occasional sensations of pricking or tearing pain within the ear were complained of, but the chief characteristic was the constant and vehement tinnitus.

Two of the cases described suffered from gout; if syphilis was present it could not be determined; heredity, gout and syphilis are the suggested possible etiologic factors. The paper regards cure as nearly hopeless, but the internal use of iodine may prevent a too rapid advance of the disease. Dr. Politzer's communication seems to me the most important that has ever been made on this subject, and fully explains the failure of stapedectomy; in over twenty cases reported of this operation by Blake, of Boston, he found bony ankylosis at the oval window, which rendered the stapes immovable and prevented its complete removal in more than half the cases. If the operations had been successful, in order to make the result lasting, other means would be necessary, which adopted in time would make such an operation unnecessary; such means as would put an end to the disease process.

Stapedectomy is not without risk, because, by entire removal of the stapes an open channel is left between the tympanic cavity and the labyrinth, which is by nature placed securely beyond the reach of external noxious influences. Rationally, this ready access to the labyrinth must be a source of danger. In what way mischief would develop can only be surmised, as none seems to have been observed in the cases so far operated upon, because probably of the careful asepsis observed.

That loosening an ankylosed stapedial base-plate will improve hearing and relieve tinnitus beyond help in any other way, would seem to have been shown by an accident to one of my patients two years ago.

The wife of a western Senator, 35 years of age,

¹ Knapp's Archives of Otology, vol. XXIII, p. 255.

with progressive deafness, had improved under treatment, but became impatient of restriction and violated continuously the line of conduct prescribed for her. Her trouble increased upon her rapidly. About two years ago she was thrown from her carriage and "something snapped very loud; she heard at once very well." She came to me to say that the accident had cured her, when I could not do so. By persistently questioning me she secured the information that the comfortable effect was only temporary, that she was *not cured*. In a few months she was in much the condition previous to the accident. She had been thrown upon her head and an imperfectly ankylosed stapedial foot-plate was loosened by the jar. Why should a much more lasting effect be expected from a perfect stapedectomy?

Professor Politzer's view that iodine promises the least possible effect in such cases, accords with my clinical experience. It may be remembered that I asserted some years ago (*American Journal of the Medical Sciences*, April, 1887,) that the local use of iodine helped some persons; that it was my chief reliance in such cases. Among the causes of intracranial circulatory disturbances, one of the factors in the causation of tinnitus, have been named morbid conditions of the heart, liver or kidneys. It is not possible to separate such conditions from what Politzer considers a cause of the hyperostosis, gout. A paper by the writer, read at the Ninth International Congress, discusses the affection as related to arthritis deformans, a form of gout, and says: "Iodine vapor is our sheet anchor for topical application," aided by clothing, food and other items of general treatment, among which "the salicylates have had manifest influence in some cases;" the failures were supposed to be "osseous ankylosis, or disarticulation of the ossicula." This view, as Politzer's observations do, includes all causes of intracranial circulatory disturbances, except concussion, and materially simplifies the question.

Finally, as to the effect of treatment in these intractable cases, the cause of which is not superficial or easily removed. Until lately the constitutional exhibition of iodine has received no attention from me (why, I do not know), for good, if not sustained, results from its local use alone has been my experience. It is now being used, both locally and constitutionally, in a number of cases in which it had been used locally with favorable influence. The local use is continued, because it appears to determine to this region the effect of what is given by the stomach, and because, in my experience, its topical influence has nearly always been good. If the gouty materies morbi is responsible for the affection, as we have reason to believe, then diet, baths and clothing must enter into its management. And beside iodine, other drugs have a useful purpose; to name them and particularize their effect would require too much space for present consideration.

In 1886 a young woman, manifestly gouty, presented herself for relief of impaired hearing and distressing tinnitus. "The men and women of her mother's family, of her mother's generation, are all as deaf as posts." My watch, which can be heard at twelve feet by a normal ear, was heard at ten feet by her right ear; at one inch by her left ear. Accumulated cerumen being removed from the left meatus, hearing of the left ear was increased to ten feet. Accumulated cerumen being always due to some

deep-seated affection, I advised that her ears be treated, but a few months later she went abroad, and I did not see her again until 1893, when, with the watch, the hearing distance of the right ear=10 inches; of the left=13 inches. There was no further accumulation of cerumen. Subjected to local and constitutional treatment March, 1895, W.H.D.D.A.=14 inches, S. A.=58 inches.

In all this time the tinnitus entirely ceased only for a short period to recur after a runaway accident, in which she was violently thrown to the ground; again, for about two weeks, while she was at the springs taking the baths. The hearing for the same watch now is, D. A.=26 inches; S. A.=10 feet. The improvement for the voice has been such that she has little difficulty in ordinary conversation. When last tested, though the windows were down, she was confused by the chirping of park sparrows in the yard. Her tinnitus varies.

A man, 50 years of age, whose tinnitus has been constant and unvarying; whose deafness was such that conversation had to be specially directed to him in a loud voice from two or three feet distant; whose record for other tests I have not at hand, and who has paid me an occasional visit for ten years past, has improved so much under the additional treatment for three months that he informed me at our last interview that he had attended "a board meeting," and heard what passed with little difficulty, and that his tinnitus had ceased for twelve hours after his previous visit.

It is my hope to make a report of interest on this subject at some future time.

SOME OF OUR LATE THERAPEUTIC RESOURCES.

Read at the Northern Tri-State Medical Association, at Toledo, Ohio, Dec. 10, 1895.

BY J. F. JENKINS, M.D.
TECUMSEH, MICH.

Within the past score of years there has been a new light thrown upon a large class of maladies which bear the name of contagious diseases. Plausible theories relative to the cause of many of them have given way to demonstrated facts. The consequence is that different methods of treatment have been adopted for the relief and cure of many of them. Modifying and attenuating the poison which produces the disease is a method originally wrought out by Pasteur, first in securing immunity in fowls against chicken cholera and lastly in the prevention of hydrophobia; and still it is a problem whose solution is engaging the attention of some of the best minds in the profession, which when completely solved will doubtless lessen the death rate of that class of diseases which has heretofore been the scourge of the human race in every quarter of the globe. Probably the most sanguine minds of the present day do not for a moment entertain the idea that contagious diseases will be completely eradicated in the future by the discovery of more potent therapeutic means, but we have every reason to believe that the death rate will be greatly reduced by better therapeutic agents, together with a more efficient code of sanitary laws, international in character, embracing every civilized country in the world; then the great epidemics of the past will never be repeated in the future.

Koch, proceeding along the same line of investiga-

tion that had been previously laid down by Pasteur prepared from a cultured medium in which the tubercle bacilli had been grown, a preparation which he designated tuberculin. This remedy, of which so much was expected as a specific for tuberculosis in its various manifestations, has proved a failure as a specific, but in the hands of a few physicians it is used in properly selected cases, and by them with satisfactory results. Dr. Karl Von Ruck, of Asheville, N. C., uses tuberculin in minute and what he terms safe doses, but so far as the writer's observation goes, he does not define the amount given. Although tuberculin has not met the expectation of the profession in the treatment of tuberculosis, yet in the field of veterinary surgery it is a remedy of the utmost importance in the diagnosis of tuberculosis among cattle, and for this purpose it undoubtedly has its largest sphere of usefulness.

Prof. Klebs has separated a substance from tuberculin which he terms antiphthisin, which is claimed by him to represent the curative, minus the poisonous properties of tuberculin. It is administered by Prof. Klebs, Dr. von Ruck and others in the early stage of tuberculosis before the tissues become broken down. Klebs states that its curative properties are due to its germicidal action on the tubercle bacilli. The report of tubercular cases treated by these gentlemen in which antiphthisin was the agent are interesting and instructive. Within the past year serum therapy has been brought to the notice of the profession by Prof. Maragliano, of Genoa, and Dr. Paul Paquin, of St. Louis. This remedy is undergoing investigation by the originators and a number of others are in the same field of research. Whether or not, future treatment of pulmonary tuberculosis by serum therapy will prove its utility is a problem yet unsolved.

Prof. Vaughan has been investigating the therapeutic properties of yeast-nuclein and finds that when this preparation is introduced into the system, that it has a decided germicidal action. The clinical report of cases which Dr. Vaughan has already published indicates that the remedy has a marked curative effect in the treatment of tuberculosis.

Dr. Vaughan makes the following statement in a recent communication to the writer: "I have not gone over all my cases, and consequently can give you only partial information. I have treated with nuclein forty cases in the second and third stages of the disease. Of these, twelve have apparently been greatly benefitted. All of these twelve have gained in weight and in some five of them the germ has at least temporarily disappeared. I have treated twenty-seven cases without cavities and all of these, with one exception, have been apparently markedly benefited. In a large majority of these cases the germ has disappeared from the sputum. I have treated five cases of tuberculosis of the urinary organs; four of these have apparently been cured. The fifth was temporarily benefited, but later the disease extended to other organs and the patient must soon die."

The most important remedial agent which has been brought to notice in the last decade is diphtheria antitoxin. Through the researches of Behring and Roux definite principles have been established for the treatment of diphtheria by serum therapy. The remedy has been criticised by many of the leading men in Germany, France, England and our own country. Notwithstanding doubts relative to the

beneficial effects of antitoxin in diphtheria, it has been very largely administered in the hospitals of Europe and America. When an early diagnosis of diphtheria is made and the antitoxin treatment adopted within the first twenty-four or forty-eight hours of the attack, the result appears to be more satisfactory than when prescribed later in the disease; yet throughout the disease, both local and general treatment is recommended. No grave complications have been reported resulting from the remedy, although occasionally a troublesome urticaria takes place, which usually disappears in a few days. No renal or heart complications have been reported following the use of antitoxin, so far as the writer has observed. Recent statistics from German hospitals and private practice show that of 10,240 cases of diphtheria, in which 5,790 were treated by antitoxin, 4,450 were treated by other methods; the death rate in the former were 9.4 per cent. In the latter 14.7 per cent., and in cases where antitoxin was given within forty-eight hours of the attack, the death rate was only 4.2 per cent. In a communication lately received from Dr. Hermann M. Biggs, Bacteriologist to the Health Department of the City of New York, he makes the following statement relative to the death rate from diphtheria:

"The death rate in New York has decreased about 40 per cent. since the use of diphtheria antitoxin."

Dr. Welch, of Johns Hopkins Hospital, states that the study of the results of the treatment of over seven thousand cases of diphtheria by antitoxin demonstrates beyond all reasonable doubt that antiphtheric serum is a specific curative agent for diphtheria surpassing in efficacy all other known methods of treatment for the disease. It is the duty of the physician to use it.

Antitoxin will not cure every case of diphtheria, even if administered in the first twenty-four hours, but the consensus of opinion undoubtedly is, among those who have the largest clinical experience with the remedy, that its beneficial effects in the treatment of diphtheria is unquestionable. The dose of antitoxin is from 500 to 1,500 units, Behring's standard, or from 5 to 15 c.c. The dose will vary according to the age of the patient and the intensity of the disease. Under similar conditions it will require from 1,000 to 4,000 units in the treatment of a case of diphtheria. The syringe for injecting the serum should hold about 15 c.c.; the needle as well as the skin should be aseptic and the injection made in the subcutaneous cellular tissues, over the pectorals, or in the buttocks. From 100 to 400 units of antitoxin injected in a person, it has been observed, will give immunity from diphtheria for the period of four weeks.

From the history of reported cases the temperature falls in the course of twenty-four hours after the injection in mild cases, while in the more malignant it slowly falls after the second or third injection. The pulse rate is lessened, but not in proportion to the fall of the temperature. After the first injection in the majority of cases the false membrane ceases to spread and in forty-eight hours, as a rule, it becomes detached. Tracheotomy is less frequently demanded and intubation, when necessary, will seldom be required longer than twenty-four hours. Albuminuria is not so frequently observed and appears milder in character. The above conditions doubtless hold good in the majority of cases treated by

diphtheria antitoxin, of which there are many exceptions.

Brown-Séquard introduced glandular extract in the treatment of disease. Within the past few years Dr. George Murray, of Newcastle-on-Tyne, has brought before the medical world the treatment of myxedema and its twin sister cretinism by the extract of the thyroid gland. The reported cases of myxedema in which the thyroid extract has been prescribed conclusively prove the beneficial effects of this remedy in a disease which has hitherto baffled all remedial agents. Several theories relative to the etiology of Addison's disease have their adherents. The latest and probably the correct one is the toxic theory. Prof. Schafer and Mr. Oliver have made a number of experiments on dogs and guinea pigs with the extract of the suprarenal capsule, and from these experiments we are led to believe that the future and successful treatment of this intractable disease will be the extract of the suprarenal capsules.

The clinical history of a case of Addison's disease has been recently reported by Dr. Stockton, of Buffalo, in the *Medical News* (Nov. 16). The uncooked adrenals of a sheep were prescribed, of which the patient took in the form of sandwiches from one to two a day and sometimes three a day were taken without any unpleasant result. Five gallons of oxygen were inhaled three times a day. The health of the patient has gradually improved, which, in the opinion of Dr. Stockton, is due to eating the adrenals of the sheep.

A SAFE AND SURE METHOD OF REDUCING ENLARGED TONSILS.

BY H. W. KENDALL, M.D.

QUINCY, ILL.

The etiology of acute and chronic tonsillitis seems settled in the minds of all pathologists, but my experience points to a cause entirely overlooked by all the authors that I have consulted. Super-acidity of the *prima viæ* is in my opinion the essential cause of both the acute and the chronic disease, the catarrhal accidents being merely exciters.

I think that in every case of acute or chronic inflammation of these glands the salivary secretions will be found acid instead of alkaline, and that free doses of potassium or soda locally applied and ingested will give most rapid relief. The anatomy of the tonsil is well understood, but the great variation in the size and number of excretory ducts has not been particularly pointed out. These ducts are greatly enlarged in either acute or chronic hypertrophy of the glandular structure unless contracted by astringent or caustic applications. Since the general disuse of astringent gargles, suppurative cases are rarely seen. Cauterization, once the general practice, is now almost abandoned for the reason that it is obstructive and converts the acute into the chronic condition.

We have an efficient cauterant and at the same time an antiseptic and alterant in pure hydrochloric acid, which is always friendly to human flesh. This is the agent that I have found so efficient in reducing enlarged glands in all parts of the body, but the method of using it is the particular point that I wish to present in this short paper. My method is the use of capillary glass tubes (Bohemian or Whital and Tatum's glass), one-eighth of an inch caliber, heated in a Bunsen flame and drawn to a point, the shaft of

the drawn part two inches long with caliber one sixty-fourth of an inch, broken off and fire polished. Now if the shaft of the tube is five inches long the drawn part will hold, after dipping in a fluid, one minim; if the larger shaft is increased in length it will hold more. When the point of this tube touches any substance it will deposit a fraction of the drop; by long contact it will deposit all that it contained.

I dip these tubes into pure fuming hydrochloric acid and push them into the excretory ducts of the tonsils, three in each gland at each sitting, twice a week. This operation is painless and produces no inflammation or swelling. Five or six applications are sufficient for moderately enlarged glands. Nitric acid used in the same way will produce swelling and sloughing. Chromic acid so used is rapidly effective, but I abandoned it forever after producing tetanus in a malignant case.

The advantages of this mode of application are the ability to deposite a definite and minute amount of acid and avoidance of strangulation and choking effects of the fumes. After ten years' experience with this treatment I can quite positively say that in my opinion tonsils ought never to be removed with knife or scissors. By careful, gentle and rapid manipulation of the first application any child will submit to the treatment willingly.

If a local anesthetic is desired a saturated solution of bromid of potassium and bicarbonate of soda is better than cocain because the latter produces subsequent delirium or dizziness with asthmatic breathing in many cases.

DACRYOCYSTITIS.

Read before the Falls City Medical Society.

BY P. RICHARD TAYLOR, M.D.

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS AND DEAN OF THE HOSPITAL COLLEGE,
LOUISVILLE, KY.

Dacryocystitis is an inflammation of the lachrymal sac, generally accompanied by a catarrhal condition of the entire lachrymal passage. The disease seldom, if ever, originates in the sac, but is a complication of trouble in the nasal passage induced by obstruction of the lower opening of the duct, or inflammation of the nasal membrane, or periostitis. These are the principal causes, and almost invariably originate below and extend upward to the sac. Inflammatory conditions of the conjunctival sac rarely produce dacryocystitis.

The disease is easily diagnosed by tenderness and swelling over the sac with edema extending to the lids, swollen caruncle with epiphoria, and puncta swollen to twice the usual size. This condition always develops stricture which, as a rule, is situated below the sac, except in those cases where the duct is obstructed at its lower opening by deformity of the turbinated bones closing in the nasal end of duct. Removal of the turbinated bone will allow the sac to empty its contents.

When dacryocystitis has once developed and pus has formed, a stricture will certainly result. The pus can be evacuated with little difficulty by making firm pressure with the finger from above or below, forcing the pus from the sac into the eye or into the nasal cavity. But the evacuation of the pus is not our sole object. Our chief aim is to get rid of the stricture.

We have the sounds and probes, blunt and bulb

pointed, with which, after slitting the puncta, we are enabled to dilate the offending stricture. Experience with these instruments has taught us that dilatation of the stricture does not cause its complete absorption, since a simple *coryza* may produce a recurrence of the trouble. We might cut the stricture and continue the dilatation with probes. It is an easy matter to evacuate the pus, to daily probe and wash the passage until it is seemingly well. Yet it will be certain to recur unless the probing is continued until the stricture is absorbed, which is seldom, if ever, accomplished by this method. The radical cure depends on keeping the passage open with free drainage, which can only be accomplished with a tube.

Some authorities recommend a lead wire with one end in the nasal cavity and the other projecting and bent downward at the inner canthus, and worn until the stricture is absorbed.

Since probing is a failure, when one of these cases falls into my hands I always split the punctum, and, with a probe-pointed bistoury or a spear-pointed knife with a malleable shank, cut the stricture. Recently, I have been using a double-edged Graefe's cataract knife. It is passed through the passage into the nose and the stricture is cut in several places by turning the knife before withdrawing it. I cleanse the tract with an antiseptic solution and put in a lachrymal tube at once. The passage can be washed while the tube is in position. Epiphoria can only be relieved by a tube which will perfectly drain the conjunctival sac. All lachrymal tubes are made on the same general plan, but the one which I have devised and which I now show you is somewhat different. It meets the requirements more fully than any I have yet used.

This tube is seven-eighths of an inch long and three-eighths inch angle, and can be made any size and of any metal. It differs from all others in having a lateral slit on both sides of the short end, leaving a duck bill spout with upper and lower blades, both of which are to be beneath the surface of the lids or entirely in the passage and hidden from view. In this way the slit prevents the soft tissues from closing the opening of the tube or hindering the passage of the tears through the tube. It can be worn indefinitely.

If the stricture should not be absorbed, or if the dilatation with probes is deemed necessary, they can be easily passed down by the side of the tube. I have nine of these tubes now in use. The one I showed you a few moments ago I removed on yesterday. It had been worn over two years by a book-keeper without the slightest annoyance and without the knowledge of his office associates, and also without a recurrence of the trouble.

Believing the probes and dilating methods to be a failure, I operate and introduce a tube as soon as these cases come under my care. If dead bone or tumors are present, they should be removed and the tube introduced.

A SIMPLE PRISMOMETER.

BY SHIRLS JACKSON, M.D.

PITTSBURG, PA.

It is not intended here to enter upon the thorny discussion of one-fourth degree prisms, but to call attention to the frequent errors of one-half degree or more in prisms of low degree, bearing the same num-

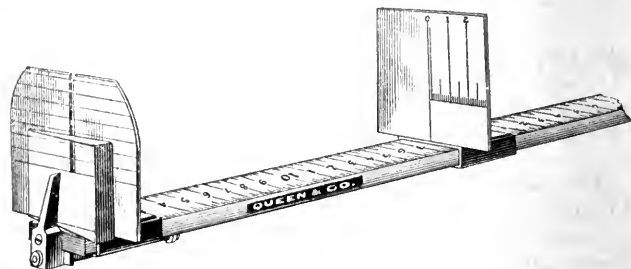
ber, and reposing in the same trial-set, the statements of the manufacturer to the contrary notwithstanding.

However accurate the trial-lenses may be, little thought seems to be given by the manufacturer to the accuracy of the prisms. Frequently the prisms are rotated, and the base apex line wrongly marked so that the prisms may neutralize. The effect of these errors upon diagnosis is obvious.

While the difficulty of grinding prisms to a predetermined refracting angle has necessitated the measurement of each glass separately to determine the angle of deviation, with which alone the ophthalmologist is concerned, nothing but expensive and elaborate appliances have been offered with the assurance of anything like exactness.

Those who have once tried a prismometer are aware of its convenience and accuracy, but however useful in the laboratory, the more elaborate appliances are out of the question in practical ophthalmology.

For the surgeon who has only an occasional use for a prismometer and for opticians who care to fill prescriptions for prisms, accurately, the simple instrument shown in the illustration is made by Queen & Co. from a model used by the writer. It measures the angle of deviation in prism-dioptres as advocated by Prentice and is a modification of his instrument. From the reading in dioptres, the angular deviation in centrad or degrees and the value of the refracting angle may be known at a glance, from the accompanying table of equivalents.



The prism to be measured is clamped between the end-gauge and the face-plate, as shown in the illustration, a spring holding the prism in position. Sighting through the slot in the face-plate, and holding the instrument in such a position that the prism bisects the observer's pupil, two images of the index-plate will appear. The prism is now rotated until the tops of the two images form one unbroken, horizontal line. The base-apex line is then indicated by one of the horizontal lines upon the face-plate and from one of these lines the base-apex line may be traced in ink upon the prism for future reference. With the prism remaining clamped in this position, and the upper edge of the prism still bisecting the pupil, the index-plate is again observed and as the zero-line is red, and extends below the scale, its deflection upon the scale is readily noted. The index-plate is glided along the bar until the zero-line has been deflected to the one-centimeter line¹ upon the scale. The deviating power of the prism may then be read in dioptres, tenths, and hundredths, from the graduated bar at the point where the index-plate is stopped.

¹ A greater or lesser unit of deflection than 1 centimeter upon the index plate may be chosen for convenience, remembering to increase or diminish accordingly the reading from the bar; as with a 15° or 20° prism a deflection to the 2 centimeter line upon the index plate may be allowed and the reading taken as before from the bar, but it will have twice the value and must be multiplied by two. With fractional prisms below 1° a deflection to the 1 millimeter line only should be allowed. As the reading will be ten times too great the decimal point must be moved one place to the left, a reading of 2.50 being written .25 P. D.

With ordinary ophthalmological prisms this is all that is necessary.

To center a lens, clamp it in the instrument, and slide the index-plate in focus. The zero-line will appear broken. Rotate and shift the lens until the zero-line is strictly rectilinear. Draw a line upon the lens corresponding to the slot in the face-plate. Rotate the lens 90 degrees and repeat the operation. The intersection of the lines marks the optical center of the lens, and if a cylinder is present, its axis exactly corresponds to one of these lines. If the geometrical center of the lens does not coincide with the optical center, prismatic effect is present. Marking the geometrical center in red and placing it directly over the slot in the face plate, the zero line will appear broken. Several square prisms are slipped behind the face plate; the one that restores the continuity of the zero line gives the deviating power of the contained prism. The power of the contained prism at any point upon the lens may be determined, and marked from the slot. If the neutralizing prisms have not the exact intervals required, or if square prisms are not at hand, the next interval above is placed behind the face plate, and rotated until the zero line is restored. Care being taken to keep the prism exactly in this position, the lens is removed, and the prism measured in this position. The exact deviating power for that point on the lens that was opposite the sighting-slit is then known.

This use of neutralizing prisms is more than sufficiently accurate, and eliminates the calculation necessary to correct a direct reading from a spheroprismatic lens.

Opticians keep in stock, packages of uncut (square) prisms, from which, owing to the usual variations from exactness, the surgeon may select with the instrument, a set of metric prisms that when edged up, will be exact, inexpensive and of all desirable intervals.

SELECTIONS.

The Urine After Anesthesia.—The influence of various general anesthetics upon the processes of metabolism in the body has been repeatedly studied both upon clinical material as well as by means of animal experiments. In this way the advantages and dangers of this or that anesthetic have been more or less thoroughly established. The action of chloroform and ether upon the kidneys has received special attention. Post-anesthetic albumin, uria and glycosuria have been repeatedly investigated, with the result that the liability to nephritis after anesthesia in persons with healthy kidneys has been shown to have been in the past very much exaggerated. Among the recent contributions upon this important topic may be mentioned Weir's¹ "Studies of the Influence of Ether Upon the Kidneys." In 1890 Weir² presented the results of an examination of forty cases of ether anesthesia with the result that in about one-quarter of the cases in whom the kidneys were previously healthy slight transitory albuminuria occurred after the narcosis. Feuter's³ conclusions, based on clinical and experimental observations, was that ether has no perceptible influence on the healthy animal kidney, that it is not dangerous in persons whose kidneys are slightly diseased, and that albuminuria but very rarely occurs after ether anesthesia in persons with healthy kidneys. Butler⁴ found albuminuria but once after 500 ether narcoses. Körte⁵ found albumin in the urine only six times in 600 narcoses in healthy persons. In seven cases where albumin preëxisted in the urine it was not increased by the etherization. Wunderlich⁶ concludes that in an already existing case albuminuria is frequently increased by an ether narcosis; that this is twice as common in chloro-

form anesthesia in the proportion of 11.5 to 6.9 per cent. Wunderlich says that an ether nephritis may be excluded from surgery. Wood⁷ thinks that if the kidneys are diseased, increased "irritation" may occur from ether narcosis; in animals Wood found etherization to produce cloudy swelling of the renal epithelium, but Selbach⁸ found that prolonged etherization, repeated on many successive days, never produced nephritis, and out of ten animals, slight fatty degeneration of the renal epithelium was found but once. Weir's⁹ last communication upon this topic contains the following summary of results:

1. Normal before and after 254 cases.
 Abnormal before, but without increase in
 albumin or casts after 7 cases.
 Abnormality lessened after 3 cases.

264 cases.

Or about 87 per cent.

2. Normal before, afterward abnormal . . . 31 cases.
 Abnormal before, abnormality increased . . 8 cases.

39 cases.

Or about 13 per cent.

Weir also studied 112 cases that had a record of the temperature after etherization and came to the general conclusion that elevation of temperature, the cause of which it was thought would aggravate the work of the kidneys and lead to, in conjunction with the narcosis, abnormal excretions, does not appear to have any positive influence on the point. Etherization in the vast majority of cases in normal kidneys, and even in abnormal kidneys, consequently does not bring about any detrimental effects as far as albuminuria is concerned. Concerning post-anesthetic glycosuria, it may be said that Wunderlich¹⁰ and others have never been able to find sugar after narcosis, where glycosuria did not exist before.

Kast and Mester¹¹ report that after prolonged chloroform narcosis in healthy individuals a prolonged disturbance in the metabolism of albuminous substances occur similar to those induced by phosphorus poisoning, may develop a sulphur-containing substance, similar to cystir, being excreted in considerable quantities. Becker,¹² in Bonn, described some instances of rapidly fatal diabetic coma subsequent to narcosis, which he was inclined to believe were due to acetonuria, and this observation gave him the idea to investigate the question whether or not narcosis can lead to the production of acetone in healthy persons. Becker,¹³ therefore, set about to systematically examine the urine of practically all the patients anesthetized in the surgical clinic of the Bonn University, for sugar, albumin and acetone before as well as after the narcosis. The method used for the demonstration of acetone was the qualitative test of Legal, which is made as follows: To a few ccm. of filtered urine are added a few drops of a freshly prepared, 10 per cent. watery solution of nitro ferrocyanide of sodium, the mixture is then made alkaline by adding a solution of sodic or potassic hydrate when a burgundy-red color appears. Then a few drops of strong acetic acid are added and, if acetone be present, a purplish tint is formed at the juncture of the acid and the mixture. Becker made the unexpected observation that in the majority of healthy persons there arises an acetonuria of varying duration after narcosis. The following table will give a birdseye view of his results:

Anesthetic.	Number of patients.	Positive.	Negative.
Ether	195	132	63
Bromether	16	7	9
Chloroform	5	5	—
Ether followed by chloroform . .	33	22	11
Bromether followed by ether . .	2	1	1
	251	167	84

The duration of the narcosis did not seem to have any influence on the occurrence of the acetonuria; the same is also true as regards the nature of the disease and of the operation—whether bloody or not—in children acetonuria seemed to be more frequent and also more marked than in adults. As a rule the acetonuria disappeared on the second, third or fourth day, but in some instances it continued for eight or nine days. In a case of perineal section it was possible to show that twenty minutes after the beginning of the anesthesia the urine already contained acetone, having previously been free from this substance. In a number of cases containing acetone in the urine before the narcosis the acetonuria was found to be increased after the operation, and

in three diabetics the narcosis increased preëxisting acetoneuria very considerably.

Concerning the significance of acetoneuria in general, it has been shown by v. Jacksch¹⁴ and others that it arises from the disintegration of albuminous substances, and consequently post-narcotic acetoneuria is a symptom that points to an increased destructive metabolism of albuminous compounds during and also after the anesthesia. In healthy individuals this post-anesthetic acetoneuria seems to be without any evident dangerous consequences, but in diabetics the increased excretion of acetone after anesthesia shows that in such cases narcosis is connected with greater dangers than in healthy patients.

In one case of bromether intoxication, abnormally large quantities of acetone were excreted, which led Becker to believe that in this case serious disturbances of tissue metabolism had been induced. Finally, the interesting and new observations by Becker upon acetoneuria after anesthesia may be summarized in these conclusions:

1. In healthy persons acetoneuria, lasting from a few hours to a few days, may appear after narcosis. In two-thirds of the cases, Legal's reaction with filtered urine gave a positive result.

2. Preëxisting acetoneuria is increased by the ordinary anesthetic agents.

3. In a case of severe bromether intoxication excessively large quantities of acetone were excreted.

4. Acetoneuria after anesthesia is a symptom of increased disintegration of nitrogenous compounds.

Third Annual Report of the Hospital and Dispensary at Chemulpo, Korea.—The third annual report (1894) of St. Luke's Hospital and Dispensary at Chemulpo, Korea, has been received from Dr. E. B. Landis, the physician in charge. It states that, owing to the fears of the inhabitants caused by the presence of Japanese troops, many fled from the city, and during July and August half of the native houses in Chemulpo were empty.

The cases treated number 4,463; of these 159 were of the respiratory organs, 407 of the intestinal tract, 16 of the urinary organs, 121 diseases of the skin, 213 injuries, deformities, etc., and only 50 cases of venereal diseases. The term pestilence is used because it is a translation of the native word; there were 68 cases of the disorder. The disease occurs in the spring and early summer, and the mortality is very high. The fears of the natives cause them to avoid it as much as possible. Relatives are compelled to leave the house until the patient recovers, if he is fortunate enough to do so.

No one can come in contact with the natives without seeing evidences of the ravages caused by smallpox. People blinded, crippled, and pockmarked are seen everywhere. An increasing number of children are brought for vaccination. The Koreans have a method of inoculating children by introducing virus from a smallpox patient into the nostrils of the child; but the mischief caused by this is only exceeded by that of the disease itself.

The native treatment of a forming abscess is by a kind of sticky mass, resembling shoemaker's wax, the chief ingredients of which are centipedes and pine-tree sap. This is applied to the forming abscess. The pus can not find its way out through this, and therefore burrows down through the more yielding tissues and finds its way out through half a dozen openings. If not seen and properly attended to, it sometimes goes down very deeply, resulting in periostitis and necrosis. When a patient presents himself for treatment there is generally a mass of diseased flesh with several sinuses leading down often quite deeply. This must be fully incised and then washed out, antiseptically.

A number of cases under the head of incised wounds were caused by the stem of the native pipe, a long piece of bamboo with a tapering mouthpiece of metal perforating the back of the throat. This accident is caused by a man's stumbling or falling while smoking, the stem being forced through the tissues, often with fatal results.

Among the cases reported was one of leprosy. The patient was a man who came from the south, begging for relief. It being impossible to place him in the hospital, a temporary place was obtained for him at some distance from the settlement. The case was one of tuberosa form; leontiasis was very marked. When he came the disease was quite advanced, with nodules scattered all over his face, and ulceration of the hands and feet already begun. He was treated with Chantmoogra oil and iodids, but without avail; he gradually grew worse and finally died.

Sanitary matters among the Koreans are in a very rudimentary state. The foreigners and Japanese are not teaching the Koreans any very useful lessons in this respect. Great care is taken to keep the streets in good order, but the gutters, or so-called drains, are used as cesspools or places for dumping all sorts of offal. Once in a while a pretense is made of cleaning them, but the only time when they are in proper condition is when the rainy season washes them out. Dr. Landis says the coming year (1896) will be an unhealthy one. The eight Provinces as well as the two large islands of Quaelport and Kanghoa were represented in the hospital during the year. Boats from all parts of the country are continually arriving, and important medical missionary work is being successfully carried out.

Dr. Landis has given the most untiring devotion to his duties, and his influence in the cause of medical science has been very great.

SOCIETY PROCEEDINGS.

Chicago Academy of Medicine.

Regular meeting held at the Union League Club Dec. 15, 1895.

DR. A. E. BALDWIN was chosen Chairman.

The first paper was read by Dr. William L. Ballenger, entitled,

ANGIO-NEUROTIC EDEMA.

He said that angio-neurotic edema was a so-called disease characterized by an acute, circumscribed, non-inflammatory swelling or edema of transient duration. It has been variously named, according to writers' ideas of etiology, pathology or symptomatology, as acute circumscribed edema; acute idiopathic edema; essential edema; periodic swelling; urticaria tuberosa; giant urticaria, or giant swelling; acute non-inflammatory edema, etc., etc.

Symptoms.—The edema appears suddenly—sometimes with and sometimes without prodromal symptoms—and is transient. A common seat is the face, the eyelids being most frequently affected. The lips and cheeks may also be involved. The Schneiderian membrane, the pharynx, uvula, epiglottis, larynx and lungs may be the seat of swelling. The hands, arms, legs, genitals and trunk, indeed, any of the mucous membranes and any portion of the skin may be selected as the site for edematous swelling, although it seeks by preference the most lax parts. It may appear in one part and later appear in another. It is usually associated with other symptoms or diseases, as hay fever, urticaria, headache, gastro-intestinal disturbances as watery vomiting and colicky pains, itching and redness.

Etiology. The etiology may be studied under the following subdivisions: 1. Predisposing causes, as *a*, heredity; *b*, previous and present condition of disordered health; *c*, overwork either mental or physical; *d*, exhaustion from disease, exposure or exertion; *e*, and last, but not least important, the neuropathic taint.

There is a growing conviction among neurologists that the reflex centers have been much abused by writers in accusing them of much that properly belongs to the central nervous system. We are coming more and more to recognize the intimate relationship existing between mind and matter, and perhaps many phenomena which we attribute to what may be styled the animal mechanism, have their origin in cerebration, though the act be an unconscious one.

While there is undoubtedly a close relationship between urticaria and simple acute edema, as there is between all neurotic phenomena, yet there is a somewhat different pathology attending the various manifestations. Some of the cases now referred to as angio-neurotic edema are probably cases of urticaria and tend to confuse the judgment of the student. In Matas' case there was malarial toxin as an exciting cause, and

¹ New York Medical Journal, Nov. 16, 1895.

² Loc. cit., March 1, 1896.

³ Deutsche Zeitschrift für Chirurgie, Bd. 29.

⁴ Laugenbeek's Archiv, Bd. 49.

⁵ Quoted by Wehr, loc. cit.

⁶ Deutsche Zeitschrift für Chirurgie, Bd. 11.

⁷ University Medical Magazine, 1891.

⁸ Dissertation, Bonn, 1891.

⁹ Loc. cit.

¹⁰ Loc. cit.

¹¹ Zeitschrift für Klin. Med., Bd. 18.

¹² Deutsche Med. Wochenschr., 1891, No. 16.

¹³ Virchow's Archiv, Bd. 110, Heft 1. The details of these investigations are also contained in an Inaugural Dissertation by Greven, Bonn, 1895.

¹⁴ Ueber Acetonuria und Diaceturie, Berlin, 1885.

the tone of the tissues was impaired by the ravages of long-continued disease until the soil was ripe for angio-neurotic manifestations. The edema recurred daily from 11 to 12 A.M., on the upper lip, causing great disfigurement during the brief time of its stay. It was finally cured by quinin as for malaria.

Osler's classic study of five generations, shows one affected with angio-neurotic edema in the first generation, one in the second, five in the third, ten in the fourth, and three in the fifth. Edema was not inherited by these people, but an impaired cell structure and activity which manifested itself as an edema was inherited. Along with this tendency, environment and suggestion acted as exciting causes.

The author then closed his paper with a report of a case coming under his own observation, and added that he believes it is a mistake to write or speak of angio-neurotic edema as a disease, for it is not a disease; it is but an expression, a symptom of some stimulus acting upon impaired cell structure.

DISCUSSION OF DR. BALLENGER'S PAPER.

DR. G. FRANK LYDSTON—Dr. Ballenger's paper is so very complete that there is very little to add to his remarks. I agree with him in the assertion that in so-called angio-neurotic edema some underlying organic peculiarity of the individual is essential. I believe the same proposition is true as regards ordinary urticaria. I have long been satisfied in my own mind that so-called giant urticaria and ordinary urticaria are congeners. I have no theory to advance regarding the essential condition underlying these forms of skin eruption. There is perhaps, after all, no better term than idiosyncrasy which can be used at the present time to explain the varying results of the ingestion of various toxic substances in different individuals. There must be some explanation for the fact that of several individuals who have ingested shell-fish in a more or less advanced stage of putrefaction, or over-ripe tomatoes, one should develop severe urticaria, while the others escape. The toxic materials which enter the system in each instance are precisely the same, granting that a series of individuals ingest the same kind of objectionable food. It is a matter of common experience that in certain individuals the freshest shell-fish will invariably develop urticaria. We can not explain this any more than we can explain why certain individuals who inhale the pollen of plants, or on entering a room in which a small amount of powdered ipecac is floating in the atmosphere, develop symptoms similar to hay fever. These symptoms referable to the mucous membrane, it seems to me, are congeners to urticaria. It is useless to deny the existence of so-called idiosyncrasy in the direction of a peculiarity of nervous organization which predisposes to urticaria and its congeners. The effect of toxins as an explanation of its exciting cause, is compatible to the effect of various drugs which we use in medicine. We know that copaiba, quinin and many other drugs produce eruptions in certain individuals, and there is nothing, so far as I know, but individual predisposition to explain this unless the vicarious functioning of the skin necessitated by imperfect renal action, the loss of balance manifesting itself under these circumstances by dermal irritation. There are certain local influences which will bring about urticarial manifestations without the necessary intervention of individual predisposition. This is eminently true of insect bites.

I had an excellent opportunity to study the effects of insect bites during the riots of the summer of 1894. A number of the troops under my charge at the Union Stock Yards were bitten by horse-flies, which were abundant and particularly voracious in that locality. I had fifteen cases of septic bites which I had under careful observation. The first manifestations were marked localized edema, with the characteristic waxy semi-translucent appearance of the urticarial wheal. This was followed by an inflammation of an erysipelatous character, with suppuration and considerable destruction of cellular tissue quite similar to that which is presented by ordinary carbuncle. Taking insect bites as the basis for argument, we have also another evidence in some cases of the importance of individual predisposition. We find, for example, that ordinary mosquito bites in some individuals result in the formation of large urticarial wheals, while in others slight or no irritation results. Observations of insect bites of the skin on the effect of urticarial eruptions are important in reference to the possible relations of toxins to ordinary urticaria. Reverting to drug eruptions, as an illustration of individual predisposition I recall the case of a lady who developed, after the application of belladonna ointment of mild strength, an erythematous eruption which practically covered the entire body, and was as marked as ordinary cutaneous erysipelas. I experimented on three different occasions with the same result.

It has seemed to me that gastro-intestinal irritation is by no means essential to the production of urticaria; indeed, in some

cases in which marked urticaria develops as a result of the ingestion of certain unwholesome food substances, no symptoms of gastro-intestinal irritation whatever are present. I know, for example, of a gentleman who, upon the ingestion of a small quantity of honey, will develop a severe urticaria. Another case, under my observation, would have severe gastralgia upon the ingestion of so small a quantity as a half-teaspoonful of honey. The gastralgia would come on speedily after the ingestion of the honey, and the attacks occurred too frequently under my own observation to admit the possibility of error.

The term angio-neurotic edema is by no means satisfactory, but if the underlying condition in ordinary urticaria and so-called giant urticaria is the same, I believe it would be best to classify them as similar conditions. The term angio-neurotic edema is as comprehensive as anything that has thus far been suggested.

DR. W. L. BAUM—The subject of angio-neurotic edema is an extremely interesting one, not only on account of the various conditions under which it may appear, but also because of the many articles which have been written from time to time relative to its etiology. The vast majority of these cases otherwise enjoy good physical health. Neither the seat of the lesions, nor their extent, shed any particular light upon the etiology. I can hardly agree with Dr. Ballenger in the statement that the condition is necessarily due to an alteration in the endothelial cells of the vessels, for if there were some abnormal changes then like etiologic factors employed at various times would be always bound to bring about like results. We frequently find that an emotional disturbance will bring about a sudden attack of angio-neurotic edema. Take, for instance, the case reported many years ago where an improper proposal was made to a young lady at a dance: within a few minutes her whole body was covered by a urticarial (giant) eruption. Many such cases have not only been reported, but are seen in every-day practice by the dermatologist, and are striking illustrations of the fact that the emotions and neurotic disturbance in general may have a powerful influence in bringing about eruptive conditions. On the other hand, it must not be forgotten that a large number of these cases develop after the ingestion of certain foods, and a great variety of foods may produce angio-neurotic edema.

As regards hereditary influences, it can be taken for granted that the changes, whatever may be their character or idiosyncrasies, are purely of a neurotic type. Whether it be a reflex condition resulting in dilatation of the vessels through paralysis of the vasomotor contractor nerves, or an irritation of the vasomotor dilator nerves, will probably never be satisfactorily demonstrated. The fact remains that the vessels do dilate, and that we have a serous, sometimes a sero-sanguinous exudate present, which gives us a variety of symptoms which may be brought about by the same etiological factor. Very frequently the gastric disturbances, which are so often named as the exciting causes, occur subsequent to the appearance of the edema. If we take into consideration that this change occurs sometimes on widely separated portions of the skin, and sometimes upon almost all portions, it is reasonable to suppose that the eruptive condition also occurs upon the mucous membrane of the nose, etc. For instance, we frequently notice that the soft palate and uvula are involved in this condition, and undoubtedly the condition occurs in the stomach, as well as intestinal tract, as exemplified by frequent attacks of enteritis; and the cerebral symptoms can be easily accounted for on the supposition that similar local conditions are also produced. There is no doubt in my mind that the angio-neurotic condition is in itself only a symptom, and that its existence is not dependent upon structural changes, but upon neurotic conditions, and it may have as its exciting factors a large and almost endless variety of causes.

DR. H. M. BANNISTER.—I have been very much interested in Dr. Ballenger's paper. When I published my case at first, it was simply because it was novel to me, and I have lately congratulated myself on the judiciousness of the title I then gave it: "Erythema or Urticaria," more especially since reading within the last two or three days an article by Dr. Osler, in which he refers many of these angio-neurotic conditions back to the types he discusses in his paper on exudative erythema, and, I believe, he refers his celebrated hereditary angio-neurotic family to this form. Henoch's first case of what I take it has been called Henoch's purpura, and which I stated was given as purpura, is included by Collins and Lovett in the literature of angio-neurotic edema, which literature, I believe, has been made to include many cases of conditions very different from each other, and which are not properly to be classed under this head.

As regards the pathology of the disorder, I presume I should agree with Dr. Ballenger in the main, though I have considered most of the cases as belonging to or closely related to urti-

caria. My last paper was written because the disease had been adopted by, or had been thrust upon neurologists, and it was published with the idea that it might help to refer it to its proper place. I believe it to be a neurosis of the integuments, but I doubt whether dermatologists themselves know how to properly place it as a distinct clinical entity.

DR. HUGH T. PATRICK. I have been greatly interested in the satisfactory paper of Dr. Ballinger, and he seems to have left very little room for criticism, but I would have been better satisfied if he had more clearly defined angio-neurotic edema. This slight dissatisfaction has been intensified by the discussion. We have had classed under this head almost everything from edema of glottis to hereditary trophoneurosis, and from the tumefaction of insect bites to simple and giant urticaria. My own difficulty has been to conclude what is and what is not to be classed as angio-neurotic edema. I had hoped to see the line drawn this evening. I have not been able to do so myself, for we can follow these troubles step by step from simple transitory blushing and paling to the most pronounced and persistent edema and pseudo-edema. In any normal individual, sharply stroking the skin with a blunt instrument will cause first a white line, and then a red one; in some peculiarly susceptible it will cause an elevation, and in others decidedly abnormal it will cause marked swelling which will persist for hours and can be reproduced after twenty-four or forty-eight hours by simply rubbing the surface with the hand. In the same way, the bite of an insect will produce in one person a slight wheal, in another a swelling and edema of the entire extremity. An auto-intoxication from the gastro-intestinal tract will cause in one, slight malaise; in another an outbreak of urticaria. I saw some time ago a lady subject to facial neuralgia, and every attack was accompanied by a marked edema of the face, as in a person with the proper predisposition, or, as Dr. Lydston prefers to call it, idiosyncrasy: a very slight irritation from without or within may be the determining cause of a localized edema, so this same result may be induced by an influence emanating from the brain, not a toxic but a psychic cause; in other words, a local edema, exceedingly difficult to separate from angio-neurotic edema, may form part of the symptom-complex of hysteria. This has been known since the days of Sydenham and is clearly emphasized by Brodie in his interesting little monograph on Local Nervous Affections, published, I believe, in 1837. Here, too, we can trace the degree of disturbance from simple blushing and perspiration from mental causes through erythromelalgia and Raynaud's disease, some cases of which have been conclusively shown to be of psychic origin, to transient and even persistent edema. In substance then, I must agree with the reader of the paper, that angio-neurotic edema may exist in many different ways. I do not think it can stand even as a clinical entity. For its definite classification we need facts, and these facts are not yet forthcoming.

DR. BALLENGER (closing). It was with much hesitation that I presumed to write upon a subject which is generally conceded to belong to the neurologist and dermatologist, but many of the so-called angio-neurotic edemas occur in the nose and throat, and therefore should claim my attention as a rhinologist and laryngologist.

Dr. Bannister believes the so-called angio-neurotic edemas are but forms of urticaria. I agree with him to the extent that many cases reported as urticaria are, indeed, not urticaria, but are cases of angio-neurotic edema. This is suggested in the thesis. While the exciting causes and possibly the predisposing causes may be almost identical, yet there is a difference in the pathology. Dr. Baum questions the impairment of the intima of the small blood vessels. Now, if we accept the simple vasomotor theory we must look upon the vessels as so much elastic with epithelial plates or brick, which regulate the amount of nutrition which is allowed to ooze through. When the vessels are dilated the plates are pulled apart and a free flow of lymph follows. I can not bring myself to think of the epithelial cells lining the vessel walls as mere inert matter acting as impediments to the transudation of lymph, for when we remember that they throw out arms or finger-like processes and embrace bacilli, we must concede a high degree of autonomy, and may reasonably expect an impairment of them to result in a modified functional activity. An acute hyperemia does not bring about an edema even though it be quite prolonged. I am well aware of the fact that I can not prove my position and that it can not be disproven. I only hold to the hypothesis which to me seems in harmony with the known facts.

In reply to Dr. Patrick's query as to why I did not more specifically define angio-neurotic edema I will say that I look upon it, not as a disease to be defined but as a symptom, an expression of an exciting cause acting upon impaired (not dead)

tissue. In other words, an exciting cause alone can not produce an acute edema; there must co-exist an impaired cell structure in the blood vessel walls. By impaired cell structure I mean that its normal activity is interfered with, and not that its structure is destroyed. This impairment may continue for only a short time and may occur through some trophic process which may have its origin from some impression made upon the brain; or, as is more common, it may arise from irritation of the nerves or centers controlling the cells, or possibly from direct irritation of the cells, although from the light of recent investigations made by Metchnikoff, this is less prebable.

In conclusion, I believe angio-neurotic edema should not be thought of, spoken of, or written about as a distinct clinical entity. It is my habit to think of it as an acute transient circumscribed edema resulting from some stimulus either psychic, chemic, or traumatic, acting on neurotic or impaired animal structure.

DR. E. A. HALSTEAD read a paper on

FLOATING BODIES IN JOINTS.

He said by floating bodies in joints, or, as they are frequently termed, joint mice, he meant bodies of varying structure usually composed of bone, cartilage, masses of fibrin or fat, or fibrous tissue which are either loose in the joint or are attached to some part of the joint surface by pedicles. By far the greater part of these bodies is found in the knee-joint, so that when we speak of joint bodies we usually refer to the knee as the seat of disease. They next in frequency are found in the elbow-joint, and rarely in the ankle and wrist. The explanation of their frequent occurrence in the knee-joint is that the joint has a very large surface, and that by its position it is greatly exposed to traumatism.

The first systematic study of these bodies was made about 250 years ago by Pechlin, a Swedish surgeon. Since then numerous cases have been reported and a great many theories advanced in explanation of their origin. Of late years, careful microscopic examination of specimens removed by operation, and found on postmortem, has done much to clear up doubtful points in the etiology of these peculiar bodies.

The author reported three cases which had lately come under his observation.

Etiology.—The cause of loose bodies in the joints has been a much disputed question. Of late considerable advance has been made in determining the exact causation of individual cases. In the past, most writers ascribed a common cause for all these bodies, whereas we now know that there are a number of factors concerned in the etiology, and different cases have a variety of modes of origin. Exact clinical histories with careful classification on a histologic basis have done much to clear up many mooted points in the etiology of these peculiar bodies. Using Volkmann's general classification, we have *a*, those that are found in otherwise healthy joints, the disease, if any be present in the joint, being only that occasioned by the presence of these bodies; *b*, those that are found in diseased joints.

The author then considered the symptomatology and diagnosis at considerable length. Coming to the treatment he said that it may be of historical interest to mention some of the methods of treatment that were employed in pre-antiseptic days. Chassaignac mentions the following methods that were employed:

1. *Palliative.* *a*, Fixation of the loose body by compression, so that it may become attached to the capsule; *b*, fixation by passing needles through a part of the capsule; and *c*, fixation by subcutaneous ligature.

2. *Radical Methods.* *a*, Removal through direct incision; *b*, incising the skin at different levels; *c*, through subcutaneous operations performed at two sittings, the skin from a distance being displaced over the body; incision made through the skin and capsule, the body allowed to escape into the subcutaneous incision, from which it was removed at a later time after the capsule had healed.

During the pre-antiseptic period the mortality connected with these radical methods of treatment was very high. Bell recommended amputation in those cases where an operation was indicated, in preference to opening the knee-joint. The mortality at this time was about 33 per cent., and of those who escaped with their lives a great number went through life with a more or less ankylosed joint, as a result of septic infection. It is scarcely worth while to mention that the only method of treatment of to-day is to remove these bodies by direct incision.

The author concluded:

1. That the etiology of some of these bodies is yet not fully understood; but that the condition described by König under the name of osteochondritis desiccans explains the most of those that are found in otherwise normal joints. This deserves further investigation.

2. That few, if any, are the direct result of violence.
3. That the most pronounced symptom is the sudden onset of severe pain in the joint with locking of the joint, usually in a nearly extended position, this being followed by acute inflammatory process in the joint involved.
4. That lengthening of femur (in movable bodies in knee) may occur as a result of irritation produced by the pressure of these bodies.
5. That the only treatment for their condition is the removal by direct incision, preferably under cocaine anesthesia, as soon as diagnosis is made.

DISCUSSION.

DR. G. FRANK LYDSTON—The essayist has left very little to be said on the subject of "Floating Bodies in Joints," he having practically covered the more important points of the contributions pertaining thereto. I, of course, understand that he has not intended to dwell upon tuberculosis as the cause of movable bodies in joints. The ordinary floating cartilages or foreign bodies in joints are not of tubercular character, but we meet with very many cases in which movable bodies are found, and in which tuberculosis is the only explanation; and the more recent researches in this direction have especially emphasized the important relation of tuberculosis to these conditions. Personally, I have always regarded the majority of these cases as of inflammatory origin. I do not believe traumatism is as important a factor in the production of floating bodies in joints as is ordinarily supposed. In many instances the patient presents himself with a history of traumatism, but this means that the first injury produced by the floating body getting between the joint was supposed to be the cause and not the effect of the floating body. It is easy to understand that a floating body in a joint is not likely to give rise to any disturbance unless it is associated with some condition which impairs the functional integrity of the joint structure, until such time as a favorable opportunity is afforded for its action as a foreign body. During perhaps some movement of the joint, which the patient recalls as somewhat unusual, the foreign body slips between the joint surfaces, produces contusion, and subsequently more or less acute synovitis of greater or less degree of severity. The patient under such circumstances is very likely to present himself with a history of strain or other injury to the joint which has produced an inflammatory condition for which he consults us. The free bodies found in the joints which result from tubercular degeneration are numerous and of a cartilaginous or even-bony feel, and can be readily outlined with the finger in many instances.

Laying aside the post-mortem or post-operative pathologic appearances, we have clinical support of the tubercular nature of these floating bodies in the fact the ordinary treatment of joint tuberculosis by injections of iodoform emulsion frequently results in the complete disappearance of the bodies.

I congratulate Dr. Halstead upon his excellent and valuable contribution to a subject which has not been as carefully studied or as well understood as could be desired.

DR. W. XAVIER SUDDUTH read a paper entitled "Suggestion as an Ideo-Dynamic Force."

The Chairman called upon DR. PATRICK to open the discussion. The doctor said: I am in no sense a psychologist, practically or otherwise, and as the paper has been essentially a psychologic one, I do not feel in the least competent to discuss it. But in accordance with the legends of the Academy, I would beg leave to decidedly differ with the reader of the paper on one point. He said in substance that suggestion is the legitimate child of science, born in the laboratories of the biologist and experimental psychologist. I would submit that it is the legitimate child of empiricism, born of the practical experience of fakirs and physicians, hundreds of years before biology and psychology were dreamed of.

DR. H. M. BANNISTER—I regret being called upon to discuss the subject of Dr. Sudduth's paper, as I do not feel prepared to do so. I can not say that I agree with him, for it seems to me he goes too far in his claims of the value of suggestion in therapeutics, and I doubt whether he will ever realize his visions of its replacing drugs to the extent he anticipates. I do not see, for example, how we are going to be able to come to the condition of voluntarily restraining the purely vegetative functions and the movements of the heart by mental effort. I should have to read his paper, however, and carefully considered it before I felt able to perfectly discuss it. But in any case my conception of the power of the human will over bodily conditions falls very far short of what I understand to be his, from the paper he has read.

DR. WM. F. WAUGH—Great discoveries in medicine are apt to be received with disfavor at first. Vaccination was violently opposed by the medical profession; hydropathy and electricity were exploited by empirics until the success of the latter com-

pelled the physicians to adopt these methods, which, scientifically studied and applied, have become very much more valuable than when operated by the ignorant. On the other hand, Koch's tuberculin and Bergeon's gas enemias were received with all but universal enthusiasm. Judging by its reception, hypnotic suggestion, as a branch of psycho-therapeutics, seems destined to repeat the history of hydropathy. To the general practitioner, suggestion is of great interest. When one has passed through the stage of enthusiastic faith in drugs, he will find that much of the success he attributed to them was really due to the patient's faith in the doctor: so that it is often difficult to determine what is the precise value of the drug.

Dr. Sudduth made one important statement, that hypnotized persons can not be induced while in that state to do things they would not do when out of it. This should be brought to the attention of medico-legal experts and the newspaper fraternity, as a very different view is presented by them. Indeed, the common conception of hypnotism, taken from the works of Dumas and Du Maurier, has about the same relation to the truth that the gorgeous palaces of the Arabian Nights have to a modern city residence.

DR. JAMES G. KIERNAN said he should have to take issue both with Dr. Bannister and Dr. Sudduth. The will, as was claimed by Dr. Bannister, was not as had been stated by Dr. Sudduth, a simple determining factor, but a complex. There is no will, strictly speaking, but wills. When these act in unity the normal condition exists. When the union is broken a large number of hitherto unconscious states rise into consciousness, producing for instance comparatively trivial notions which often plague the comparatively normal individual by the fact that he is obliged to rid himself of these by a conscious effort to do what was previously done automatically. That the brain received and registered a large number of objectionable matters unconsciously, was excellently illustrated in the insanity of pregnancy, during which refined women used not merely the gestures and actions of courtesans, but their very expressions. It was also illustrated in the cases in which ignorant persons had registered unconsciously expressions once heard from the Greek and Latin classics and had reproduced them during fever delirium, remaining totally unconscious of their source. The fact was, that while suggestion might act normally it certainly was most potent in the abnormal state, which was either hypnotic, or closely allied to it.

Dr. Sudduth in his claim that hypnotism and suggestion are most easily applied to normal beings, was supported only by psychologists whose opinion was of no value whatever as to the normal or abnormal, since two of those quoted had admitted on clearly insane testimony, whose nature they did not recognize, the possibility of the occurrence of ghosts. The vast majority of alienists and neurologists had found that not only was the unstable nervous system most easily affected by hypnotism, but that it was actually injured by it. This was excellently illustrated by Westphal in his experiments on animals, which he found became readily paralyzed after having been frequently hypnotized. That this must result would be obvious on an analysis of the vasomotor phenomena underlying hypnotism, and even suggestion. Rapid vasomotor alternations, such as resulted from the strong impressions produced by hypnotism, must and did derange the monarchic vasomotor centers with consequent deteriorating action, both on the walls of the blood vessels and on the parts supplied by them. The fact that the insane, as a rule, could not be hypnotized simply indicated the potency of counter-suggestion, in which way delusions acted. The insane of the abulic type were undoubtedly influenced by individual suggestion. It should be remembered also that the chief treatment of insanity, after all, consisted in suggestion, the discipline of the insane hospital acting in this manner in a beneficial way that no home-treatment could do, however skillful. The burden of proof still rested very severely on any attempt to prove any but a subjective influence in hypnotism. Suggestion undoubtedly played an enormous part in all medical practice, and was aided by surroundings tending to make the patient peculiarly susceptible to it.

With regard to the influence of suggestion in producing crime, in the vast mass of unstable degenerates no one could doubt such an influence, who had carefully perused the suicide records as to the relation of bizarre methods of suicide. An excellent illustration occurred several years ago. A patient was brought into a hospital with a suicidal wound inflicted in the vicinity of the femoral artery. The surgeon in attendance rather unwisely remarked to an overworked nurse, "If you make an attempt of that kind, cut a little lower down, you will reach the artery certainly." The man, who was depressed only from overwork, made the attempt, but fortunately did not profit by the instructions given. The case was announced in the newspapers, and three other instances in neighboring towns

occurred in rapid succession. The same thing is illustrated in the fire panics of theaters where, under the influence of the suggestion that the place is on fire, a large mass of people hear non-existent crackling flames, and smell non-existent smoke. A crowd is a being that acts but does not reflect, and hence is peculiarly liable to suggestion. The crowd is, however, not in a normal condition, for as separate units each individual would act on his own volition, and not on that of the crowd as a whole. That suggestion could be used in this manner to induce homicides, whether by an individual or by a crowd, no one who has studied lynch-law procedures can doubt. While it was true that if an individual had the secondary ego so developed as to act as a counter-ethical suggestion, he could not be induced by suggestion, whether in the hypnotic state or not, to perform crimes, in a large mass of mankind, and especially in the commercial world and among so-called society leaders, this secondary ego was very weak, and aside from the fear of law there would be nothing to act as counter-suggestion. Certainly the commercial people who could poison the insane with rotten food, who could "sweat" their employees into death, were not persons on whom the mere idea of taking another person's life would act as a counter-suggestion. These formed a large portion of the so-called intelligent normal class among whom Dr. Sudduth found such excellent subjects. On the other hand, that suggestion could act excellently as a moral factor was shown by the beneficial influence of the alcoholophobia movements and the Keely cure.

Dr. Kiernan was prepared to take issue also with Dr. Sudduth as to the duality of the mind or its manifestations. The opinions as to this had been fought out for centuries. St. Thomas Aquinas, for example, held the still powerful physiologic argument, that as mind was notoriously the product of material structure, as it produced material effects, and as it was affected by material influences, it must be a product of matter. Dr. Kiernan was prepared to admit from a careful study of morbid states, that strong mental influence could produce even organic alterations in structure. He had seen (not to speak of other instances) Raynaud's disease produced by mental shock. Suggestion and hypnotism had a certain limited value, but no more was done with it now than had been done by Mesmer and Puységur at the end of the eighteenth century, by Braid and Elliotson in England, and Brigham, Galt and others in the United States in the middle of this century. Dr. Crawford W. Long, the discoverer of anesthesia, had himself in company with Dr. Dugas, of South Carolina, experimented with hypnotism as an anesthetic before employing ether. All had found hypnotism of value, but all had found it too irregular an agent to be employed, as well as too dangerous in its secondary effects. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION did not state the case too strongly when it lately announced the passing of hypnotism to the extremely moderate domain of therapy which it had occupied at the beginning of the century.

Annual Convention of the New Jersey Sanitary Association.

Atlantic City, N. J., Dec. 6, 1895.

The New Jersey Sanitary Association held its twenty-first annual session in the Brighton Casino, December 6. The session was opened at 2 P.M., by Dr. D. C. ENGLISH, of Brunswick, the President, Dr. STROCK as Secretary. SENATOR HOFFMAN welcomed the association on behalf of the Mayor of Atlantic City and extended to the members the freedom of the city, the ocean, in short whatever was in sight. President English in reply, alluded to the fact that this association had now attained its majority and had established its right to a position in the State. He mentioned as noteworthy the fact that Atlantic City appropriated \$20,000 a year to its Board of Health, thus showing its confidence in their ability, and enabling them to carry out the proper sanitary work of the city.

Dr. O. W. BRAYMER, of Camden, read a paper entitled "Sanitary Inspection of Factories." He said there was not law adequate to the work, nor the application of the scientific knowledge. The age of operatives is regulated by a law, but it is very doubtful if this is ever enforced, as may be judged by the judged by the appearance of many of the operatives. Inspectors are not paid sufficient to carry out this work; consumption is caused by the improper diet, dust and bad air of these places, hence many workers are disabled. Capital sees the importance of looking to protection from fire, and injury from machinery, but as the supply of work people is large, capitalists do not see the need of caring for their health. These points require education of the masses. We must teach sanitary science to the children; we must show the people that

health is wealth. Again, workrooms should be ventilated and disinfected when not in use. The water closets should be cleansed and put in proper order against the return of the people. Each employe should have a separate drinking cup. There should be a washroom where the hands can be washed, and thus the lunch not be eaten with dirty hands. Seats are needed for the women, the floors should not be allowed to remain in the filthy condition in which we usually find them. Statistics show that many factory work-people are diseased and die early.

Dr. STRICKLER in discussion said: He had made a careful inspection of a number of factories, particularly of textile fabrics. The number of operatives was nearly 40,000. Care should be taken at the very outset in the selection of a proper site for such a building. It should never be on made ground, and free from malaria. The drainage is generally into the sewers and cess pools: the plumbing is too often old fashioned, but in a number of instances it was as good as could be asked. A practical plumber is needed for such inspections. The cess pools rarely are ventilated and drain into a near-by stream. The drinking water, as a rule, was good, but very many drink freely of beer, which renders them unable to take the proper amount of food, and thus their strength is exhausted. The clothes worn are often not a protection from the weather, and it is a wonder that more do not die from the exposure which they voluntarily undergo. In several factories he found proper food was provided with excellent results in their ability to work. It is imperative that rest must be permitted by the provision of seats. In the case of women it was found beneficial by the better work done by them. Damp floors should not be tolerated. He was glad to be able to commend several places where the owners had wisely provided for the needs of their people. In these instances, the owners claimed direct benefits to themselves in the better quality of work obtained. He concluded that factories as a rule are not in a bad condition. He quoted one owner who claimed that he had known instances where the inhalation of oil had restored a consumptive to health.

Dr. J. R. LEALE read a paper on

PROGRESS IN PUBLIC HYGIENE.

This was a creation of the medical profession, born within thirty years. It had met with much opposition from prejudice at first, even among the intelligent. Now the medical profession claim it as their own. It is generally taught in the colleges. Only three States are without a department of health. To our disgrace the National Government has no department of health. Public water supplies are being protected and improved at great expense. Drainage and the disposal of refuse are claiming and receiving attention everywhere. Disinfection is becoming better understood and enforced. The food supply is a subject which now receives close attention as to its purity. Sanitation of shops, houses, factories, etc., is demanded. Within the past few years such progress has been made that six years have been added to the average of human life. No general epidemics now devastate the community. In view of the progress which has been made within a short time, we may confidently look forward to still more rapid improvement in the future with wonderful benefit to humanity.

A telegram was received from Governor-elect Greggs, regretting that absence from the State would prevent his presence at the convention.

Prof. WILLIAM B. ATKINSON, of Philadelphia, was invited to sit as a corresponding member.

The first paper of the evening session was entitled

THE HYGIENIC SUPERVISION OF SCHOOL CHILDREN.

by BARON NILS POSSE, Principal of the Boston Gymnastic Institute. He first spoke of the importance of knowing and understanding what was to be supervised, then who was to do it. The temperature of the school room must be regulated; when it is too hot the pupils are not able to perform the work properly. The clothing must be comfortably easy, so as not to interfere with the movements. See that the ventilation is correct. Windows are for air as well as light. Fresh air need not be cold air. This is a point upon which there appears much want of understanding. Next look to the seats and desks; the back must be supported, especially the small of the back; each scholar must be suited with a chair and desk, otherwise come spinal curvatures and other similar troubles. This perhaps is the most important yet least regarded point. Recitations should not be continuous, but at the end of every three-quarters of an hour a rest of some minutes should occur. Overwork produces poor students. Perhaps it would be better to not permit each recitation to exceed half an hour. Arrange the work so that most of it will be in the afternoon; for this is a better time for work than the morning when just risen from

sleep. By afternoon the system is thoroughly aroused and ready for work. Physical training is of vast importance, but properly guarded and never to excess. Here is wherein so many instances the training is wrong. When a child evinces signs of failing, it should be dismissed to play, to seek the fresh air or to rest, as the case may demand. Education is of no possible use without health. The gymnasium is a useful and valuable adjunct to every school.

In discussing this valuable paper, Dr. Barringer asked what would be thought of placing a young lady in a seat suitable for a child of 6 years. We must fit the furniture to the pupils. There should be single adjustable desks and seats. It is not the expense that we should consider but the results, regarding it as a profitable investment from which we may expect good returns. Teach the children cleanliness, and many good things follow in its train.

SUPERINTENDENT V. L. DAVEY, of East Orange, said ventilation is now attended to, but only in cold weather. In October and May, when it is of more importance, it is utterly neglected. Contrary to the usual impression adjustable desks cost but little more than ordinary ones. One matter of great importance is a hospital room for the reception of teacher or scholar who may be taken suddenly ill. In addition the teacher should be taught how to use such a room. Desks and floors are rarely washed. They need it at frequent intervals to keep them in a proper condition. He had known instances where this was neglected for nearly a year.

GOVERNMENT METHODS FOR PREVENTING THE POLLUTION OF STREAMS.

by C. P. BASSETT, C. E., of Newark. He said: Streams are polluted and forests are destroyed at the will of those who please. All common sense shows this must be prevented, but how? Every one insists that the stream at his own door must be pure, but cares little in what condition it is when it leaves his vicinity. Voluntarily, they never attend to this vital matter. We must have laws to prevent this. We certainly have laws, but their enforcement demands too much litigation, with no one to do the work. There should be supervising authority, such as the River Pollution Commission in England, which has done much good work. These have power to investigate and put a stop to all pollution. In this country, factories and houses are preferably erected on the banks of a stream that may serve as a conduit to carry off the filthy products they care not where. Stream pollution is cumulative: it gathers as it runs. A proper board or commission could regulate such factories when being built, and not wait until they are completed and then become nuisances. Massachusetts has the best results because of her law which requires the State Board of Health to take charge of the streams and can say to the community, you can do so and so, but not what may render this stream foul, whether for drinking or other use. This law is a good model for the other States. There is a crying need for it in New Jersey. In the discussion, which was quite general, the very foul condition of the Passaic River was especially noted, as it supplies several places besides Jersey City. Dr. Mortimer Lampson of that place graphically detailed the supply of filth which was offered the people of that important city as a drink.

PERRY JACKSON, Esq., of Beebeville, a small place on this river opposite to Jersey City, portrayed the condition of the river as it flows past. Laws were plenty, but all require that it shall be shown to be a nuisance, and by whose action, hence preventing action in the premises. Streams are everywhere regarded as natural sewers to carry away the filth of the cities or towns which grow up on their banks.

This paper

ARTESIAN SOURCES OF PUBLIC WATER SUPPLIES IN NEW JERSEY,

in the absence of its author, J. C. SMOCK, Ph.D., State Geologist, was read by DR. A. W. STRICKLER. He outlined this very interesting and valuable paper, as follows: There are no reservoirs or subterranean pools so much talked of. Seams, joints, strata, fissures in the rocks or places filled with loose earth act as water-ways. Some earths are saturated with water and it is from thence comes the supply to the borings. The deeper we get the greater extent of water-bearing strata, and hence the greater and more constant the flow. Before a boring is made, careful examination is needed as to the geological formation, that our efforts may meet with success. Some waters are mineral because the water in its course meets soluble earths, from which we have iron, alkaline or other springs. Pollution of artesian wells is the result of the drainage into them of filth from the surface. The future of artesian wells is a great one. They will eventually be the source of the drinking water of this State.

A discussion followed in which Professor Lewis Woolman of

Philadelphia exhibited a series of diagrams showing the strata and the wells of the State.

DR. THOMAS K. REED, ex-Mayor of the city said the best way to get good drinking water was by this method. Surface water should never be used. Malarial disease in all its forms comes from the use of surface water. Deep-seated water ensures the absence of this trouble.

It should be named mal-aqua, not malaria. At the depth of 150 feet no organic life can exist, hence these waters are exempt from these impurities which engender disease. Eighty per cent. of our frame is water, hence we are all sponges, and we should be sure that that proportion should be the purest we can obtain. He objected to the name "artesian," they should rather be called "deep wells."

On motion of DR. HENRY MITCHELL, Secretary of the State Board of Health, the following was adopted.

WHEREAS, An order of the United States Post-Office Department provides that the mails shall not be used for the transmission of diseased tissue; and

WHEREAS, Specimens for bacteriologic examination, when inclosed in proper packages, can be transported in the mails without endangering the health of persons who may handle them; and

WHEREAS, Bacteriologic examinations in cases of diphtheria and other infectious diseases constitute an invaluable defense against the spread of communicable diseases by providing an exact method for early and accurate diagnosis; be it

Resolved, That the New Jersey State Sanitary Association hereby respectfully requests the Postmaster General to so modify the order now in force that specimens of diseased tissue, when properly inclosed in approved mailing packages, may be transmitted to state and municipal authorities.

DR. MITCHELL explained that such packages had been tested in many ways: crushed beneath a railway car, smashed beneath a heavy hammer, etc., without a particle of fluid escaping.

State committees on legislation and on sanitation were appointed by the president.

M. N. BAKER, C.E., of Montclair, read a paper on

PURIFICATION OF WATER SUPPLIES BY FILTRATION.

Few of the 2,500 water supplies in the United States are free from sewage. Strange how people prefer to drink their own filthy discharges! To free waters thus fouled the easiest plan is filtration. The ordinary sand-bed requires too large areas. The real danger is from bacteria. These must be removed. Mechanical filters clear the water of bad taste and odor and color. Filter beds are successfully used to remove iron, coloring matter and bacteria. The Massachusetts State Board of Health have the best opportunities to test this, as they have an appropriation annually of \$25,000 for this work. Their experience has been with filter beds or tanks, the result being tested by chemists and bacteriologists. An objection was the slowness, but it was found that the water could be forced through at twice the rate with equally good results. There are no true filters in New Jersey. Mechanical filters are not favored by the Massachusetts State Board. We have some filters in the State which are used for special work, as the removal of iron or other matters.

DR. JAMES A. EXTON, of Arlington, read a paper entitled

IMPROVEMENT OF THE LOCAL ADMINISTRATION OF TOWNSHIPS.

A uniform method of administration is much needed. Contagious and infectious diseases are not opposed as they should be. This opposition should be equal to that against law-breakers. Local boards are apt to antagonize, and the State board alone can harmonize them. Again, training in the work is required, as in very many instances the members and officers of the local boards are not so educated as to know what to do in certain cases. He had addressed queries to the local boards in Connecticut, where the best law existed for local boards, and he quoted from 1,000 replies. They have less expense and better results. The new law recently adopted there was quoted as being the best form in such cases. It is explicit and easy of enforcement. He urged it as a model for New Jersey to adopt. It would require only a few changes. He would place the appointment of all health officers in the hands of the civil service authorities and thus secure the very best talent.

PROF. C. C. BRACKETT, M.D., of Princeton, said: We must make board of health work a business, and carry it on with business principles. It pays well as a good investment. We should act as the manufacturers do, they select the best employees possible: so must we, and get the best talent to be found in the State. The inefficient fear to act lest they interfere with friends. Although there is a physician on the board, he often appears to see no need of action: there are no meetings, no plans; finally the matter falls into abeyance. But the manufacturer attends to it that the work is done and done

properly, and the valuable results are shown by his book. We must have better material in the boards: if necessary put them under an examination and only take those who are fit to do the work. Particularly should the doctor be examined as to his knowledge of sanitary science, and all others as to their knowledge of the laws which should apply to these cases. The boards should keep records of the whole place; thus they are able to know the cause of a disease owing to the presence of improper drainage, etc. At present there is no inducement for proper men to accept these places, as they are liable to be dropped for want of political influence or the like. Again, they are not paid enough to induce them to work. They should be kept in office during good behavior and while they do their duty. What costs nothing is worth nothing: we pay good servants well and obtain good service. When we secure these we will find excellent results.

DR. ENGLISH (the president) took the same ground. Improve the officers. Good roads are regarded as of more importance than health. Health men should always be students of sanitary science and of the laws which apply to the enforcement of what is needed for the work: they should carry out the suggestions of the State board, and feel responsible for an infectious disease that may break out in their locality. Bad roads must pay for the damage which takes place to a wagon or to a horse, but the board of health does not think of preventing disease. We must improve the people in sanitary ideas: let them know the great need of pure food, pure water, the value of quarantine: then we will have their coöperation, and this becomes the special duty of the health officers to do to the best of their power. Circulars should show the value of isolation in the prevention of the spread of disease. When disease prevails the sanitary code should be ready to stand the test of the law, the physicians should be compelled to report the cases, the houses placarded.

On motion of DR. H. MITCHELL the whole matter was referred to a committee of three to report a plan for the proper organization of the local boards.

DR. R. MEADE BOLTON, Chief of the Bacteriologic Department of Philadelphia, read a paper on

DIAGNOSIS BY BACTERIOLOGY.

He said all were not fit to be bacteriologists. They should be selected for their knowledge and experience. He had taught many, but in spite of every effort, they were not fitted for the work. It is not easy in every instance to recognize bacilli. Additional experiments are often needed to perfect the diagnosis. Animal experiments must be brought to our aid. Water examination is generally for typhoid and cholera. Here often doubt exists. Thus with cholera, other bacilli resemble the comma bacillus, and only by control experiments can we obtain the proof. An immunized guinea pig is inoculated, true comma bacilli at once die: they can not increase in number; but the similar form rapidly increases. Soil examination is needed for the agriculturist lest germs exist which may prove injurious to the cattle. The air is not loaded with microbes as was once taught: they sink to the floor and are only stirred up by the movements of people. It is not always possible to know the bacilli of typhoid fever. Still, bacteriology has been found of great value in special cases. There still exists some doubt as to there being a special bacillus of typhoid fever. In diphtheria this science proves of great value. We may diagnose the disease early, even before clinic symptoms show themselves. In cholera this has often been done, the germs being found in the feces though no diarrhea existed, and this will account for the occurrence of sporadic cases or outbreaks. Prompt diagnosis here is of great value: such cases should be isolated. This is a hardship, but it is necessary. In one instance a gentleman and his family were kept at home until they were known to be clear of the disease. So with diphtheria, the throat may show the presence of the danger, and it is hard to say what is best to do.

DR. MITCHELL said that this State was just ready to begin this work. The building is ready, good men have been secured and in a few days work will begin. He would issue a circular of information to all.

Plumbing inspection occasioned much discussion. Samples of bad work in this line were exhibited, and in the remarks of practical plumbers present these were condemned as the work of unskilled men or the result of efforts to put all the money on the outside of the house, without attending to the more important sanitary matters. The need of selected men who knew their business and felt responsible for their work was shown. Plumbers often oppose the assumption of authority by the health board: a conflict is now imminent and they as a body are proposing to have their own people appointed. It will be better to have examinations made by practical men, and pre-

ferably by those who are posted in sanitary matters connected with this business.

A resolution to that effect was unanimously adopted.

The disposal of garbage was then treated of by W. G. HOOPES, of the Atlantic City Health Board. He showed that they were able to cope with the question for eight or nine months in the year, but when the immense influx of visitors came to the shore, as they do in the summer months, then more aid is needed, and during the past year it was found that additional furnaces were required to consume it. The plant was a furnace which consumed its own gas after starting, and did the work well. Cremation was the only way to get rid of the stuff. His explanation was extremely interesting, but space will not permit of a detail.

DR. W. C. R. COLQUHOUN, health officer of Wilmington, explained the method adopted at that place. It was similar to that used at Atlantic City, and was only adopted after very careful inquiry and rigid tests. A steel furnace was employed.

On motion of Dr. Leal a resolution was adopted urging upon the Legislature action relative to the Passaic River to relieve it of its present foul condition.

The officers elected for the ensuing year were: President, Shippen Wallace, C.E., of Burlington; vice-presidents, James Owen, C.E., of Montclair; J. C. Smock, Ph.D., of Trenton (State Geologist); V. L. Davey, East Orange; recording secretary, James A. Exton, M.D., of Arlington; corresponding secretary, J. M. Watson, of Elizabeth; treasurer, George W. Howell, C.E., of Morristown.

A satisfactory balance was shown in the treasury, and it is contemplated to issue the proceedings in pamphlet form. The executive committee will decide as to the place of meeting for next December.

NECROLOGY.

RICHARD L. VAN KLEECK, M. D., of Brooklyn, died December 18, of paralysis, aged 56 years, a cerebral hemorrhage having occurred six days previously. No man in the town of Gravesend was more universally beloved than Dr. Van Kleeck. He was a leading physician in general practice. Dr. Van Kleeck was born in the town of Berne, Albany County, in 1839, and at 4 years of age he moved to Flatbush with his parents, his father being the first rector of St. Paul's Church at that place. He entered New York University, and received the degree of M.D. in 1862. After a year's service as interne in the Kings County Hospital, he began private practice in the town of Gravesend. His public positions were those of health officer and postmaster, which he held for twenty years or more. Dr. Van Kleeck was married over a quarter of a century, and his wife survives him together with his two sisters. He was of a hearty, cheery disposition; sometimes outspoken and fatherly in his advice, but always kind hearted.

DANIEL AMBROSE, M.D., formerly of Brooklyn, died in London, England, on December 16, in his fifty-third year. At the time of his death he was a M. P. of the anti-Parnellite party for the South Louth constituency, Ireland. He left Brooklyn about ten years ago, and in 1892 and 1895 secured his elections. His death is ascribed to cardiac disease. A widow and a family of nine survive, of whom the eldest son will presently go up for his medical examinations in London. Dr. Ambrose was born Nov. 14, 1843, in the County of Limerick, Ireland, his family being a race of doctors. His brother, Dr. J. K. Ambrose, was coroner of Richmond County, New York, in 1883. Dr. Daniel Ambrose received a preparatory education in Ireland and at the age of seventeen took up the study of medicine in the hospitals and schools of Dublin. In 1864 he received a diploma of a licentiate of the royal College of Surgeons in Ireland, and was made a doctor in medicine of the Queen's University in 1865. During that year he went to Brooklyn and took up his residence there and remained for a period of twenty years. In 1886 he joined the Kings County Medical Society, and was connected with St. Mary's Hospital at its inception. In 1875 the Charities Commissioners of Kings County appointed Dr. Ambrose physician to the department. In 1879, on account of ill health, he abandoned practice for a time, and a business opportunity to his liking offering itself, he accepted it, and became a man of affairs, and large ones at that, from that time onward.

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SATURDAY, JANUARY 4, 1896.

NAVAL REORGANIZATION AS IT ESPECIALLY CONCERNS THE MEDICAL PROFESSION.

The imminence of international complications, compelling Congress to reorganize the military establishment to be as effective as possible, makes that portion of the report of the Chief of the Bureau of Medicine and Surgery of the War Department which accompanied the annual report of the Secretary of the Navy, relating to the persistent vacancies in the medical corps of the Navy, of especial interest to the general professional reader.

The Surgeon-General says:

During the last fiscal year there were 269 applications made to the department for information concerning the appointment of assistant surgeons in the Navy. Replies containing instructions were promptly forwarded in every instance. Out of this number *only 33* applied for permission to appear before the Naval Medical Examining Board, as follows:

Alabama	1	New York	8
California	3	North Dakota	1
District of Columbia	1	Ohio	1
Illinois	1	Pennsylvania	1
Kentucky	1	South Carolina	1
Massachusetts	3	Tennessee	2
Michigan	1	Virginia	2
Mississippi	3	West Virginia	1
New Hampshire	1		
New Jersey	1	Total	33

Of the 33 mentioned who received permission 19 availed themselves of the opportunity to appear before the Board, and of this number there were 3 rejected physically and 12 rejected professionally, leaving *only 4 out of the 269 original applicants*, representing every section of the country, who were found qualified for appointment as assistant surgeon, viz.:

Alabama	1	California	1
District of Columbia	1	New York	1

It may be well to mention, for comparison, that there is no difficulty in filling vacancies in the medical corps of the Army and Marine-Hospital Service, both corps having at present the full quota of assistant surgeons allowed by law, while at this date there are *fourteen* vacancies in that grade in the medical corps of the Navy, and the services of that number of assistant surgeons are needed at once for hospitals, ships and other stations. The law does not provide for the temporary appointment of acting assistant surgeons to meet the emergency that has arisen.

In our issue of December 14 we alluded to the reasons for the disinclination of young graduates to enter the naval medical service because of the inferior pay and status of the naval medical officer compared with those of medical officers in the army. The figures of the Surgeon-General are significant. It is absurd to suppose that among the hundreds of graduates of old schools as Harvard, the College of Physicians and Surgeons of New York, the University of Pennsylvania, Ann Arbor, our own Chicago schools and others, there are not to be found *fourteen* able to pass the examination for admission into the navy. Indeed, the members of the Naval Medical Board of Examiners have over and over declared that their examination is only such as any properly educated young physician should be qualified to pass without special preparation. It is just as absurd to believe that among these graduates there are not *fourteen* young men to whom the prospect of an assured income from the start is not an inducement. The only possible inference, and one that is highly creditable, is that there are not *fourteen* young physicians in the country who do not hold the honor of their profession so high that they refuse to enter a service where they will be subjected to indignities to which the possessor of a diploma should not be subjected, and so long as this is the case the Army and Marine-Hospital Service will continue to attract the eligible graduates, notwithstanding the allurements of foreign travel on board a man-of-war.

We have already indicated the remedy for this state of things in the elevation of the naval medical officer's position to the level of that of his army colleague, for which the time is opportune. The engineer corps of the navy has taken the lead in framing a bill for its reorganization, made necessary by the changed conditions of the new navy. The days of the reefer—when tacking and wearing were the nautical problems—when steam power was auxiliary and the engineers a tolerated body of despised mechanics—are no longer. The modern man-of-war is a complex machine, which only skilled mechanics of the highest order of attainments can control, and the engineer corps has wisely considered only its own special needs. The medical corps should do the same. There is no reason why the number of medical officers and their requital should be graded by the number and pay of paymasters, engineers and chaplains. Within the lives of the older officers, the medical corps once occupied an independent and distinctive position. The surgeon-of-the-fleet had no parallel. The absurd imitative titles of pay director and pay inspector were created to offset medical directors and medical inspectors. The young medical officer was a ward-room officer from the start. Now he begins his naval career only as an ensign in the steerage, the messmate and associate of

undergraduates from the naval academy. The identity of the medical officer is sunk under the generic designation of the *staff*—with engineers, paymasters, chaplains, constructors, professors of mathematics and civil engineers, notwithstanding the fact that the medical department of the United States navy is contemporary with the creation of a naval force, which first appears on the statutes by act of Congress, approved March 27, 1794, and is consequently, with the line, the oldest of the coördinate branches of the naval service. To restore the medical corps to its former prestige no lower professional standard of pay and position will be equitable and acceptable than that existing in the army to-day. It is absurd that two young graduates shall enter—one the army and the other the navy—after a precisely similar ordeal of examination, to perform precisely the same character of duties, with equal responsibilities and obligations, but with such an enormous disparity of rank and reward as exists between the two services.

We are glad that the *Association of Military Surgeons of the United States* has determined to advocate the cause of its naval associates. The resolution of GEN. J. D. GRIFFITH, of Kansas City, late Surgeon-General of the State of Missouri, looking to the equalization of the medical corps of the two services, commends itself to every physician in the country and we hope they will make themselves heard through their Senators and Representatives in the Congress now in session, when the subject of the general reorganization of the navy shall be considered, and that not only the existing fourteen vacancies may be speedily filled by the flower of the profession, but, as was the case fifty years ago, there may be nearly twice as many acceptable candidates examined and approved in expectation of possible vacancies.

A VALUABLE WORK.

Much information of value is yearly consigned to oblivion by publication in the voluminous annual reports of the various heads of bureaus, chiefs of divisions, etc., at Washington. Volumes issue from the Government printing office by the ton of whose mere existence the mass of the people never become aware. How many of the sixty-odd thousand physicians of the United States have ever seen a copy of the Annual Report of the Chief of the Weather Bureau (late Signal Service)? Some few perhaps have looked over individual reports, and have been impressed with the variety and value of the climatology data being thus slowly accumulated. But they have felt that, however interesting and suggestive the report of a year's observations may be, yet in the nature of things it is by itself of no practical value. For it is only by combining the data for any given point for some five years that they become an index, even then unreliable, of the normal climatic condi-

tions there found. The data for ten years, however, when worked up, are of great practical value; and from the data for twenty years may be deduced with almost perfect accuracy the normal characters of any given climate.

If there be few medical men who have ever seen an ordinary Annual Report of the Weather Bureau, there are fewer still who know that in Vol. I of the report for 1885 there is a series of tables of great value, compiled, as a rule, from all observations from the date of the establishment of the various stations up to 1885. They embrace nearly every feature necessary to an exact and comprehensive knowledge of every element that goes to constitute climate. No physician can study these tables without an appreciation of the extent of his previous ignorance of the climatology of the United States, and without a deep sense of their great value. At that time, however, (in 1885) many of the stations were but recently established, and consequently the data at those points were insufficient. Ten years have now elapsed and should these tables be now brought up to date and published, they would form a volume of great and permanent value, which should be found as a reference manual in the library of every physician in this country.

Some of the tables in the work referred to might be omitted or modified, and other tables might be added. Also, some information about the physical and geological features of the country around the various stations might be appended, and the nature and sources of the water-supply, the natural drainage, vicinity of mineral springs, etc., might be briefly indicated. But, brought up to date even in its present lines, this volume of tables would be of immense practical value, not only to physicians and health-seekers, but, in an economic sense, to the agricultural and horticultural interests, as well as others. It would be a laborious task; but when it is considered that, apart from the daily use made of these observations to forecast the weather, their permanent value depends altogether upon their tabulation as above indicated, it would seem entirely reasonable and proper to ask that the work be done without further delay.

For the present, however, we can only advise those physicians who have not the existing volume to obtain it if they can, for so long as change of climate is to be intelligently prescribed it will prove invaluable. We can not mention all the tables, but will briefly indicate a few, in order that their scope and value may be apparent. These tables show, for each station: Mean normal pressure, by month and year; highest and lowest pressures; mean temperatures, by month and year; mean daily range of temperature; highest temperatures recorded, by month and year; lowest ditto; monthly maxima and minima; mean

temperature at 7 A. M., 11 A. M., and 3 P. M.; mean A. M., P. M., and midnight temperatures: monthly and annual precipitation; mean relative humidity, by month and year; dewpoint, by month and year; dates of first light and first killing frost; dates of last ditto; direction of winds, by month and year; average hourly velocity of winds, by month and year; average cloudiness (scale of 0 to 10), by month and year; average number of clear, fair and cloudy days.

These are some of the more important of the seventy-one tables of this great compilation. The editor of this JOURNAL was one of those who submitted plans for the extension of the work of the weather service into the medico-climatologic field, and naturally we are interested in seeing the successful accomplishment of this work.

LATENCY OF INFECTION AND DISEASE.

An interesting discussion that was continued through two meetings of the Royal Medical and Chirurgical Society of London, brought out some interesting points as regards the so-called latency of certain germ diseases. The participants in the discussion included, among others, such men as JONATHAN HUTCHINSON, DR. P. MANSON, J. ERNEST LANE, SIR W. BROADBENT, which fact it lends a certain importance as expressing up-to-date English opinion on the subject.

Latency, in the sense of the term as used in the discussion, implies the possibility of a disease germ lying quiescent for a longer or shorter period after its introduction instead of at once showing its virulency in the usual way, and the microbes of hydrophobia, syphilis, tuberculosis and leprosy were referred to as affording instances of this phenomenon. The matter is an important one, for as MR. HUTCHINSON stated, it has a very important bearing on some questions of infection; what is often attributed to lack of care may really be only the result of stirring up the soil containing these latent germs. It thus adds, or rather it makes us conscious of a new surgical danger, and one that no precautions can insure against. It is often impossible to say when any germ, except a very few specially inoculated ones, enters the system, and it is probable that we have many of them constantly with us, and among these more especially may be mentioned the ordinary pyogenic microbes and those of pneumonia, tubercle and diphtheria. These lacking the special soil for their development are harmless, but when some disturbance of the health or some accident occurs, as in a case reported by SIR W. BROADBENT, where a young man developed tuberculosis after a fall from a horse, they then take on their activity and produce their morbid symptoms. The germs may be encapsulated and thus released or some other disorder of the system, itself infectious or otherwise, may call out their activity.

Properly speaking, as pointed out by HUTCHINSON, true latency requires that there be no vital activity of germs and we can not therefore include a large proportion of the apparently latent cases of syphilis and probably also of tuberculosis as really falling under this head. His illustration of a field in which the seeds of poppies had lain absolutely quiescent for eight years and had then grown, is an apt one to show what is meant by true latency. Latent bacteria must be either encysted or surrounded by resistant tissues, and perhaps the most striking pathologic example in the human subject is afforded by leprosy, the infection of which it seems may be incurred in a region where it is endemic, and the disorder only appear after many years' residence in a country where it does not normally occur and where a reinfection would seem to be practically impossible. Another, which may perhaps be questioned by some, is that of hydrophobia, the mode of infection of which is altogether special and impossible to occur without the knowledge of the subject, and which has been reported as lying latent for months and years in the system. The diseases, the germs of which are liable to be always with us and from which infection may occur at any time unconsciously, such as tuberculosis, erysipelas, diphtheria, etc., can hardly serve as well as typical examples of latency, though it would be impossible to absolutely exclude it, and their relations to the subject are therefore practically just as important. It matters little, in fact, whether infectious germs are encysted in resistant tissue in an organism that is generally their prey or whether for special reasons that organism is at the time generally resistant as far as the possible breaking up of this resistance by disease or accident is concerned, but it is a very important fact to know that we may by a single exposure create the possibility of an outbreak of disease at some indefinite future time.

There is as was pointed out in the discussion, a possible distinction to be made between latency of the disease and latency of the germ, and it is probable that either condition may exist. A disorder apparently cured may be only latent, as is tuberculosis or syphilis, but the late appearing leprosy and hydrophobia are better explained by the hypothesis that the germ only had been introduced and had been lying quiescent in the system till for some reason or other it was aroused to activity. This would meet the condition of true latency as defined by HUTCHINSON better than would arrest or latency of a disease that had once developed its morbid symptoms; but, as already inferred, the difference is not one of great practical importance. The really important fact, as it seems to be a fact, is that either germs or their products can undergo an arrest in their development or progress that is not actual extinction, and may be again revived to all their original and natural viru-

lency. Our present knowledge of the subject is much more in the suggestive than in the positive stage, but the practical bearings of even the suggestions are almost infinite.

A BASE SORT OF CHRISTMAS STORY.

The president of a prominent life insurance company has contributed to one of our weeklies a "Christmas story," the turning-point of which is made to be the abominable rascality of a young medical examiner to a life insurance company. The scene is laid in Cumberland, Penn., and the rascally young doctor is named VAN DOREN. The crime alleged in the tale—and it is "founded on fact," according to the writer—was the return to the company of a false report on a certain application, for the purpose of intriguing his rival, a young lawyer, out of a matrimonial engagement. The villainous trick works to charm until the last moment, when the scamp becomes conveniently intoxicated, and reveals the fact of his false report and a long chain of disasters to his rival, so that the rival is saved from despair and an untimely grave.

This gross and horribly improbable story has been gotten up for a Christmas story, forsooth, by a man whose business for years has been largely dependent upon the painstaking and truthful work of his company's medical examiners. We do not envy the writer of the story the average current and movement of his mind during his leisure hours, if his inventive faculty can not frame for itself any purer fancies than this that he has given to the public. The story is one that is likely to rebound and create a feeling of detestation against its author in the minds of all the medical men who have anything to do with his company, and he may before long have occasion to regret that his imagination played him so sorry a trick. We are entirely incredulous as to the foundation on fact that is claimed by the writer. If he thinks he has the facts, we believe that he has been hoodwinked, and that his informants have an axe to grind. There is a certain amount of "the horrible example" about the medical wretch of the story, for we are told that he was also intemperate and a bar-room roysterer, who shortly after the exposure of his plot drank himself to death. Perhaps the story has been drawn up to scare some of the author's young medical examiners away from the demon of alcohol. This is the way the narrative is closed:

"The President of the life insurance was very much concerned as to what he ought to do about DR. VAN DOREN. He was immediately dismissed; *cela va sans dire*. But after consulting counsel—and the President was a little bit of a lawyer himself—he couldn't exactly see how the offender could be brought to bar. Fortunately, he (the President) drank him-

self to death in a short space; policy forfeited for non-payment of premium. His rival is still living, with a heart for any fate, and the holder of the limit in, let us say, the *Greatenormous* Life Insurance Company. The story has no moral; it has not even the usual tag—Insure in the *Greatenormous* Life Company."

We are agreed, The story has no moral. It is even devoid of morality, in its implied confiscation of the fair name of medical examiners. In this Christmas season good is to be returned for evil; not evil for evil; much less evil for good.

THE MEDICAL AND SURGICAL HISTORY OF THE WAR OF THE REBELLION.

Several Medical Societies have recently petitioned Congress to reprint the six quarto volumes of the Medical History of the War. The reprinting of this great work would indeed be desirable, but we would like to see the illustrated catalog of the Army Medical Museum printed first. The former publication being in all our large libraries is already accessible to a great many, but the immense collection of specimens illustrating anatomy, histology, pathology and military surgery, is only accessible to gentlemen residing in Washington, or visiting the capital, and the reproduction of this collection in book form would be of the highest educational value.

The publication of a carefully compiled critical review of the medical and surgical records of the Pension Office, showing the subsequent history of the vast numbers of wounded and disabled soldiers, would also be of great utility to the entire profession. The generosity of Congress has been frequently shown in many directions, but here is one that would furnish information of the highest practical value to the country.

BRITISH MEDICAL ASSOCIATION.

The *British Medical Journal* in its issue of Dec. 21, 1895, publishes a list of the members of the Association, from which it appears that the membership of that body has now reached 18,100. This shows what systematic organization can accomplish. Let our members signalize the year 1896 by bringing our membership up to 12,000. One new member by each member will do it. This done, we may surpass any other in 1897. We have great reason to be pleased with the steady increase in the membership list, and it shows that our members are taking hold in earnest, but "be not wearied in well doing." Let there be no rest until all regular practitioners are organized under the ASSOCIATION for the general welfare of the profession.

HONOR TO DR. DRAKE. It is suggested that the name of Dr. Daniel Drake be perpetuated by the erection of a monument in Cincinnati; or, that the new medical department to be established by the University of Cincinnati, be designated the Drake Medical College. *Medical Bulletin*.

CORRESPONDENCE.

The International Scientific Language.

CHICAGO, Dec. 23, 1895.

To the Editor:—I was very much pleased with your article in the last number of the JOURNAL on "The International Scientific Language," and I think that in the main I agree with you. But I feel sure that you did not lay sufficient stress upon the unfortunate fact that the ability to speak French is quite a different thing from the translating knowledge. The former is rarely acquired after a certain age and almost never outside of a French school or a French-speaking locality. For instance, the only French that I heard spoken by Americans at the Pan-American Medical Congress—with one or two notable exceptions—was of that variety which Chaucer designated as of "Stratford-atte-Bow," and it was excessively painful to listen to. When the time comes that a man will commence to prepare himself for the study and practice of medicine at 12 years of age,—as you know is often done abroad the acquisition of conversational French will form part of his preliminary education, but as things now are, the ability to *translate* technical articles is about as much as one medical man out of a hundred will be likely to acquire.

But this is not what I set out to speak about. I should feel obliged if you could tell me where I can procure Kostomoir's Greek work, "On Ophthalmology and Otology of the Ancient Greeks." I have not much intention of translating it, but I wish it for reference and for my library.

Very sincerely yours, CASEY A. WOOD, M.D.

CLEVELAND, Dec. 30, 1895.

To the Editor:—I read with much interest your address on "The International Scientific Language," and heartily indorse what you said. Especially am I in accord with your ideas of the practicability of French as against the sentimentality associated with the Greek language. I sincerely hope that you will continue to use your influence to have French indorsed as the international language. Very truly yours,

WILLIAM E. WIRT, M.D.

A Typographic Error.

MUSCATINE, IOWA, Dec. 24, 1895.

To the Editor:—As I was reading an article in the issue of December 21, p. 1090 of the JOURNAL, I came across this word, "tribaism," in second column, line 41. I could not find its meaning from any books at my command nor from any of my "Roman friends." I am yours fraternally,

ELLIOTT R. KING, M.D.

ANSWER:—The word was misprinted by the omission of the letter "d." It should have been printed *tribadism*.

BOOK NOTICES.

Injuries and Diseases of the Genital and Urinary Organs. By HENRY MORRIS, M.A., M.B. Lond., F.R.C.S. Svo. cl. pp. 478. with ninety-seven illustrations. New York: William Wood & Co. 1895.

This is an excellent monograph, quite up to date, with many special illustrations. The diseases and injuries of the scrotum, testicles, vesiculæ seminales, penis, urethra, prostate and bladder are treated of in the book. The author's advice, based as it is on large experience, is sound and trustworthy. In the matter of style, there is some ground for criticism, but as its teaching is in accord with modern views on the subject, little need be said. The book like many others, might be easily pruned, so that a loss of 5 per cent. of its superfluous words, would add to its clearness. These are usually Britishisms. "The poor fellow described them as being like to round clear

bladders or berries," p. 264. "And was thereby able to suture the cut edges of the floor *together* around a No. 8 catheter," p. 265. "The pus burrowed *up* through the pelvis, etc.," p. 265. "The average time from *start to finish* is from three to nine months," p. 323. "One feels that the rectum is close *up* to the posterior surface, etc.," p. 333. "Nothing but a layer of cellular tissue, and *not always* that separates," p. 333. "If these means afford positive signs, *well and good*; but if not, we must not exclude," p. 440. Barring this peculiarity, the book is to be commended for its practical value, and its sound common sense.

An American Text-book of Surgery, for Practitioners and Students by various authors. Edited by WILLIAM W. KEEN, M.D., LL.D., and J. WILLIAM WHITE, M.D., PH.D. Second edition, carefully revised. Royal octavo, cl. pp. 1248. Philadelphia: 1895. W. B. SAUNDERS. For sale by subscription. Price \$7.00.

Seven professors of surgery: two hospital surgeons, and one professor of ophthalmology have modestly consented to anonymously assist the responsible editors in the production of this well-known and deservedly popular text-book.

The chief criticism directed against the first edition, was that it was unequal in the relative importance given the various topics, that certain unusual operations were enlarged upon by essayists to the exclusion of other more common topics of everyday interest to the young practitioner. This criticism has been met in this edition by many additions that will materially increase the value of the book. The alterations have made only slight increase in the number of pages. Additions to surgical knowledge follow one another with such rapidity that while the pages of a text-book are still fresh from the press, omissions begin to be noticed. The additions in present volume include a section on acromegaly, a chapter on symphyseotomy, statements concerning the effect of modern small arms in military surgery, the Murphy button, the Hartley-Krause method of Gasserian ganglion removal, Schede's operation of rib resection, and many minor changes. That the book has improved there is no question, and we have no doubt the third edition will be called for in about the same time that has elapsed since the appearance of the first.

A Manual of the Practice of Medicine. By GEORGE ROE LOCKWOOD, M.D. Illustrated. Svo. cl. pp. 935. Philadelphia: W. B. Saunders. 1896. Price, \$2.50.

The author says that it has been his aim "to present in this manual the essential facts and principles of the practice of medicine in a concise and available form."

It must be conceded that he has fairly succeeded, but in our judgment much condensation can still be done with advantage. A sample of unnecessary verbiage may be seen on p. 263 where the author says: "By such exercise the really weak heart *goes to pieces*, while the healthy neurotic heart *clears up*."

It would be extremely interesting to have the author inform us of the exact pathologic change which occurs in the heart when it "goes to pieces," by any kind of exercise, or when being "neurotic" it "clears up."

Many a good book is spoiled because its author is careless in the use of words. In these days when there are so many excellent works on nearly every conceivable subject, every superfluous word inflicts unnecessary toil upon the reader. The old system of dosage is used.

NEW INSTRUMENTS.

NASO-PHARYNGEAL BLADES AND UNIVERSAL HANDLES.

BY J. E. SCHADLE, M.D.

ST. PAUL, MINN.

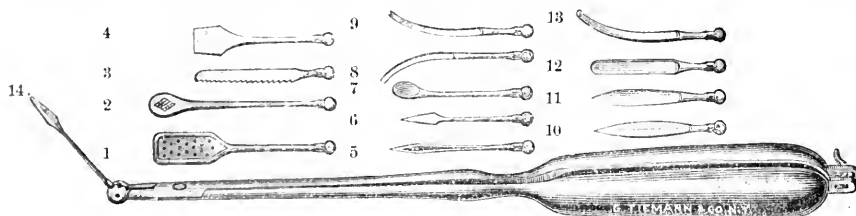
This instrument has many advantages other than its "*en plus minus*" construction, which is, perhaps, the first thing that appeals to one upon inspecting it. By means of the ball

and socket joint, effected by the union of the different blades with the holder, the operator is enabled to fix his instrument at any angle he desires to fit the exigencies of the case presenting, and to hold it perfectly firm—as firm as a needle is held in a Hagedorn needle-holder. The handle is made sufficiently heavy to have it balanced well, and to be of utility in cutting where force is required in a small space.

Inasmuch as many of these blades are new, I would like to describe them briefly so that they may be better understood. The first and second blades (see cut farthest to right and immediately over the handle) are designed to be used in making caustic or alternative applications to the base of the tongue in the treatment of enlarged blood vessels or masses of lymphoid tissue. No. 1 serves an especially good purpose in such work for the reason that the remedy can be accurately applied and the epiglottis can, at the same time, be thoroughly protected. It is a small metallic, shovel-shaped officer with a smooth back, into the upper surface of which is inserted a rectangular piece of metal full of small perforations, not unlike a cullender. No. 2 is on the same principle but much smaller and of circular form, adapted more particularly to the cauterization of small points. No. 3 is a saw particularly adapted to the breaking up of adhesions between the soft palate and the posterior wall of the pharynx. No. 4 is a dissecting blade. Nos. 5 and 6 are sharp spear-pointed blades designed for exploring pus cavities, as in peritonsillar and tonsillar abscesses. Their use is invaluable, causing but little pain and enabling us to locate with perfect accuracy the site for the evacuating incision. No. 7 is a cup-shaped curette or scoop which can be used in clearing out tonsillar pockets or crypts of concretions and breaking down the diseased walls. Nos. 8 and 9 are curved probe-pointed blades which answer an admirable purpose in removing tonsillar shreds

the conference of representatives of the health departments of Illinois, Iowa and Missouri, which was held in Chicago last October, met in Springfield, Ill., December 20. Drs. Scott and Griffith, of the Illinois Board of Health, Dr. J. A. Scroggs, Secretary of the Iowa State Board of Medical Examiners, and Dr. Paquin, of the Missouri State Board of Health, were present. It had been suggested that the committee formulate a plan for the issuance of medical certificates which would be recognized in either of the three States, but this was not attempted and the committee confined its work to the preparation of a report regarding medical colleges, which will be presented at the next meeting of the three State boards. This report recommends that the boards shall recognize only such medical schools as have facilities for teaching all branches of medicine and are well equipped for the work. They must have laboratories and teach physiology, pathology, chemistry, bacteriology, microscopy and have clinical resources. For graduation the recognized colleges must require no less than four years of study and not less than three full courses of lectures of six months each.

Boards of Health to Control Burials. A law has been passed in New Hampshire which provides that boards of health in cities shall have charge of the granting of permits for the burial of the dead: and no interment, disinterment or removal from the city of any dead body of any human being, nor deposition thereof in any tomb or vault, shall be made without a permit from said board or their duly appointed agent, nor otherwise than in accordance with said permit. No such permit shall be issued until there has been delivered to the board a satisfactory written statement containing the facts required by Section 1 of Chapter 173 of the Public Statutes, together with the cer-



or masses remaining after tonsillotomies. They are also of use in severing adhesion bands sometimes found existing between the Eustachian cushion and the vault of the naso-pharynx.

No. 13, like No. 4, is also a dissector and intended to be used in breaking down adhesions between the tonsil and faucial pillars.

The instrument has been constructed for me by George Tiemann & Co., of New York City. Mr. Tiemann will, I believe, be glad to show the handles and blades to any one who feels sufficient interest in it to call upon him.

PUBLIC HEALTH.

A Farm Colony for Epileptics in England. At Chalfont St. Peter, Buckinghamshire, a freehold farm to the extent of 135 acres has been given by Mr. Passmore Edwards to the National Society for the employment of epileptics. He has erected a home thereon, beside offering to build two others, one for boys and one for girls afflicted with epilepsy. There have already been some iron buildings occupied for over a year by eighteen patients, and the number of colonists has lately been increased to thirty six. Each inmate, if able, pays 10 shillings a week, and all are employed, chiefly in farm work, which is held to have a beneficial effect over the malady, inasmuch as the patients have fewer seizures so soon as they are actively employed.

To Regulate Medical Practice. The subcommittee appointed at

tificate of the attending physician as required by said chapter, or in absence thereof such other evidence as may be required by law. Upon the receipt of such statement and certificate the board shall forthwith countersign the same and transmit it to the city clerk for registration.

Public Baths in Brooklyn. Health Commissioner Emery sent to the mayor December 16 a communication in reference to the establishment of public baths, as proposed by an act of the legislature in 1895. This act provides that all cities of the first and second class shall establish and maintain such number of free public baths as the local board of health may determine to be necessary. Each bath shall be kept open not less than fourteen hours and be provided with hot and cold water. The erection and maintenance of river or ocean baths shall not be deemed a compliance with this law.

The public baths of Brooklyn now are river baths. Dr. Emery engaged the services of W. P. Gerhard, honorary consulting engineer of the health department, to assist in the formation of plans. He sent Mr. Gerhard's report to the mayor, together with plans for various styles and forms of bath buildings. The commissioner, recognizing the fact that the establishment of free public baths of this character will be in the line of an experiment, submits a design, calling for the construction of a one-story and basement building, wherein a separation of the sexes can be obtained and simultaneous baths afforded. The bath would cost probably not more than \$12,000 or \$15,000, exclusive of the land, and would provide baths for 450 persons a day. This building, said the commissioner,

can be constructed in such a manner as to permit the addition of a story, should the experiment prove to be satisfactory. In his opinion, a closely built up and densely populated portion of the city should be selected as a site. He thinks a suitable place can be found in the fifth ward, and that the maintenance would cost about \$10,000 a year.

Department of Public Health.—At a meeting of the North Texas Medical Association, at Greenville, Texas, the following preamble and resolutions were adopted:

WHEREAS, In the opinion of this Association, the condition of the United States demands a department of Public Health, under the control of a secretary, who should be a member of the Cabinet of the President of the United States, in the interest of the public welfare and the prosperity of our country, therefore be it

Resolved, That our members of Congress be urged to support the bill now pending and use their influence in securing its passage;

Resolved, That the secretary be requested to transmit to our Senators and each Representative in Congress a copy of this preamble and resolutions.

Resolved, That a copy of this preamble and resolutions be spread upon the minutes of this Association.

J. C. ERWIN, President.
R. D. POTTS, Secretary.

GREENVILLE, TEX., Dec. 11, 1895.

Typhoid Fever in Duluth. *To the Editor:*—The outbreak has been serious. The Health Officer reports that it is declining and that the profession are coöperating. I am now for more than a month making a series of analyses of the public water supply, both chemic and bacteriologic. We are leaving no known method untried to limit the disease or to discover the cause of the more than usual morbidity and mortality of the present outbreak.

Allowing water carriage all the influence it can be proved to have in distributing the specific cause of enteric fever, I believe the soil and other carriers are to a very considerable extent responsible and too frequently neglected.

Respectfully, CHARLES N. HEWITT, M.D.,
ST. PAUL, MINN., Dec. 27, 1895. Secretary.

A Board of Health Circular on Diphtheria.—The following is an extract from a circular of information issued December 15, to the medical profession of the city of Brooklyn, N. Y., regarding diphtherial antitoxin, the importance of isolation and hospital treatment. It is signed by Dr. Z. Taylor Emery, Commissioner of Health:

"Recognizing the fact that there is at the present time an unusual prevalence of diphtheria in this city, and realizing that measures instituted to limit its spread must receive the hearty coöperation of the medical profession in order to be effective, the Department of Health desires to call your attention to the following recommendations in the hope that they will meet your approval and enlist your active support.

"It is urged in every suspicious case of sore throat, especially when exposure to diphtheria is probable, a culture should be taken for bacterial examination so that a positive diagnosis may be made at the earliest possible date. Genuine cases of diphtheria may then be properly isolated and prevented from exposing others; while persons who have not the disease may be relieved from the necessity of such isolation and the children residing on the premises may be allowed to return to school. Before the patient is isolated it is advised that the carpet and all unnecessary furniture should be removed from the room, or, if it is not practicable to remove the carpet, that it should be covered with crash which should be kept in place until after proper disinfection of the apartment. In this way the removal of the carpet for subsequent disinfection may be avoided. As a result of every effort to limit the spread of diphtheria will depend chiefly upon the degree to which isolation can be carried out, it is urged that every case be isolated as thoroughly as possible, and that, with the exception of the nurse, all persons, especially children, be excluded from the room.

"The Department is prepared to furnish free of cost to any member of the profession who applies for it at this office, fresh anti-diphtheric serum of a high grade of antitoxic power, or condition that the full dose shall be given and that the blank

accompanying the bottle shall be filled out and returned to the Department. The use of antitoxin in Brooklyn having been as yet limited, your attention is called to the following figures from the Berlin authorities: Patients treated with antitoxin from Oct. 1, 1894, to April 1, 1895: Cases in private practice, 4,391; deaths, 349; mortality rate, 7.9 per cent.; hospital cases treated, 1,442; deaths, 210; mortality rate, 14.6 per cent.; total cases treated, 5,833; deaths, 559; mortality rate, 9.6 per cent.

"The great majority of cases of diphtheria occur in crowded tenements where proper supervision and isolation are impracticable or impossible. In such cases the Department urges the removal of the patients to the Board of Health Hospital, where they will receive the best of care, and where, if necessary, the mother or some other member of the family can go and remain as a nurse during the patient's illness."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Michigan: Detroit, Dec. 21 to 28, 3 cases, 1 death; Rochester, Dec. 21, smallpox reported.

SMALLPOX—FOREIGN.

London, Dec. 7 to 14, 1 death.
Dublin, Dec. 7 to 14, 1 case.
Glasgow, Dec. 7 to 14, 1 death.
Constantinople, Sept. 1 to 30, 10 deaths.
Buda-Pesth, Dec. 2 to 9, 2 cases.
Cardiff, Nov. 23 to Dec. 14, 1 case.
Madrid, Dec. 3 to 10, 5 deaths.
Montevideo, Nov. 2 to 16, 6 cases.
Nogales, Dec. 14 to 21, 2 cases.
Odessa, Nov. 23 to Dec. 7, 10 cases, 2 deaths.
Rotterdam, Dec. 7 to 14, 2 cases.

CHOLERA—FOREIGN.

Constantinople, Sept. 1 to 30, 18 deaths.
Bombay, Nov. 19 to 26, 6 deaths.
Calcutta, Nov. 10 to 17, 45 deaths.
Egypt, Nov. 27, to Dec. 5: Damietta, 18 cases, 19 deaths; Borachia, 9 cases, 10 deaths; Salamoun, 1 death; Farascoor and Siunomdij, 15 cases, 13 deaths; Zagazag, 3 cases, 2 deaths.

YELLOW FEVER—FOREIGN.

Cienfuego, Dec. 8 to 15, 2 deaths.
Sagua la Grande, Dec. 2 to 14, 20 cases.
Santiago de Cuba, Dec. 7 to 14, 29 deaths.

MISCELLANY.

To Preserve Health of Females. Every person, firm or corporation employing females in any manufacturing, mechanical or mercantile establishment in New Hampshire, it has been enacted, shall provide suitable seats for the use of the females so employed, and shall permit the use of such seats by them when they are necessarily engaged in the active duties for which they are employed. A fine of not less than \$10 nor more than \$30 for each offense is the penalty prescribed for a violation of this law.

The Legal Valuation of a Lost Limb or Member. In the case of James Roberts, a brakeman, against the New York, New Haven and Hartford Railroad Company, before Judge Lacombe in the United States court, the jury returned a verdict for the plaintiff for \$5,000. Roberts sued to recover \$50,000 damages for the loss of his right leg through being struck by a low bridge. In the case of Rouss vs. the New York Biscuit Company, before Judge Wallace in the United States circuit court, the jury recently returned a verdict for \$10,000 for the plaintiff. Rouss lost his right hand through an accident while at work in the defendant's factory. He sued to recover \$20,000.

Can Obligate Herself for Payment. That a married woman can render herself liable by special contract for the services of a physician in attending her, the Supreme Court of North Dakota says can not be doubted, under the statute of that State. And a married woman, who has in fact incurred liability for medical attendance made necessary by an injury for which an-

other is liable, the court holds, in the case of Chacey vs. City of Fargo, decided Nov. 4, 1895, may recover as part of her damages a sum equal to the amount of such liability the same as an unmarried woman, although she has not paid for such medical attendance at the time of trial.

Inebriate Retreats in Austria. According to *Hospital*, a plan of curative treatment of habitual drunkards is likely to be taken up by the government in Austria. It is proposed to establish retreats where inmates shall be received for two years. They may enter of their own accord, or be placed there under compulsion. The period of retention may be curtailed to one year, the patient being released on a system resembling that of ticket of leave. If a patient is shown to be incurable he may be committed for life.

Circumstantial Evidence of Abortion. In the case of Dixon vs. State, decided by the Supreme Court of Nebraska, Nov. 7, 1895, where there was evidence that the health of the girl upon whom it was charged that an abortion had been criminally produced had to the time of the use of an instrument therefor been good, and there was evidence tending to show that the fetus, when born, was well developed, the court holds that this was sufficient to justify the finding that it was alive, or vitalized; especially in view of the expert testimony which was introduced. There was affirmative evidence in this case that the woman in question had never been advised that such an act was necessary to preserve her life. There was also evidence that, down to the time of this event, she was a woman of, ordinarily good health. From these facts and from the other circumstances which the facts tended to prove, if the direct evidence was to be believed, the court holds that it was not only a fair inference, but it was an absolutely necessary inference, that the mother's life was not in danger, and that the object of performing the operation was not to save her life, but to prevent the birth of a child and to avoid disgrace. The inference was considered equally strong that no such operation had been advised by physicians as necessary to save her life.

The Twelfth International Medical Congress. The date of the Twelfth International Medical Congress, to be held in Moscow, has now been definitely fixed for the week August 19-26, 1897—cholera and the state of the political atmosphere permitting. The Czar has signed the Imperial Rescript sanctioning the congress, and His Majesty's uncle, the Grand Duke Sergi, Governor-General of Moscow, has consented to be its patron. The President will probably be Professor Klein, the Dean of the Medical Faculty of Moscow University; Professor Erismann, Professor of Hygiene in the same University, will be General Secretary. The Russian Government has granted a subvention of 120,000 francs toward the expenses of the congress. The official languages of the congress will be French and German.

British Medical Journal.

The Red Cross Advance in China. Dr. B. C. Atterbury, of Tientsin, China, is quoted by the *Christian Herald* as showing that the Red Cross is beginning to be appreciated by officers of high grade in that country. He is reported as saying:

"The Red Cross work, besides affording foreigners a fine opportunity to show practical sympathy with the suffering Chinese, has also stirred up some of the higher native officials to take an interest in their own soldiers. Many of the soldiers are most superstitious, and have great faith in the power of charms to heal their wounds. One general, with his arm shattered by a ball, thinking the daily dressing too slow a method of cure, called in a fortune teller. This charmer wrote some prayers on a piece of paper; this was burned and its ashes were made into a medicine, which was taken for four days. During this time the wound was not looked after, and the too superstitious general died from blood poisoning before the paper-prayer medicine had a chance to work properly. These men also believe most thoroughly in a certain plaster, which has not only power to draw out the bullet, but will also heal the wound without any after deformity. On the other hand, several more intelligent mandarins, seeing for themselves the su-

periority of the western surgery, have asked to have foreign trained men located in their camps, promising all necessary money for the hospitals. I have seen Viceroy Li several times since his return from Japan after signing the treaty of peace. The Viceroy is still the only official in China who appreciates and understands western civilization. The wound in his cheek has healed, leaving only a small dimple where the ball entered."

Liability of Corporations to pay Physician. *Deane vs. Gray Bros. Artificial Stone Paving Co.*, decided by the Supreme Court of California, Oct. 9, 1895, was an action brought by a physician and surgeon to recover the value of professional services alleged to have been rendered to one Barsotti for and under the employment of the defendant corporation. The trial court instructed the jury that it was an immaterial consideration whether Barsotti was or was not at the time of the accident to him in the employ of the defendant, if the defendant employed the plaintiff to treat him for his injuries. This was sound law, says the supreme court, if the principle of *ultra vires*, which forbids a corporation to exceed the powers conferred upon it, was not in the case, but certainly unsound if that question were properly presented. Except in the latter case, a moral obligation would support a contract of this character. The further instruction that if defendant knew that plaintiff was so treating him on its account, and relied upon the defendant, and defendant made no objection thereto, that defendant was liable in this action, the supreme court holds did not embrace a sound principle in law, and necessitated a reversal of the judgment, rendered for plaintiff in the court below. Whether it be claimed that such facts constituted a ratification or an estoppel, it is declared equally unsound. Certainly, the court says, the mere knowledge of a corporation that some one, perchance a total stranger, has represented that such corporation would compensate a third party for services rendered to such stranger, casts no duty upon the corporation to take any affirmative action. It is not for the corporation to disillusionize such party as to the reliance placed by him upon the statements, but rather his business to substantiate them before rendering the services. Therefore the court concludes that knowledge upon the part of the defendant that the plaintiff was rendering services to the injured man and was relying upon it for compensation for the performance of such services rendered, taken in connection with the fact that the defendant, possessing such knowledge, made no objection thereto, were circumstances wholly inadequate to create a legal liability against the defendant.

Concerning Ethics. Commenting upon the resignation of Dr. Cyrus Edson and the expulsion of Dr. Edward C. Mann from the Medical Society of the County of New York, the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, in its issue of Dec. 7, 1895, makes the following astonishing statement:

"It would appear that there has been sudden and unlooked for stimulation of the ethical conscience of a body that has for ten years or more been in affiliation with the 'no Code' State Medical Society. We trust that the change of heart is deep, sincere and not based on any alleged approaching bankruptcy of the New York profession. . . . The quickening of ethical conscience in the society, whereby professional honor is appealed to by many who have heretofore objected to any ethical rules, shows clearly enough the absolute necessity for rules of some sort. 'No Code' may be extremely interesting as a theory, but it invariably has commercialism as its underlying basis."

This proved a sufficient reason for the *Philadelphia Polyclinic*, in its issue of Dec. 14, 1895, to propound the following conundrums, which, in the vernacular of Dr. De Wolf Hopper Syntax, may be termed "corkers":

"We should like to ask the *JOURNAL* in all sincerity the following questions: *First*, is the signing of certificates of nostrums by a member of the New York County Medical Society, a no Code institution, more culpable than similar action on the part of a member of the *AMERICAN MEDICAL ASSOCIATION*? *Second*, is there any provision in the constitution or rules of the *AMERICAN MEDICAL ASSOCIATION* by which one of its officers who violates its Code of Ethics can be disciplined by the Association itself in the absence of action upon the part of his local society?"

We may with propriety add: *Third*, is it a greater moral crime against ethics to be a member of the Medical Society of the State of New York than to advertise in the various journals that one is prepared to go to any part of the country to do any sort of professional consulting or surgical work. We wait with some interest the JOURNAL's answer to these pertinent questions.—*Buffalo Medical Journal*.

ANSWER:—1. No.

2. Charges may be filed with the Judicial Council.

3. Degrees of "crime" are not anywhere stated in the Code.

Gray Hair Restored to Black.—Dr. George W. Griffiths of Louisville has contributed to the *Journal of Cutaneous and Genito-Urinary Diseases*, for September, a report of a case of which the following is an abstract:

"The subject of this report was an engineer, in the Fire Department of the city above named, 65 years of age, who was on duty during the alarming conflagration that occurred early in January of the past year. The night was bitterly cold, the streets being covered with snow and ice. He was out on duty from eleven o'clock in the night until two o'clock of the following afternoon, except when he was taken away overcome by sheer exhaustion, and sent in a carriage to his home, where he remained two or three hours and again returned to duty. Two or three sections of hose were leaking near his engine, and the spray was blown by a strong north wind until he was covered from head to foot with ice, which became so thick that it had to be cut or broken off from his clothing. This man was constantly at his engine, exposed to the north wind, which was carrying the spray of water from the broken hose. The top of his head was the warmest part of his body; his eyebrows and whiskers became wet, and were frozen stiff. He had a red skull-cap over his head, and his helmet on top of that: his head was not exposed at all, nor any hair, except the eyebrows and whiskers.

"I saw him the next day, when he had a very feeble pulse, and was much exhausted and worn out. He has not been in robust health for some time. The next afternoon after the exposure to the severe cold, as I have indicated, his hair turned black; and the wonder becomes greater when we consider that his hair was perfectly white before. He has been gray for eight years, and for the past three years perfectly white; before that he was blonde. Now his hair is black. I have known this gentleman for over forty years. The hair is oily, and does not seem to be dead at all. His head has been very carefully scrubbed several times, as I was inclined at first to think the change in color was caused by cinders or other foreign matter; but such did not prove to be the case."

Camping-out in Florida in Winter.—A Virginia correspondent of the *Independent* writes favorably of his experiences as to out-of-door life in the winter in Southern Florida.

"December and January are the coldest months, and these are best passed along the Gulf Coast, or on the east, south of Rockledge. The scenery is tropical and picturesque, and at this season the days are pleasant and the nights are cold enough to ensure sleep. Take your flannels and some knockabout clothing along, and, if you care for sport, add an assortment of fishing lines and your best shotgun. Do not take rifle or revolvers, unless you expect to make use of a wagon. Limit your toilet articles to absolute necessities. The shotgun and fishing tackle will be your best friends, and will render it easy for you to keep down expenses. The great point is to take just enough without touching on the superfluous. A favorite method with some campers is to hire a large covered wagon, similar to the almost obsolete 'prairie schooner,' and in this to make the tour of the State. They make camp anywhere along the roadside, or back on the bank of some lake or river, sleeping in their wagon and stopping wheresoever fancy suggests or night overtakes them. If there are three or four in the party, the expense is scarcely increased, the extra cost in one direction being saved in another. With a wagon many conveniences can be carried which should otherwise be avoided. If any of the party own rifles, these could be taken along, and would not be found amiss. In many parts of the State, there is large game. The permanent camp is the most comfortable and, if you are averse to exertion, perhaps the best; but wandering over the State is certainly the pleasantest and most in-

spiring. If this is your choice do not stop until you reach the extreme limit of your proposed area of travel—say, Punta Rassa or Charlotte Harbor on the west, or some of the coves or inlets of Indian River on the east. In this section the winter average of the mercury is about 70 to 75 degrees; and even very hot days, with light, off-shore winds, are generally followed by cool nights, in which that sultriness known to moist sections is seldom felt. One of the wonderful peculiarities of Florida is the rapid radiation and dispersion of heat after night-fall. I have slept night after night, for weeks and months, in a hammock slung between two pines, and even during the hot months of July and August rarely felt uncomfortable."

Medical Practice in Armenia.—An Armenian lady physician, now sojourning in Vienna, is reported in one of the London papers as having delivered a lecture showing the dark past and better prospects of the women of her land, in respect of medical care and a higher education. In the course of her lecture, she stated that she would have to deny Professor Albert's assertion as to the inferiority of women, as far as the Armenians are concerned. She said when the Armenian male looks around him, he can certainly not say that all he sees is man's handiwork, for it is rather woman's. The products of industry which have made the country famous—silks and wools, carpets and embroideries—are all made by women in Armenia, from the treatment of the raw material and the designs to the final process of manufacture. No male Armenian claims to have had a part in this work, nor does he dream of looking down upon woman as an inferior being. There is not a single proverb in all the dialects of the country that ridicules woman, although there are innumerable ones in her praise. Armenians say, "Let women learn all they can; they will be so much more useful, and we will marry them all the more willingly." She mentioned that women were now to be admitted to the St. Petersburg University, and predicted great results from this grand opportunity, as hundreds of families whose girls have passed through the grammar schools and seminaries in Tiflis, declared they should send them to study medicine, and so obtain relief from the terrible dearth of doctors in Armenia.

Hygienic Exposition of Warsaw. Consul Rawicz writes from Warsaw, Oct. 15, 1895:

The second Hygienic Exposition of Warsaw will be held in the city of Warsaw, Poland, during the year 1896. The exposition will be opened on the 15th of May, and will close on the 15th of July. The first hygienic exposition in Poland was in the year 1887, and, judging from the success which the undertaking met with at that time, and taking into consideration the interest shown at present among medical men and the public at large in hygiene, the usefulness of the new exposition would seem to be assured. At present there are nine committees at work: 1, physico-chemic; 2, parasital; 3, architectural; 4, pedagogic; 5, on hygiene of industry; 6, on hospitals; 7, pharmacutic; 8, statistic; and 9, public hygiene. The several committees have been assigned the following subjects:

1. The committee on physico-chemistry will take into consideration: *a*, air, water, light; *b*, food in general; and *c*, articles connected with the above, as kitchen utensils, paints, wall paper, and poisonous vegetables.

2. The parasital committee, the question of sterilization; also, the utensils used for the culture of bacilli, showing exhaustively the method of ascertaining their presence and the means for their destruction.

3. The architectural committee, human dwellings in general, past and present, and the latest improvements in hygienic building.

4. The pedagogic committee, the hygienic mode of caring for children; construction of school houses; all systems of school education, and school rooms and furniture.

5. The committee on hygiene of industry, the hygienic conditions prevailing in the homes of laborers, shops and factories; also, food and drink and vital statistics.

6. The committee on hospitals, the history and statistics of hygiene and the modern hospitals of the world.

7. The pharmacutic committee, the literature and history of pharmacy, patent medicines, furniture, medical instruments, and all pharmacutic results.

8. The committee on statistics, the blanks, plans, diagrams, drawings, books, and all printed matter on the subject of hygiene, meteorology, geology, hydrography and anthropology in all their details, and all sciences connected therewith; also, to provide a series of lectures and reports on its work.

9. The committee on public hygiene, the manner of living, dwellings, etc., of all classes of the population from a sanitary point of view.

Each of the above committees is composed of at least three members selected from among the doctors of medicine, professors, engineers and other specialists, under the presidency of the general committee, composed as follows: Professor Brodewski, President; Professor Przewski, Vice-President; Professor Proiecke, and Engineers Grotowski and Mascicki, members; and M. Polak, M.D., Secretary.

Awards of gold, silver, and bronze medals will be made; also, diplomas and letters of honor. *U. S. Consular Reports*, December, 1895.

A Lay View of German Chemists.—"Made in Germany" is now the recognized trade-mark for chemicals throughout the world. The dyes and by-products derived from coal tar have become a classical instance, or, as Bacon would have said, a glaring example. As we have stated, the fatherlanders have captured these trades from us. Go to Elberfeld, and what do we see? At the Farbenfabriken, besides first-class works, we are shown a laboratory unsurpassed, perhaps not equaled, in London, and employed in research or in the business there are sixty high-class chemists. In the Badische anilin und sodafabrik seventy-eight chemists are engaged. An expert witness told the Gresham commission that six skilled chemists was the maximum number employed in any English color works, if indeed, there were so many. These men are unceasingly active in research. The price to pay for progress is eternal vigilance. Every hint from England, France, America, or Italy is tried; every new material tested; every hopeful process patented. The great works at Höchst made in 1890 from 1,700 to 1,800 colors, they employed 3,000 hands, seventy chemists and twelve engineers. A firm in Offenbach with 300 workers had forty-five investigators. The lesson that has been driven home in the fatherland is that industrial processes carried on upon a large scale give great chances for discovery. Just as gas making gave anilin so the soap boilers' lye yielded iodine, the waste of salt gardens bromine, the mother liquors from the springs caesium and rubidium, the acid chambers selenium and thallium, the mines and metallurgical works gallium and germanium. Therefore, the "chemiker," on the other side of the Rhine, is always looking out for something new. He found it in the benzidin and azo dyes, the former giving Congo red and chrysamin, "the most important discovery of modern times so far as cotton dyeing is concerned." In short, as Dr. Ostwald has said, it is now a firm article of belief that "the secret of German industrial chemistry is the recognition that science is the best practice." In England it is greatly to be feared there still lingers faith in "the rule of thumb." *London Telegraph*.

The Visceral Complications of Erythema Exudativum Multiforme.

Osler (*American Journal of Medical Sciences*, December, 1895) describes eleven cases of erythema with especial reference to the visceral lesions. By exudative erythema he says that we understand a disease of unknown etiology with polymorphic skin lesions—hyperemia, edema, hemorrhage, arthritis occasionally and a variable number of visceral manifestations, of which the most important are gastro-intestinal crises, endocarditis, pericarditis, acute nephritis, and hemorrhage from the mucous surfaces. Recurrence is a special feature of the disease, and attacks may come on month after month, or even throughout a long period of years. Variability in the skin lesions is the rule, and a case may present in one attack the features of an angio-neurotic edema, in a second of a multi-forme or nodosum erythema, in a third those of peliosis rheumatica. The attacks may not be characterized by skin manifestations: the visceral symptoms alone may be present, and to the outward view the patient may have no indication whatever

of erythema exudativum. Of the eleven cases reported the visceral complications were as follows: In all gastro-intestinal crises—colic usually with vomiting and diarrhea; five had acute nephritis, which in two cases was followed by general anasarca and death; hematuria was present in three cases; hemorrhage from the bowels occurred in three cases, from the stomach in two cases, from the lungs in two cases, from the nose in three cases; one patient had spongy and bleeding gums; two patients presented enlargement of the spleen; in one there was recurring attacks of cough and bronchitis without fever; in one case there was a heart murmur. Five cases had swelling and pain in the joints. In only one of the cases reported was the attack single. In the others there were multiple outbreaks distributed over periods ranging from two months to eight years. The recurrence of severe attacks without cutaneous manifestations is a remarkable circumstance to which especial attention is directed. The relation of this disease to rheumatism and the question of the infective nature of the disease are not discussed because the author wished to emphasize the importance of the visceral manifestations of the process, which is also shown by the fact that in sixty-one cases collected by Osler (including the eleven cases now described for the first time) there were thirteen deaths, a percentage of 21.3.

The Etiology of Ozena.—Abel (*Zeitschrift für Hygiene und Infektionskrankheiten*, Bd. 21, Heft 1) concludes an elaborate bacteriologic and literary study of the processes included under the term ozena, as follows:

1. The mucous membrane of the nose is subject to a peculiar disease which begins with the appearance of isolated, minute masses of viscid muco-pus that rapidly dry into crusts. The process may extend and come to involve large districts of the nasal mucosa.
2. The above appearances are accompanied with actual changes in the mucous membrane; whether hypertrophy is the first change in all cases can not be said for certain, but the final result of the process is atrophy of the mucosa and hence the term rhinitis atrophicans.
3. In a series of these cases decomposition occurs in the crusts which is recognized by the unpleasant odor. This odor is an inconstant and secondary symptom. The cases in which it occurs are spoken of as examples of rhinitis atrophicans fetida or ozena (vera or simplex).
4. The disease may spread to the naso-pharynx—where it may also begin—to the accessory nasal cavities, the internal ear, the larynx and the trachea. The first noticeable change is the appearance of small masses of mucoid secretion.
5. The disease is an infectious one. The proof of this is seen in the transplantation of the process from the nose to the larynx or trachea of the same patient; the disease may also appear in several members of the same family. Finally the disease was produced experimentally in one case.
6. The cause of ozena is the bacillus mucosus ozenae, which is closely related to the pneumobacillus of Friedländer, but presents several important characteristics. This bacillus is found present in the mucus in every stage of the disease; it does not penetrate into the mucous membrane. Such bacilli are not found in the nose under other conditions. When the ozena heals the bacillus disappears.
7. In one case a pure culture was introduced into the healthy nose and the first stage of ozena was produced.
8. The atrophy of the mucous membrane that develops in the course of ozena may be explained as due to poisonous substances produced by the bacillus or as due in part, at any rate, to pressure of the crusts upon the mucous membrane, the epithelial lining of which undergoes metaplasia, changing from cylindrical to squamous.
9. The factor in many cases of rhinitis atrophicans is due to a fetid decomposition of the masses of secretion, but this de-

composition is not due to the bacillus mucosus but to the action of other microorganisms which invade the mucous secondarily. The variations in this secondary invasion will explain the absence of fetor in some of the cases.

The demonstration of the probable etiologic relation of the bacillus to the atrophierhinitis may at times become important from a diagnostic standpoint. The therapy which must be directed to destroying the bacillus necessarily meets with many difficulties on account of the numerous inaccessible cavities and recesses in the nose, and then the mucus in which the bacilli are imbedded protect the latter to some extent. The importance of careful prophylaxis in connection with the use of instruments and in order to prevent the spread of the disease from one member of the family to others is self-evident.

Practical Notes.

Iodoformin (Odorless Iodoform).—Eichengrün (*Therapeutische Monatshefte*, September, 1895) is convinced that hitherto no substitute has been found which can displace iodoform. They are mostly compounds holding iodine and giving it up by decomposition. But the action of iodoform is to be ascribed to a specific influence on the wound, rather than to the iodine. Still it is a matter of importance to remove the odor without changing the iodoform molecule or its power. The result of experiments is iodoformin, an odorless white powder, insoluble in the usual vehicles, which becomes iodoform on contact with acid or alkaline fluids. This change goes on *pari passu* with the healing process. Eichengrün further lays stress on the absence of irritation and a longer continuance of its activity than with iodoform. The yellow color remains longer in the wound.—*Deutsche Medicinische Wochenschrift*, Oct. 31, 1895.

Bromoform in Pertussis.—Trial was made by O. Fiertz (Inaug. Dis. Zürich, 1894) in seventy-five cases in private practice. The results were very favorable where the treatment was regularly carried out and continued fourteen days after cessation of the cough. In these cases the average duration of the paroxysms was 2.19 weeks, of the disease 3.19 weeks. In no case was the bromoform without effect. The rule for administration laid down by the writer is in brief: The initial dose in drops, for children up to ten years, should be the age plus two, given every six hours, preferably in a teaspoonful of sweetened water. Increase the dose one to two drops if the paroxysms do not abate within eight days. As soon as the paroxysms cease at night, give the dose once in eight hours. Use the remedy guardedly if the lungs threaten to fill with mucus. In case of intoxication from careless administration, use artificial respiration, wash out the stomach, give warm baths alternated with cold suffusions, moist swathing, fresh air.—*Deutsche Medicinische Wochenschrift*, Oct. 31, 1895.

Therapeutic Use of Bone Marrow.—Regarding the use of bone marrow dissolved in glycerin, it may be said that some American therapeutists have commended it far more emphatically than Dr. Pepper's words would appear to indicate. Dr. McLean Hamilton has used the glycerin of red marrow in nearly twenty cases with results that appear to cast older methods of treatment quite into the shade. One striking case may be summarized as follows: A female, aged 40 years, for several years has been hysterical, anemic and incapable of making exertion without resulting back- and headache. A year ago oöphorectomy was performed, but her nervous state and general mal-nutrition persisted. A variety of cerebro-spinal neurasthenic disturbances were helped little or not at all by treatment, and it seemed impossible to improve the condition of anemia. Corpuscular poverty well marked, the red corpuscles not exceeding 2,500,000 at any time. She was placed on medullary glycerid with prompt benefit. In doses of two drachms, thrice daily, she gained over 2,000,000 corpuscles in six weeks, and her hemoglobin rose to nearly fourteen grams. In cases in which anemic headaches were the prominent feature the effects of the marrow were marked, and many such improved in a few weeks. Two brominized epileptics were decidedly benefited, and this treatment must commend itself when iron

in such cases is apt to produce cerebral congestion and increase of the fits." The above remarks are quoted from a paper in the *New York Medical Journal*. Furthermore, Dr. I. N. Danforth, of Chicago, has treated a member of his own family with a similar preparation, and he believes that life was saved thereby. His preferred formula is the following:

R Liq. potass. arsenitis (Squibb's)	2.5	3	10
Acid phosphate (Hosford's)	3	oz.	90
Ext. bone marrow (Matthews')	to 8	oz.	240

Dose, one dessertspoonful after each meal.

Already a preparation of marrow, called carnogen, has been largely produced and put upon the New York market, purporting to be made from the medullary substance of small bones in combination with fibrin, and to have the qualities of stability and palatableness. It may be said in this connection that Dr. John S. Billings, Jr., made trial of a medullary extract at the Johns Hopkins Hospital in 1894, in four cases, two of pernicious anemia, and two of chlorosis. His results in the former disease were unsatisfactory, while he ascribes the benefits following its use in the other cases to the contained iron—a conclusion which, according to Dr. McLean Hamilton's analysis of the cases, does not seem to be borne out in those cases where red corpuscles are multiplied without any corresponding increase in the hemoglobin. To go a little further back in the history of this promising treatment for pernicious anemia, it may be said that Dr. Thomas R. Frazer, the well-known professor of materia medica and clinical medicine at the University of Edinburgh, is the parent of it, he having first reported upon it at the International Medical Congress at Rome. The first appearance of his paper in English dress was in the *British Medical Journal* for June 2, 1894, and in it the author makes no mention of the method of preparation of the remedy, but merely speaks of it as beef-bone marrow, leaving his readers to infer that the white marrow of the femurs of oxen was employed. Those who have followed him, however, have favored the use of the red marrow, obtainable from finely broken small bones, such as ribs, by extraction by glycerin. Dr. Hamilton gives the name "medullary glycerid" to the preparation used by him, and he advises those who have their uncured cases of anemia under mixed treatment, to give a fair trial to the marrow without other medicines.

Hospital Notes.

THE TRUSTEES of the Springfield, Mass., City Hospital held their annual meeting December 19. The expenditures were \$21,118 for the year, and receipts \$15,171, leaving a deficiency of \$5,946. The income of the hospital from rents and interest on invested funds was \$5,828. There were 355 patients treated in the year, including the 24 at the hospital last year. Of these 255 were discharged, having improved in health or recovered, and 44 died. A committee reported that it was expedient to build a large addition to the hospital, to cost \$12,000, and to contain one of the most complete operating rooms in New England. The room will be similar to the Sims operating room in connection with the Roosevelt Hospital in New York, which the committee visited. The building will be of brick, one story high and 46 feet long.

THE COMMISSIONERS to locate and build the new hospital for consumptives in Massachusetts have decided to locate it in the town of Rutland, Worcester County. Rutland is the highest town in the center of the State, and is 1,200 feet above the sea level. It is on the line of the Central Massachusetts Road and twelve miles from Worcester. The selection is a compromise between the eastern and western claims. No land has been bought, but prices have been obtained on about two hundred and twenty-five acres, at about \$8,000. The buildings will be begun next spring.

THE ELEVENTH annual report of the New York Post-Graduate Medical School and Hospital has been published. It embraces the period from Oct. 1, 1894, to Oct. 1, 1895. This hospital includes wards for babies, children and adults. In the last year 610 patients have been treated in the babies' wards and 1,125 in the children's and adults'. Its dispensary, which is for the poor only, has treated 19,227 persons, and 866 visits have been made by the district physician to the patients' homes.

Washington Notes.

HEALTH OFFICE WEEKLY REPORT.—The report of the Health officer for the week ended December 21, is as follows: Number of deaths (still-births not included) 103. Death rate per 1,000 per annum, 19.4; death rate per 1,000 per annum corresponding week last year, 15.7. The number of deaths reported at the Health Department fell off during the last week. From 110 the mortality declined to 103, and the annual death rate went down from 20.8 to 19.4. The improvement was general. Nearly one-third of all the deaths were from lung diseases, of which 15 were from consumption and 13 from pneumonia. With the exception of two deaths from diphtheria and one from scarlet fever the dangerous contagious diseases were in abeyance. There were eight deaths from typhoid fever and one from malarial fever. Of all who died forty were over 50 years of age while twenty-two were under 5 years old. With the death rate materially below the normal and with no immediately threatening epidemic the health conditions may be pronounced favorable.

HOSPITAL APPOINTMENT. Dr. Francis R. Hagner, late resident physician at the Children's Hospital in this city, has been appointed on the house staff at the Johns Hopkins Hospital at Baltimore, Md. The Doctor is the son of Dr. Chas. E. Hagner of this city and a graduate of the Columbian Medical School.

A NEW FREE DISPENSARY.—The Central Union Mission has organized a free dispensary in the old postoffice building.

THE GROSS PEDESTAL.—The contract for the erection of the pedestal for the Gross statue has been awarded to a local firm. The price to be paid is \$1,400. The pedestal is to be of round block granite. Work will begin at once.

Detroit Notes.

The regular meeting of the Wayne County Medical Society was held Thursday, December 26, at the Hotel Cadillac, where about one hundred physicians of that city sat down to a course supper at 8:30 p.m. After the repeat Dr. Mathew D. Mann, of Buffalo, N. Y., read a paper on "Some Common Mistakes in Gynecology." The Doctor took issue with the older writers upon the subject of cancer where they state that pain is a prominent symptom of the disease, and stated that the opposite was what he had found to be the rule, that a cancerous condition of any of the organs in the female pelvis showed that those afflicted were at the first almost entirely free from pain. The Doctor cited several cases, among them one that was brought to him by a brother practitioner, in which he was obliged to take some pains to show the family physician that his patient was suffering from a malignant trouble. The Doctor laid great stress upon making a thorough examination of the pelvic organs, as only by an early diagnosis could the physician hope to accomplish much for the patient. As a rule the early diagnosis was not made and the surgeon was unable to give the desired relief. The aorta and the spinal column he had seen mistaken for tumors; and the patients themselves sometimes will insist that they have tumors. One case was cited in which there was such marked pain that he was obliged to make an exploratory incision to satisfy the patient. This relieved the patient from the pain, but he would not advise this procedure, except in extreme cases. He had patients brought to him by the attending physician for supposed tumor in front of the rectum, which turned out to be the uterus; and had known patients to examine themselves in this way, and arrive at the conclusion that they had something that must be removed. The Doctor dwelt upon this mode of examination as one in which the uterus could be well examined, also the ligaments and the ovaries. The Doctor next asked his hearers to remember the ureter and not remove ovaries when the fault lies with the former. The Doctor here laughed at the idea that the uterus, an organ weighing some three ounces, lying upon the bladder would bring about cystitis, as he showed we have tumors weighing more than

that many pounds, lying against and pressing down upon the bladder, without giving any symptoms of inflammation of that organ; but more often there was some trouble in the walls of the bladder itself, or in the secreting fluid; that when the urates or crystals were removed, the urine neutralized, the trouble would cease, and recommended for treatment in this class of cases, the taking of large quantities of pure alkaline water, lithia or others. Personally he found that the water did not contain enough bicarbonate of soda, and so he added some alkalin and gave liberally large draughts. He gave the history of a patient at his private hospital, where the patient, according to her own statement, had not taken a glass of water altogether for months, and he was obliged to start with teaspoonful doses. In constipation he recommends cascara, with washing out with a long rectal tube of bowel and massage to the abdomen. Where patients were weak he recommended massage with some bland applications of lanolin, etc., and considerable outdoor exercise. As to pessaries, he would certainly very much regret to do without them, especially in retroflexion, as he thought that he had accomplished a great deal in the distressing train of symptoms that this trouble brought on. There were cases outside of the operative field where only the pessary could give relief. The following gentlemen made remarks on the paper: Drs. E. W. Jenks, H. O. Walker, N. W. Longyear, Walter P. Manton, Donald Maclean, L. E. Maire, of Detroit; Charles B. Nancrede, of Ann Arbor, and G. R. Cruikshank and James Samson, of Windsor, Ontario.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION at its regular meeting, Monday, December 16, listened to an interesting paper by Dr. J. E. Emerson, entitled "The Consideration of Certain Heart Tonics." At the next regular meeting of this society, Monday, December 30, Dr. Geo. Henry Fox will read a paper entitled "Lesions of Various Cutaneous Diseases."

HEALTH OFFICE REPORT for week ending Dec. 28, 1895: Deaths under 5 years, 39; total 78. Births, male 41, female 46, total 87. Contagious diseases: Diphtheria, last report 33, new cases 23, recovered 20, died 2, now sick 34. Scarlet fever, last report 21, new cases 6, recovered 5, died 0, now sick 22. Smallpox, last report 3, new cases 0, recovered 0, died 1, now sick 2.

Change of Address.

Ingals, E. Fletcher, residence to 4757 Grand Boulevard, Chicago.
McKinlock, J., from Lakota Hotel to 3622 Michigan Avenue, Chicago, Ill.
Perry, T. B., from Milledgeville, Ga., to U. S. Marine Hospital Service, Buffalo, N. Y.
White, P., from Rockford to Van Orin, Ill.

LETTERS RECEIVED.

Ayer, N. W., & Son, Philadelphia, Pa.; Atkinson, Wm. B., Philadelphia, Pa.; Anderson, Edward, Rockwell, Md.
Blakiston, P., Son & Co., Philadelphia, Pa.; Biddle, A. P., Detroit, Mich.
Colton & Walsh, Boston, Mass.; Castle, Wilmot & Co., Rochester, N. Y.; Calder, J. R., Minneapolis, Minn.; Crume, P. G., Boswell Ind.; Cokenower, J. W., Des Moines, Iowa; Clark, A. P., Boston, Mass.
Dunglison, Richard J., Philadelphia, Pa.; Dunavant, H. C., Little Rock, Ark.; Davis, W. H., Maquoketa, Iowa; Darnell & Upham, Boston, Mass.; Dietz, R. E. Co., New York, N. Y.; Dukehart, T. M., Baltimore, Md.; Dudley, Anna T., Chicago, Ill.; Davission, J. A., Eldorado, Ohio.
Ellis, H. Bert, Los Angeles, Cal.
Flint, Austin, New York, N. Y.; Frontis, D. B., Ridge Spring, S. C.
Gressen, M. S., Branchville, S. C.; Gray, L. L., St. John, Mo.; Graham, D. W., Chicago, Ill.
Hummel, A. L., Advertising Agency, (3) New York, N. Y.; Holmes, Bayard, Chicago, Ill.; Harrell, W. J., Antander, N. C.; Haralson, H. H., Forest, Miss.; Henry Pharmaceutical Co., Louisville, Ky.
Johnson, H. L. E., Washington, D. C.
Kenyon News and Postal Sub. Co., Chicago, Ill.; Kelly, W. H., Covington, Ky.
Lawbaugh, A. J., Opechee, Mich.; Lippincott, J. B., Co., Philadelphia, Pa.; Lester, Rufus E., Washington, D. C.; Leutz, Chas., & Sons, Philadelphia, Pa.; Liebhart, Laura L., Denver, Colo.; Latham, V. A., Chicago.
Mashane, J. T., Indianapolis, Ind.; Moore's Newspaper Subscription Agency, Brockport, N. Y.
Nemmyer, W. G., Chicago, Ill.
Orton, J. G., Binghamton, N. Y.
Perry, T. B., Milledgeville, Ga.; Parke, Davis & Co., Detroit, Mich.; Phippen, S. S. Co., Owosso, Mich.; Peacock Chemical Co., St. Louis, Mo.; Plummer, R. N., Company, The, New York, N. Y.
Randebauh, E. C., Columbus, Ohio; Robinson, Byron, Chicago, Ill.; Regensburger, A. E., San Francisco, Cal.; Rose, A., New York, N. Y.; Rand, D. H., Portland, Ore.; Reynolds, Dudley S., Louisville, Ky.; Richmond, Albert, Ames, Iowa; Roseberry, B. S., Lacon, Ill.
Stearns, F. & Co., Detroit, Mich.; Struch, Carl, Chicago, Ill.; Supervising Surgeon General, M. H. S., Washington, D. C.; Subscription News Co., San Francisco, Cal.; Steiger, E., & Co., (2) New York, N. Y.; Schief-fellu & Co., (2) New York, N. Y.; Shoemaker, C. E., (2) Chicago, Ill.; Smith, A., Minneapolis, Minn.; Soudler, H. L., Paris, France.
Treat, E. B., New York, N. Y.; Tyree, J. S., Washington, D. C.; Todd, Frank C., (2) Ft. Worth, Tex.; The F. A. Davis Co., Philadelphia, Pa.
Woodbury, Frank, Philadelphia, Pa.; Warren, W. A., Wetumpka, Ala.; Woods, Matthew, Philadelphia, Pa.; Westernman, B. & Co., New York, N. Y.; Wallace, D. R., Waco, Tex.; Weeks, T. E., Minneapolis, Minn.; Weber, A. H., Des Moines, Iowa; Wood, Wm. & Co., New York, N. Y.

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ADDRESS.

A SHORT SKETCH OF THE HISTORY OF GYNECOLOGIC SURGERY.

Opening Address before the Medical Department of the Minnesota State
University, October 8, 1895.

BY ARCHIBALD MACLAREN, A.M., M.D.

ST. PAUL, MINN.

In the busy rush of professional work and daily practice, it will, perhaps, prove of benefit to take a glance backward and for a few moments study the early beginnings of our most glorious profession—glorious for what it has achieved, more glorious still for the charity which its individual members are daily distributing to the pauper sick throughout the world.

In most of the recent text-books of to-day one would imagine that surgery was almost entirely due to the invention and ingenuity of the various text-book authors, and that little or nothing is due to our illustrious predecessors in medicine. Many hundreds of years before Christ, medicine had made considerable progress, as shown by the inscriptions on the Egyptian monuments, as well as by the five medical papyri of very ancient date. On the walls of the Egyptian temples are found figure pictures representing the surgeon operating upon his patient; fillings of gold and false teeth found in Egyptian mummies show that dental surgery had made very considerable advance, even at this early day. Susruta, a Sanskrit work of uncertain date, written at least 500 years B. C., proves that the specialists were commencing to be recognized as important agents in the commonwealth even at this early date. Nail trimmers, ear borers, tooth drawers, and drawers of blood and lithotomists are mentioned among others. But medicine was at this time so closely allied to mysticism and confounded with the supernatural, that little scientific knowledge was realized until the time of Hippocrates, called the "great," born about 470 B. C. This man, who is justly called the "Father of Medicine," was supposed to be the direct lineal descendant of Æsculapius, a priest physician who founded an order of priest physicians called Asclepiadæ. These priests established several temples of health throughout Greece and Rome, built especially in the high places where the "air was wholesome," or at the medicinal springs. At these temples patients were received and treated somewhat after the manner of our modern hospitals.

In the beginning of the fifth century, B. C., there were three of these temples of special importance, namely: the temples of Rhodes, Cnidos and Cos. The last named is of particular interest to us, because it was here that the young Hippocrates received his education and grew to the renown which gave him the name of the "Great Hippocrates." He succeeded his father, becoming high-priest physician, in charge

of the temple, and the head of the school of physicians, called the School of Cos. The course of treatment at these hospitals included baths, rubbings, shampoos or massage, restrictions of diet, the administration of drugs and occasional surgical operations, combined with religious ceremonials and music. It has even been suggested that animal magnetism and hypnotism were made to serve their part in effecting the cure of the patient. The extensive physical notes or histories of the patient, which were kept by the priest students, or hospital internes, show the desire for exact knowledge which these men were striving after. That Hippocrates studied these histories carefully is shown by his renown in all the civilized world for his great powers of accurate prognosis. His fame was so great that he was called at one time to Athens to stay the plague; again to Babylon to treat the king of Persia, where he remained in attendance upon this royal personage, as resident physician, for several years.

To show the character and breadth of mind of Hippocrates, how free from errors of superstition he was, if you will pardon me, I will quote a few sentences from Francis Adams' translation of the original Greek manuscripts, where, in speaking of the "sacred disease," or epilepsy, he says:

"It is thus with regard to the disease called Sacred; it appears to me to be nowise more divine nor more sacred than other diseases, but has a natural cause from which it originates like other affections. Men regard its nature and cause as divine from ignorance and wonder, because it is not at all like to other diseases. But if it is reckoned divine because it is wonderful, instead of one there are many diseases which would be sacred. And they who first referred this disease to the gods, appear to me to have been just such persons as the conjurors, purificators, mountebanks and charletans now are, who give themselves out as being excessively religious, and knowing more than other people. Such persons, then, using the divinity as the pretext and screen of their own ignorance."

In regard to the knowledge of this man in both medical and surgical matters, I can but express to you the pleasure and surprise which I have experienced from reading his remarkable works. His knowledge of the effects of the physical surroundings of the patient, the effects of heredity and previous disease is quite remarkable. Pulmonary tuberculosis, as well as tubercular inflammations in other parts of the body, was recognized by Hippocrates. In surgical matters his works show a very considerable knowledge; especially is this true in reference to injuries of the bones, fractures and dislocations, to each of which subjects he devotes a book.

The accidents of the amphitheater and the Olympian games probably furnished him with plenty of clinic material. Hippocrates speaks frequently of the use

of the elevators and the trephines in injuries of the head, and if I understand him aright, he also at times uses the trephine in epilepsy. Hippocrates advises and practices tapping of both the abdominal and the chest cavities for the purpose of withdrawing collections of fluid. Hernia in some of its forms was well understood by Hippocrates and his pupils. The treatment of the falling of the intestine into the scrotum by position, enemata and taxis, is described; he also speaks of the production of the omental hernia from straining of epileptic convulsions. That he was familiar with the symptoms of stone, both in the kidney and the bladder, is shown in several places in his writings. He describes the symptoms of renal calculus and the use of the sound in detecting stone in the bladder.

In the "oath" of Hippocrates, with reference to this very matter, he says: "I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work." The operation of lithotomy was at this time and for many hundreds of years after, not considered respectable, and was left with the same class of men who performed castration for the purpose of making royal eunuchs.

This "oath" of Hippocrates, to which it was common for physicians of later years to give their assent, is of interest in regard to the standing of morality and propriety, which it enjoins. It was more than anything else, however, a compact between the physician and his student, whom he promises to treat as a son and to instruct in all of the science of healing.

With regard to the diseases of women, displacement of the uterus and its treatment by pessaries, is understood to a limited extent. Medicinal pessaries for the treatment of uterine troubles, intra-uterine pessaries for the production of abortion are spoken of, but only to condemn. Ulcer of the cervix which is, as he says, "produced by parturition," and later, "when an ulcer heals, the neck of the womb is harder, smoother, and the woman is less liable to conceive." It is remarkable to me how near Hippocrates comes to the appreciation of laceration of the cervix in this description of his, for although ulcer of the womb was described and treated until the present generation, it was reserved to our own Thomas Addis Emmett to prove that such lacerations were, in fact, tears, and that certain of them could only be cured by trachelorrhaphy, the operation which was devised and practiced by Emmett in New York during the past thirty-three years.

Pyometria, or collections of pus in the uterus, is described by Hippocrates, and also dropsy of the uterus, which may have been the condition which we recognize as ovarian cyst. Hydatids of the uterus he also describes, which he believes to be caused by drinking marsh waters. Abscess of the uterus, which starts near the hip-joint and bursts at the side of the uterus, is, without doubt, our pelvic abscess, rising from suppuration of the ovaries or fallopian tubes, instead of the uterus, as he describes. He advises the treatment of this condition with tents for the promotion of drainage through the vaginal opening, much in the same way as drainage is secured to-day.

Rectal diseases were apparently very well understood, and the use of the rectal speculum; although the use of the speculum in the vagina is not mentioned, it undoubtedly must have been used, for without it his accurate description of the ulcers of the womb would have been impossible.

External and internal hemorrhoids, the treatment of hemorrhoids, either by strangulation with the ligature, or by searing with a hot iron, the hot iron being passed into the rectum through a canula, corresponds, as you see, very closely with the usual line of treatment of hemorrhoids to-day. Fistula in ano is accurately described, with the advice that the abscess be opened before it bursts into the bowel, if possible, but after the fistula has formed, he advises the dividing of it by the tightening of a ligature or occasionally with a knife.

Following Hippocrates the next surgeon of importance in history is Galen. He lived and practiced 150 years after Christ. He has given to us several very extensive works on the subject of medicine and surgery in Greek, the study of which will well repay the student of surgery to-day. That surgery had made considerable further advance at this time is shown in his accurate description of laparotomy for intestinal concretion—probably the condition which we recognize as intestinal obstruction. The incision he makes a little to the left of the median line just below the umbilicus. After exposing and opening the intestine and relieving the obstruction he completed his operation by an intestinal suture, probably of linen thread and a closure of the abdominal wound. Galen also gives a very accurate description of the operation which is so well known by the name of Cæsarean section. I have not been able to determine that the name is justified in the birth of Cæsar by this method, but it is not impossible that this was the case, for I find records of several well-known men of a somewhat later date who were saved by Cæsarean section upon dead women; as for instance, the philosopher Georgia, who was so delivered according to Valerius Maximus, and Pliny says that Scipio Africanus was also saved from death by this same operation. I understand that Galen does not advise the operation upon live women, but in ancient times and even to-day in the Catholic countries, Numa's law provides for the opening of the abdomen in all dead women who are large with child. Velpeau quotes M. C. Lang to prove that Nicholas De Falcon was the first surgeon to perform this operation upon a live woman. This was in the year 1491. The operation was greatly lauded and very much abused by the different authors of 200 years ago—certain men like Mauriceau, who wrote in the year 1700, condemning it as entirely unjustifiable and doubting the list of successful cases which were reported by his predecessors. Certainly the operation was much abused, for, as Velpeau says, it was as popular in France as blood-letting was in England. The operation soon fell into disuse on account of the great maternal mortality, only to be revived with great success under the present antiseptic regime.

With regard to the use of the forceps in childbirth, it is supposed that the ancients used some such contrivance in difficult labors. None of the older authorities give record of it, but in the ruins of Pompeii, in what is supposed to have been a physician's office, together with a rectal speculum, were found a pair of forceps which could only have been meant for obstetric work. In later years the forceps were invented by a young man named Chamberlens about the year 1655. The Chamberlens brothers kept the knowledge of the existence of the forceps and of their use a secret for quite a number of years. That this secret was profitable to them is proved by authorities who

claim that the older Chamberlens' practice gave him thirty thousand pounds a year, a very large sum for that early date. Chamberlens took his forceps with him to Paris for the purpose of selling them to the French government, but making the mistake that he could deliver any woman, no matter what the obstruction, with the forceps, he attempted to deliver a rachitic dwarf whom Mauriceau had said could only be delivered by Cæsarean section. Chamberlens of course failed, as well as his negotiations with the French government.

While speaking of obstetrics it may be of interest to know Mauriceau's opinion of the fertility of the women of the time. He says that although four children at a birth is generally conceded to be the limit, he reports many instances in which more were born at one birth and until the number reaches fifteen he seems to think that such records are just within the bounds of possibility, but when he arrives at the history of a certain Dame Marguerite, Countess of Holland, "who in the year 1276 was brought to bed with 365 infants at one and the same time, who all received baptism and died on the same day together with their mother," he confesses, and not without reason, that we have reached the domain of fable.

Vaginal hysterectomy. According to Velpeau, "Soranus, a Roman obstetrician living in the reign of the Emperor Hadrian, affirms that the uterus may be removed without causing death, as Themison," he says, "demonstrates in his writings"; and he even goes so far as to lay down the operation as a precept, for he recognizes without any reserve, that the prolapsed uterus should be extirpated if it is in a putrefied state and asserts that it has been in some cases excised entire with success. Several operators, among others Brengarius of Bologna, in 1507, describes the removal of the inverted uterus with a ligature. For malignant disease Patella was probably the first operator to remove the uterus. The operation was performed on April 13, 1812. According to Senn, Patella did not know that he had extirpated the entire uterus until he had examined the specimen after the completion of the operation. The patient died at the end of the third day. Senn says that J. C. M. Langenbeck, the grandfather of the Langenbeck of our time, living in Göttingen, made the first deliberate attempt for removal of the uterus through the vagina for cancer in the year 1813. Senn gives a long and very interesting description of this first operation, which was done, as all operations were at that time, without the aid of any anæsthetic. In this operation the surgeon dissected the uterus out of its peritoneal coat without opening the abdominal cavity. His colleague, who was very gouty, toward the latter part of the operation gave up entirely and could be of no assistance. Langenbeck found it necessary to tie the ligatures holding one end in his teeth, and to stop the tremendous hemorrhage which followed the removal of the uterus by thrusting his closed fist into the cavity from which the organ had been removed. The patient apparently died upon the table, but later revived, and lived without return of the growth for twenty-six years. Langenbeck's assistant soon dying of the gout there was no one to corroborate his story and his report of the operation was never believed until the autopsy was performed twenty-six years after the original operation. The second operation for deliberate vaginal hysterectomy was performed in the year 1882 by Sauter. Billroth, Velpeau and

others have given the credit to Sauter of first performing this operation, when it should rightfully belong to Langenbeck.

After the invasion of Rome by the barbarians from the north of Europe and the consequent downfall of the Roman empire, all scientific knowledge received a set-back from which it did not recover until the great renaissance in the fifteenth century. Medicine and surgery suffered with the other sciences, the Arabs and the Catholic clergy being the only ones to keep alive the ancient knowledge. The diseases of women suffered more than general medicine and surgery, because of the seclusion of the women by the Mohammedans and on account of the celibacy of the priests.

France was the first to revive the study of the diseases of women, and under such men as Ambroise Paré, who revived the use of the speculum forgotten since the days of Soranus; Recamier, who has given us the uterine sound and the curette; Jobert de Lambelle, who successfully operated upon vesico-vaginal fistulæ; Madame Boivin and many others, has helped to bring gynecology up to its present standing.

As Americans we can justly be very proud of our part in furthering all gynecologic and abdominal surgery. Ovariectomy, although it had been suggested and advised by John Bell, instructor in anatomy and surgery in the University of Edinburgh, was never performed by him nor by any of his students excepting the courageous Ephraim McDowell, of Danville, Ky. Young McDowell had graduated from the University of Edinburgh, had listened to the lectures of his preceptor and afterward lived with him as a student and assistant. Several years after McDowell had entered upon the practice of his profession in Kentucky he met with his first case of ovarian cyst. He suggested to his patient, Mrs. Crawford, the only chance of escape from her disease, and she accepted it without hesitation. This, the first operation of the kind ever performed, was done while a mob of enraged neighbors awaited upon the outside of the house the result of the operation, determined to lynch McDowell if his patient did not recover. Fortunately for him and for her the operation was crowned with success and she lived for many years. In 1818 McDowell prepared a brief report of his first three cases and sent it to the *Eclectic Repertory and Analytical Review*, published in October, 1816, in Philadelphia.

Mr. Lizars, associated with Mr. Bell in Glasgow, received a report of these cases sent him by McDowell and a few years later operated for the removal of an ovarian tumor in Edinburgh. Tait and others have tried to claim that Lizars was the first ovariectomist, but history will not bear them out. One or two operations had been performed before the time of McDowell's, but they were simply the tapping or opening of ovarian cysts with a knife, no attempt being made to remove the sack or to ligate the pedicle. Probably no other one operation since surgery became an art has done so much to save life and to alleviate suffering as has ovariectomy, and certainly all honor should be due to the father of ovariectomy who has had the courage to perform this operation.

Nothing that has ever happened has done more to develop surgery than the discovery of anesthesia. On October 16, 1846, Dr. Morton, a dentist living near Boston, having experimented upon himself and a few of his friends, etherized a patient at the Massachusetts General Hospital, making it possible to per-

form considerable of an operation without giving the patient any pain. That the dread of surgery to-day is bad enough we all must admit, but what could it have been before the days of ether and chloroform? It is certainly wonderful that so much was accomplished and that patients, and especially women, could be brought to the point of undergoing such terrible suffering as must have been inflicted by even the slightest surgical operation before the days of anesthetics. Gynecologic, and especially plastic surgery of the vagina, made very rapid progress after the introduction of ether. The two men in this country who have done the most to develop a high standing of American gynecology are Marion Sims and Thomas Addis Emmett, both of New York. Sims, when he was a country practitioner in Georgia, in an emergency needing a speculum, improvised one from a piece of malleable metal, from which grew the Sims speculum of to-day, upon which all of the perineal retracting specula are modeled. The use of the Sims speculum and Sims position allowed a thorough inspection of the vagina and made the cure of vesicovaginal fistula a certainty, where before it had been the exception when such conditions were cured. Emmett, by his introduction of silver wire as a suture material, also greatly aided vaginal plastic surgery.

In the Johns Hopkins Hospital in the last few months investigations have been carried out to prove that silver has an inhibitory action upon growing bacteria. Perhaps this was one of the reasons why Emmett, with his silver wire, was able to secure such excellent results in distinction to any other suture material then in use. Emmett discovered the condition known as laceration of the cervix, and invented the operation for its cure which bears his name. His perineal operation is founded upon sound surgical principles, and so far as my observation has led me, every surgeon who has ever mastered this intricate procedure believes, with its author, that it is the only perineal operation.

Abdominal hysterectomy, which a few years ago was one of the most dangerous of all abdominal operations, has become to-day no more dangerous than ovariectomy was five years ago. This has been accomplished by the observation of another American, Baer, of Philadelphia. The old operation, in which the cervix was constructed in mass and fastened in the lower angle of the abdominal wound, where it was left to slough off, has been superseded by the intra-peritoneal treatment of the stump which consists of the ligation of the four arteries which supply the uterus with blood and the suture of a flap of the periotomy over the stump of the cervix, which is not constricted in any way.

One of the most brilliant recent advances in surgery must be credited to Howard A. Kelly, of Johns Hopkins. By the use of his ureteral specula and the placing of the patient in the knee-chest position, he has made it possible to see the entire mucous lining of the bladder and to catheterize the ureters upon sight, and even pass his long elastic catheters into the pelvis of the kidney itself, making possible accuracy in diagnosis and treatment which would not have been thought possible a few months ago.

You are entering or have entered upon the study of the most interesting of all human problems, the study of the secrets of life itself; that you may all attain your highest ambitions in your chosen profession is the sincere desire of myself and of all your instructors.

ORIGINAL ARTICLES.

THIERSCH'S METHOD OF SKIN GRAFTING.

Read in the Section on Surgery and Anatomy at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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Although a comparatively new procedure in surgery Thiersch's method of skin grafting has met with considerable favor among surgeons. Now that a sufficient time has elapsed to test the permanency of the earlier results, this method should be accorded a more prominent place in plastic surgery. Its field of application is limited to three conditions; 1, where one desires to prevent deformities produced by healing by granulation; 2, when large areas uncovered by skin are to be healed promptly; 3, where one desires to replace cicatricial tissue by skin grafts in order to restore the usefulness of the parts. The raw surfaces left by burns of the skin are, as is well known, slow to heal when left to the natural methods, and the contraction of the cicatricial tissue produced by the healing, frequently seriously disturbs the function of the part. This offers a very good field for the application of Thiersch grafts.

It very frequently happens after the removal of extensive tumors that it is impossible to draw the edges of the flaps of the skin together and thus a raw surface is left to heal by granulation. Such surfaces as these may very conveniently and with a great degree of certainty and satisfaction be rapidly healed by covering them with skin grafts at the time of the original operation or later.

Ulcers of all descriptions except syphilitic, uncovered areas left by sloughing of flaps and similar conditions afford a good field for this method.

Instances when skin grafts can with advantage be substituted for cicatricial tissue, are by no means uncommon. Discolorations of the skin such as "port wine stains," may be cut out and skin with a normal color be substituted therefor.

Much of the horrible deformity resulting from the removal of malignant growths about the face can be avoided by the use of Thiersch grafts.

The technique of the method is comparatively simple. An absolute essential is the careful preparation of the patient for the operation. The area to be grafted and the region from which grafts are to be secured (usually the skin of the thigh), must be thoroughly sterilized previous to the day of operation. When the grafting is to be done on old surfaces which have been bathed in pus for a greater or less time, it seems advisable to begin the sterilization of the ulcer several days before the time of grafting. For this purpose dressings saturated with carbolic or bichlorid lotion should be kept constantly in contact with the part. After the parts have been properly prepared for operation a sharp spoon is used for the purpose of scraping away the granulations which cover the ulcer. This layer of granulations is often surprisingly thick, but the sharp spoon should scrape all away until the firm base of the ulcer is reached. The edges of the ulcer, which are usually thick and indurated, should also be thoroughly curetted and a raw, bleeding surface left. After this has been done the oozing from the surface may be very satisfactorily

stopped by elevation of the limb and pressure from hot sponges. The Esmarch tourniquet has been recommended to control the oozing from the scraped surface, but experience has seemed to demonstrate the fact that the oozing which occurs after the tourniquet is removed and takes place under the grafts, thus lifting them off their bed of tissue, does harm, especially when dealing with an old suppurating surface. The blood-clot then seems to form an excellent culture medium for the pyogenic organisms and suppuration occurs early after the grafting, thus seriously endangering the success of the operation. In those cases in which an aseptic field is to be grafted, the objection to the use of the tourniquet would not be so serious a one. Nevertheless, its use is unnecessary for the reason that pressure and elevation of the parts is sufficient to bring about an early cessation of oozing.

After obtaining a dry surface upon which to implant the grafts, the next step is to cut the ribbons of skin. This is best done by means of a very sharp razor which has been ground flat on its under surface. The hands of your assistant are used on each side of the thigh in such a manner as to render the skin tense; then, with a sawing motion backward and forward of the razor, the upper layers of the skin are removed for a distance of an inch or two. The incision of the skin does not pass into the deeper layers; all that is necessary is to enter the papillary layer of the integument. As the graft is cut by the razor it will ordinarily fold up upon that instrument, and may be conveniently transferred upon it. The layer of skin is now spread out upon the surface to be grafted. This can be much facilitated by the use of a couple of probes, wet either in sterilized water or with the physiologic salt solution. Care should be taken to spread the graft out evenly upon the raw surface. In like manner other grafts are cut and applied. The edges of the grafts should overlap each other and also the margin of the surface. When covered completely with these strips of skin, the dressing should be applied so as to retain them in position. Various methods of dressing such surfaces have been recommended. Thiersch himself recommended that they be covered with rubber tissue. Later work in this line seems to demonstrate the fact that the nature of the dressings is not so important as was at first supposed. Most operators, following the lead of Thiersch, still adhere to wet dressings for several days at least after the grafting has been done. Other observers have reported excellent results from the use of dry dressings. It seems probable, therefore, that wet or dry dressings may be used at the option of the operator. It may even be predicted that here, as elsewhere in surgery, dry dressings will supersede wet.

One word as to the treatment of the areas from which the grafts are taken. Patients frequently complain most bitterly of pain and annoyance produced by these raw surfaces. The ordinary dressings are not well adapted for this purpose because of the irritation produced by the adhesion of the gauze to the raw, sensitive surface. The redressing is unpleasant and painful and likely to cause suppuration. The use of gauze saturated with sterilized oil, containing 1 per cent. of carbolic acid, has been found to be much more satisfactory both to the physician and the patient. Healing goes on rapidly and is painless. Ordinarily there will be no necessity for changing such a dressing until the surface is healed.

Various suggestions have been made for the purpose of simplifying the technique of this operation. S. J. Mixer in the *Boston Medical and Surgical Journal*, vol. cxxv, page 700, suggests the use of a roller and special knife for the purpose of cutting the grafts more accurately and easily. His suggestion in regard to raising the grafts from their bed by means of properly sterilized tissue paper is undoubtedly a good one, and saves the curling up of sections after they have been cut. The same method is used in dealing with large thin sections for microscopic use, cut with the microtome.

The thorough sterilization and preparation of the area to be grafted is of prime importance and should therefore receive very careful attention. Most writers condemn the use of a strong antiseptic after the surface has been curetted for fear its use may damage the capillary circulation. Some writers, however, advise its use after the surface has been curetted, as they believe its application may prevent suppuration. The plan has been adopted successfully. It would seem better, however, to wash away the excess of antiseptic with plain sterilized water before applying the grafts to the surface.

Dr. F. W. Murray in the *New York Medical Journal* of Feb. 4, 1893, calls attention to the peculiar keloid-like development which occasionally takes place between and beneath Thiersch grafts. It would be interesting to know whether this complication occurs more frequently in the negro race as does ordinary keloid. The author says nothing upon this point.

It is probable, from microscopic investigations which have been made, that the blood supply of the grafts is very speedily established and a firm union occurs within a very short time providing suppuration does not take place early. Suppuration later, after several days, does not appear to exert a very detrimental effect upon the grafts.

Occasionally at the time of the first dressing it seems as if all the grafts had died, but after a few days more it is seen that the grafts are still alive and are growing. Excellent results are sometimes obtained when it looks as if all the grafts had been destroyed.

In making skin grafts no fear need be felt about transplanting skin from a region in which hair is normally present to one in which it is normally absent. The hair does not grow in the grafts, because the hair bulbs are not included in the portion of skin removed.

Within a few weeks my colleague, Dr. Evans, placed skin grafts upon the bony surface of the skull after having cut away the external table sufficiently to provoke slight bleeding. These grafts took excellently and thereby an old exposed area of the skull was covered.

Syphilis seems to have a very blighting influence upon the vitality of skin grafts, and because of this fact skin grafting can not with confidence be recommended in the ulcerations produced by that disease. The possibility of inoculating persons with syphilis should be borne in mind when the grafts are taken from one person and engrafted upon another. Instances are on record where syphilis has been produced in this way. Other diseases might also be communicated in this way, and therefore it is wise, whenever possible, to take the grafts from some part of the patient's own body.

By way of illustrating the good results obtained by this method of skin grafting, I desire to report two cases representing two different conditions for which grafting was done. The first case illustrates the advantage to be gained by substituting skin grafts for cicatricial tissue. The second illustrates the applicability of this method to the covering of large defects caused by sloughing of flaps. It also incidentally illustrates the fact pointed out by Francis S. Watson in the *Boston Medical and Surgical Journal*, Oct. 27, 1892, that it is unnecessary to curette the surface to be grafted providing it be covered by healthy, fresh, red granulation tissue.

Case 1. Miss Grace L., age 18, had her right hand caught between hot rollers while at work in a laundry. The palmar surface was very severely burned and was allowed to heal by granulation. She came under my observation about one year subsequent to her accident. The contraction resulting from the healing had drawn the little finger down to about a right angle, and the thumb inward across the palm of the hand in such a way as to prevent its being brought into contact with the ends of the fingers. The index, middle and ring fingers possessed good motion, the superficial flexors being free from involvement. The palm of the hand was a mass of cicatricial tissue of low vitality. Superficial ulcerated points were present in two or three places.

As the patient was one dependent upon herself for her means of livelihood, and the use of her right hand was a matter of great importance, she was advised to have the scar tissue removed and its place supplied by skin grafts. This was agreed to, and on Nov. 17, 1894, the scar tissue was thoroughly dissected out in the palm of the hand and Thiersch grafts from the thigh were substituted. Dry dressings were used and the grafts took perfectly. After healing was completed the thumb could be approximated to the end of each finger and motion was excellent except in the little finger, where some scar tissue about the second interphalangeal joint was allowed to remain. The patient now makes her living by wrapping cakes of chewing gum. The nature of her occupation indicates that the use of her hand must be nearly perfect.

Case 2. On Jan. 1, 1892, I made a double amputation of the legs of a man who had had these members crushed by a switch engine. As it was impossible to tell just how far the vitality of the skin was destroyed, the amputation was made a couple of inches above the apparent line of destruction. It happened, as is frequently true, that the tissues were injured higher up and consequently the flaps of each stump sloughed. Sufficient time was allowed for the proper clearing off of the sloughs and cleaning up of the extremity of the stump before an attempt was made to cover the surface. On the twenty-seventh day after amputation each stump was covered with skin grafts taken from the thighs. In this case the granulations were not curetted. The grafts were applied directly to the granulating surface. Everything did nicely and the raw surfaces were soon covered completely.

Beside the fact of giving this man better stumps because of the skin grafting, he was undoubtedly saved many weeks' time.

The process of grafting directly upon the granulated surface was at that time an experiment with me. The possibility of successfully implanting the grafts directly upon the granulated surface has since been abundantly proven.

I have purposely refrained from the consideration of the results in cases where skin grafting has been practiced upon the ordinary crural ulcers. This course has been adopted for the reason that it is extremely difficult to keep track of these cases after they have been healed. Several cases, grafted as long as three years ago, show no breaking down at the present time. Other cases have come under observation subsequent to complete healing under skin grafts with ulcerated surfaces present. As a rule almost without exception, the part originally grafted was not broken down, the ulcers having occurred at new points in the vicinity of the original ulcer. It seems probable, therefore, that these ulcers will recur in

this class of cases so long as the cause for such breaking down is not removed. Skin grafting can not be looked upon as a radical cure in this class of cases. If the cause or causes of the original condition are not removed, we may reasonably expect ulcerated patches to appear from time to time. Where skin grafting is done for the relief of conditions other than that of leg ulcers, the results have not only been satisfactory but permanent.

THE DEGENERATE EAR.

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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Discussing the "stigmata of degeneracy in the aristocracy and regicides," I dwelt with most emphasis on oral and facial stigmata. I now propose to deal with an organ which in the opinion of alienists, biologists and criminal anthropologists, is most affected by degeneracy.¹

Considering the wide range of variation in the external ear in closely related zoological families, such, for example, as the African and Asiatic elephant, this was to be expected. My own experience confirms that of the alienists and criminal anthropologists as to its occurrence in degenerate man.

It has been claimed that deformities are due to pressure by sleeping upon one side or the other and pressure of wearing apparel. This can scarcely account for excessive and arrested development, since most stigmata exist at birth and are exaggerated as the ear develops in size. Such being the case local conditions can in no case produce excessive or arrested development in cases other than those produced by traumatism. This arises from the fact that it is a cartilaginous organ extending from bony base without a bony framework for its support and with very poor blood supply. While it no doubt receives all nourishment necessary, yet its parts are so far removed from the great blood supplies that from any defect in the nerve centers of those which control the local blood supply, or from malnutrition, the parts become materially affected. As a cartilaginous organ the ear has no lymphatics, a fact bearing on the growth of the ear throughout life. That the ear is sensitive to vasomotor changes is verified by the result of extremes in heat and cold, emotional blushing and fatigue.

In dealing with the question, aural embryology demands discussion, since in it are outlined many future changes. Skipping evolution of the ear from the otolith of the fish to the ear of the mammal, human otic embryology alone requires attention. Minot points out that "before the end of the first month there appears around the external opening of the first gill-cleft a series of six tubercles, two in front on the hind edge of the first visceral arch, one above the cleft and three behind it. A little later a vertical furrow appears down the middle of the hyoid arch, in such a way as to mark off a little ridge

¹ I wish here to express my thanks to the following gentlemen for their kindness in allowing the privilege of visiting their institutions and compiling the statements given here: Major R. W. McClanghry, superintendent Illinois State Reformatory, at Pontiac; Hon. Z. P. Brockway, superintendent New York Reformatory, at Elmira, N. Y.; Mr. O. W. Nash, superintendent Cook County Poorhouse; Dr. Clark Gaph, superintendent Illinois Eastern Hospital for the Insane, at Kankakee, Ill., and Mr. Alfred Brisbols, photographer, for the use of photographs of prominent men.

which joins on to tubercle three and descends behind tubercles four and five. The second stage is reached by the growth of all the parts; the fusion of tubercles two and three and the growth of the ridge down behind tubercle five to become continuous with six. After these changes it is not difficult to identify the parts.

"Tubercle No. 1 is a tragus; 2 and 3, together with the arching ridge, represent the helix; 4, the antihelix; 5, the antitragus, and 6, the lobule; the pit between the tubercles, the fossa angularis. During the later part of the second month the ear changes in its proportion somewhat, in the irregular development.

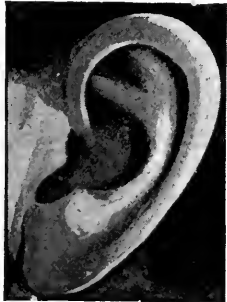


Fig. 1.



Fig. 2.

"The third stage begins at the third month. The upper and posterior part of the concha arises from the surface of the head and gradually but rapidly bends over forward, so as to completely cover the antihelix and the upper portion of the fossa angularis. During this stage in mammals the assumption of the pointed form of the ear commences.

"The fourth stage commences at the fourth month, when the tubercles which are now joined together by cartilages commence to unfold and are complete by the fifth month. Finally the sixth tubercle develops to form the lobule."

This unfolding or development of the tubercles to



Fig. 3.



Fig. 4.

produce the different portions of the ear and make it complete, is not unlike the development of a flower from the bud. By this process may be understood how, if by malnutrition in one tubercle or bud or another, or should there be a larger supply of nutriment in one than another, malformation of the ear would result. If arrest of development of all the tubercles should take place at any period from the first to the fifth month of fetal life, the ear would resemble a semi-developed flower.

The aural deformities that fall under the head of stigmata, or that have been classed as such, affect all portions of the external ear. The helix may be im-

perfect, it may be angular from Darwin's tubercle, it may lack its inward roll, it may be interrupted, the root of the helix may extend inward completely across the concha and in very rare instances it may be bifurcated. The antihelix may be unduly prominent or be insignificant, the scaphoid fossa may extend through the lobule and be double or triple. The lobule may be adherent and sometimes almost absent, thus producing the jug-handle-shaped or so-called Morel ear. It may be exaggerated in size; the whole ear may be misshapen, too large or too small. These deformities may exist in nearly every degree; only when pronounced can they be considered as stigmata. Others have been noted, but their importance as



Fig. 5.



Fig. 6.

signs of degeneracy is very insignificant unless they co-exist with several of those above mentioned.

The normal ear, or rather the ideal ear, for few possess it in its entirety, should have gracefully curved outline, nowhere pointed or angular, have a well-defined helix separated from the antihelix by a distinct scaphoid fossa extending down nearly to the level of the anti-tragus. Its root should be lost in the concha before reaching the antihelix. The antihelix should not be unduly prominent and should have a well-marked bifurcation at its superior extremity. The lobule should be shapely, not adherent or too pendulous and free from grooves extending



Fig. 7.

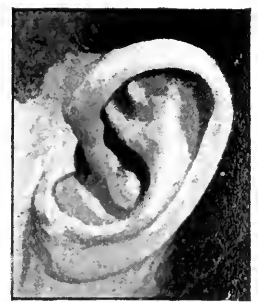


Fig. 8.

from the scaphoid fossa. The whole well shaped, its proper proportions and size can be inferred from the tables herewith given: In the adult we may say that it ought not to average much over two and a half inches in length and one and a fourth in breadth.

To describe a normal ear would be as impossible as to describe a normal jaw or dental arch. Some eight or ten years ago I collected 3,000 plaster casts of the upper jaw, and in the whole collection no two were found to be alike. If 10,000 or 20,000 casts were presented for examination no two would correspond. This is also true of the human ear. To such an extent is this the case that the two ears of

the same person never correspond either in shape or position, and rarely in size. Again in making an examination for a normal ear two investigators would never agree as to what would be considered as normal. A typical ear as a guide in the study of degeneracy has been described by many writers, G. Ballet, Frigerio, etc. The typical ear, thus regarded, consists of one whose length, width, shape and form represent the average of a large number of ears of apparently normal individuals, the parts of which are all developed in harmony, with graceful curves and outlines.

Frigerio has shown that the normal ear is from 1.95 in. (50 mm.) to 2.34 in. (60 mm.) in length. In an examination of the ear of 356 apparently normal persons, I have found in people over 12 years of age and under 50 years, that the shortest ear was two inches, longest three inches, with an average of 2.50 inches. Narrowest width, one inch; widest, 1.50 inches; average, 1.22 inches. If all structures of the ear can be well developed and in harmony, and should no two resemble each other, it may be regarded as a typical ear.

The chief points in which variations from the normal, and stigmata of degeneracy have been found, are: The auriculo-temporal angle, the position of the ear upon the head, the size, the helix, and antihelix, especially the root of the former, the presence of the tubercle of Darwin, and the shape and development of the lobule.

Like the other deformities, the angle does not denote the criminal alone as claimed by some observers, since frequently just as extreme angles are found among deaf-mutes, dumb, blind, insane, prostitutes, egotists, one-sided geniuses and occasionally among people considered normal. There is this to be said, however, the ear is more prominent at birth and up to the sixth or eighth year than later in life. In other words, the tendency is for the auriculo-temporal angle to become smaller, as the individual grows older. This only shows that the theory advanced by Frigerio that while very few ears are observed at right angles in apparently normal individuals, they will in all classes of degenerates frequently be seen. The percentage among the degenerate classes is greater than in normal individuals.

The different parts of the ear may be well developed while the general shape and outline is the opposite; on the other hand the external outlines may be graceful and pleasing to the eye, while the parts which go to make up the ear may be markedly deformed.

The position of the ear upon the head has been used by neurologists and others as a fixed point in cerebral localization. This can only be approximately correct since the position of the ear varies; in many cases greatly. Not infrequently the ear is found located forward and again back, high or low upon the head. In its relation to the mastoid process and coronoid process there is the greatest deviation. The two ears vary in position in the same individual, one ear often higher and placed more forward than the other.

Thus in an examination of twenty-two skulls by drawing a line perpendicularly through the center of the mastoid process and through the center of the glenoid cavity, it was found that not only did the auditory canal vary from one-fourth to one-half inch in different skulls, but that they differed in the same skull one-fourth of an inch. By placing a square on

the perpendicular line in the center of the mastoid process and allowing the arm to meet the outer and upper border of the glenoid cavity by drawing a line with a pencil upon the skull, the position of the auditory canal can easily be located. Thus it will be seen that the canal varies from one-eighth to three-eighths of an inch in a perpendicular direction. Since this is the case in apparently normal skulls, what must be the disparity in position in degenerates when the two halves of the head are so markedly deformed, or when the ears are situated in the posterior or anterior part of the head, or when the upper border of the ear is an inch above the superciliary ridge when it should be on a line with the inferior orbital foramen? I have observed this great difference in height in seemingly normal persons.

Unlike deformities of other parts of the head, deformities of the ear are always seen at birth, though perhaps not as prominently as later in life. While excessive and arrested development of the different parts of the ear are always congenital, they are not always inherited, since many are the result of excessive or arrested nutrition in utero. These deformities are often seen among idiots and feeble minded. The same causes which produce the one in utero, in apparently healthy parents, produce the other.

The Greek and Roman artists, judging from their sculpture, seem to have had no idea of a normal ear. Either they considered the form and position of the ear of little moment in delineating features and character, or the models used by them consisted of marked degenerates; the latter most probably being the case. Many large men have unusually small ears, and small men unusually large ones, while most present the handle-shaped and degenerate ears. The singularly consistent use Hawthorne makes of the degenerate ear in "The Marble Faun" will be recalled by students of American literature.

Morel described the deformities of this organ fifty years ago; later Darwin, struck by the frequency of a tubercle upon the outer border which has received his name, used this organ as evidence of the "Descent of Man." Still later, the ear has been studied by Giachi, Fere, Spitzka, Launois, Frigerio, Ottolenghi, H. C. B. Alexander and others. These signs of degeneracy consist of variations in size, position and shape of the ear as a whole or in part, and are the results of excessive and arrested development.

Deformities of the ear have been studied in the different institutions for special conditions of degeneracy for comparison with what are considered normal individuals. As might have been expected, different results have been observed by different individuals. One investigator may be an untrained novice, while the other has years of experience and can, at a glance, record all the peculiarities. Such being the case, the percentages may differ materially in final results. Only by comparison of the results of different scientists can a just average be obtained.

The illustrations here presented for consideration are those of typical cases, not extreme conditions. There are many degenerates in every class who possess excessive and arrested development of each of the different parts of the ear, and in this manner marked deformities are produced; in some cases exaggeration of parts, in some, arrest of parts. Figs. 1, 2 and 3 illustrate a long, medium and short ear.

The longest ear observed by Frigerio was that of a woman convicted of complicity in uxoricide. The left

No.	Name.	Age.	Method.	Time. Minutes.	No. M.A.	Spur, ridge, crest.	Effects—Remarks.
1	Mrs. T.	46	Monopolar.	18	18	Cart. spur on right side septum.	At the end of ten days the spur was disintegrated leaving a smooth surface covered with healthy membrane.
2	Mr. J. P.	28	"	20	18	Bony crest right side septum.	First treatment reduced crest some. Second treatment (one week later) 15 m.a. 15 min. reduced crest enough to overcome stenosis.
3	Mr. W. H.	24	"	25	18	Horiz. $1\frac{1}{4}$ in. bony ridge right side sept.	Fainted at end of ten minutes; placed him in reclining position and continued 18 m.a. for 15 min. without further inconvenience. One month later ridge gone and membrane intact.
4	Rev. L.	25	Bipolar.	12	15	Cart. ridge left side.	Two weeks later edges of ridge remaining were removed with a chisel. This required as much work and skill as an original operation with a chisel.
5	Rev. L.	25	"	13	15	Cart. spur left side.	Ten days later spur much reduced and membrane intact. Spur was quite small and of soft cartilage.
6	Miss G.	30	"	12	15	Cart. spur left side.	Large flat needle used at base of spur. At end of one week, spur was much reduced and membrane intact.
7	Mr. J. R.	26	"	15	15	Cart. and bony ridge left side.	Eleven days later ridge gone but there was an offensive odorous discharge from seat of operation. Passed probe one and one-half inches back between walls of septum. Twenty gr. argent. nit. checked necrotic process in three weeks.
8	Mr. L.	29	Monopolar.	13 27	27 20	Ant cart. spur left. Post. rdg. bone.	A cathodal needle was inserted into each growth, a large sponge electrode being held in the hand of the patient. At end of thirteen minutes needle was removed from ant. spur, in twenty-seven min. from post. ridge. One mo. later ant. S. gone, post. R. reduced.
9	Miss E.	20	Bipolar.	20	20	Large spur left side. cart. and bone.	After two weeks, spur gone and membrane intact.
10	Miss E.	20	"	12	15	Med. cart. spur right side.	After two weeks, spur gone and membrane intact.
11	Mr. E. S.	26	"	20	15	Cart. spur right side.	For fifteen days sloughing with foul odor; no perforation. At end of one month healing complete. Result good.
12	Mr. E. S.	26	"	13	13	Small cart. spur left side.	At end of two weeks spur was gone. No ill result.
13	Miss P.	21	"	16	14	Large cart. right side.	At end of two weeks spur was gone. No ill result.
14	Mr. C. W.	18	"	18	15	Cartilaginous ridge on right side septum.	Negative needle inserted one inch into ridge. Positive into crest of ridge. At end of first week ridge much reduced.
15	Mr. F. R.	50	"	20	15	Very large cart. spur right side.	At end of second week spur much reduced. Formerly there was great stenosis, now breathing channel was clear.
16	Mr. J. M. B.	25	"	20	15	Horiz. ridge, cart. and bone $1\frac{1}{4}$ in. long, left side.	Negative needle inserted one inch into ridge, positive inserted into crest. After three weeks ridge almost gone, stenosis greatly relieved.
17	Rev. S.	45	"	14	15	Horiz. cart. ridge on right side of septum.	One month later ridge almost gone, membrane intact.
18	Mr. C. S.	32	"	15	10	Horiz. cart. rdg. (ant.) $1\frac{1}{2}$ in. long left side.	Two negative needles used, one inserted into the anterior, the other into the posterior part of ridge. After three weeks anterior part gone, posterior reduced.
19	Mr. V. H.	24	"	16	15	Cart. spur on left side of septum.	At end of second week spur gone and membrane intact.
20	Mr. E. S.	20	"	15	13	Cart. spur right side.	Spur only partially removed, a second operation with a chisel being necessary for its complete removal.
21	Miss P.	21	"	14	12	Small cart. spur on left side.	At end of second week spur gone, membrane intact.

* Cases Nos. 1, 2 and 3 were reported in paper No. 1.

ated at the anode (positive pole) and hydrogen at the cathode (negative pole). If this process be continued the entire amount of water in the vessel will be decomposed, and in its stead will be two parts of hydrogen by volume and one of oxygen. This is a simple illustration of the electrolytic action of electricity when applied to a simple electrolyte. If the substance to be decomposed or disintegrated is more complex in its chemic composition it will undergo the same molecular disintegration, but it will be more difficult of demonstration.

When a direct (galvanic) current is passed through animal tissue it is more or less disintegrated, its molecular, its cellular structure is broken up in the immediate vicinity of the poles. Near the anode (positive pole or electrode) oxygen, chlorin and acids are accumulated, while around the cathode (negative pole or electrode) hydrogen and alkalies are accumulated. There is, no doubt, some interpolar change in the tissues remote from the poles, but it is difficult of demonstration. An inflammatory action is excited, osteoclasts are left in the broken-down tissue and absorption takes place through their agency. Where a larger area is entirely cut off from blood supply it sloughs without absorption. The electrolytic power of the current is in proportion to its density, hence, it is usually applied by means of needles as the active electrode, the indifferent electrode being from a few to a hundred square inches in area, according to the quantity of current needed in the case under treatment. In bipolar electrolysis both poles, usually needles, are introduced into the tissue to be destroyed. It should be remembered that electrolysis does not necessarily mean the caustic destruction of tissue, but rather the chemic disintegration of it.

There is a primary and a secondary electrolytic

action to be taken into account. By primary electrolysis is meant the chemic dissolution of the elements composing the tissue; by secondary electrolysis is meant those changes which occur, owing to the presence of the liberated chemicals already referred to. The primary action takes place during the time the current is passing through the tissues, while the secondary action occurs so long as the newly liberated chemicals (hydrogen and alkalies, or oxygen and acids) remain free in the tissues and the osteoclastic absorption is in progress. In some cases it continues active several days. The characteristic reactions occurring at either the positive or negative pole is chiefly due to the peculiar chemic products formed at the respective poles. At the anode we should expect the tissues to be hardened, coagulated, owing to the presence of oxygen and acids about it. At the cathode we should expect the tissues to be softened, liquified, owing to the presence of alkalies there. A moment's consideration will suggest the wisdom of this law, for a vascular growth needs in addition to the disintegration of tissue to shut off the blood supply of the part, so as to prevent rapid repair of the part, while in fibrous tissue the blood supply is poor and a softening of the tissues is needed to favor absorption through the medium of the phagocytes and circulation. Hence, vascular growths are most effectually treated with anodal electrolysis, while firm fibrous growths are best treated with cathodal electrolysis. In some conditions (notably bony and cartilaginous growths) it is indifferent which pole is used locally, or it may be found expedient to use both locally, in order that the current be confined more perfectly to the offending tissue.

The advantages of the bipolar method for operations in the nose are: *a*, the current is limited to

the offending tissues and shock from diffusion of current to brain is avoided; *b*, perforation of the nasal septum is avoided as the current is limited to a field superior to the plane of septum, *i.e.*, to the path between needles in the growth; *c*, the method is simple and less painful than the monopolar method.

Specially devised needles may be used, or in most cases extra large sewing needles answer every purpose. Moure¹ has designed a series of double needles to be used in the base of spurs and ridges, whereby he claims superior results are obtained as the current is more uniformly distributed through the growth, thereby favoring its complete removal with a minimum quantity of electric force. All my operations were done with single needles except No. 18. The part of the needle not imbedded in tissue should be insulated with varnish or small rubber tubing to prevent destructive action to inoffensive tissue.

The outfit needed to do electrolysis of bony and cartilaginous spurs and ridges of the nasal septum must embrace the following: *a*, a source of electric energy equal to twenty-five LeClanche cells—a properly reduced and guarded Edison current may be used; *b*, a reliable rheostat, the Massey current controller answering every purpose; *c*, a reliable milliamperemeter. It would be folly to attempt to do electrolytic work without accurate measurement of the electric energy employed. To depend on the number of "cells turned on" is as absurd as to tell a patient to take ten pills without regard to the quantity of medicament each represents. Cells used in medical batteries have an electromotive force ranging from 1 to 2 volts, and the resistance of the various tissues of the body varies all the way from 2,000 ohms to 500,000 ohms, hence there is no way of estimating the quantity of current passing through the body except to measure it with some reliable instrument. The quantity of electric energy required to disintegrate such growths as are of common occurrence in the nose and throat is from 2 to 30 m.a., according to the size of growth and kind of tissue composing it.

In my first paper² it is implied that I was the first American observer to write upon this subject, but I now freely accord Dr. James E. Newcomb, New York, precedence in the field. In the *Medical Record*, Aug. 5, 1893, he wrote under the title, "Electrolysis for the Relief of Certain Morbid Conditions of the Nasal Septum." He gives an admirable review of the literature to that date with a report of two cases. Since then, there has been little that is new, except some slight modifications in needles and the adaptation of the Edison current to nasal electrolysis by Dr. Casselberry.³ He takes the position, in an article read before the American Laryngological Association, at Rochester, that bony growths will not yield to the electrolytic action of the current, contrary to continental observers and also contrary to my own observation.

I present herewith a tabular report of twenty-one cases in private practice, from which I arrive at conclusions as to the propriety of resorting to electrolysis for the removal of septal spurs and ridges.

These cases were all well-nourished, healthy people. An equal number of dispensary cases treated in the same way would, no doubt, show less favorable

results. While the results are quite favorable in most cases, the fact still remains that as a method it is neither so simple nor so sure as others at our command. I quite agree with Dr. Bresgen⁴ that its scope should be limited: *a*, to those cases in which it is impossible to carry out the usual surgical treatment, either on account of weakness or other disability; *b*, those cases in which more radical measures are refused; *c*, that electrolysis is not, nor can it ever be, a therapeutic measure which can be used by other than experienced specialists, because when carried out by unskilled hands it can only lead to disaster. Dr. Bresgen was supported in his conclusions by Drs. Hajek, Stoerk, Heymann and Chiari.

I will add the further conclusions: *d*, cartilage yields more readily than bone; *e*, an osteoma is more easily removed than normal bone, because being an abnormal growth it is an irritant and is therefore more unstable, requiring less irritation to cause proliferation of osteoclasts; *f*, only growths of minor size are successfully treated by electrolysis, those of major size being only partially removed; *g*, large growths, especially those with a wide base, should be attacked with double needles at base and single needle at apex; *h*, perforation and sloughing will result from the use of too much current, or from a prolonged use of a moderate one (see case No. 7); *i*, all cases should be thoroughly cocaineized by placing a pledget of cotton saturated with a 10 per cent. solution of hydrochl. cocain over the part to be operated on, and leaving it there for eight minutes.

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THE TREATMENT OF TRACHOMA AND TRACHOMA SEQUELÆ.

Read in Part at the Annual Meeting of the Tri-State Medical Society, at St. Louis, April 3, 1895.

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Trachoma cases come to us for treatment not only in all stages and states of active disease—such as acute, sub-acute and chronic—but also after the affection has worn itself out; been consumed by its own fire, so to speak, and we have to do only with its effects; and every phase of the morbid process, every attendant complication and, lastly, every resulting defect of the lids or eye, calls for some particular method of handling.

In view, therefore, of the prevalence of trachoma, or granular conjunctivitis, or granulated lids, or what you will, in the three States represented by this society, especially in Illinois, and having, through my connection with the Illinois Charitable Eye and Ear Infirmary for the past eight years, been afforded admirable opportunities for observation along this line; moreover, in view of the fact that the disease is peculiar to the very class of sufferers who can not, as a rule, most easily consult the oculist and comes, perhaps, oftener than any other ocular affection within the province of the general practitioner, I could think of no more fitting subject to bring before you.

To the point then, and briefly: As to the acute stages of trachoma the treatment must be mainly that of septic conjunctivitis in general. The free and constant use of antiseptic solutions, as baths, douches

¹ Archives Cliniques de Bordeaux, February, 1893.

² JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Nov. 10, 1891.

³ American Laryngological Association, Rochester, 1895.

⁴ Journal of Laryngology, Rhinology and Otology, Jan. 1895.

and instillations; the application over the closed lids, and for only three to ten minutes at a time of intensely hot water, the sparing use of atropin for its quieting effect, and occasionally when the deeper parts of the eye, such as the iris, become involved, the putting of leeches to the temple. As an all-around disinfectant remedy nothing quite equals a solution of the bichlorid of mercury. For a douche or instillation its strength should not be less than 1-10,000 nor more than 1-2,000; as a strictly localized application, however, one may with safety and to advantage use solutions varying from 1-500 up to 1-60. Second in importance only to sublimate is the nitrate of silver, either in solution or in substance. I may state, once for all, that in the use of these salts not so much depends upon the strength of the solution as upon the method and tact with which it is applied. A nicely sharpened pencil of lunar caustic may by deftness and caution be made to give the mild effect of a 2 per cent. solution of the same. By your leave I will explain my manner of applying these strong solutions to the conjunctiva. Of silver I rarely use less than sixty grains to the ounce of distilled water, or perhaps what is a still better medium, a 4 per cent. solution of boric acid in distilled or boiled water. The nitrate of silver dissolved in this gives a clearer and more stable solution than when dissolved in water alone. Being seated in front of the patient or, if a child, holding its head tightly between the knees while the body and hands are held by an assistant, the eyes are washed externally with absorbent cotton wet with warm boric acid solution, special care being taken to cleanse the cilia and canthi, after which the lids are everted, sponged off with absorbent cotton dipped in boric acid solution and tightly wrung, for dry cotton should never touch the eyes. A small delicately pointed brush is made by winding absorbent cotton on a silver probe. Camel's hair brushes I consider an abomination. If one could keep them absolutely clean and have a separate one for each patient they would be bother enough, but this is impossible, while absorbent cotton is not only always clean and ready, but is actually a better vehicle. Making sure now that the exposed conjunctiva is freed from moisture by sponging, the brush is dipped into the strong solution, whether it be of silver or sublimate, touched to the lip of the vial so that at the moment of coming in contact with the lid it will not give off a drop to spread and do injury to the unaffected parts. And here is just the point, to strictly localize the effect.

No doubt much harm has been done in the treatment of these cases by the slipshod manner of using caustic remedies; by allowing a solution of silver, for example, to run down over the cornea, destroying its epithelial protection, thus giving better chance for infectious ulcers; again by indiscriminately touching the whole of the exposed conjunctiva, diseased and normal portions alike, thus aiding the malady itself in the destruction of tissue and favoring greater cicatricial contraction afterward. Whether we use brush, pencil of lunar caustic or crayon of copper, I repeat, it should be sharp-pointed and the granulations should be gone over therewith much as an artist goes over his nearly-finished painting putting in the high-lights. Sufficient impression must be made at each point where the remedy is applied to cause the appearance of a decided coagulum—dense white if silver, grayish if sublimate or copper. Im-

mediately after this, comes copious douching of the whole conjunctival sac with very warm saturated solution of boric acid; dropperful after dropperful is poured on the membrane, flooding cornea and all, the patient holding a hard-rubber pus basin beneath the chin to catch the overflow. I have found that the warmer this douche can be borne the better. One's patient is more comfortable after the treatment.

Lastly, the excess of moisture is again sponged away and one drop of a 4 per cent. solution of cocain, containing six drops of carbolic acid to the ounce, is let fall upon the everted upper lid. The eyes are then carefully wiped externally with wrung-out cotton to keep the patient himself from employing his own means and materials for doing it; indeed he is told to let the eyes severely alone. Many trachoma cases, both acute and chronic, will come with photophobia and spasm of the orbicularis, which, aside from being bars to progress in treatment, cause complications such as pannus, conical cornea, trichiasis and entropion.

It was for a long time believed that entropion was solely due to the contraction of the conjunctiva and warping of the tarsi from connective-tissue degeneration; it is now known, however, that an important factor in the production of this deformity is prolonged blepharospasm, especially of the tarsal and border fibers of the orbicularis. Through its influence the posterior angle of the free border of the lid is absorbed, whetted away, as it were, and the anterior angle with the cilia brought down in contact with the eyeball.

Our first care then, where exists dread of light and spasm of the orbicularis of the lids, should be to remove these conditions. The former will yield to systematic exposure of the cornea to bright daylight. If the patient has resolution enough he can often be prevailed upon to keep his head erect and his eyes open until they will tolerate the light; if he can not or will not try to do this, cocain may be instilled, a blepharostat put in, and the face directed toward a well-illuminated window. This done for a few minutes daily works wonders. Best of all, however, for both conditions, is a well-made canthoplasty, together with free division of the external canthal ligament.

Where there is excessive lymphoid infiltration of the conjunctiva, be it contained in discrete granulations or trachoma bodies, or whether it be distributed profusely beneath and in the swollen papillæ, thanks to the man who invented squeezing-out¹ forceps; the process of treatment in such instances has been tremendously shortened by the expression of the infiltrated portions. Here is a pair I have had made of tortois shell, a material that resists the action of the strongest antiseptic, and by its elasticity prevents undue laceration in the squeezing procedure. The operation of excising the retro-tarsal fold or fornix of the conjunctiva for the cure of granulations has always struck me as being a little too heroic, since great loss of this membrane, particularly where such loss would tend to restrict the movement of the eyes and lids, is precisely what we wish to avoid.

Yet there is a time for excision of the granulations, viz., when the hypertrophy of the papillæ has gone to the extent of forming hard knob-like tumors in more or less advanced stages of connective tissue degeneration over the tarsus and at its upper border. These act like so many foreign bodies and by their

¹ Suggested by Mandelstaum in 1883, and first practiced in America by Dr. F. C. Hotz, of Chicago, in 1886.

continual rasping do great damage, especially to the cornea. Their indifference to the laying on of ordinary medicaments is supreme; even the oft-repeated and prolonged rubbing of them with a bit of sulphate of copper but serves to give them a little polish. Hence in dealing with these it is my custom to evert the lid, put on a drop of cocain solution, and with delicate, sharp scissors, curved on the flat, trim them short off.

As to corneal complications, they are as a rule purely secondary and do not require special attention. At times, though, an ulcer will become too large or threaten to perforate, requiring vigorous antiseptic treatment and, if encroaching on the posterior layer of the cornea, eserine to lower the intra-ocular tension, and a roller bandage to give outward support. Sometimes, too, blood vessels will remain over the center of the cornea, interfering with vision and disfiguring the eye, even after the original disease has disappeared. To cause their absorption one has but to incise the tissues immediately surrounding the cornea in a complete circle and clean down to the sclera, retract them somewhat and scrape the bottom of the furrow well with the convex edge of a sharp scalpel.

Passing now to those sequelæ of trachoma that call for surgery of the lids, we will consider only what goes by the rather comprehensive name of entropion. This may consist mainly in a slight warping or incurvation of the tarsus from the deposit of scar tissue in a more or less pronounced horizontal groove along its inner face, the free border being fairly well preserved, and only a few eyelashes resting on the cornea; in which event a well-executed Hotz operation will suffice to set all to rights again. But by far the greater number of the cases, as we find them, will have a much more aggravated condition. In many the conjunctival sac will be shrunken until both upper and lower fornices are obliterated—the tarsi so atrophied that their transverse measurement is only half, or less than half, the normal, having a deep groove within, and a decided ridge without, and the free border of the lid worn down to a very thin edge just at the point where the lashes emerge from their follicles, and the lashes themselves all inside the palpebral fissure, and all resting on the eye-ball. There will be more or less over-tension of the orbicularis, as also photophobia, the last from the corneal irritation. Experience has taught that, in cases so extreme, a Hotz operation alone, no matter how pronounced the primary effect, will not give permanent correction. In short, each distinct, morbid feature, as enumerated above, must be met by a separate surgical measure, and each measure made to give its maximum effect. To replace the inner angle of the free border and, to a degree, the atrophy of the conjunctiva as well, a graft of mucous membrane is taken from the lip and placed just back of the cilia; with the Hotz operation is combined a counter-grooving of the tarsus, and for the relief of lid-tension the border fibers of the orbicularis muscle are excised (not the muscle of Riolan, for this would be impracticable), and canthoplasty, with thorough cutting of the external canthal ligament, is done. Moreover, to insure the best possible and most lasting result all of these operative procedures must be resorted to at one and the same sitting. Were the canthoplasty done to-day, the graft put in to-morrow and the Hotz operation made the day afterward, our object would not be at-

tained. I have seen many instances of failure in the results of these operations, but never one of permanent over-correction. In a number of my own cases, temporary ectropion has occurred, but in none has it remained. Indeed, we might even strive with advantage, to produce slight eversion of the operated lid. With your permission, I will describe the operations as made in exaggerated cases; not because I have anything new to offer, but because, having given much attention to the technique of this particular surgery I desire, for the first time, to give details. Patients are prepared for the operation by a few days of hospital regimen; baths, clean clothing, antiseptic eye-washes and eye-douches. At the moment of operating, the eye and its appendages are most thoroughly and carefully cleansed; the same, as to hands and instruments. Ether is usually given, though many prefer to stand it without; cocain, however, being freely instilled at the site while the instruments are being used. This first step in the combined operation is the making of the canthoplasty, and the cutting of the external canthal ligament. For this the only instrument used is a pair of straight, strong scissors with very blunt points. Standing behind the patient's head the lids are gently pressed apart, one blade of the scissors introduced behind the outer canthus as far as it will go without using force, and as free division of integument and conjunctiva made as can be done at one snip. Then the lid is taken between the thumb and finger, by pulling the external canthal ligament is put upon the stretch and, on putting the scissors into the incision with the blades closed, can be readily felt. One snip also serves to cut it, when the lid at once gives way from its support on that side, as detected by the thumb and finger holding it. The sutures here, which complete the canthoplasty, are left till next to the last step. Next thing, we make the incision just back of the cilia to relieve the mucous graft. Apropos of the tissue here employed, there was a time when I used fine-textured skin, such as exists behind the ear, but having had one case in which a large ulcer came on the cornea just under the graft, apparently due to the fact that the secretions of the lids and conjunctiva failed to moisten the piece, as there were no hairs in it to scratch, and it had to be excised and mucous membrane substituted, before the ulcer would heal. For this incision the only instrument is a small, very sharp scalpel, with great convexity of edge near the point. The lid is well everted and held thus by the fingers alone, not by fixation forceps, for they do too much traumatism. The taking of the first step (*viz.*, the canthotomy) in the operation makes the second an easy one. A rather deep incision is made extending about the whole length of the free border, avoiding the punctum, hugging the conjunctival and not the tarsal side, and observing well that all the hair follicles are in front. The object in making this cut at this stage is to give time for bleeding to cease in time for the last step, *viz.*, the insertion of the graft. The third step is the Hotz operation—a most efficient feature, and too well-known a procedure to require a description. I would like, however, to call attention to two or three points in this connection. The incision through the integument and orbicularis is often made too far from the free border. In this, one should be governed by the width of the tarsus, since it is the "stiffening," as tailors put it, across which the lower flap (we are speaking now

tially. It becomes doubly important that the weak of the upper lid) must be tightly drawn in order to turn out the lashes. Moreover, to get the full effect, this lower flap must be dissected down to the free border, or until we see the cilia stretching across the bottom of the incision like stitches of thread in a seam, being cautious enough not to cut a buttonhole through, and all the border fibers of the orbicularis, that is to say, all those fibers of the palpebral portion that lie near the free border, must be excised. The next step is the grooving of the outer, or convex, side of the tarsus if the latter be much warped. Then, as to the placing and tying of sutures, I was taught, I do not know by whom, but certainly not by Dr. Hotz himself, that the second puncture of the needle carrying the suture was in the tarsus. Instead, it is infinitely better, and was undoubtedly the originator's idea, to utilize the full breadth of the tarsus to stretch the flap bearing the cilia across, and to pass the needle in just *beyond* the convex border of the tarsus. And in tying the thread, after the first turns are taken in it, the lower end is given to an assistant while the operator holds the upper, when, with the other hand, and by the aid of forceps, the edge of the lower flap is drawn up and set in contact, and held at the point where the suture plunges into the deep fascia constituting the ligament of the tarsus, when the knot is drawn tight, surgeon and assistant drawing together, and completed. Then come the sutures to make the canthoplasty; and lastly, the cutting and putting in of the graft. The lower lip is everted by the fingers, washed with warm boric acid solution, and cocaine dropped on. To remove the piece I roll the lip around the ball of my middle finger, and with the same scissors used for the canthotomy, excise at one cut a long ellipse of the mucous membrane, sufficient to fill the incision in the free border of the lid. Dip it in the warm boric acid solution and lay it over the left thumb nail, face downward, and with small, curved scissors, trim off all the adipose and as much of the sub-mucous connective tissue as is practicable, and again immerse it in the warm boric acid solution. The incision which is to receive the piece is now spread wide open and the graft laid in, it goes without saying, flatwise, not edgewise, and with the epithelium outward. Small sponges with thin edges, made by wringing small bits of absorbent cotton out of boric acid solution, are delicately applied round about the border of the graft for a few moments to drink up the ooze of blood and other moisture, the lid being held everted the while; after which the eye is closed and a borated dressing is put on, fixed by a mosquito-netting bandage, applied wet. No sutures are used either in lid or lip. The dressing should be removed after the first forty-eight hours, then daily three or four times, for if the lids are left exposed too soon the grafts become dry and hard, much to their detriment.

605 Venetian Building.

SOME MECHANICAL PROBLEMS IN THE OPERATIVE CURE OF INGUINAL HERNIA.

Read before the Medical Society of the Missouri Valley, Council Bluffs, Iowa, Sept. 19, 1895.

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It is customary to think of the abdominal viscera as making unrestrained pressure in every direction in their efforts to escape from the cavity in which they are enclosed. If this were literally true, hernia to the extent of total disability would be the rule. In the normal condition the relationship is such that when the omentum, the small intestine or the large intestine has pressed about so far in any given direction, it can go no farther, not because of the resistance met in front, but because of the restraint offered by the mesentery, the mesocolon, or other attachments. This restraining force does not manifest itself by a sudden pull like the jerk when the end of an elastic cord is reached, but by the gentle traction of an elastic tether, which causes the organ to glide away from the danger point over the slippery peritoneal surface.

From these considerations the inference is natural that because A has a hernia and B has not, it does not prove that A's abdominal wall was originally weaker than B's, or that A's deep ring was more open or more distensible. But it is fair to infer that A's mesentery or mesocolon is abnormally long or abnormally attached; or, if the omentum be the *persona delicta*, that this apron is too long, or too heavy, or its attachments above have descended from either dilatation or displacement of the stomach. In the event of none of these abnormalities being originally present, A has probably been in the habit of overloading the alimentary canal by eating too much, or has been a victim of constipation, or his work has been such as to subject him to frequent and severe strains. Any of these influences may have brought about in an artificial manner the conditions favorable to the production of hernia.

If the above are the correct etiologic factors, when the question of the operative cure of a hernia is considered, the surgeon must (1) and preferably, remove the original cause, or (2) make the abdominal wall at the site of the rupture stronger than nature made it. Unless one or the other of these conditions is met, efforts towards cure are bound to be followed by disappointment on the part of the surgeon and the disgust of the patient.

1. The first requirement can seldom be met except in a slight degree. It would not be practicable to put a tuck into a too long mesentery or mesocolon; but it may be possible to temper gluttonous habits, correct constipation, or induce a patient to follow an easier occupation. Should the contents of the sac be omentum it is a good plan to curtail its length by ligating and removing the extruded portion. I have practiced this expedient in several cases and have been pleased with the result. De Garmo not only removes what omentum he finds in the sac but draws down as much more as possible, ligates and removes it. This procedure comes very near fully meeting the condition.

2. But it must be admitted that in the majority of cases the first condition can be fulfilled only par-

A MEDICAL GENTLEMAN.—A medical gentleman always recognizes that it takes money to publish a good medical journal and that as a rule the better it is the more money it costs. He does not fly into a passion when he receives his reminder in the form of a bill for subscription, but as he hopes that his patrons may pay him, he promptly sends the amount to his publisher, *tuto, cito et jucunde*.

point in the abdominal wall be made stronger than nature made it. Until very recently this had not been very generally accomplished. In a paper before the American Surgical Society, in 1890, no less an authority than Bull asserted that he had never seen a case that had remained cured five years after having been operated upon.

So much for hernia in general. The difficulties with which we have to deal and the generally unsatisfactory results of operations for the cure of inguinal hernia need no further comment than a reference to the myriads of "new" and "improved" processes which from time to time have been heralded to the medical world only to give place to a method still newer in the next issue of the journals. A disability so frequent, so troublesome and so dangerous has been deemed of sufficient importance to command the attention of hundreds of workers who have given to the subject their best thought. Until very recently no operation had been devised in which the percentage of permanent cures was great enough to make any surgeon very sanguine. When a sufferer consulted an honest medical man he was likely to be told to content himself with the use of a truss, however unsatisfactory, and cautioned against any form of surgical operation as too dangerous and uncertain.

Since it has been made possible to perform such operations with very slight risk to life or danger of wound infection, the efforts to solve the mechanical problems that enter into a cure of hernia have been redoubled. From St. Petersburg to San Francisco and from Italy to the North Cape surgeons have been at work trying to evolve a way to strengthen a place in the abdominal wall which nature has left intrinsically weak.

The weakest point is usually at the site of the deep ring. Although the spermatic cord is surrounded here by a strong muscular and tendinous border there is often space for a small piece of omentum or intestine to insinuate itself by the side of the cord when a cough or anything else which increases intra-abdominal pressure will stretch the ring and increase the space by the side of the cord, putting everything in a more unfavorable condition to bear the next strain. Repeated stretching in this manner is doubtless the usual precursor of the sudden "giving away" by which the average patient describes the origin of his rupture. This "giving away" I take it is only the final step in a process which has been going on for a considerable time. There are occasional cases in which a sudden very intense strain has produced the hernia, the ring not having been stretched and weakened before, but I believe such cases to be very rare. These remarks do not, of course, have any reference to congenital hernia, whose formation is so well known as to need no explanation here.

Numerous methods have been devised for the disposal of the hernial sac. It has long been the orthodox belief that the sac must be so disposed as to leave a smooth surface or a convexity, that the impact of the abdominal contents during a moment of increased intra-abdominal pressure, may not find a depression at the place of exit of the cord. This has always seemed to me to be making a great matter of what is really an unessential. It makes little difference what disposition is made of the sac; within a few weeks the peritoneal surface will be smooth.

The important point is that there shall be no infundibulum left external to the peritoneum. If such

an infundibulum exist, it matters not how smooth the peritoneum may be, it will soon be invaginated into the depression, the thin, distensible peritoneum presenting very slight resistance to pressure. This furnishes a useful hint when it comes to treatment. The stronger structures external to the peritoneum must be well drawn together and the cord must pass through as narrow an opening as is consistent with continued function of the cord. This gave rise to the practice of closing the deep ring external to and above the cord. But one of the weak points of such operations arises from the condition in which the transversalis fascia is left. This structure is one of the strongest elements making up the abdominal wall. In old and large hernia it has become much stretched. When the cord is simply pushed backward and the tissues more external are closed over it the overstretched transversalis fascia is left untreated and it presents almost an open door for a new hernia. This condition of the transversalis fascia is doubtless what lead Bassini and Halstead to see the need of a stronger wall posterior to the cord. The construction of a new canal with a strong and firm posterior wall was evolved and the operation for the cure of inguinal hernia is now upon a secure basis—relapses being very few.

A brief comparison of the relative excellences of the Bassini and the Halstead operation may be profitable. The inference is often made that, if Bassini's operation is radical, Halstead's is still more radical, and therefore, if the former is effectual, the latter must be still more effectual. This is a plea frequently made in favor of the Halstead method. Whether there is anything in this specious reasoning let us see.

The statistics of both operations are excellent. Bassini's latest reports show a total of 536 operations with no deaths and only 15 relapses; and Coley reports 160 operations done by his modification of the Bassini operation—using kangaroo tendon for the buried sutures—with one death from double pneumonia on the fifth day and three relapses. Halstead's statistics seem equally good though lacking the number of operations performed.

Admitting that from a statistical standpoint there is little to choose between the two methods there seem to be a few valid objections to the Halstead operation which are less apparent in the operation of Bassini:

1. With the carrying of the incision through the deep muscles outward from the deep ring for the purpose of transplanting the cord, the operation is made a true laparotomy, and such an incision carries with it all the inherent dangers of an abdominal hernia to which every laparotomy is subject.

2. The new ring of Halstead is made of normal muscular tissues and would not seem to be the ideal structure for a ring. It would be wanting in firmness and be too easily distended when impinged upon. When the cord is simply carried to the outer margin of the natural ring and the ring is closed as closely as possible from the inner margin, as after Bassini, the margins of this smaller ring are already smooth and almost tendinous and are much less distensible than ordinary muscle.

3. When the cord passes directly through the deep muscles and also through the aponeurosis of the external oblique, as Halstead does it, it must then bend at right angles downward and inward. Just at the

bend there must be decided pressure of the dense aponeurosis which can not fail to produce occasional destructive pressure upon the spermatic cord. The same objection has been raised against the Bassini operation and some cases of atrophy of the testicle have been noted. If this accident can result when the bend of the cord is made over the softer tissues it is certainly much more likely to occur after the Halstead method.

4. An objection often made to the Halstead method is that it places the cord so superficially that it is exposed to dangers from contusions. Although I do not believe this would often happen there can be no question that the criticism is valid.

5. By uniting the aponeurosis of the external oblique over the new canal, Bassini forms a solid point of resistance over the deep ring. In order for a new hernia to form an opening must first be forced so large that the viscera extruded can turn at a right angle underneath the firm aponeurosis—a thing very unlikely to happen. In the Halstead operation, the new canal passing directly through the whole thickness of the abdominal wall, there is no hindrance to the viscera pushing their way directly through, if once the slightest infundibulum forms at the inner end of the canal. Any one who will for a moment think how easy it is to separate the fibers of the external oblique when they once begin to separate, can not fail to see that this aponeurosis, in order to do effective service, must be intact. An opening through it large enough to permit the exit of the cord introduces an element of weakness which does not obtain in the Bassini operation. That the aponeurosis of the external oblique serves as a buttress and adds greatly to the strength of the wall can be fully appreciated when one calls to mind the frequency of direct inguinal hernia, which occurs at the superficial ring, the point where the underlying tissues are not re-inforced by the aponeurosis. Kocher claims that the main cause of relapse is the overstretched condition of the aponeurosis and the chief distinguishing feature of his operation is to draw this structure taut by means of sutures. Here we have a high authority for the statement that the aponeurosis does serve as a buttress. In doing the Bassini operation I believe it is advisable to suture the aponeurosis over the cord as firmly as can be done without dangerous tension. This can best be done by inverting the edges.

6. Finally in case of relapse after the Halstead operation the condition is likely to be worse than after the Bassini. If the hernia recurs after Halstead's method the skin and superficial fascia offer no opposition to the hernial contents. And as any one can see, if the external oblique fibers once begin to separate, they will separate easily and there is no limit to the size to which the relapsed hernia may attain. After the Bassini operation, if a relapse occur, the intact aponeurosis will act as a check and will offer a favorable condition for the use of a truss.

There are one or two modifications of the Bassini method which seem to me will improve its usefulness. One of them is the practice introduced by Halstead of ligating and excising superfluous spermatic veins, especially if varicocele or anything approaching varicocele be present. The cord can thus be much reduced in size and with it the caliber of the canal.

Another decided improvement is the use of kanga-

roo tendon for buried sutures, as so ably practiced by Coley. Marcy, of Boston, has shown that kangaroo tendon when buried in the tissues is absorbed at the end of two or three months; and Bosse has thoroughly investigated the healing process of tendinous tissue, finding it complete at the end of ten weeks. From this showing there can be no doubt that kangaroo tendon is the ideal suture, being superior to silk, catgut, silver wire, or silkworm-gut.

I have no hesitation in pronouncing the Bassini operation, slightly modified, the best yet devised for the cure of inguinal hernia in the male. The rationale of the method is scientific and the practical results all that could be expected of any operation. Following is a brief résumé of the steps of the operation as I am in the habit of performing it:

After one or two days of liquid diet, the alimentary canal having been thoroughly emptied, and the field of the operation having been shaved and scrubbed a few hours before, an incision is made, just above and parallel to Poupart's ligament, extending from an inch external to the deep ring, to the spine of the pubes. This incision is carried directly down to the aponeurosis of the external oblique and the tissues retracted slightly in order to bring the white aponeurosis into good view. Next the fibers of the aponeurosis are separated, the separation extending from the superficial ring to a short distance external to the deep ring. The aponeurosis is then loosened for a half inch to an inch above and as far as the attachment to Poupart's ligament below and the borders are held aside by retractors.

The cord and sac are now laid bare and the sac separated well down to the abdominal peritoneum. The sac is then opened, and if the contents be omentum this structure is ligated and cut off; if the contents be intestine it is reduced. The sac is next drawn well out, twisted, tied with catgut ligature, and cut off. The cord is raised, superfluous veins ligated and excised and the remainder held out of the way by an assistant, using his finger or a dull retractor. Kangaroo tendon sutures are used to unite the internal oblique, transversalis, and transversalis fascia to the posterior surface of Poupart's ligament. The internal suture should be placed as far toward the external border of the deep ring as is consistent with the integrity of the cord. It is important in placing this row of sutures that the stretched transversalis fascia be drawn well up in order to make it normally tense.

The deepest row of sutures having been completed the cord is dropped back and the aponeurosis of the external oblique united over it also by means of Kangaroo tendon. Either interrupted or continuous sutures can be used, being careful to invert the cut edges of the aponeurosis and make as taut as practicable without undue tension. Finally the skin wound is closed with interrupted sutures of silkworm-gut and a sterilized dressing applied, binding it on by means of a spica bandage. The bowels are moved on the second or third day, the dressings changed and skin sutures removed on the eighth or ninth day. The patient is kept in bed for three weeks. He is then allowed to go about, is warned against heavy lifting for several weeks longer and discharged with no truss or other apparatus to harass him.

This is about the method I have adopted in several cases and the results have been so gratifying that I do not hesitate to advise any patient with hernia

which causes him the least inconvenience, to resort to the operation. Great aseptic care must be used to guard against accidents. With such care I see no reason why the operation for the cure of inguinal hernia should not be practically free from danger and the percentage of relapses be almost *nil*.

GENERAL AND SPECIAL TREATMENT OF TUBERCULOSIS.

Read before the Dodge County, Wisconsin, Medical Society,
at Waupun, Wis.

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It is a source of pleasure to state in the words of an authority, Solis Cohen, that tuberculosis of the lungs is a curable disease. This authority, however, believes that the statement must be considerably modified with reference to the outcome of every case. We all realize from painful experience how utterly inefficient were our past resources in the arrest of these cases. There is no disease within the realm of medicine that gives the physician more prolonged and painful anxiety, because, in the first place, it is a pathologic process, generally occupying a lengthened period of time, whether in the direction of recovery or death; and in the second place, because we can not weigh in the balance the amount of potential energy possessed by the victim and the degree of vitality of the invading bacilli. We are thus surrounded by a cloud of uncertainty.

It may be well to generalize the situation by the statement that tuberculosis is primarily a local manifestation of a degenerative process, which may be limited to a few cells, or lobules of the lungs, or diffused, so to speak, throughout the economy, the characteristic tubercular process being due to some form of lesion whereby the active principle (the bacilli) gains a foothold through that gateway or entrance.

Degeneration of cells is produced by prolonged disregard of natural laws by predecessors, or promoted in the direction of depression, privation or excess. Anything either within or without the economy that is calculated to reduce the physiologic resistance of individual cells prepares the way for this dreaded enemy. We may also state the opposite, that everything within or without the economy calculated to maintain the standard of physiologic resistance are ideal conditions to ward off danger. With normal resistance of individual cells the microbes will come and go harmlessly. After the invasion of the tissues by the bacilli the struggle for existence continues, it being then a case of the survival of the fittest.

I have been deeply impressed of late by the suggestion, that we should examine the lungs of our patients more thoroughly and more frequently, especially those who have chronic dyspeptic symptoms and subject, by least exposure, to catching cold. When there is a persistent yellowish deposit on the tongue, after excluding malaria and rheumatism, we should suspect incipient tuberculosis; particularly when there is the least evidence of a predisposition in the family history. These symptoms, associated with indications of parenchymous change, constitute the so-called pre-phthisical state. It may be defined as a disposition of individual parent cells to produce a progeny of lowered vitality, brought about by conditions entirely outside of the cells; conditions which

produce mal-nutrition of cells. We shall not err very much by saying that in most of these cases the great battle for the supremacy between cell and bacillus has already commenced.

It is evident that to overcome this morbid state of mal-nutrition, our efforts should be directed towards making the environment as physiologic as possible. Our hope of relieving suffering humanity rests upon this principle generally speaking.

Nature has endowed all cells with wonderful recuperative forces, and providing that the parent curse of many generations does not rest upon any biologic cell, nor the surroundings be unfavorable, all living protoplasm by inherent forces will evolve from a lower to a higher state of physiologic vigor. I would suggest that these cases be treated, in all detail, as tubercular, even in the absence of any positive local symptoms. The treatment that promises any degree of satisfaction must be general. We must resort to all measures to improve nutrition, to bring the economy into harmony with its surroundings. We can not call to our aid any one specific, and I doubt if we ever shall; for independent of the invasion of bacilli are the degenerate cells. I feel, however, enthusiastic over the possibilities within reach of all. Our hope of a successful issue rests not upon directly fighting bacilli; but upon fighting degeneration of individual cells; upon increasing potential energy, modifying their surroundings, bringing the cells into harmony and equilibrium with environment. If we succeed in our efforts we may venture to disregard the bacilli, for we shall have succeeded in changing a favorable to an exceedingly unfavorable soil for their development.

A very essential beginning with these cases consists in ridding our patients of all disobedience and anxiety by laying the whole matter intelligently before them. In no other manner can we successfully protect the well and gain the patients harmonious co-operation. Inspire them with confidence and hope. Impress upon them the fact that by prolonged obedience to natural laws, rests their future welfare.

Cheerful surroundings are an essential factor to a successful issue; they aid nutrition reflexly through the mind. Prompt and thorough elimination of the products of normal and morbid tissue metabolism must be maintained. All the emunctories must be kept actively at work.

We will first take up the skin. By warm baths we increase its eliminative function; the superficial capillaries are filled and the lymphatic circulation stimulated so that subsequent inunctions of cod liver oil will be beneficial for nutrition and protect from cold. By cold bathing we stimulate the nervous system, and also train the economy to adapt itself to sudden changes of temperature without producing morbid reactions. Frictions after the cold bath will stimulate the capillary and lymphatic circulation.

The urinary secretion should be under constant observation, particularly its specific gravity. The specific gravity is usually increased. It is an indication for the administration of more fluids. A patient may take with advantage artificial lithia water or sterilized soft water, or better still, distilled water.

Of the alimentary organs, the liver demands the closest attention. Its influence for good or bad results is very great. It is called the graveyard for

blood cells. When there is a hard fight within the economy we have reasonable evidence that many phagocytes are killed in the encounter. The cells break down in the liver, and thereby increase the specific gravity of the bile. The demands upon the liver are frequently beyond its capacity for work. These cells, however, must be removed or the products of their disintegration will cause auto-infection.

These products, leaking, as it were, into the blood, make a very unphysiologic environment for the living phagocytes. Occasional minute doses of calomel, or preferable, as indicated biniodid of mercury, should be administered to reduce the pressure in the bile ducts. Free use of hot water will reduce the specific gravity of the bile. It may be well to stimulate the parenchyma by the usual remedies. A liver that has a normal capillary and biliary circulation will not let poisonous alkaloids leak (percolate) into the blood. Any abnormality in this direction causes passive pressure in the stomach and bowels that will retard digestion and assimilation. We must guard against prolonged retention of intestinal contents. Careful attention to the alimentary canal and its tributaries will result in greater capacity to digest food and prepare it for oxidation and assimilation. We all realize that the demand of the economy for abundant nourishment is very great in all these cases. Occasional flushing of the colon with sterilized water is worthy of attention. We must endeavor to keep up a vigorous circulation by vaso-motor tonics, systematic exercise, and massage.

Special attention should be given the nasal cavities; all obstruction to free admittance of air must be removed. They must also be kept scrupulously clean. We now come to the most important of our consideration of the treatment of tuberculosis of the lungs. It is not what shall we do with the bacilli, for this is a secondary matter, but the all important and vital question of how shall we maintain, restore or increase the capacity of the lungs? No part of the treatment has been more unsatisfactory in the past, and indeed, no part more disregarded. It is a fact that the largest majority of people with acquired tuberculosis of the lungs have not learned one of the greatest lessons in life, that of physiologic breathing.

Collapsed vesicles, hyperemia and lymph stagnation are nature's punishment for a disregard of her endowments. The decree of nature is, that a neglected organ will atrophy and degenerate.

It is an easy matter for plugs of mucus to settle in the vicinity of collapsed vesicles and there decompose. These mucous masses under normal conditions are expectorated. Wherever we have decomposing organic material there we shall find a plentiful supply of micro-organisms. It is a practical question to ask, how shall we open up these vesicles and relieve the hyperemia and lymph stagnation? It is a source of great pleasure to bring to your attention an apparatus, or instrument, called by the manufacturer, a pneumatic dilator, the principles of which are based upon the most sound philosophy.

Dr. Hawley describes it as an apparatus for preparing and administering nebulous medication by a process of forced dilatation, the basis of which is the discovery that the lips will act as a safety valve and that, into any tube, cavity or valve or air cell into which air can be forced by high pressure, the nebulous medicament prepared by this apparatus, can be forced with absolute safety, thereby enabling the

physician to use agents that are capable of preventing or controlling disease.

This discovery makes an important epoch in practical medicine. We should all grasp these principles with ecstasy for they tear open the thick clouds of despair that surrounded the wretched victims of this disease. I extend to it my fondest hopes for success, as it is destined to save many lives, of those otherwise doomed to an untimely grave. The practicability of the apparatus and process is self-evident. The principle is sound logic and not theoretical uncertainty. A full and elaborate illustrated description of the apparatus and process by Hawley has been published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

But I have brought the apparatus here for your inspection, it will speak more eloquently for itself than any words of praise from me. As a prophylactic measure it is invaluable. One in health has but to experience the feeling of well-being by a single dilatation in order to appreciate its capabilities. There is absolutely no danger of rupturing either vesicles or tympanum, as the pressure is uniform, the lips giving perfect protection. By it the cardio-vascular and the pulmonary capacities are greatly increased, and to use the words of Solis Cohen, "resulting in increased function, increased elimination of waste products of function; with increased buoyancy of spirits which is no mean factor in treatment; in a word, heightened vitality."

That the capillaries throughout the body are wonderfully influenced is evident from the fact that the cold hands and feet become warmer. Williams also believes that dilatation of the alveoli in the neighborhood of the various lesions produces an important localizing effect and thus tends to prevent the spread of tuberculosis by secondary infection, from a caseous center or from a secreting cavity with inflamed walls, while the emptying of the vessels and of the capillaries of the region through alveolar dilatation leads to the absorption of caseous and cretaceous tubercular deposit. There is no more ideal treatment to prevent hemorrhage or control it after its occurrence, as it relieves the engorged vessels and removes congestion.

The mechanical principle of forced dilatation with air itself, you clearly see is invaluable; with these dilators, however, we can force into the lungs, the finest medical nebula imaginable. Ordinary inhalers for medicated air may be discarded, as we can not reasonably expect the medicament to get past the reserve air left after the most extreme expiration. They are regulated by the patient's will and consequently not satisfactory. By forced dilatation with nebulous medicament we overcome obstructions which offer an impassable barrier to ordinary inhalations. We can easily imagine the rapid diffusion of fine medicated nebula with the reserve air; and thereby attenuating, at least, the micro-organisms. We will demonstrate the explosive effect desired in order to remove the decomposing pulp of mucus. One bottle contains medicament for cough and all manner of bronchial irritation. The other contains the local specific for these cases—free iodine and chlorid of gold with menthol enough to mask the taste of the iodine. We can hardly realize the extent of the absorbing surface of the bronchi.

In addition to local effect, we also get systematic effects from absorption. For enlarged lymphatic

glands and lymph stagnation, the iodides are held in high esteem by general consent.

Above all else, however, we must endeavor to get as much pure air as possible into all these cases, as normal oxygen is the best excitant of the recuperative forces latent in all cells.

I have thought it waste of time to enter into consideration of the numerous remedies as we are all very familiar with their merits.

SOME REMARKS ON TEST MEALS.

Read by title in the Section on Practice of Medicine at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY HENRY SALZER, M.D.

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Test meals are given for the purpose of testing the digestive and motor power of the stomach, and thus judging of the condition of the mucous membrane and its glandular elements, as well as of its muscular action and its size, for an enlarged, or rather dilated, stomach depends chiefly upon these conditions.

The test meal now almost universally employed is Ewald's test breakfast, consisting of 30 to 50 grams of bread and 300 c.c. of warm water, or tea without sugar or milk.

One hour after this meal a soft, elastic tube is introduced into the stomach, and the entire contents of the stomach brought up, either by attaching an aspirator apparatus to the tube, or by pressing with the hand at the epigastrium, and encouraging the patient to assist this pressure by contraction of the abdominal muscles as it is done for defecation.

Other test meals have been suggested:

Leube-Riegel's consists of 300 c.c. of soup, 60 to 120 grams of meat and 50 grams of bread with 250 c.c. of water, and either the contents are aspirated or pressed out four hours later, when we expect the height of digestion, as we do one hour after the bread and water meal is taken, when it ought to be entirely empty, if both digestive and motor power are good.

Klenipere advises milk and bread, and two hours later, aspiration. The same time is recommended after the test meal of Germain See, which consists of 60 grams of scraped meat and 30 to 50 grams of bread.

Jaworsky's test meal is very complicated and requires a complete cleansing of the stomach by lavage, a meal of the whites of one or two boiled eggs and 100 c.c. of water, and aspiration every quarter hour for one and one-fourth hours, when the aspirated water becomes clear and acidulated and possesses digestive properties.

Boas advises as a test supper for atony a light meal late at night and lavage next morning, when the normal stomach is empty, while the atonic is not.

It is admitted that every one of these tests is useful, and that every investigator may reach good results with the method he prefers. The food obtained is in a state of advanced digestion, and permits the corresponding conclusions by inspection of the whole contents, by examination of the residue of the filter, and by chemical examination of the filtrate, which represents a true stomach juice at the height of action.

The Ewald breakfast gives these factors as well as the others; its use is very simple, and the masses we have to deal with are very clean and easily distinguished. Yet the disadvantage connected with this,

as well as with other test meals heretofore used, is the necessity of obtaining the entire contents of the stomach before one can judge if the muscular functions are normal. In health the entire residue after one hour should not exceed 20 to 50 c.c.

A further disadvantage of Ewald's test meal is, that it demonstrates the functions of the stomach in regard to only a very limited amount of work. For instance, Honigmann as well as myself, have found that with a more complicated test meal, *i. e.*, Leube's, the results with the same person showed marked differences. No impaired condition was found with the Ewald test meal, yet when a Leube test meal was used, the result was strikingly different.

Ewald and Boas advise in doubtful cases, the control test with a Leube-Riegel meal. These two factors, the necessity of a controlling test meal, and especially the importance of gaining by aspiration or pressure the entire contents of the stomach, is a great annoyance in private practice. It is very often the case that the patient is available only for a limited time and that repeated sittings can not be had to accustom him to the use of the tube; furthermore, by expression or aspiration parts of the mucosa are easily drawn or forced into the fenestræ or eyes of the tube, especially with patients not used to the manipulation, a factor which will be very unpleasant where peptic ulcer may exist, and where you may be especially anxious to gain an idea of an existing hyperchlorhydrie or at least hyperacidity. This objection can be made equally against the Einhorn bucket, which is very apt to bring up pieces of the mucosa, and is certainly not swallowed and removed more easily than a very soft, thin, elastic tube.

The following simple modification of the present test meals does away completely with all these inconveniences, and has been employed by me exclusively for the past three years to my greatest satisfaction.

I make the patient take early in the morning 30 to 50 grams of cold roast, free from all fatty and skinny parts and cut into small pieces one-eighth of an inch wide and about half an inch long; further 250 c.c. of warm milk, or milk and water, and 30 to 50 grams well-toasted wheat bread (dark-brown toast) or Zwieback. Four hours after this meal, 30 to 50 grams of stale wheat bread without crust or toasted particles, and 300 c.c. of warm water, or tea without sugar or milk. One hour later I introduce a thin, soft, rubber tube with two eyes near the lower end; this tube is inserted to the depth of from 50 to 60 cm. to reach the bottom of the stomach. In the case of tall persons, and of those in whom a splashing sound may be detected below the navel I prefer to insert it 60 cm. The tube is allowed to remain a few seconds, until some retching takes place, when it is slowly and carefully withdrawn, and in the case of great distress even without waiting for any contents of the stomach to appear at the upper end; if without any effort some flows out and a larger quantity can be obtained, so much the better. As soon as the stomach end of the tube leaves the mouth it is held upward and over a porcelain dish; by blowing gently into the upper end a sufficient quantity of the stomach contents (generally from 3 to 6 c.c.) is obtained to enable one to make all required tests. You see at a glance whether residues of the first meal are present or not. If there is only a milky, chyme-like addition to the bread and water, and no undigested casein, meat or toast, you know that the *motor* but not the

digestive function is more or less impaired. In health there should be nothing but what appears after a regular Ewald test meal. If casein and meat are undigested and the latter even apparently hardened, you know that there is sub- or anacidity and impaired albuminous digestion; if there are mostly pieces of toast, you have hyperacidity and impaired starchy digestion. The small quantity of stomach contents gained, shows before filtration every other abnormal addition, such as blood, surplus of mucus, bile, etc.

You can use red and blue litmus paper, Congo paper, and the Dimethylamidoazobenzol test. You can then gain enough filtrate to determine the degree of acidity, and to try the Uffelmann carbolic acid and chlorid of iron test for lactic acid, the phloroglucinvanillin test for even an approximative, quantitative muriatic acid, the biuret reaction for a peptone and propeptone test, the iodine test to prove the absence or presence of starch and erythroextrin, and a few drops for a rennet, or rennet zymogen test, and even a few drops to pour on a small piece of the white of an egg (hard boiled), or fibrin, for the pepsin test. You can do all that is generally done after a regular test meal, and have a perfect picture of the previous, more complicated digestion as well, especially for the estimation of the muscular power.

I have repeatedly convinced myself with others, as well as with my own stomach, that the tube always brings up portions of the first meal if any are still present in the stomach.

In introducing the tube a second time, pressing out every trace of the stomach contents, and using lavage until clear water appeared, I could always convince myself that the small quantity contained in the tube was a true representative of the entire contents of the stomach at the time. Nothing else could be expected, for we know from Beaumont's experiments with his Canadian, that those food particles which are not in proper condition to pass through the elective pylorus, either in consequence of chemical or other abnormalities, are thrown back into the stomach, even up to the cardia.

This fact is quite in accordance with the daily experience of eructations of food particles, which, indigestible pro-tempore, often show the taste of an article taken with a former and not the latest meal.

It is easily understood that the first meal will permit different modifications, and may, for instance, consist of rice, soft-boiled eggs, meat and milk or water; provided that it consists of articles of food which in health will disappear within a given time, and which will at the same time represent the albuminous, starchy and fatty types of food, in a way that the particles which remain undigested will show a conspicuous difference from the second meal, and not be large enough to obstruct the eyes of the tube.

It is clearly demonstrated that an amount of material fills the stomach tube when the latter reaches the fundus, which is sufficient for all clinical purposes, especially for the demonstration of the motor, as well as of the digestive faculties of the stomach, and that by this method these results are reached in a way the least troublesome and dangerous for the patient, and most convenient for the examiner, whether he makes his investigations from a physiologic or pathologic standpoint.

I can not close these remarks on test meals without alluding to a very important modification, which is

the result of the untiring efforts of Boas to gain positive diagnostic means, in cases where cancer must be suspected, but no tumor can be palpated.

He advises lavage in the morning, until the water becomes perfectly clear without any reaction whatever, then a test breakfast of a soup prepared of one tablespoonful of flour free from every trace of lactic acid and not apt to form it. He designates a special kind of oatmeal (Hafermehl) for this purpose. The amount of water to be used in preparing the soup he gives at 500 c.c.; after one-half hour (the average time in his experiments) the contents of the stomach are aspirated and examined. With these precautions, and only then, he found lactic acid present (with but very few exceptions) only in cases of malignant disease.

SPASMODIC ASTHMA CAUSED BY AORTIC ANEURISM.

BY GEORGE TULLY VAUGHAN, M.D.

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It seems to me that a form of dyspnea, which closely resembles spasmodic asthma and from which it seems at times impossible to differentiate it, as a symptom in aortic aneurism, is important enough to deserve especial notice. In the three cases I am about to report it was a prominent and distressing symptom while other symptoms of aneurism were rather obscure. Asthma from aneurism is no doubt caused by pressure on the pneumogastric nerve and is not always continuous as might be supposed, for in one of my cases the patient had only three attacks in all and these occurred at irregular intervals during the last two months of his life. In the other cases this symptom was continuous but with marked remissions.

In obstinate and persistent cases of asthma in elderly persons, aneurism should always be born in mind as a possible cause, for in the absence of bruit, impulse, swelling, or circulatory disturbances it is not always easy to make a correct diagnosis. The pressure symptoms which cause changes in the pupil, paralysis of a vocal cord or unilateral sweating are not sufficient, as any other mediastinal tumor may produce the same effects.

"Tracheal tugging," first described by Surgeon-Major Porter of the British Army is a symptom of great value. It is brought out by taking hold of the cricoid cartilage when the patient is sitting with the neck relaxed, and putting the trachea slightly on the stretch. If there is aneurism of the arch, a distinct tugging of the trachea is felt with each pulsation of the heart.

Case 1.—J. F. C., aged 60 years, native of Maine, was admitted to the Marine Hospital at Boston, Mass., June 14, 1888, with this history: Was first taken a year before with pain in left side of the chest from breast to back and in the left shoulder. Slight cough and once expectoration of a little red blood. Felt well after this until winter, when, after "taking cold," the pain and cough returned, there was nausea, unpleasant symptoms after eating, and loss of flesh. In appearance the patient was thin, with unhealthy color of skin, suggesting malignant cachexia.

Respiration in the left lung was weaker than in the right, but the heart seemed normal and no bruit nor tumor could be detected. There was little change, patient expectorated blood two or three times, until about two months before death when he was suddenly taken with extreme dyspnea with all the signs of constriction of the bronchial tubes on both sides, rales, wheezing and orthopnea, lasting an hour or two when it was in a great measure relieved by morphia.

In a day or two he was about as usual until the next attack, having in all three severe attacks and dying in the third.

Necropsy. Left lung weighed 170 grams, was small, atrophied and the seat of a low grade of inflammation; its pleural cavity was obliterated by adhesion. Right lung weighed 250 grams, congested, some adhesions of pleural surfaces. Heart weighed 310 grams, valves normal. The sinuses of Valsalva were incrustated with calcareous nodules, the aorta dilated at its origin to double the normal size and gradually increased to the beginning of the transverse portion of the arch where the expansion was much greater and formed the beginning of a large fusiform aneurism which extended from this point to the lower border of the seventh dorsal vertebra, including the left sides of the bodies of five vertebrae with the heads and necks of the corresponding ribs. The posterior wall of the sac was formed by the exposed bone from the third to the seventh vertebra inclusive. The bodies of all were more or less eroded and the heads and necks of the fourth and fifth ribs had been completely absorbed. The spinal canal was intact. The walls of the sac were thick and firm with deposits of organized clots in places interspersed with plaques of calcareous material. The edges were firmly adherent to the vertebrae and there was no rupture. Capacity of the sac about fifteen hundred cubic centimeters, nearly filled with loose antemortem clots. There was evident pressure on the left vagus nerve.

Case 2. G. C., aged 57 years, native of the United States, was admitted to the marine ward of the German Hospital, Philadelphia, July 15, 1895; died July 19, four days later. Patient stated that he had been suffering from asthma (according to his physicians) for nine months constantly, though at times he was better. On examination there was orthopnea, prolonged expiration, wheezing, râles all over chest, respiration weaker in right lung, and occasional cough. Circulation and heart sounds apparently normal, though the examination was not satisfactory owing to the râles and dyspnea. Aneurism was diagnosed as probable, chiefly on account of the persistent dyspnea and the feeble respiration in the right lung. Tracheal tugging was not sought. Of various remedies tried morphia afforded most relief, but the dyspnea continued and the patient died from exhaustion.

Necropsy. Heart hypertrophied, especially the left ventricle; atheroma of the base of the aortic valve though the valves were competent. The aorta was dilated and from its arch, anteriorly, between the origin of the arteria innominata and left common carotid, arose a saccular aneurism, capacity about four hundred cubic centimeters, filled with a hard, laminated, grayish clot. The edges of the sac were attached in front to the posterior surface of the manubrium between the first and second ribs, the bone being eaten through on the right side, but forming scarcely a perceptible bulge in front. The lumen of the aortic arch seemed little, if at all, encroached on, the tumor pressing especially on the arteria innominata, the right bronchus and right pneumogastric nerve. There was no rupture of the sac and death must have been caused by pressure on the vagus nerve.

Case 3 has not yet come to a necropsy. J. B., aged 48 years, native of Maine, a tall, 6 foot 3 inch, powerful-looking man, was admitted to the marine ward of the German Hospital, Philadelphia, Sept. 18, 1895. History: Family history good; admits gonorrhea, denies syphilis; had "rheumatism" in 1896, but no fever nor swelling of the joints; has had slight cough with expectoration of mucus for three years. For the past eight months says he has suffered from "asthma" which is worse by spells and generally worse on lying down. Three months ago he was taken with pain in the right shoulder, right side of the neck and left knee. Examination: Breathing high pitched over both lungs. Numerous râles, coarse and fine, over both lungs, especially at end of inspiration. A diastolic murmur was heard over the upper part of the sternum, but no thrill nor pulsation could be felt and there was no pain nor swelling. Hard, dry, high pitched, metallic cough at intervals of half hour or hour, night and day. No inequality of the pupils, but he states that the right side of his face sweats more than the left. A distinct though slight tracheal tugging is perceptible with each heart pulsation.

The diagnosis was aneurism of the arch of the aorta. October 17, patient asked attention to a swelling behind his left knee which he first noticed three months ago. There was some pain at first but lately he has felt only weakness in the leg.

An aneurism as large as a pigeon's egg was detected in the popliteal space. By an oversight his leg had not been examined before.

October 26, pulsation can now be felt over the right sterno-clavicular articulation and there is unmistakable bulging on this side, thus removing all doubt, if there were any left as to the correctness of the diagnosis.

The patient was put on the Valsalva-Tufuell treatment but could not stand it and was allowed to get up. The operation of ligation of the subclavian and carotid arteries was explained to him but did not meet his approval and he was discharged at his own request. Nov. 4, 1895, not improved.

PURULENT OPHTHALMIA.

Prepared for the Mitchell District Medical Society of Indiana.
Dec. 26, 1895.

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Purulent conjunctivitis should have a degree of significance to the physician according to the character of the infection and the age of the patient. While there are many varying degrees of intensity, for clinical purposes, it is best to recognize but two causes; the gonorrheal and the endemic.

The gonorrheal is most malignant and intractable; it seldom occurs in both eyes simultaneously. It is most common in adults, and is the result of contagion. The endemic is equally contagious and differs in its clinical features from the gonorrheal type in degree of severity and extent of invasion. In gonorrheal inflammation, the cocci not only attack the mucous corpuscles and surface epithelium, but penetrate quickly into the mucous follicles, which become greatly distended, causing such interruption in the circulation of the blood in the capillary coils surrounding the follicles that great edema is quickly set up, producing a degree of swelling of the ocular conjunctiva often quite sufficient to very nearly overlap the entire cornea, giving to its vertex a decidedly umbilicated appearance.

These phenomena are never seen in the endemic form, which depends upon the presence of one or the other of two varieties of staphylococci. The disease in its earliest stages, presents a golden yellow colored pus, or a cream colored stringy muco-pus. In the gonorrheal infection there are always extensive abrasions of the surface in the lining of the lids. In the endemic type this never occurs, and while there are in reality two distinct forms of staphylococci which produce purulent conjunctivitis, one of them stringy, the other golden yellow, there is little difference in degree of severity and in the clinical course of the inflammation. In the new-born, the endemic is the most common type of purulent inflammation, and it is vastly more dangerous to the cornea, than in adults. It is extremely doubtful if any case of gonorrheal conjunctivitis ever resulted from maternal infection in the course of natural delivery. In the first place, as is well known, the skin of the fetus is everywhere covered with the vernix caseosa, the eyes being closed. After the birth of the child, when the eyes are opened, the lash lifts away all external matter, and its arrangement along the free borders of the lids is such as to constitute a practically impassable barrier for any matter that might be lodged upon the skin, even if it be of a fluid nature. When the nurse undertakes the removal of the cheesy coating from the skin, the eyes are frequently inoculated with whatever matter may be on the rag or sponge. Staphylococci are nearly constantly present about the finger nails and sponges handled by untidy persons; and simple muco purulent vaginitis, with which the mother or nurse may be suffering, constitutes a vastly more common source of inoculating

the eyes of the infant through the carelessness or ignorance of the nurse than any possible gonorrheal state of the maternal passages.

Did you ever think for a moment, those of you who have seen gonorrhea in the female, how it almost invariably provokes miscarriage, or abortion; and, how, if it exists prior to pregnancy, it makes that condition impossible during the existence of the infectious inflammation? It is extremely rare that a pregnant woman, in the advanced stages of gestation, contracts gonorrhea, and yet this would appear to be the only class of cases in which gonorrheal ophthalmia neonati might be possible from maternal infection. Credé concluded that purulent ophthalmia neonatorum might always be prevented by having the new-born subjected to an instillation of a 2 per cent. solution of nitrate of silver into each eye. In the attempt to carry out this suggestion, the eyes of many are infected which might otherwise escape. Under strictly antiseptic rules, Credé's method might possess some virtue, but with the always to be desired and ordinarily aseptic conditions, all interference with the eyes is unnecessary, and even meddling. In the obstetric wards of a general hospital, the most abundant evidence of the faults of this system, owing it may be to the imperfect methods of those in charge, have been clearly apparent. Since the attempt to employ Credé's method, but few children born in that hospital have escaped purulent ophthalmia, a disease comparatively unknown there prior to the attempt to introduce this system. The best protection for the eyes of the new-born in public institutes where asepsis is easily maintained should be complete non-interference. Where sepsis may reasonably be feared, the nurse who takes charge of the infant should be an entirely different person from that one who takes charge of the mother. The only proper course to pursue, in such dangerous conditions, is to insure complete isolation until after all those preliminary stages relating to the cleansing and dressing of the infant have been completed. If the nurse in charge of the infected mother is permitted to touch the eye of the infant, experience shows that infection of the eyes will be almost inevitable. Neither Credé's solution, nor any other chemie agent may prevent disaster. I have known an interne within ten minutes after delivery, seize the infant and, separating its eyelids with his fingers, order the silver solution instilled by the nurse; next day purulent ophthalmia appeared. The mother was not then infected, but had two days later well characterized puerperal fever. The interne had examined an infected woman before delivery. In other cases, the child's face and neck are washed and wiped off with a rag, which is subsequently folded upon the nurses finger and employed to remove adhering particles of vernix from the vicinity of the inner canthus, the same process being repeated at subsequent ablutions. In due time they are inflamed, and the maternal passages are accused. I am convinced that, if physicians and nurses generally, as is the custom in private practice, could be taught the danger of attempting to touch the eyes, much more good would be accomplished than it would be possible to secure by the use of any kind of chemie antiseptic agent. The aseptic rule in this field is just as precious as in any department of surgery, and the attainment of antiseptic principles just as difficult and uncertain.

As to the treatment of the varying forms and

stages of purulent conjunctivitis, it seems to me necessary that something should be said. It has been too long the custom to seek chemie antidotes for specific types of inflammation, and to regard all the purulent forms of conjunctivitis as the old-fashioned doctors did similar processes in the male urethra. It was long the custom to treat such cases with active caustic applications, and powerful astringents. Experience must have convinced any ordinary observer that these methods of practice are not only dangerous, but rarely curative. The most successful treatment of gonorrhea in the male is through the medium of the circulation, and not by local injections; and where these are practiced in the advanced stages, they are of a far milder character than were formerly employed. The same rule applies to the treatment of gonorrheal inflammation in all mucous membranes, whether it be the conjunctiva, the vagina, or the urethra. The object being to keep accumulating matters constantly washed away, and to so sterilize the surfaces as to retard the activity of the growth of the ferment, and, in this way, the earlier stages of the disease are held in such control as to prevent deep seated invasion, and consequent necrosis of the cornea. In the more advanced stages of the infection such stimulating agents as do not impair the vitality of the young epithelial cells may be employed. Astringents are, however, never to be used here. In the first stages of gonorrheal infection, bichlorid of mercury in the proportion of one-sixteenth of a grain to the ounce of water containing ten grains of chlorid of sodium, may be freely used with the irrigator every ten minutes, until there is manifest abatement of the discharge, when the interval may be gradually prolonged until finally, when no more pus is formed, it may be discontinued altogether. In the virulent gonorrheal types of inflammation, Jeanel's emulsion of copaiba may be instilled every four hours with great advantage. To illustrate this treatment, permit me to recite the case of C. L., aged 19: He came from the country with gonorrheal ophthalmia of four days standing; the cornea in the right eye had already sloughed, leaving the iris exposed in the central portion; a small part of the superior pupillary margin being still protected by an overlapping edge of the posterior elastic layer of the cornea, led me to employ sulphate of atropin solution in the attempt to dilate and thereby retract this part of the iris from the vicinity of the perforation. The cornea throughout all the remaining portion was so infiltrated and opaque as to make it impossible to see the iris. In the left eye, the cornea presented a gray, cream color, the surface epithelium being thoroughly infiltrated and abraded in small areas. The urethral discharge was very profuse, as well as the discharge of pus from the conjunctiva. I gave him five minims of balsam copaiba, in a capsule, every three hours, and two drachms of Rochelle salts, in one pint of water every morning. He was directed to have his eyes irrigated every ten minutes with the following:

R. Bichlorid of mercury	gr. viii	48
Chlorid of sodium	3 iii	90
Distilled water	cong. i	3840
Sulphate of atropin	gr. ii	12

He used, as a collyrium, every four hours, the following:

R. Jeanel's emulsion of copaiba	3 ii	60
Distilled water	5 vi	24

Two weeks after admission to the hospital he returned home, able to read with the left eye, and to count fingers across the room with the right. This result could not have been attained by any very widely different plan of treatment.

ILEUS.

BY JOHN B. MURPHY, A.M., M.D.,

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CHICAGO.

(Concluded from page 22.)

Mechanic ileus.—In the diagnosis of internal strangulation, no matter from what cause, we have exactly the same symptoms as in strangulated hernia, except the physical signs are different. The symptoms of internal strangulation are as follows: Pain in the abdomen which comes on suddenly, gradually increasing in intensity for the first half hour, followed by nausea and vomiting, and inability to produce bowel movement. If the strangulation be severe, there is an increase in the frequency of the pulse (but as a rule in the early stage the pulse is not accelerated), *absence of temperature*, absence of tenderness. As the case advances, if the strangulated coil be large, it can be recognized through a moderately thin abdominal wall by its distension; the coil of the intestine leading to it may also be recognized by a circumscribed elevation of the abdominal wall. In twenty-four hours all of these symptoms will have increased in severity. The distention of the coil is greater, the abdomen is more tympanitic, sensitiveness at the seat of obstruction is now manifest, and the increased resistance of the occluded coil may be felt. If the coil be small, the increased resistance of the intestine on the proximal side of the occlusion may be felt and a circumscribed dullness be outlined. This varies with position, depending upon the portion of the intestine involved in the strangulation, as shown in the von Zoege-Manteuffel plates. *Peristalsis is very greatly increased and is most pronounced in the neighborhood of the obstruction.* This increase in peristalsis continues until peritonitis sets in, when it entirely disappears. If the strangulation be sufficient to produce gangrene the depression will be more marked, but the local manifestations unchanged. *Opiates paralyze peristalsis for hours and therefore should never be given in acute intestinal lesions as they obscure the symptoms and signs of the pathologic process.*

The following cases are good illustrations of internal intestinal strangulation:

Mr. C., aged 37 years, robust, had always enjoyed excellent health. Six days before admission to the hospital was attacked with pain in the abdomen, moderately severe, followed by nausea, persistent vomiting, and inability to produce bowel movement. The symptoms continued notwithstanding intestinal irrigation and frequent doses of cathartics. When admitted the pulse was 100; temperature 99 degrees, and it had not exceeded that at any time since the onset. Expression good; abdomen very tympanitic, greatest distention being just above the umbilicus. Increased resistance in neighborhood of umbilicus; abdomen slightly sensitive. Diagnosis intestinal obstruction. Laparotomy. A loop of bowel was found twisted around a Littre diverticulum attached to the umbilicus, evidently congenital. The coil was distended, cyanotic, surface glistening but not gangrenous. There was no peritonitis. The diverticulum was ligated, excised and invaginated, the coil liberated; circulation became reestablished, and the abdomen closed. Time occupied in the operation twenty-five

minutes. The patient's pulse increased in rapidity, the vomiting subsided, the bowels moved freely, nevertheless, he died nine hours after the operation. Post-mortem showed no peritonitis: strangulated portion of the intestine congested but not perforated; mucous membrane ecchymotic; small veins thrombosed.

What was the cause of death? It was certainly not the strangulation, nor peritonitis, but auto-infection either from absorption of the decomposed proteids that began rapidly after the liberation of the obstruction, or an auto-infection through the thrombosed intestinal veins, more likely the former, as we have exactly the same results where the gangrenous intestine and infected veins have been resected.

Case of internal strangulation in a sub-peritoneal pocket at left internal inguinal opening;

Mr. C., age 22 years; printer. On the morning of October 25, when lifting a heavy case, "felt something give way" in the left inguinal region. The pain became so severe he was compelled to stop work and go to bed. Six hours after the onset vomiting began and continued at frequent intervals up to the time of operation. Impossibility to produce bowel movement. I saw him three days after the onset of symptoms. *Status presens:* Face sunken, eyes prominent, anxious, depressed expression; pulse 90, temperature 98.8 degrees; breathing somewhat labored. Abdomen tympanitic, most prominent in lower left portion; resonance irregular; sensitive over left inguinal ring; a slight induration could be felt above and to the left of the internal ring. The inguinal canal was free, the finger could be passed through it. Peristalsis was greatly increased; rectal examination negative. The patient located the difficulty in the left inguinal region.

Diagnosis: Internal mechanic ileus. Section; median incision; passed the hand down to left internal ring, found the coil bound fast at the ring. Exposed the parts and found a peritoneal pocket extending upward and to the left subperitoneal, *i. e.*, between the parietal peritoneum and the muscular fascia. Incised the constricting ring and opened pocket; bowel in good condition; not resected. Peritoneal sac removed and opening sutured. Abdomen closed. Rapid recovery.

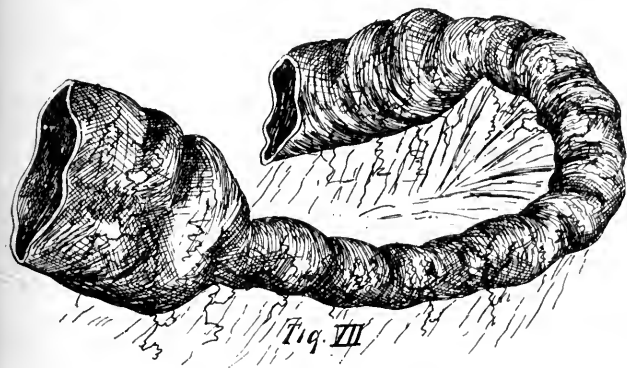
Case of strangulated diaphragmatic hernia. Referred to me by Dr. Richard Haley:

J. H. M., age 31 years; single. Admitted to Mercy Hospital July 15, 1895. The patient, a well-developed, muscular brakeman in excellent physical condition, states that he has had repeated attacks of abdominal pain and vomiting with inability to produce bowel movement in the last six years, usually lasting from ten to twelve hours; had never had a severe injury. The pain was always located in left hypochondrium. Present attack began six days ago with the usual symptoms, slight pain in left hypochondrium; vomiting, not excessive, biliary in character; no passage from bowels of gas nor feces from that time. *Status presens:* Patient's expression good; pulse 86, temperature 98.7 degrees; breathing somewhat labored; abdomen very much distended. Borborygmus so marked that it could be heard in any part of the room; pain not severe; tenderness most marked in left hypochondrium, but nowhere excessive; auscultation revealed increased peristalsis, most marked in right hypochondrium, but present in all portions of abdomen; percussion elicited areas of dullness over lower half of abdomen, largest to right and below umbilicus; they were outlined with ink on the surface of the abdomen and changed position while being transferred to the hospital where he was re-examined. The transverse and ascending colon could be outlined by inspection and percussion. They were greatly distended. Section; median incision: small quantity of serum escaped. The sigmoid flexure found contracted and empty; followed it up to large bowel and the latter to splenic flexure, which could not be drawn into the field. Small intestine was very much distended with fluid feces. The colon ascendens and transverse enormously distended with gas, but contained no feces. The greater portion of the bowel had to be turned out to allow access to the obstructed splenic flexure of the colon. A careful examination showed the cause of the obstruction to be a strangulated diaphragmatic hernia; the opening was situated two inches from the ribs and about the junction of the posterior with the middle third of left leaflet; it was most difficult to reach. Traction failed to move the strangulated portion. With the greatest difficulty the tip of the finger was inserted under the edge of the ring, which was divided on the finger with scissors. The intestine was liberated and examined; the circulation was rapidly restored; no

resection necessary. The intestines were removed from the warm protections and returned by the "towel method" of reduction, which I have used on many similar occasions and found very effective. Abdomen closed. The sphincter ani was then paralyzed by over-stretching.

In the operation the patient had excessive and true fecal vomiting. This was accounted for by the obstruction being so far down in the large intestine. Patient's condition fair when the operation was completed. Had copious and frequent bowel movements three hours after operation. Soon showed severe symptoms of shock; pulse rapidly increased in frequency; in seventeen hours it had reach 142; temperature 105.2 degrees. Hippocratic face with marked excitement and anxious mental state. This condition continued until death, which occurred forty-three hours after operation. Post-mortem was not permitted.

Volvulus is a rare form of internal ileus. By volvulus we mean a twisting of the intestine upon itself for more than two-fifths of a circle; less than this does not produce obstruction. We have all the symptoms of ileus; the pain is mild; the vomiting is persistent; inability to produce bowel movement; absence of temperature. In the early stage the patient shows very little depression; pulse negative. As soon as the coil of the volvulus becomes distended, it can be recognized by its shape through a moderately thin abdominal wall; the local meteorismus; increased resistance local; great increase of peristalsis until peritonitis supervenes. The following case, referred to me by Dr. J. L. Piper, is typical:



Mr. S., aged 68. Nov. 10, 1893, was seized with pain in the abdomen shortly followed by vomiting, inability to produce bowel movement; slight tenderness; diagnosis by Dr. Piper, intestinal obstruction. I saw him thirty hours after the onset of symptoms; he then had but little pain; the vomiting was frequent and severe, the matters ejected yellow and offensive; pulse 72; temperature normal; abdomen distended, most prominent a little below and to the right of umbilicus; increased resistance at this point; tympanitic; excess of indican in urine. Patient removed to Presbyterian Hospital. Celiotomy. The hand was passed down to the right and the distended coil drawn into the opening. The distended intestine measured over two and a half inches in diameter; a coil of 12" was found twisted upon itself; when this was straightened a loud report was heard from the escape of gas; there was no gangrene nor peritonitis; intestine returned. Patient made an excellent recovery.

Frequent in the benign mechanical obstructions is cicatricial contraction of the intestine itself. In these cases the onset is gradual, so much so that the patient suffers from intestinal disturbance a long time before the final occlusion takes place. This occlusion frequently manifests itself as a seizure with pain, nausea, vomiting, no elevation of temperature,

no change in pulse, inability to produce bowel movement. Note following case:

Mrs. E. T. S., aged 53, referred to me by Dr. Jas. J. Fortier. The patient, three days previous, was suddenly attacked by pain in abdomen, persistent vomiting, inability to move bowels. These symptoms continued until time of operation. When patient entered Post-graduate Hospital she still complained of pain; slight tenderness. A hard tumor the size of a child's head could be felt just above the symphysis; abdomen tympanitic, slightly tender, greatest resistance on the left side of tumor; percussion note except over tumor resonant; pulse 96, temperature normal. Diagnosis, dermoid cyst; intestinal obstruction, probably from bands. The patient stated positively that the tumor was not present until the attack came on, but this was not credited. Laparotomy June 2, 1893. Median incision; dermoid removed; distended coil of intestine drawn out and with it a stricture, a cicatricial band completely occluding the bowel for one inch; resection of two inches of bowel and end-to-end approximation with button. Time for making resection five and a half minutes. Time for entire operation—removing dermoid, making resection, and complete closure of abdomen, nineteen minutes. No drainage. Convalescence uneventful; button voided on the tenth day. July, 1894, patient in excellent health.

Invagination (intussusception) occurs more frequently in children than in adults. The onset is sudden; the patient usually gives a piercing shriek from pain in the abdomen; depression produced is very great; the pulse increases rapidly in frequency; the vomiting is persistent; the eyes sunken; cold perspiration. These symptoms continue for about two hours, when they gradually diminish. The vomiting persists, but is less severe; after twenty-four hours blood may be detected in the stools. The following case was referred to me by Dr. F. S. Hartmann: Baby. B., aged 7 months, shortly after nursing gave a loud and piercing cry and began to vomit; cold perspiration and collapse. When seen by Dr. Hartmann a few hours later, pain was less severe; a distinct oblong tumor could be found in the right hypochondriac region just below the margin of the ribs; no bowel movement could be produced. The same afternoon the patient was removed to Cook County Hospital. Laparotomy ten hours after onset of symptoms. Tumor in right hypochondriac region was very distinct; median incision; tumor grasped with the fingers and found to be the cecum and colon into which the ileum was invaginated. Very friable adhesions had formed, but pressure upon the colon forced the ileum out without traction. Abdomen closed; perfect recovery; patient left hospital after seven days.

When the obstruction is due to a gall-stone or a foreign body in the intestine, the symptom of vomiting is very marked, the meteorismus is less and the depression less, as the foreign body is constantly changing its position and advances further in the intestinal canal.

The following case illustrates intestinal obstruction from enterolith:

Case 1.—J. McC., age 47; male; admitted to Cook County Hospital Dec. 1, 1895. Family history negative. Personal history: Uses intoxicants and tobacco to excess; had gonorrhea three times; denies syphilis; typhoid fever when a boy; about twenty years ago was seized with sudden severe pain in the epigastrium; he describes the pain as a cramp, says it

lasted but a few hours: since that time has had many similar attacks: present illness began five days ago: after a large bowel movement, was seized with severe, steady, aching pain in the epigastrium which confined him to bed: the following evening patient began to vomit a dark-colored material: shortly after the material ejected became offensive: the severe pain, vomiting and inability to produce bowel movement has continued up to the present.

Physical examination: Well nourished: conjunctiva slightly jaundiced: tongue dry and heavily coated: breath very offensive: face has a pinched expression: knees drawn up: abdomen distended: irregular elevations can be noticed on its surface: liver dullness normal: the peristaltic movement could be recognized through the abdominal wall: auscultation revealed stormy peristaltic action, most marked in the epigastrium and on the right side: no tenderness except to the left and a little above the umbilicus, where deep pressure produced pain. Pulse 90: temperature normal.

Diagnosis: Mechanic ileus without intestinal strangulation. Celiotomy Dec. 6, 1895. Assisted by Drs. Besley and Wood. Median incision: small intestine very much distended: a portion secured and held by assistant: splenic flexure of colon located: found contracted and empty: advanced along the transverse colon until near the median line, when a nodule was felt in the small intestine. The transverse colon was then dropped and the nodule in the small intestine drawn into the wound. The intestine above the nodule was about two inches in diameter, below the nodule five-eighths of an inch. It could readily be seen that the obstruction was produced by a large foreign body in the bowel. A parallel incision was made and a large enterolith extracted. Opening closed with a Czerny-Lembert suture. Abdominal wound closed with silk-worm gut: no drain.

The enterolith weighed 25 grams. It measured $4\frac{1}{2}$ cm. longest diameter by 2.75 cm. shortest. Its circumference was 12 cm. The center appeared to be made up of an old dry mass of plum pudding, to which other material had become adherent. It would be interesting to know whether this had been the cause of the attacks of pain which he had had for twenty years preceding the operation, and if it had been in the canal where it was lodged. We do know that the anastomosis button may remain in the bowel for months without producing manifestations of its presence. The differential diagnosis between strangulation ileus and obturation ileus in this case was based on the fact that the man had suffered for five days from obstruction and still was not collapsed nor severely depressed by it. The patient made an uninterrupted recovery.

We have in strangulated hernia the same symptoms as in internal strangulation, and in addition thereto we have a history of hernia, and the presence of an irreducible tumor. The peristalsis is increased and there is an absence of induration in the abdomen, except where peritonitis is present. When peritonitis is present there is a marked induration about the seat of obstruction and an absence of peristalsis in that region.

The following cases are illustrative:

Case 1. Mr. C., aged 58. Referred to me by Dr. T. A. Lilly. Gave a history of hernia of twelve years' standing. Twenty-four hours before he came under my observation the hernia was down, and at that time he received a kick in the scrotum. It was followed by pain: the patient continued his work as usual, but at night was unable to return the hernia as had been his custom. He remained in bed the next day, and sent for the doctor in the afternoon. An irreducible strangulated hernia was detected and the case referred to me. Patient's pulse 100: temperature 100.3 degrees: abdomen tympanitic, induration extending over an area of five inches from the inguinal canal: absence of peristalsis over that region. No effort made at reduction and patient would not consent to operation at that time: but the following day he was taken to hospital. Herniotomy performed. On opening the hernial sac there were found two perforations of the coil of intestine, evidently the result of the traumatism. The coil was surrounded by pus: circulation not strangulated. Abdomen opened, and suppuration was found to extend about six inches from the inguinal opening. Intestines matted together, a large pocket of pus in the neighborhood of the inguinal canal, and three or four feet of the intestine covered with a pyo fibrinous exudate. Peritoneum cleansed, pus carefully removed from surface of intestines, perforations sutured, coil returned, position of sutures kept at opening in the abdomen, the latter packed with gauze, glass drain inserted. Patient's condition was excellent for fifteen hours:

his bowels moved: he then began to sink rapidly, and died twenty hours after operation. Post-mortem not permitted.

Case 2.—Referred to me by Drs. Jennings and Berry. History of strangulated hernia. Three days previous the hernia came down and could not be reduced. The pain was more severe than at any previous time. The patient had made protracted efforts at its reduction, but did not succeed. A doctor was consulted and the hernia apparently reduced, but the pain, vomiting, and inability to produce bowel movement continued.

Examination three days after onset of symptoms showed the abdomen uniformly distended: absence of abdominal respiratory movement: induration circumscribed by an arc of five inches from the inguinal ring: peristalsis over that area absent: present on the other side of the abdomen: temperature 101 degrees. Diagnosis, strangulated hernia: perforative peritonitis. Operation. Sac opened, and found to contain a small knuckle of intestine not strangulated, feces and pus. An opening half an inch in length was found in the coil of intestine, not from gangrene, but cut apparently by pressure against the ring in the patient's efforts at reduction. Enlarged opening in abdomen. Peritonitis circumscribed, half a pint of pus in the iliac fossa, twenty inches of intestine covered with a fibropurulent exudate. Peritoneum cleansed, sac amputated, opening in bowel sutured (Czerny-Lembert), and retained near wound in the abdomen. Packed with iodoform gauze, glass and gauze drains. The following day the patient's condition

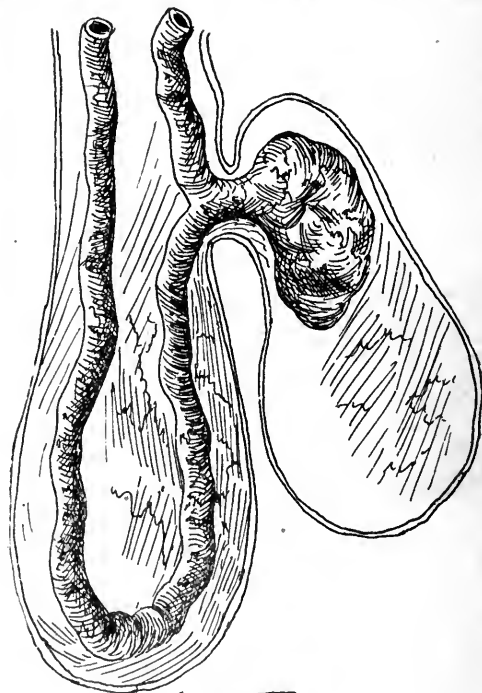


Fig. VIII

was fair and continued so until the third day, when singultus began. This persisted for four days, the patient vomiting once every six or eight hours. A bowel movement was produced on the second day and frequent passages kept up from that time. In ten days the gauze drain was removed, and the patient made a slow but perfect convalescence.

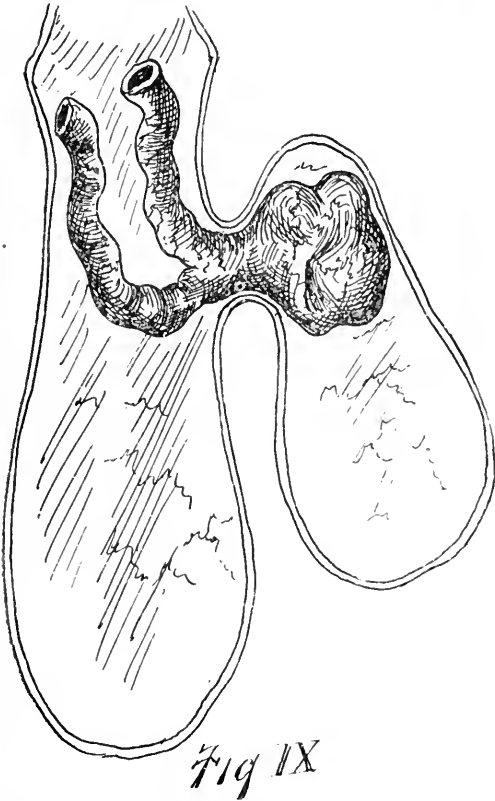
These two cases illustrate the characteristic signs of infective peritonitis following strangulated hernia; that is, beside the usual symptoms of obstruction there was elevation of temperature; absence of peristalsis near the position of obstruction, and induration. In neither of them was the coil of intestine gangrenous, and therefore not resected but sutured. It was fortunate for the patient in both cases that the hernia could not be completely reduced.

Strangulation of the omentum produces usually the same symptoms as an intestinal obstruction, and they continue for three or four days, depending upon the degree of strangulation. If it be sufficient to produce a necrosis they will continue until gangrene is complete. This may occur without producing a sup-

purative peritonitis, nor even an infection of the sac and absorption may take place. It is not uncommon, however, to have an incarcerated or strangulated omentum suppurate, and it should not be reduced. The same practice should govern its reduction, as the reduction of a strangulated intestinal hernia, that is, a hernia of more than thirty-six hours duration should never be reduced except by operation where the coil can be examined.

The following is an illustration of the importance of this principle in omental strangulation:

Mr. R., referred to me by Dr. W. W. Wetherla, and admitted to St. Joseph's Hospital. The patient stated that in alighting from his buggy forty-eight hours before, his hernia came down, as it had done repeatedly for fifteen years. He could not reduce it. The doctor was called thirty-six hours after the obstruction occurred and finding that the hernia could not be reduced, advised operation. Herniotomy was performed forty-eight hours after the onset of symptoms. The strangulated omentum was suppurating, and infiltrated with a fibropurulent exudate: fresh adhesions to sac evidently prevented



the reduction. Omentum amputated; stump returned, and Bassini operation resorted to for radical cure; sac removed, abdomen closed, complete primary union notwithstanding the presence in his perineum and scrotum of a number of old suppurating fistulae. I believe that the source of the infection was through the lymphatics from the perineum and scrotum. In this case, as in the two preceding ones, the hernia could not be reduced.

Another danger following reduction of hernia is that it may be reduced *en bloc*, or a small knuckle may be allowed to remain in the ring. In these cases the symptoms of obstruction do not subside after the reduction, and it should be the rule that in all cases of reduced hernia, where the symptom of vomiting continues for six hours after reduction, a laparotomy should be performed.

Mrs. K. Referred to me by Dr. Blank. Patient had a strangulated umbilical hernia of two days' duration when the doctor saw her. It was returned; the symptoms of vomitine continued, and the patient's abdomen became more and more distended. No bowel movement could be produced. The

vomit had the peculiar odor of decomposed intestinal contents, not fecal. The patient's countenance denoted great depression. I saw her five days after the initial symptoms: at which time the extremities were cold, a cold perspiration over the entire body: lips cyanotic: eyes staring and glassy, and the patient in the most profound collapse. Examination of umbilicus showed the opening free, but on passing the finger into the ring an indurated nodule could be felt on the right side. No operation. Patient died two hours later. Post-mortem showed small knuckle of strangulated gangrenous bowel in one of the pockets of the sac, so commonly found in umbilical hernia.

As an illustration of incomplete reduction, the following is a most instructive case, referred to me by Dr. John W. Hanna of Winfield, Iowa.

Patient admitted to St. Joseph's Hospital, December 30, 1894. Six days previous, when he alighted from his buggy, the hernia came down. It was more painful than usual. It was reduced a short time after, but the pain continued, and he soon began to vomit. When seen by Dr. Hanna, five days after the hernia came down, the patient's abdomen was tympanitic, the vomiting had continued: the pain was slight, and in the five days the bowels had not moved. Examination revealed the inguinal canal apparently free. The patient presented the same symptoms when he came under my observation in the hospital, except that a small, hard nodule could be detected on the inner side of the right inguinal ring. The finger could pass freely into the canal without obstruction. This nodule was sensitive to pressure and very hard. The scrotum was full of fluid, as the patient said, from an old hydrocele.

Operation. Hernial sac opened, found empty, incision extended up into abdomen, and just below the inner pillar at the induration was found a knuckle of intestine passing from the seat of hernial sac through a very narrow opening into the hydrocele sac, as shown in Figs. 8 and 9. The abdomen contained a considerable quantity of serous fluid. Before the hydrocele sac was opened, the field was well packed with gauze and preparations made for a resection of the bowel. Hydrocele sac opened, contained a Littre hernia, involving four-fifths of the circumference of the bowel: it was gangrenous and perforated, and the hydrocele sac was full of very offensive pus and feces. Resection of five inches, end-to-end approximation with button, and mass returned into abdomen. Peritoneal cavity full of seropurulent fluid: incision left open and packed with gauze. Patient's condition when removed from the operating table very good. Within the next eight hours after operation he had six bowel movements, but his pulse began to increase. He had no pain, tenderness, tympanites nor vomiting. His expression became anxious and he died thirty hours after the operation from auto-intoxication.

We have in this case a striking illustration of the importance of operating where the symptoms of vomiting continue after the reduction of the hernia. Furthermore, we have an additional illustration of death from auto-intoxication from the absorption of the decomposed proteids that have been retained in the intestinal canal. In this case it could not be attributed to the thrombosed veins as they were resected.

TOWEL METHOD OF REPLACEMENT.

Surgeons of experience well know how difficult it is to replace the bowels after they have been out for a considerable time during an operation even when protected by hot applications. The causes of this difficulty are: 1. Usually before the operation the bowels are full of gas (tympanitic) from the diseased condition demanding the operation. 2. During the exposure the intestinal wall becomes edematous and a large transudation of fluid into the intestinal canal takes place. The bowel when eviscerated is light and its wall thin and pliable, in half an hour it becomes heavy and sodden, resembling sausage. These changes make it difficult to replace the intestine into the abdominal cavity. Some operators resort to puncture of the bowel to relieve the distention and thus facilitate the replacement. In a number of cases I have used the following method of returning

the bowel. Cover the entire intestinal mass with a hot towel, placing the edge of the towel inside the margin of the wound all the way around. This acts as an artificial abdominal wall and resembles an enormous ventral hernia with a large neck or opening. The operator and assistant then press or work the edge of the towel under the wall on all sides, with the fingers, at the same time elevating the abdominal wall with retractors, and thus force the mass down to a level with the abdomen. The reduction is effected in this manner as easily as a hernia is reduced after the ring has been enlarged. The sutures are then inserted and as they are tied the towel is gradually withdrawn.

I desire to thank Dr. F. S. Hartman for his assistance in the preparation of this article.

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TRAUMATIC STRICTURE OF THE VAGINA.

BAYARD HOLMES, M.D.

PROFESSOR OF SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO.

A bride of three days consulted me on account of unendurable pain at the first attempt at sexual intercourse. She was a young woman of apparently perfect health. She said she had never been sick in her life and that she had worked constantly as a nurse for several years after taking training in a small hospital. In her girlhood she had fallen on a picket fence and injured the vagina and bladder, but she believed she had entirely recovered from that injury. At each menstrual period she bloated some but had no pain. There was always a rather long flow, sometimes lasting six or eight days. Clots were never seen. There had always been some leucorrhea. On making an examination the vagina was found closed just beyond the remnants of the hymen. A large tumor could be felt through the rectum about an inch and a half behind this stricture, and still further back the tumor verged into the uterus. The tumor was evidently cystic. Pressure upon it did not cause any discharge of its contents into the vagina, and was not painful. The case was pronounced one of stricture of the vagina with dilatation of posterior portion by discharges from the uterus.

She was operated on in my hospital the following day and the diagnosis confirmed. The probe was passed into a small opening in scar tissue at the bottom of the vagina, for half an inch, and then with the finger in the rectum and the sound in the bladder the vaginal wall divided. This move was repeated several times until at last the sound came into the cyst and about six ounces of pus-like fluid was discharged. The cavity was washed out. The ragged anterior portion of the vagina was then trimmed into a regular line. The posterior vaginal mucous membrane was loosened up from the bladder and rectum so that it could be brought forward and attached to the anterior portion. The line of suture was slightly elliptical extending farther back dorsally than ventrally. By the end of two weeks the union was complete and the vagina would admit the glass plug that measured an inch and a half in diameter. The dilated cervix of the uterus had contracted to about the normal size. Two months later the patient reported herself perfectly well.

This was an unusually easy case to treat. The distention of the posterior vagina gave loose tissue enough to bring forward and repair the vaginal defect. This defect seemed to be one and a half or two inches long.

BUST OF THE LATE PROFESSOR WILLIAM H. BYFORD.

PROFESSOR DELASKIE MILLER, in accepting the bust of Dr. Byford to be placed in Rush Medical College, paid the following tribute to the memory of his late colleague:

GENTLEMEN OF THE BOARD OF TRUSTEES AND OF THE FACULTY:

Ladies and Gentlemen: Obedient to the impulses of my own heart, I feel that I must do more than pronounce these formal words of acceptance and thanks for this valued memorial of Professor Byford. Moreover, the presence of so many who knew the original and appreciated his worth as a man, and his skill as a physician, constrains me to indulge my inclination.

As the years recede, men who are engrossed in the duties which are imposed upon them by the exactions of life's struggles, are hardly conscious of the changes that are constantly taking place around them, or if an event should arrest the attention, the impression is quite certain to be only of short duration. Still it remains true that the column of figures behind them which shadow forth the lapse of years is rapidly attaining altitude. It is well that this register of passing events is thus placed, for thus it may elude the vision for a time; were it otherwise, men would hardly go forward with the same intense interest in their vocations, or continue to exercise the same vigorous striving for high acquisitions, or to feel so constantly the stimulus of the same bright hopes.

Notwithstanding this pre-occupation, the lesson of experience which we and all should learn to heed, is, that one by one our comrades are dropping from the ranks, and when one whose characteristics are partially expressed by words like these—gentleness, goodness, uprightness—probity and preëminent ability has departed, it is most fitting that we should step aside from the onward rush of the tide of events and give expression to our appreciation of his character.

To be effective every delineation requires that attention be given to the environment. A landscape of forest, glen or rivulet without a suitable background, would be faulty. We must see the sky, the clouds, the distant mountain tops, the haze of the atmosphere, the decomposed sunlight giving the variegated coloration of morning or evening views, as well as the forest, the glen or the rivulet.

In presenting my subject to-day, it will therefore be to the purpose to sketch the environment of Dr. Byford's early life.

William Heath Byford was born March 20, 1817, in the hamlet of Eaton, Preble County, Ohio. Thus the year 1817 gives us the point of departure in this study. What was Ohio in 1817? The western tier of counties was a wilderness, broken only by occasional settlements. This was the frontier of civilization. Indiana had been a State but one year. Illinois, Michigan and Wisconsin were parts of the great Northwest Territory. Plato said: "That to know what a thing is, we must know what it is not," accepting the teaching of that wise man, I must use negatives mainly in expressing my present thought. In most places of that region the forests were so dense that the sun's rays could not penetrate to the earth. The roads were not improved, the stumps and other rubbish had not been removed in the isolated clearings. There were no railroads, no telegraph lines, there were no electric or gas lights; verily,

western Ohio was distinguished for the absence of all improvements which we think are essential for a comfortable existence. What a background does this present to us, on which to limn the outline of the evolution of a human life!

Some have emphasized the fact that the father of William was not wealthy. In this respect, I imagine, that his case was not peculiar. In the small communities of that time widely separated as they were in districts, wild as nature, he was rich who possessed health, habits of industry, integrity and the indomitable courage to look unappalled into the future. That I have not overdrawn the picture, may be inferred by the fact that while William was still in his infancy, the father was dissatisfied with the location, and in hope of improving his circumstances, he moved to another section of the country, also new, viz., the Falls of Ohio, now called New Albany. And again, in 1821, he removed to Martin County, Indiana. Here William began his career as a scholar. Here he had the advantages to be obtained in the public country school (whatever they might have been).

It was here that the father, Henry T. Byford, died, when William was nine years old. This bereavement compelled William to leave school, and at this tender age devote his time and strength to the aid of the widowed mother.

In acquiring his education, I am not aware that William ever had the advantages of a university, a literary college, an academy, a high school or even the district school, after he was nine years old.

It does seem that these were hard lines for the boy who was to become, though he knew it not, a most eminent physician and a leader of the profession in a metropolitan city. Some who have had the advantages which Harvard or Yale could offer, have in their life's work accomplished less than did this orphan boy.

At the age of thirteen he was apprenticed to a trade. At this trade he worked faithfully for six years, but he devoted the spare hours to study. Of his success as a student, under these circumstances, you shall judge. In four years he had acquired a thorough knowledge of the English language; he knew Latin, Greek and French. He had studied natural history, physiology and chemistry. At this period he determined to become a physician, and he applied his energy to study with such success that in 1838 he presented himself to the Board of Commissioners authorized by the statute to grant licenses to practice. He passed a satisfactory examination and received a certificate testifying that he was qualified to practice medicine and surgery.

He began the practice of medicine in Owensville, Ind., Aug. 8, 1838. In 1840 he moved to Mt. Vernon, Ind. He attended medical lectures in the Ohio Medical College, and received the degree of Doctor in Medicine in 1845.

In 1847 he performed the Cæsarean section, the most daring operation known to surgery, the history of which he wrote and published.

From this time forth he wrote numerous and valuable papers on a variety of medical subjects for the medical journals, which attracted the attention of the profession throughout the country. One paper, as I remember, was of unusual interest, and elicited a great deal of earnest discussion by the profession. It was on "Milk Sickness," a peculiar disease. The mortality was so great from this disease that it was

called by the historian of that time "a frightful pestilence." Its etiology was probably no better understood at that time than it is by the most learned physicians of the present day. I write from memory and am unable to give Dr. Byford's views of this disease, nor can I indicate the publication in which they were printed.

In 1850 he was appointed Professor of Anatomy in Evansville Medical College. Two years later he was transferred to the chair of Theory and Practice of Medicine in the same institution. During his connection with that college he was one of the editors of the *Evansville Medical Journal*.

He was elected Vice-President of the AMERICAN MEDICAL ASSOCIATION in May, 1857, and in the same year he was chosen to fill the chair of Obstetrics and Diseases of Women and Children in Rush Medical College.

For two years he was associate editor of the *Chicago Medical Journal*. After two years he retired from Rush Medical College, and united with other gentlemen in organizing and establishing the Chicago Medical College. In that institution he filled the chair of Obstetrics and Diseases of Women and Children.

He was a member of the American Gynecological Society, and in 1881 was elected its President.

Dr. Byford was active in the organization of the Woman's Medical College of Chicago, of which he was President, and to his personal influence and his valuable work as one of its professors, that institution was indebted for its well-known prosperity and acknowledged usefulness.

He was an active and zealous member of the Chicago Medical Society, and by the frequent contribution of papers on important subjects, and by his participation in the discussions in its meetings, he did much in raising the society to great usefulness.

Dr. Byford was requested to reorganize the Woman's Hospital of Chicago, at a time when its existence was threatened. He soon collected the forces and systematized the work in a manner that insured its permanence and capacity for greater usefulness. By his indefatigable exertions a new, substantial and capacious hospital building was erected. The benefits to the sick and suffering dispensed by the Woman's Hospital, under his efficient management, are beyond calculation.

It is no wonder that the friends of this hospital were greatly exercised and anxious regarding the future of its usefulness when Prof. W. H. Byford was stricken down. Even the Board of Lady Managers seemed not to realize for the time being that there was still connected with the medical staff another Byford. It is not out of place for me to say here that the Woman's Hospital maintains its high grade of usefulness.

Dr. Byford was the prime mover in the organization of the Chicago Gynecological Society, and he was its first President. The amount and quality of work done in this society will compare favorably with that of the best societies known. It still continues to produce abundant works of the highest scientific and practical value.

He was a life member of the British Gynecological Society.

I have alluded to the fertility of Dr. Byford's pen, but it was not limited to the production of contributions to the medical journals. In 1864 he published his work on "Chronic Inflammation and Displace-

ments of the Unimpregnated Uterus." In passing, I note that this was the first systematic medical work published by a Chicago author. At this time the author had acquired considerable reputation in the treatment of the diseases of women. To prove that he was a pioneer in this department of practice, it needs only to be stated that, owing to the novelty of procedure, there were eminent men in the profession not a few who endeavored to discourage the use of means which were necessary in making a diagnosis. Notably, of these, was the Professor of Obstetrics in the Medical School of St. George's Hospital, who insisted that this practice was of questionable propriety, and he did not hesitate to use, in condemnation of the practice, even more ungracious terms.

In 1866 Dr. Byford published his "Practice of Medicine and Surgery Applied to the Diseases and Accidents Incident to Women." This work has passed through successive editions, and is recognized as a standard text-book in the medical colleges.

In 1872 his work on Obstetrics was published. With justifiable pleasure the doctor related to his intimate friend an incident of his first visit to Europe. He called to pay his respects to the venerable Dr. McClintock, of Dublin. During the interview, Dr. McClintock went to his bookcase, saying to Dr. Byford, I wish to show you a work which I consider one of the best on the subject in my library, and then handed him Byford's Obstetrics.

By invitation, in 1879, Dr. Byford attended the annual meeting of the British Medical Association, and read an important paper on the use of ergot in the treatment of fibromyomata of the uterus.

Dr. Byford returned to Rush Medical College in March, 1879, and was elected to the chair of Gynecology, which he filled continuously till his demise, May 21, 1890.

As an operator he was deliberate and painstaking. No minutia of detail was too trivial to escape his attention, for he held that every item of detail was important, and to his care in these particulars must be attributed largely the secret of his success.

As a teacher he was accurate in every statement of scientific truth as he understood it. He was systematic in his arrangement of the subjects, and logical in his deductions. His vocabulary was ample and his words were well chosen. He never attempted unnecessary embellishment of style. He avoided everything in his lectures, either of word or act, which would tend in the least to divert the attention of the class from the elucidation of the subject under discussion. These were the qualities that made him the popular teacher that he was.

In his professional intercourse he was considerate and just. In his deportment no prospect of immediate advantage ever influenced him to swerve in the slightest degree from the line of rectitude. To such a man the printed code of medical ethics was useless. In the dignity of his manliness he rose above the technical limitations which that code would prescribe. To the young physicians he was generous to a degree that secured their confidence and captivated their affections.

Here I can not resist the temptation to introduce the estimate in which Professor Byford was held by an eminent member of the profession long years since.

In 1859, after Dr. Byford had withdrawn from his position in Rush Medical College and united with

other gentlemen for the purpose of organizing and establishing a new medical college in this city, in answer to a direct question, Dr. Daniel Brainard said to me: "Dr. Byford is a physician of uncommon ability."

These are expressive words, when we remember the time—when we consider the circumstances we are conscious that comment could add nothing to their force.

Now having reached this stage of my sketch, we find that Dr. Byford attained eminence and great reputation. He seems to stand alone, like a general in front of the long column of an army (if I may use the simile). Do you query: Who were Professor Byford's teachers? I answer, he had no teachers.

True, he took his degree from a legally organized medical college. But what were the opportunities for obtaining a superior medical education at that time in a western school? There were no clinics worthy the name. Of the didactic lectures, which were the principal, almost the only means of communicating knowledge in all the medical schools, I have only this to say: There are doctors present who are old enough to recall the appearance of the paper as the pages of the manuscript were turned, already venerable with age, having passed into the sear and yellow tint, from which the professors droned out their instructions. No, Dr. Byford had no teachers! He took his degree and at once stepped upon a plane, above and unknown to his confreres.

Were the story of Dr. Byford's life, which I have only briefly sketched, duly extended, we would be obliged so search far to find many analogous to his; in the obstacles which he overcame; in his usefulness in society and in the eminence which he achieved. I know of but one in any profession whose life presents a parallel, and of that life I need not rehearse the particulars. You all know it well, of course I refer to Abraham Lincoln, also, of Illinois.

The home life of Dr. Byford needs no words of praise. The most sacred word to the true man is, Home. This word includes all the real pleasures and joys of life. One who saw, and knew that home and the daily life in it, can affirm that the delicate graces and refinements of true affection resided there. It was a type of the house of "many mansions." In a sense there could be but a thin veil between that home and the "house not made with hands."

Dr. Byford had an abiding faith in the doctrines of the Christian religion. With a congenial friend he never wearied of conversation on the influence which these doctrines exerted in the formation of character; in elevating thought; in stimulating aspirations for the highest good; believing, as he did that the surest way to secure the greatest amount of pleasure in life was by practicing all the virtues implied in the "golden rule." He enjoyed the solemn worship with the congregation, but public worship was not a necessity to him; the graces of his belief shone brightly in the acts of his daily life. With a full consciousness of the solemn import of the words and with a reverent awe, I would class Dr. Byford with those who in the sermon on the mount are promised the blessing; for they "are pure in heart."

Dr. Byford possessed the spirit of genuine devotion. He could offer acceptable worship when alone in the grand cathedral of nature. Standing under the arch of the blue canopy in

"The broad blessed light, in the perfect air,
By the rippling tide, the tree, the meadow, the flower,
Listening to the symphonies of the living breeze,
And in the midst, in the hour of faith,
He could see God's beautiful and eternal right hand."

During the latter years of Dr. Byford's life, he was a great sufferer from sudden attacks of severe pain in the region of the heart, attended with difficult breathing. These attacks became gradually more frequent and more painful, ordinary exercise was liable to excite an attack, so much so, that about a week before his death he announced his determination to decline all cases which would require operative procedure.

The diagnosis of his case was "ossification of the coronary arteries."

In the evening of May 20 he took a bath, as was his custom, and retired; about midnight he was seized with an attack of unusual severity.

"These were the parting pangs which nature feels
When anguish rends the heart strings."

The nearest physician was called hastily, he administered an anodyne, and the son, Dr. Henry T. Byford, was summoned by telephone. The doctor responded promptly, but when he reached the bedside his father was unconscious, and he remained in that state till he breathed his last at 2 o'clock A. M., May 21, 1890.

The funeral was largely attended by the physicians of the city, and by other mourning friends.

It is a coincidence that these services have been held on the anniversary of Dr. Byford's death.

NEW INSTRUMENTS.

A DOUBLE STOMACH TUBE.

BY F. B. TURCK, M.D.

CHICAGO.

This new apparatus is similar to the needle-douche and the gastric motor meter. It consists of a thin rubber bag connected with a double tube, and has been devised by me for the purpose of diagnosis and treatment. As stated before, this is simply an addition to the double tube, known as the needle-douche, which I first used two years ago, and which was first shown at the International Medical Congress at Rome in 1894, and later at the meeting of the AMERICAN MEDICAL ASSOCIATION at Baltimore, May 7, 1895. Further reports on its uses and advantages were published in the *Therapeutic Gazette*, May 22, 1895, in an article on "Chronic Glandular Gastritis." Again, reference has been made to the use of the double tube in an article "Methods of Diagnosis and Therapeutics in Diseases of the Stomach," published in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, June 22, 1895. Previous to this, May 21, 1895, I demonstrated it before the New York Academy of Medicine. The lecture was published in the *American Medical and Surgical Bulletin*, July 1, 1895.

The use of the double tube is not of recent date. It is an old method which has been common property for some years. Therefore no originality can be claimed for the simple use of the double or recurrent tube. The distinctive features which I was the first to bring out, as far as I know, are:

Two single tubes of different caliber attached to one another side by side. The one of smaller caliber reaches to the cardia only, the larger extends to the great curvature. The short smaller tube, which reaches to the cardia only, was made smaller so as to,

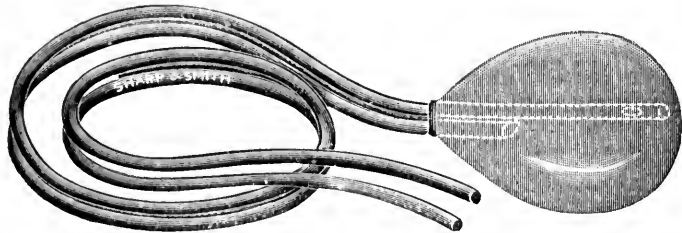
in some degree, equalize the relation between the inflow and outflow of the water, and also for direct treatment of the stomach wall.

When a small perforated ball is attached to the shorter smaller tube, it is used as a needle-douch for forced irrigation. Furthermore, it was found of great value (as previously reported) in using hot and cold water alternately. A fine spray needle-douche projected against the wall of the stomach acts as a vasomotor and a muscular stimulant, similar to a rain- or fan-douche used on the surface of the body. This belongs to the hydro-therapeutics of the stomach.

By leaving off the small ball the same tube has been used with the nebulizer which I introduced for the treatment of the stomach walls with oil of cloves and other medicaments.

I have found this arrangement of the double tube (small caliber reaching to the cardia, large caliber extending to the great curvature) very valuable for a number of purposes. Others have evidently recognized it, and have adopted my modification of the old double or recurrent tube. (Vide Hemmeter, *New York Medical Journal*, Dec. 28, 1895.)

This new apparatus may also be used as a gastric motor meter, an instrument which I first demonstrated before the AMERICAN MEDICAL ASSOCIATION at Baltimore, May 7, 1895. Previously it was shown in a special course of lectures in the Post-Graduate Medical School, Chicago, September, 1894. Also at the meeting of the County Medical Association, Philadelphia, May, 1895.



In this new apparatus the smaller tube leads to the upper part (the opening) of the thin rubber bag, the larger tube reaches to the bottom of the bag, similar to the tubes and bag of my gastric motor meter and needle-douche. When the bag is collapsed it fits very closely to the tubing and does not considerably enlarge it, so that it readily passes into the stomach.

USES OF THE APPARATUS.

For purposes of diagnosis. Water is introduced into the bag through the smaller tube from an elevated graduated reservoir. The current is rapidly carried into the bag, the other tube acting as a vent. The elasticity and distensibility of the stomach can be determined by the degree of distention produced which may readily be seen on the graduated elevated reservoir.

The stomach may be mapped out: 1. By percussion. 2. By inspection with the electric light. By introducing the electric light into the bag when it is filled with cold water, a very much higher candle power can be used than ordinarily. Thus the illuminating power is increased without danger of overheating, since the constant flow of cold water prevents this. The partly spherical body of water contained in the bag, the bulk of water acting as a refracting medium, greatly increases the power of the light. 3. By palpation. By using the gyromele the stomach can be mapped out most accurately by palpation.

This will give the most positive evidence of the exact location. By using the gyromele when the bag is empty it can be placed into any part of the stomach desired, the pyloric extremity or cardia. This is done by introducing the cable through one of the tubes and passing it along to the desired part. The pylorus can be dragged down and palpated in many cases, by introducing large quantities of water. This one fact alone makes it a valuable aid in early diagnosis of carcinoma of the pylorus. When air is introduced with the water the degree of increased or decreased motility of the stomach can be determined. One of the tubes is closed and the other is connected with a manometer. I have previously reported on the uses of the gastric motor meter, by the use of air, or water, or both. It has been found that a small quantity of water, 100 to 200 c.c. stimulates contractions, especially in a healthy stomach. When over-distension occurs, as by the use of a liter of water, or more, it rather interferes with the motility, on account of the greatly increased bulk and weight.

Treatment.—The use of this apparatus for treatment is chiefly in cases of congestion of the gastric and mesenteric vessels. By introducing a constant stream of hot water—105° F., sometimes even 110° F.—an even constant temperature is kept up. It is especially beneficial in cases of chronic gastritis attended with gastralgia, due to congestion. It may also be used in cases of prolonged operation upon the viscera, to prevent shock. Its value in cases of shock is due to the fact that not only the gastric and portal vessels are affected by the hot water, but also the superior mesenteric, which lie beneath it. The important use of this method is that a constant and even temperature can be controlled by the continuous flow, and that hot and cold water can be used alternately. In cases of sluggish circulation of the stomach, or deficiency in musculature and secretion, the stimulating effect of alternating hot and cold water can here be readily utilized.

The advantages are:

1. The hot or cold water treatment can be continuous. The water does not come in contact with the mucous membrane, therefore secretions and particles of food-stuff necessary for nutrition are not removed.
2. The water can be aspirated readily without endangering the mucous wall.
3. The amount of water retained in the stomach can be regulated at will.
4. By using a large oval-shaped bag, distended, great force can be used in projecting a stream against the wall with the spray or needle-douche, stimulating the gastric vessels and musculature. The needle-douche can be used for a considerable time under great pressure. As fast as the water is projected it can be aspirated. There is no obstruction to the rapid withdrawal of the water.

No. 1, The Plaza.

SOCIETY PROCEEDINGS.

Association of American Anatomists.

Meeting held in Philadelphia, Dec. 27 and 28, 1895.

THE DUTY OF THE MEDICAL PROFESSION TO CIVILIZATION AND TO SCIENCE.

DR. THOMAS DWIGHT, of Boston, Mass., in his opening address as President spoke of the horror which the general public have for human dissection, and the aversion of the popular mind to this very necessary part of medical research. This prejudice he believed was founded, first, in the popular belief

that sepulchers were violated: and second, that the remains were subjected to wanton insult.

It is idle to hope that while human nature remains as it is this aversion to dissection will ever disappear. Our wisest course is to recognize it and to soften it by removing all just cause of complaint. It should be made clear to the public that dissection can and should be followed by decent burial. I, myself, would go so far as to have the bodies of Protestants and Catholics buried in their respective cemeteries when the creed of the deceased is known. It should also be understood that no wanton insult is permitted in reputable schools. The policy which will lead to the most satisfactory results is one of complete openness. Above all, we should avoid a timidity which shirks discussion of this topic. When we shall show so clearly as to carry conviction, that we have nothing to conceal, a great step will have been taken. A radical defect in the laws of many States otherwise well drawn, is that the delivery to medical schools of unclaimed bodies is optional with superintendents, boards of trustees and municipal authorities. The result of this is that those in authority very naturally hesitate to do anything for the advancement of science which not only can be of no possible advantage to themselves, but may involve them in serious difficulties.

German anatomists have recently adopted a report prepared in company with the representatives of other European countries, prepared with the idea of establishing a more satisfactory, and at the same time more scientific nomenclature than is at present in use. It is for us to decide whether their report is satisfactory, and if so, whether we shall join hands with our foreign colleagues, or if such is not the case, whether we can devise an American nomenclature which shall be so much better as to be distinctly superior to that at present in use.

ANATOMIC MATERIAL AND ITS PRESERVATION.

A committee of three appointed by the Association of American Anatomists to investigate this subject made their report at the meeting held Dec. 27, 1895, as follows: In response to a circular which was sent to a number of teachers of anatomy, not only in this country but abroad, in which a series of questions were asked, full answers were secured from the majority. This letter was sent to the professors of anatomy in 148 colleges in the United States, twenty-five in foreign countries, and twenty-five copies were sent to the medical journals in this country and Europe.

1. Anatomic material is received wholly under the provisions of the law in thirty States and countries, in part by law in seven and without law in five.

2. The provisions of the law were satisfactorily complied with in ten, fairly so in ten, not satisfactorily in twelve, and no replies were given in ten. In eight the provisions of the law were stated to be obligatory and in six the provisions were optional.

3. As to the condition in which the anatomic material was received, in twenty instances it was good, in twenty-one fair, and in one bad.

4. As to the disposition of the remains, in twenty-seven institutions they were reported buried, in ten cremated, and in four thrown away.

5. The agents employed in the preservation of subjects were various, and employed in a variety of combinations. Carbolic acid stood first, and was found to be especially useful in combination with other agents. Glycerin was the ingredient of next importance. It was also employed in combination. Arsenic was the next most popular, especially in combination with other substances. Chloral hydrate, the chlorid of zinc and the bichlorid of mercury came next in the list. Alcohol either pure or in combination, carbonate of potassium, the bicarbonate of sodium, chlorid of sodium, methyl spirit, formalin, nitrate of potassium, brown sugar, and boric acid were reported as successfully used.

The preservation of subjects by cold storage was reported in five instances. Some of the agents above noted were used in combination to preserve the subject which had been kept in cold storage, after it had been placed upon the table for dissection. It was found that the subject would keep indefinitely. A solution of the chlorid of zinc of neutral reaction, 50 per cent, in strength, was found to successfully preserve subjects, but it has the objection of hardening tissues and causing a change of color. If subjects have been immersed for a long time in a solution of common salt it has been found advantageous to soak them in water for twenty-four or forty-eight hours in order to soften the tissue. A number of useful formulæ for the preservation of subjects were forwarded to the committee, such as Wickersheim's, containing alum nine parts, chlorid of sodium twenty-five, nitrate of potassium twelve, carbonate of potassium sixty, arsenious acid ten; when cool filter and to

ten parts of the liquid thus obtained add one part of methyl alcohol and four parts of glycerin. Van Vetter's formula, seven parts of glycerin, one part of brown sugar and one-half part of nitrate of potassium. Langer's formula, 100 parts of glycerin, fifteen parts carbolic acid and eleven parts of alcohol; and Emperonne's formula, chloral hydrate 500 grs., glycerin 2½ liters, and distilled water.

6. Injections were made in two institutions in the heart, in nineteen in the common carotid artery, and in six in the common femoral artery.

7. The cost of receiving and preserving material was stated to have been from one to twenty-five dollars per subject.

8. In fifteen cases the supply of material was stated to be sufficient and in fifteen insufficient. The number of students who were assigned to each subject varied from four to sixteen.

The committee, consisting of Drs. J. Ewing Mears of Philadelphia, J. D. Bryant of New York and Thomas Dwight of Boston, Mass., heartily recommend that, 1, a combined effort should be made by the medical profession to secure the enactment of laws which will provide for the proper supply of anatomic material to medical colleges; 2, that an effort should be made to place before the public the great necessity which exists for the proper use of dead bodies in providing instruction for students of medicine, and the ample protection afforded the citizens of every State by the enactment of laws which will regulate the supply of anatomic material. The committee believe that the cold storage method of preservation in combination with the injection of chemic agents especially adapted for that purpose, affords the best method at present known. The great objection to formalin and alcohol is that they are both too expensive.

CONCLUSIONS.

1. Anatomic material for the promotion of medical science should be obtained wholly under legal enactment. The provisions of the law should be compulsory upon all officers of the State and county institutions and municipal governments.

2. Of the anatomic laws which are in force in this country the committee are of the opinion that the law of the State of Pennsylvania is the best.

3. The committee believe that it would contribute to the best interests of anatomic teaching in this country if action were taken by this Association to secure the enactment in every State of a law controlling the collection and distribution of anatomic material, and it heartily recommends such action.

4. While many of the agents reported in the communications which have been received have been long in use and have been to a greater or less extent employed successfully, the committee feel that no definite conclusions can as yet be drawn in regard to that perfect method as well as the securing of the best results in dissection, which it is hoped to secure. The preservation by means of cold storage approaches nearest to the perfect method, and it should be arranged upon a plan which will admit of the retention of subjects for a long time under the influence of a low temperature during dissection.

Dr. B. G. WILDER, in discussing the report of this committee, said that after an experience of twenty-seven years, we are wedded to the use of alcohol. Brain tissue, we find, is best preserved by a combination of formalin, bichlorid and salt. For muscles and viscera, alcohol is the best preservative. There are two objections to its use, first, the cost, and second, the property it has of bleaching the tissues.

Dr. G. B. HUNTINGTON fully agreed with Dr. Wilder in regard to alcohol. He recommended also the cold storage plan, which after an experience of three years has been found to give good results. Any injections should be made before freezing. Immersion in cold water is the best method of removing the ice from the body, and hastens the uniform melting of the parts. Arsenite of soda was used chiefly for washing the blood out of the body. Injections were made into the carotid artery, and the blood was allowed to flow until the water which made its escape was no longer tinted with blood.

Dr. BEVAN said that he had had excellent results with the combination of cold storage and a preliminary injection of alcohol, glycerin and bichlorid. In handling bodies while in cold storage, he made use of a pair of tongs, which can be made by any blacksmith for about one dollar in such a way as to fit into the external auditory meatus of each side. He has found a solution of formalin and Müller's fluid to be useful in the preservation of brain tissues; the substance so prepared hardens rapidly, and may be used for class demonstration to within three days; the color is well preserved, and it is possible to distinguish the gray and white matter at a distance of fifty feet. He uses a 5 per cent. solution of formalin in Müller's fluid, enough of the solution being employed to immerse the specimen.

A CONTRIBUTION TO THE MYOLOGY OF LEMUR BRUNUS.

Dr. GEORGE S. HUNTINGTON, of New York City, read an interesting communication on this subject. He confined his attention to the muscles of the trunk, pectoral girdle, and upper extremity. His results differ in many respects from the descriptions published by Murie and Mivart in their memoir of the anatomy of the lemuroidea and others. The paper dealt especially with the following points which have hitherto been undescribed.

1. The presence of an axillary arch from latissimus dorsi to the pectoral insertion replacing the cutaneous muscular slips described by Murie and Mivart.

2. The peculiarities of the humeral attachment of the pectorals which may be arranged as follows: *a*, the connection as already stated with a slip from the latiss. dorsi reproducing the condition found in a distinct variety of the humeral axillary arch. *b*, the connection of the abdominal division of the pectoralis major with the pectoralis minor at its insertion into lateral humeral ridge. *c*, folding of insertion tendon of the sternal division of superficial pectoral. *d*, insertion of clavicular portion into superficial aspect of sternal tendon and its fusion with the deltoid. All the conditions referred to can be properly regarded as presenting strong simian and anthropoid affinities.

3. The coraco-brachialis presented a division into an upper, middle, and lower parts, the latter was inserted into the root of supracondylar arch. The musculo-cutaneous nerve perforated the middle division.

4. The presence of a large and distinct epitrochleo-anconeus from the supracondylar process to the internal condyle and the ulnar margin of the olecranon.

5. The union of the brachialis anticus and the lateral head of the triceps, both extending to the head of the humerus and arising from the outer aspect of the bone.

6. Among the trunk muscles the arrangement of the supracostalis was especially to be noted, extending from the cartilage of the first rib to the third, fourth and fifth cartilages at their juncture with the sternum.

The entire group of deep thoracic muscles presented a typical carnivore aspect. The supracostalis, thoracic extension of the rectus abdominis to the first rib, a continuation of the serratus anticus with the levator scapulae, the thoracic extension of the scalene group and its relation to the external oblique all conform almost absolutely with the type presented by a plantigrade carnivore as *Taxidea Americana*. On the other hand the pectoral girdle and brachial muscles conform to the simian type. Thus far lemur brunus is especially marked in the arrangement of the pectoral group.

In the abdominal muscle groups the arrangement of the external oblique aponeurosis clearly foreshadows the structure found in the higher primates, especially in relation to the construction of the external abdominal ring, Gimbernat's ligament and the triangular ligament of human anatomy.

HISTORY OF THE CILIARY MUSCLE.

Dr. FRANK BAKER of Washington, D. C., after a careful review of the literature of this subject has found that the two portions of this muscle, the fibers of one part of which are directed meridianally along the eyeball and the other with fibers arranged equatorially have been named after observers who were not strictly the first to describe them. Thus the portion, which has been called Müller's annular muscle, has received its name from the description which Heinrich Müller of Würzburg gave of it in 1857. Portions which have their fibers arranged meridianally were often called Brücke's or Bowman's muscle, under the impression that the discovery or first description of it belonged to one or both of these anatomists. Bowman described the ciliary muscle in his lectures on parts concerned in operations on the eye published in 1849, and Brücke called this muscle the tensor choroideae in a paper read before the Berliner Physikalischen Gesellschaft, in May 1846. Of the two descriptions that of Bowman's is the best. Bowman made several other publications on this subject. In 1844 he published a series of lectures in the *Boston Medical and Surgical Journal*; he speaks of the ciliary muscle as being composed of muscular fibers lying within the ciliary body. He supposed the striations of the orbicularis ciliaris to be tendinous. Before either of these observers wrote, however, the ciliary muscle was described and named by an American, Dr. William Clay Wallace, who published an article in *Silliman's Journal* in 1835. Dr. Wallace also published several other articles on this subject. In his treatise on the eye, New York, 1839, he mentions the ciliary body as containing muscular fibers. Also in 1844 in a series of lectures published in the *Boston Medical and Surgical Journal*, he speaks of the ciliary muscle as being composed of muscular fibers lying

within the ciliary body. He supposed the striations of the orbiculus ciliaris to be tendinous. Dr. Wallace also goes in the subject at considerable length in his lectures on myopia. *Boston Medical and Surgical Journal*, 1844, xxx, 288. See also the same author in the *London Medical Gazette*, 1842-43, 1, 412.

Among the earlier authors, there are also several who appear to have recognized the muscular nature of the so-called ciliary ligament. Even Eustachius, who lived from 1510 to 1574, had some divination of the muscular character of these fibers although he was unable to demonstrate them by the means in his power. Fallopius corrects him and calls it a ligament. Plempius (*Vopiscus Fortunatus*), *Ophthalmographia*, Amsterdam, 1632, p. 169, also describes this structure. Wm. Briggs, *Ophthalmographia*, 1686, speaks of it as possessing muscular fibers that change the form of the lens. G. Bidloo, "*Anatomia humani corporis*," Amsterd., 1685, and Descartes "*L'Homme de Rene*," 1664, describes this structure at some length and present a number of drawings illustrating the part.

It is interesting in this way to recall that the real nature of this part of the anatomy of the eye was not altogether unsuspected by the early anatomists, and that all the credit for an early description of this ciliary muscle is not entirely due to the men whose names the several parts bear.

ABSENCE OF THE FIBROUS PERICARDIUM, OF THE LEFT SIDE.

DR. ADDINELL HEWSON, of Philadelphia, presented an interesting specimen of this condition before the meeting. He had found it in the dissecting room of the Jefferson College. The specimen was removed from an Englishman by birth, aged 54 years, who had been an inmate of an insane asylum for four years previous to his death. By occupation he had been a scrivener. There was distinct absence of the fibrous pericardium on the left side and an adherence between the apex of the left ventricle and the lower anterior margin of the left lobe of the lung. The specimen showed in front the pleura enclosing the internal mammary artery and the left phrenic nerve displaced anteriorly from its normal position. An incision had been made in the median line to expose the vessels. The aorta practically had no arch and was near the median line. The innominate artery was wanting. The subclavian artery on the left side was found at the highest part of the arch. There was a wide space between the subclavian artery at its origin and the point where it crossed the first rib. The vena azygos major made a very decided arch coursing over the right half of the chest wall. While the patient had been confined in the asylum he had been in the habit of sitting with his knees drawn up and his head between his knees. This position being the one assumed by him for the most part may account for the adhesions which were present. The course of the phrenic nerve on the left side was normal. The posterior veins were inside of the posterior fold of the pericardium.

THE DESCRIPTIVE ANATOMY OF THE HUMAN HEART.

DR. WILLIAM KEILLER, M.D., F.R.C.S., Edin., of Galveston, Texas, read a paper on this subject. He used a mass of gelatin injected into the common carotid artery or the femoral artery for the preparation of his specimens, and he finds that when the heart has been so prepared it follows in all essential particulars the description of his model. Thus viewed the heart is an irregular four-sided pyramid whose base rests on the diaphragm and whose apex has been removed to afford attachments for the ascending trunks of the great vessels. It presents for examination five surfaces (including the base), a number of borders separating these, an anatomic apex and a clinical apex. The anterior surface is triangular in shape. In sagittal mesial section it is parallel with the sternum. It includes the greater part of the right ventricle, portions of the left ventricle, the left auricular appendix, the entire right appendix, and part of the right auricle. Its superior angle marks the anatomic apex and here the surface merges in the anterior walls of the aorta and pulmonary artery. Its left inferior angle forms the clinical apex. Separated from it by the pericardium are the margins of the lungs and pleura, the sterno pericardial ligaments, triangularis sterni, internal mammary vessels and sternum. The right surface is markedly convex, quadrilateral, lies almost vertically, and is directed toward the right. It includes the greater part of the right auricle. Its anterior, posterior and inferior borders are only slightly rounded, and are therefore fairly well defined. At its superior extremity the surface blends with the wall of the superior vena cava, and at its posterior inferior angle it is similarly related to the inferior vena cava. It is separated by the pericardium from the right phrenic nerve and vessels, the pleura and inner surface of the right lung.

The left surface is a complex triangular area directed mainly upward and toward the left. It includes about one half of the

free surface of the left ventricle and the left auricular appendix. It presents the proximal extremities of the descending branch of the left coronary artery and great cardiac vein, the marginal and transverse branches of the same artery and the posterior cardiac and coronary veins. It is separated by the pericardium from the left phrenic nerve and vessels, the left pleura surface of the left lung. The posterior surface (dorsal surface) is called the base in text-book descriptions. It is four-sided, rather narrower above than below, is convex, vertical and directed backward. It is formed by the left auricle and by the portion of the right auricle which joins the two venae cavae behind. It presents the opening of the coronary vein (right and left), the great coronary vein and coronary sinus and the oblique vein of Marshall which runs down over the sinus to enter the left extremity of the coronary sinus. It is only partially invested by the serous layer of the pericardium—it is so separated by the pericardium from the bronchi, esophagus, vagi, descending aorta, vena azygos major and thoracic duct. The inferior surface (diaphragmatic surface or base) is quadrilateral, slightly convex, or almost flat when the ventricle contains blood. It is formed by a small portion of the right auricle and the opening of the inferior vena cava; the rest of the surface being about equally divided between the right and left ventricles. In addition to the inferior caval opening it presents the inferior extremities of the right (anterior) and left (posterior) interventricular grooves with the right coronary artery embedded in the former and the coronary sinus in the latter. Crossing it diagonally is the inferior interventricular groove with the descending branch of the anterior or right coronary artery and middle cardiac vein. The posterior cardiac vein runs along its posterior border. The apex of the pyramid is formed by the aorta, pulmonary artery and superior vena cava. These structures arise from the heart on a level with the upper margin of the third costo-sternal articulation extending an inch and a half to the left and one inch to the right of the middle line. The clinical apex is indicated by a point between the fifth and sixth ribs three and one-half inches to the left of the middle line. The antero-inferior border may be indicated on the chest wall by an oblique line extending from the clinical apex on the left across and slightly upward to a point one inch to the right of the middle line at the level of the sixth chondro-sternal articulation. Along this line the cardiac blends insensibly with the hepatic dullness. On a level with the fourth chondro-sternal articulation the area of the heart's dullness extends three inches to the left and one and three-quarter inches to the right of the middle line. The author suggests the following changes in the cardiac nomenclature in accordance with the above description. Thus the interventricular grooves are seen to be superior and inferior, the right coronary artery might be called anterior, and its branches respectively infundibular (as at present), right ventricular (now marginal), and inferior interventricular (now descending); the left coronary artery would be better named posterior and its branches superior interventricular (now transverse).

NOMENCLATURE OF NERVE CELLS.

DR. FRANK BAKER, of Washington, D. C., spoke on this subject. He regarded the term *neure* as the best name to use in describing these cells, because the word lends itself readily to combinations. Thus cells which form nerve roots might be called *rhizoneures* and cells of the cerebro-spinal axis might be called *axoneures*. If necessary these cells can be divided into other groups. Short path cells might be called *zigoneures* or commissural cells, and the long path cells of the cortical surface might be called *macrodromoneures*. In this way sensory fibers might be called *esthenoneures*. Other cells which have their origin in the spinal cord and are especially connected with the muscles might be called *dynamoneures*. The term proposed by Kolliker, or *neurodendron*, is too long. Other neurologists, among them Dr. Fish, prefer the term *neurosite*. As neurologists and psychologists are giving considerable attention to this subject it is reasonable to suppose that a better terminology will be adopted than the one now in use.

THE CEREBRAL FISSURES OF TWO PHILOSOPHERS.

DR. B. G. WILDER, of Ithaca, N. Y., presented a paper on this subject illustrated by specimens and a number of photographs. The paper referred to Chauncey Wright of Cambridge, a philosophic writer, critic and mathematician, and James Edward Oliver, Professor of Mathematics in Cornell University. The brain of the former was very different from the average pattern, and the two brains presented a distinct contrast, probably due to the greater activity and larger breadth of the former's scientific research. The reputation of the former was wider and better known than that of Oliver. One peculiarity of both brains was the simplicity of structure. The writer

called attention to the fact that there was no decided standard of comparison for the normal adult American brain, and he suggested that the members of the Association unite in an effort to secure some such standard.

THE HUMAN PAROCCIPITAL FISSURE—SHOULD IT BE SO RECOGNIZED AND DESIGNATED?

DR. B. G. WILDER, of Ithaca, New York, read a paper on this subject. Ten years ago the same writer suggested that the occipital portion of the long fissure called intra-parietal by Turner, inter-parietal by Ecker, and parietal by Pansch, be regarded as a distinct fissure under the title paroccipital, referring to its constant and marked relation to the dorsal end of the occipital (parieto-occipital). The "U" shaped area between the two or first annectant gyrus he proposed to call the paroccipital gyrus. The grounds for this suggestion have been given in the reference "Handbook of the Medical Sciences," VII, 155, as follows:

"1, in about half the cases examined by the writer there are two fissures separated by an isthmus of greater or less width: 2, when the two are continuous there is always a vadium (shallow) at the point corresponding to the isthmus: 3, each of the two portions, whether separate or continuous, is usually deepest at or near its middle: 4, at their first appearance in the fetus they are always completely independent. While this division is recognized by some observers it is thought needless by others and has not as yet received the sanction of the German Committee on Anatomical Nomenclature." The present paper was intended to review all the accessible literature on the subject as well as the material accumulated by Dr. Wilder in the interval, especially comparing these parts with similar fissures found in apes and monkeys.

On practical grounds the writer believes that the fissure should be recognized and called the paroccipital division of a "fissural complex." Among eight educated persons the isthmus occurred seven times in all but one on the right side. In only one case did the isthmus occur on the left side and not on the right, and that was the case of an insane Swiss patient.

PRACTICAL HISTOLOGY FOR LARGE CLASSES.

DR. CHARLES S. MINOT, of Boston, Mass., spoke as follows:

We have given up entirely allowing students to make their own preparations and we find the change to be an advantageous one. Every student is obliged to make a perfect drawing of each preparation and the drawing is judged on its accuracy. The geometric faculty is especially developed. In the second half year they are given practical work, and they then begin the study of the embryo. In commencing the work they are given specimens of the liver, heart, spleen, etc., instead of beginning with a connective tissue, a piece of bone or the like. We find it an advantage to teach embryology as a help to anatomy, and as offering an explanation to a great many relations that would otherwise be obscure.

SOME NOVEL METHODS OF DESCRIPTION OF THE HUMAN SKULL.

DR. HARRISON ALLEN, of Philadelphia, in his remarks upon this subject said:

My method is to secure a formula for each skull. I begin with the supra-orbital ridge, and draw a line between this point and the outer part of the external auditory process. The nasal bone may be divided into three parts, the upper part, the frontal; the main portion, the maxillary; and the third part, the pre-maxillary. In the human skull the third portion is not well defined. The frontal portion is very variable. Holding the bone in such a position as to examine it in profile it is possible to tell the proximal from the distal portion. The latter it is well to call the radix, and below that the salient. Variations in these portions serve to identify the individual. In two skulls of Sandwich Islanders which Dr. Allen presented, the one had a well-developed incisor crest, and the other had not. The anterior nasal spine is simply the end of the incisor crest. It has received the name of infantile, but Dr. Allen prefers the word pavidomorphie. The writer believes that the hard palate has not received the attention which it deserves in its posterior part. In negroes the middle lacerated foramen is very much narrowed and is frequently closed. The temporal fossa may be divided into two parts, the fronto-temporal ridge, and parieto-temporal. They are distinctly different. The former is very apt to be closed and is very rarely continuous with the same line as the parieto-temporal. No two skulls show a similar arrangement. In a study of the temporal bone the remains of a suture is sometimes found between the squamous and petrous portion. To the lower portion of this suture the name retro-tympanic has been proposed. In speaking of the lachrymal bones Dr. Allen said that scarcely any portion of the lachrymal bone is in advance of the crest. In the North

American Indian, and in the Sandwich Islander they are apt to be very small.

OBSERVATIONS ON THE FOSSA CAPITIS AND A TUBERCLE IN THE TROCHANTERIC FOSSA.

DR. F. J. BROCKWAY, of New York City, presented a carefully prepared paper on this subject. The fossa capitis which in the human femur is found at the extremity of that bone and gives attachment to the ligamentum teres, presents ordinarily a well-marked depression. In certain of the lower animals this depression does not exist. The ligamentum teres and the fossa capitis are absent in the elephant, hyrax, rhinoceros, tapir, hippopotamus, hedge-hog, seal, sea otter and walrus. They are absent in the monotremes, echidna and ornithorynchus; of the marsupials, the great kangaroo; of the edentates, the three and two sloth anteater. It is also lacking in one rodent and in one of the insectivora, etc. While a study of comparative anatomy frequently leads to valuable deductions, as to the function of parts of human anatomy, the writer dealt more especially with the human femora. He examined 900 human femora, of which the pedigree of over 400 was known. Moser in his article in Schwalbe's Arbeiten, vol. II, p. 36, says that only one-half of the fossa capitis that he examined presented vascular foramina. Dr. Brockway, however, found that in the 900 adult specimens which he examined, 84 per cent. presented these vascular openings. Twenty-six specimens (2.8 per cent.) presented no fossa at all, and in five cases there was a distinct tubercle in place of a fossa for the insertion of the ligamentum teres. In five cases there were double fossae occurring on one head. In two cases there was a combination of a fossa and a separate tubercle on the same head. In thirty-six cases the fetal condition persisted, *i. e.*, there was a fossa and a distinct postero-inferior groove descending nearly to the margin of the articular surface, and always pointing toward the line passing up from the lesser trochanter to the inferior border of the neck of the femur. Thus it is possible to determine to which side of the body the femur belongs by noting the direction of this groove: holding the fossa facing the observer the groove points to the side to which it belongs. Twenty-eight cases showed the presence of a fossa and a connected tubercle. The ligamentum teres is not inserted into the whole floor of the fossa, but into its upper half and upper margin. The lower part of the floor is free and the ligamentum teres simply rests upon it. Therefore, the vascular foramina are usually confined to the deepest and lowest portions of the fossa. The synovial membrane has a more extensive insertion than the ligament proper. The author described three types of the fossa: first, oval; second, triangular, and third, round. They are all practically the same whether they contain vascular foramina or not. The most common type of all is the oval form (45 per cent.); the next most common the triangular form (34 per cent.), and finally the round type (21 per cent.). Old people are apt to have shallow fossae, but their foramina are not more apt to be absent than in adult life. Out of twenty-two people over 60, thirteen had shallow fossae. The character of the foramina and fossae are not symmetrical on both sides. Out of the 900 bones examined only four could be called "pilastered." Twenty-eight specimens showed a good third trochanter (3 per cent.) not counting an exaggerated gluteal line. Six of these showed also a tubercle in a digital fossa. From a study of these specimens the linea quadrati would seem to be a myth, as Dr. Brockway has never seen it as a distinct line representing the full length of attachment for the quadratus femoris.

DR. D. S. LAMB, of Washington, D. C., showed a colored sketch illustrating

A CASE OF POLYORCHIS.

There were three testicles in the right scrotum and one in the left. They varied somewhat in size, but showed nothing abnormal in the texture of each. Three cords could be distinctly seen and felt passing separately through the external abdominal ring. The patient was a male, white, aged 45; well developed and enjoyed good health. He was a widower with two children. He has offered to submit to operation if sufficient remuneration was offered. A comparatively small number of cases of supernumerary testicles have been reported. A number of them, if not the majority, have been questionable. Armstrong, Blumener, Bulaboff, Hauser, Hewitt, Hough, Jacobovics, Kennow, Hetard, MacCann, McElmoil, Mercklin, Pranken, Sibbern, Stewart and Vanchrin have reported cases. Dr. Hewitt's case seems to be well authenticated and is as follows: The patient was a soldier with two distinct testicles and cords in the left scrotum. The cords united before entering the abdominal ring. This man is alive at the present time and the condition has existed since birth.

DR. LAMB also presented a "Note on the Appearance of a Unilateral Tuberosity in Place of the Trochanteric Fossa," with specimen.

SELECTIONS.

Recent Contributions to the Etiology of Malignant Tumors. The very recent demonstrations that certain peculiar microorganisms of the class of blastomycetes possess the power to produce in animals tumor-like growths in which are cell inclusions, have brought into renewed prominence the question concerning the nature of malignant tumors.

Otto Busse¹ discovered in a case which was regarded clinically as a sarcoma of the tibia, but which the post-mortem examination showed to be a strange case of chronic pyemia with collections of giant cells in the purulent foci, numerous clear and transparent bodies that could be cultivated upon ordinary media. According to their morphology and biology these microorganisms were saccharomyces or yeast fungi, and Busse entitles one of his communications upon this interesting observation "Saccharomycosis Hominis." Following are the principal conclusions in regard to Busse's case of this new disease:

Saccharomycosis hominis is an infectious disease, due to a pathogenic yeast fungus, and characterized by purulent foci in the skin, the bones, the lungs, the kidneys and the spleen. The fungi lie either in the cells, mostly in giant cells ("cell-inclusions"), or outside the cells in the tissue spaces. They are in part naked, in part surrounded by a homogeneous halo as if possessed of a capsule. The majority of the parasites reveal within the capsule, a center with a double contour in which lie one or more glistening bodies. The shape of the organisms is usually circular, the size varying between that of a large nuclear body and that of a liver cell. The saccharomyces can be cultivated in bouillon, gelatin, agar, blood serum, glycerin agar, potato and acid decoction of plums. The cultures usually have a white color, and growth occurs at a temperature varying between 10 and 38 degrees C. In young cultures the organisms present a single contour, only after several days is it possible to recognize a distinct membrane. In plum decoction and grape-sugar bouillon the fungi causes a considerable fermentation, resulting in the production of alcohol and carbonic acid. The microorganism can be transferred to the body of animals, and here they multiply and cause a local, slow suppuration, accompanied with the formation of granulation tissue rich in giant cells and "inclusions," that gradually subsides. In white mice they cause death, and are then present in large numbers in the blood.

A little later Sanfelice² cultivated from the air a certain form of yeast fungus which, when inoculated into animals, caused small ulcers with the formation of new tissue that reminded one of a neoplastic growth very similar to epithelioma. And then Maffucci and Sirleo³ found an organism, similar to the one described by Sanfelice, in a guinea pig that died from marasmus; and which was pathogenic for animals.

From these investigations it is apparent that some of the blastomycetes belong to the parasites of the animal body, and that they are capable of inducing processes of proliferation that in some phase of their development are not unlike some of the malignant tumors. The presence of the saccharomyces within the cells of the proliferating tissue has awakened the hope that we were in a fair way to obtain definite and conclusive evidence that some at least of the various "cell inclusions" described by many workers in carcinoma, and sarcoma also, were really microorganisms as believed to be the case by not a few scientists. Should it be proven that these intracellular formations in carcinoma and sarcoma were forms of fungi, belonging to the blastomycetes, then the sporozoon theory in regard to the etiology of malignant tumors would have to be abandoned,

while the general theory of the parasitic nature of these growths would seem to receive evidence of a very positive nature. It would then appear that all the authors referred to had in reality described and seen genuine parasites, but that they had erred in giving these organisms a place among sporozoa, and that the persistent but fruitless search for spores and sporocytes had indeed been in vain because such structures are not produced by yeast fungi. It would be some consolation at any rate to know that all the time technical skill and energy expended during the last years in the microscopic study of malignant tumors in the search for their cause were, in spite of all the confusion and contradiction that resulted, to be crowned with final success, even though of a different kind than was believed by many of these tireless workers. It is consequently of great interest to read that certain Italian investigators continue to describe the presence of forms of yeast fungi in tumor growths that seemed to them to correspond to certain definite varieties of carcinoma and sarcoma in the sense that these terms are used in medical literature of to-day. Thus Roncali⁴ describes certain parasites in adeno-carcinoma of the ovary. In one case he found them very numerous in the cytoplasm (not the karyoplasm) of cells lying in the stroma of the tumor. In the second case he found these structures in the cell protoplasm and between the connective tissue bundles of the ovarian tumor, which was removed by Durante; also in the metastatic nodules in the omentum which were present. These parasites were identic in form and staining properties with the fungus that Sanfelice used in his experimental studies. It does not appear, however, that Roncali made any culture experiments with the tissues at his disposal, and consequently his observations at most confirm the supposition that the "cell-inclusions" of the recent workers in this field were, in the first place, parasites, and secondly, blastomycetes and not sporozoa. Then Corselli and Frisco⁵ make a preliminary communication of the results of their studies of a case clinically diagnosed as sarcoma of the mesenteric lymph glands, with milky effusion into the peritoneal cavity. The post-mortem examination showed a neoplastic mass composed of new-formed mesenteric lymphatic glands, small ulcers on the mesentery and small intestines, and a large quantity of milky fluid in the peritoneal and pleural cavities. The microscopic examination of this fluid revealed single, or collections in pairs, of oval cellular forms of various sizes. The same formations were obtained in pure cultures from the fluid in the pleural cavities and from the ulcers. Colonies were grown on fucus (seaweed), gelatin and agar. On potato, fruits and decoctions inoculations gave no results. Morphologically and developmentally the parasites presented the same characteristics as the saccharomyces. In the sections from the tumor small cell forms, with granular brownish pigment in their interior were found. The authors believe this pigment to have been formed in the body of the patient. In many instances, distinct evidences of multiplication in the shape of budding processes were also observed.

Animal inoculations were made with the pure cultures and with the milky fluid, and it was found that in guinea pigs, dogs, and rabbits neoplastic proliferation processes occurred in various parts of the body, but especially in the lymph glands; the anatomic structure of, and the arrangement of the parasites in, these animal foci of proliferation were analogous to these in the human mesenteric tumor so that it seems to have been demonstrated that the parasites isolated were the true, specific agents in both instances. The discovery of the fungi described in connection with tumors of the mesenteric glands and chyli-form ascites gives the study of chyli-form ascites a new direction, to say nothing about the relation of this demonstration to the causation of malignant tumors.

¹ Centralblatt für Bact., 1891, p. 175, and Virchow's Archiv, April, 1895.
² Centralblatt für Bact., 1895, No. 4, and Annali d'Igiene Sperimentali, Vol. v, Fasc. 2.

³ Il Pollicino, March, 1895.

⁴ Il Pollicino, February, 1895, and Centralbl. für Bakteriologie, Oct. 15, 1895.

⁵ Centralbl. für Bact., Oct. 15, 1895.

In this connection reference may be made to certain peculiar, round or oval bodies described by Flexner,⁶ in a case of multiple lympho-sarcomata. These bodies were free, and apparently entirely foreign to the tissue in which they were found. Flexner thought they were, perhaps, protozoa, but could not say anything definite as to their nature.

In summarizing these recent contributions to the study of the etiology of malignant tumors it can be said that Busse and Corselli and Frisco have succeeded in demonstrating that organisms, belonging to the groups of blastomycetes, may appear in a pathogenic role in man and animals, producing peculiar processes, in some respects very similar to certain forms of malignant tumors: that Sanfelice and Malfucci and Sirleo have demonstrated that this group of microorganisms is pathogenic for animals, initiating tissue proliferations not unlike true neoplasms; and that Roncali makes the claim to have shown histologically that the same parasite was present in two cases of adeno-carcinoma of the ovary. Inasmuch as there is good reason to doubt the true tumor nature of the cases of Busse and of Corselli and Frisco—in fact Busse does not at all claim his case to be one of sarcoma—and inasmuch as Roncali did not cultivate the parasite from his case and reproduce by inoculation into suitable tissue an adeno-carcinoma, the writer is of the opinion that the results of these researches have far greater importance in showing that hitherto unknown infectious processes may be caused by yeast fungi than in establishing the parasitic nature of carcinoma and sarcoma. It may be that instances of infection with yeast fungi, like those described by these authors, have been included under the term sarcoma, the various histologic forms of which may harbor such peculiar processes which Busse and others describe: the word sarcoma may be found to have been applied to a variety of different infectious processes because the structure of its numerous varieties is often not unlike granulation tissue. The convincing proof that carcinoma and the distinct forms of sarcoma are due to blastomycetes, or other parasites, is still lacking; no one has as yet isolated and cultivated the parasite, and reproduced typical tumors by inoculation into susceptible animals. That yeast fungi are pathogenic and may give rise to fatal forms of infection, accompanied with tissue proliferation, and parasitic cell inclusions, are discoveries of far-reaching importance; and continued work in this new direction will undoubtedly yield far more valuable and satisfactory results, even as regards the great problem of the etiology of malignant tumors, than the discouraging efforts to prove the sporozoon theory of their origin by histologic examination only.

Recent Researches on Gout.—The theories as to the causation of gout are still obscure, and the rôle of uric acid in the morbid process is far from being elucidated. All we know is that during the course of the disease regional inflammations are produced with necrotic tendencies, that these inflammatory foci are usually in relation to the deposits of uric acid, but the latter may be missing. A striking example of the latter is found in the necropsy on Professor Cohnheim. For many years this savant had suffered from grave attacks of gout, yet no trace of uric acid deposits were found.

Garrod in his classic work admits there is an increase of uric acid in the blood with diminished elimination in the urine by reason of a functional alteration in the kidney. He supports his opinion by ingenious experiments. When this uric acid has attained a sufficient degree of concentration in the blood it should produce an inflammatory reaction in the tissues with formation of necroses. Ebstein adopts Garrod's ideas in full, save on one point. According to this author the crystallized uric acid is not the cause of the necrosis, the latter is primitive and is a consequence of the diathesis which causes the increase of the uric acid itself. Treatment therefore should

be directed toward the excess of uric acid in the blood. Later on, the methods of analyzing uric acid (Salkowski) showed that the problem was not as simple as had been thought. The elimination of uric acid was sometimes increased, sometimes diminished. Up to the present no analyses have been made of the uric acid in the blood of gouty patients. Nevertheless we find figures similar to those of Garrod in other diseases, for instance in pneumonia. Hence this theory is somewhat unsettled: in fact Van Noorden in his recent work accords it no value whatever. He attributes the principal rôle to the necrosis, and the uric acid found in the inflammatory foci is formed, he says, in these points without any relation with the uric acid of the blood. This uncertainty in theories led Klemperer to make some researches in Leyden's clinic for the purpose of elucidating some points. First of all the quantity of uric acid in the blood of healthy men was to be determined. In no case were appreciable quantities found. Then the quantity of uric acid in the blood of three gouty patients during the attacks was determined, and the same amount found that Garrod indicates (0.05 gr. to 0.1). In one patient the proportion was 0.088, in the second 0.067 and in the third 0.0915. While this shows that the blood during gouty attacks is rich in uric acid, it is not conclusive, for Klemperer found 0.985 gr. in a case of leukemia and 0.0165 gr. and 0.0685 in two cases of nephritis. On the other hand, uranalysis in the second and third patients gave 0.423 and 0.710 of acid, so we can not conclude there was a diminution in the elimination. Finally, a great number of uranalyses were made in gouty patients between and during the attacks, but there was no concordance between the access and the quantity of uric acid. Hence the analysis of this acid in the urine is of no value in the diagnosis. As to the production of necroses by stasis of the uric acid in the tissues, it is necessary to first establish the quantity of the acid soluble in the blood, for if this is precipitated from the blood it is because the latter is saturated. Blood serum from three healthy individuals was digested with uric acid at 37°. It was found that 100 cubic centimeters of the blood had dissolved in one case 0.166 gr. in another 0.171, and in the third 0.143 of the acid. The same experiment repeated with blood from the three gouty individuals taken during the paroxysms gave 0.14, 0.126, and 0.18 (the most grave attack). It seems from these researches that the blood of gouty patients even during the attacks may still dissolve large quantities of the acid, and we can not admit there is a supersaturation and consecutive precipitation during the paroxysms.

It might be claimed that the blood is less alkaline during the attack and the uric acid is precipitated. Experiments made on the three patients gave 28, 31 and 33 volumes per cent. of carbonic acid, figures but little lower than the normal (36 volumes per cent.). Hence this hypothesis also fails us. What, then, is the origin of the necrotic process? For answer we can only invoke analogies. Thus we may cite observations on saturnine intoxication. Garrod, and later on Leyden, showed that in cases of lead poisoning there are foci of necrotic inflammation very similar to those in the gouty. We are now prepared to admit that certain toxic substances circulating for a long time in the blood cause necroses in which uric acid is deposited. Alcohol acts in the same manner as lead. If the toxic agent of gout is still unknown to us it is certain at least that it oxidizes very readily, and that anything increasing its oxidation diminishes the attacks. Treatment, then, should be directed toward increasing oxidation. For this purpose we may recommend moderate alimentation, appropriate muscular exercise and abundance of drinks. *Les Nouveaux Remèdes*. 1895, No. 15.

Hoppe-Seyler.—In a consideration of the life of Hoppe-Seyler it is brought to notice that we owe to him much of our knowledge of the inter-relations of chemistry and physiology, from

⁶ Johns Hopkins Hospital Reports, Vol. III, p. 171, 1893.

the fundamental principles of the one to the highest problems of the other. It was his aim to secure for physiologic chemistry a position as an independent branch of science. At an early period he was an assistant with Virchow. He filled the chair of applied chemistry at Tübingen eleven years. Then, in 1872, at the reestablishment of the University of Strassburg, he was selected above many to increase its scientific reputation, and there he remained to the end. In 1884 an independent institute was built for him. His published works are exceptionally numerous: at first in anatomy and medicine, as studies on cartilage, bone, teeth, the theory of percussion. He soon turned to medical chemistry and wrote on chondrin, serous transudates, the influence of cane sugar on digestion, etc. Then came a paper on the effect of carbonic acid on the blood, in which the chemie proof of carbonic acid poisoning was first shown in the dead body. This was the beginning of a long series of researches on the blood. In 1862 he first described the spectrum of hemoglobin. To him is due the proof that oxyhemoglobin does not accomplish the physiologic oxidation in the blood of albumin, fat and sugar, as had been often assumed, but that it is to be regarded as a means of carrying oxygen into the tissues. He showed how to obtain blood crystals pure. He recognized that oxygen gave to hemoglobin its power to resist decomposition and the pancreatic juice, and proved the elaboration of oxygen in green plants. There is hardly a branch of physiologic chemistry that has not been advanced by Hoppe-Seyler. He bestowed careful work on the composition of bile, on enamel, pus, milk, urine, lecithin, nuclein, the great group of albuminous bodies which he arranged in a plain and natural system. So in the chemistry of plants there is his work on chlorophyll, on the influence of algae on the gases of fermentation. His researches on fermentation and putrefaction are extensive. With all these manifold works, he yet held in view those powerful forces which have so influenced the earth's crust. So we find investigations on the formation of anhydrite and dolomite, on flow of gas in coal strata, on the optical properties of oxid of manganese, the production of light by motion of atoms. These show us on what a broad foundation his knowledge and investigations were developed.

His *Physiologic Chemistry*, begun in 1877 and finished in 1881, is a work of great importance and had the task of embodying in a connected manner all known facts. Much earlier appeared his "Handbook of Physiological and Pathologico-chemical Analysis," which rested in great part on methods original with Hoppe-Seyler. This extensively-used book is now in its sixth edition by Hoppe-Seyler and Thierfelder. The lack of a special journal for physiologic chemistry led him, in 1877, to establish the *Zeitschrift für Physiologische Chemie*, which has a well-assured existence. Naturally pupils came from all over the world to work with him: a great number of publications arose under his direction and bore witness to the enthusiasm which reigned in his laboratory. Preparations to celebrate his next birthday were brought to an end by the news of his death. A great gap remains where this man of science stood. *Wiener Klinische Rundschau*, August 25, 1895.

The Prevention of Cholera; Dr. Haffkine's Work in India. The very able address given by Dr. Haffkine at the Examination Hall of the Royal College of Physicians and Surgeons, explained the results of the work which he has done during the past two years and a half in India in carrying out the practice of his method of vaccination as a preventive of cholera in India. Dr. Haffkine's work is of the highest scientific value and promises to confer a great boon on the Indian empire. It has been carried out under circumstances of the most remarkable self sacrifice and devotion to the interests of humanity and of science. He has given many of the best years of his life to this research, and has with unwearying industry and transparent sincerity worked out in India all the details which

can test the value of this new gift to science to life-saving purposes, without fee or reward other than his own conscience, his love to humanity and his scientific devotion. Dr. Haffkine has with steady diligence and unquestionable enthusiasm braved every danger, and endured the extremes of climate and of unhealthy seasons. He has listened to the appeals from every direction regardless of personal risk and unmindful of his own health, which has suffered greatly. He returns to Europe greatly debilitated by the continuous trials of his arduous labors. In India he earned the respect and affection of all with whom he came in contact. His unaffected simplicity of character, his undeviating search for the truth regardless of any other object than that of the largest possible application and the most rigorous tests of his method, have won for him universal esteem. It is fitting that his first great public reception should have been in this country, for it is in the Indian empire that his discovery and his invention will find its largest field of usefulness, and while the boon which he has conferred on humanity is one which all the world must recognize, and by which all will be benefited indirectly, even where not directly, still it is especially in the Indian endemic home of cholera that the application of this method will find a most useful field. It may be hoped that with the larger views on sanitation which the Indian government is now adopting and carrying out, and with the universal recognition in India and the unspeakable importance of recognizing the water-borne theory of the causation of cholera, the necessity for the application of Dr. Haffkine's method will become narrowed within diminishing limits.

Dr. Haffkine concluded his address by a touching, eloquent, and deeply-felt tribute to the memory of his illustrious master, Pasteur, from whom he derived his inspiration, and who gave, it should be remembered, the most generous financial help, as well as his scientific aid and countenance, to this great enterprise of Dr. Haffkine. The adoption of the Pasteur filter throughout India, where it is now being extensively introduced, will in its own way tend probably almost as largely to prevent the development of cholera as Dr. Haffkine's vaccination will limit its extension within the areas of its prevalence. Thus Pasteur's name will be doubly connected with the crusade against this terrible plague, which usually slays hundreds of thousands in the Indian empire, and thus extends its ravages from time to time to European countries. The Pasteur filter and Haffkine-Pasteur vaccinations will go hand in hand in rendering this great service to humanity. The tribute which Dr. Haffkine paid to the memory of his great master comes at a timely moment, and every one who reads his luminous and convincing address will feel that his concluding words are not the least interesting part of it. We trust that the Indian Government may see its way to some just and adequate recognition of the unstinting services which Dr. Haffkine has rendered to the great Indian dominions, and that his unexampled devotion and self-sacrifice will not pass without due official recognition.

British Medical Journal, December 21.

Can Leprosy be Stamped Out? The London letter writer for the *American Practitioner and News* speaks hopefully of a proposed new treatment of leprosy, by the artificial induction of erysipelas upon the leprosy members of the patient. He credits the suggestion to Dr. W. Impey, Medical Superintendent of the leper settlement at Robben Island, Table Bay, who is now in England on a six months' leave of absence. During his vacation he intends to visit the various leper establishments in Norway, Russia, Turkey, and the south of France, in order to see the method of treatment, and if possible to experiment with a view of testing what he believes to be an effectual cure for the disease in its earlier stages. Dr. Impey has found that at Robben Island, where there are six hundred lepers, that when a patient is attacked with any inflammatory skin disease, such as measles, erysipelas, or smallpox, the part affected is invariably cured of leprosy, and the patient either entirely recovers from leprosy or his life is indefinitely prolonged beyond the normal eight years. Dr. Impey contends that erysipelas should be induced within three or four years if a patient be attacked, and by this means he thinks leprosy may eventually be stamped out.

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SATURDAY, JANUARY 11, 1896.

DECIDUOMA MALIGNUM.

The history of the malignant tumors following normal labor, abortion, hydatidiform mole, or extra-uterine pregnancy and composed of decidual or placental elements, begins with SÆNGER's¹ report to the Leipzig Obstetrical Society, July 16, 1888, of "two unusual cases of abortion," one of which occurred in a 23-year-old woman, who aborted in the eighth week and died seven months later, with four large, soft, spongy, reddish tumors in the uterine wall and metastases of the same character in the lungs, diaphragm, tenth rib and right iliac fossa. The microscopic examination showed a hemorrhagic structure with cells similar to those found in the decidua; he named the tumor "deciduoma malignum." In 1893 SÆNGER published a more extensive monograph² in which he collected all that was known of this kind of tumor and compared his case with those which had been described since his first report.

The year after SÆNGER's first report PFEIFER described a similar case from Chiari's institute in Prague, and without knowing of SÆNGER's previous work, likewise proposed to call it a deciduoma malignum. During the last five or six years the number of such cases has increased rapidly; the majority of the cases have been described by German authors, a few by French and Italian observers, but in this country and in England a well authenticated case had not been reported until WILLIAMS,³ of Baltimore, very recently described what he called a typical case. It is also true that BACON, of Chicago, described a case from Chiari's institute in the *American Journal of Obstetrics*, vol. XXXI, No. 5, 1895, so that now when

the attention of American workers has been directed to the subject it may be expected that more cases of deciduoma will be recognized and studied in this country than heretofore.

References to this tumor are not found in many of the recent American or English text-books. As WILLIAMS⁴ says, it is apparent to any one who has read the various descriptions of the authors, that the growths which have been described as malignant deciduomata, or by more or less cognate terms, differ very materially among themselves, and an idea as to the various interpretations is well gained by enumerating some of the designations which have been applied to them. SÆNGER at first called his case deciduoma malignum, and later sarcoma uteri deciduo-cellulare. GOTTSCHALK⁵ first called his case sarcoma chorion-deciduo-cellulare, later sarcoma chorii; FRÆNKEL,⁶ carcinoma arising from the chorionic epithelium; KLEBS,⁷ placental papilloma, etc. But in spite of the differences in the onkologic and histogenetic interpretation of the growths, these so variously designated tumors form a distinct clinical group. They all follow closely upon some form of pregnancy, either abortion, normal labor, hydatidiform mole or extra-uterine pregnancy, and quickly lead to the death of the patient with the rapid formation of metastases, especially in the lungs and the vagina. In order to group all these tumors under some distinctive designation, which will enable one to speak of them from a clinical standpoint, without at the same time wishing to express any definite connection as regards their intimate origin and structure, WILLIAMS⁸ proposes that the term deciduoma malignum be retained as best suited for this purpose at the present time. After thoroughly sifting the accumulated material WILLIAMS finds that at least twenty-six cases have already been described which from a clinical standpoint should undoubtedly be classed among the malignant deciduomata. The etiology of this tumor is unknown. The most striking etiologic relation is its close connection with pregnancy of some form. Of the twenty-six cases referred to eleven followed hydatidiform moles, six full-term pregnancies, five abortions, one a tubal pregnancy and in three cases the form of pregnancy preceding the tumor is not stated. The majority of deciduomata maligna occur in young women. One case occurred before the 17th year, twelve cases between 20 and 30, five between 30 and 40, four between 40 and 50, one case occurred at 55 and in three the age was not stated. The most constant symptoms is uterine hemorrhage following pregnancy in some form; it may appear immediately after the completion of labor or abortion or be delayed until some months later. This hemorrhage occurs at intervals, and is

¹ Centralbl. f. Gyn., 1889, 132.

² Arch. f. Gyn., XLIX, 89-149, 1893.

³ Johns Hopkins Hospital Bulletin, Dec., 1894, and Johns Hopkins Hospital Reports, vol. IV, No. 9, 1895.

⁴ Loc. cit., p. 26.

⁵ Berl. Kl. Wochenschr., 1893, No. 4, and Arch. f. Gyn., XLVI, 1894.

⁶ Arch. f. Gyn., XLVIII, 1895.

⁷ Die Allgem. Path., II Theil, 690, 1889. ⁸ Loc. cit.

usually of a gushing kind. The uterine cavity is more or less completely filled by a soft reddish placental-like mass. After removal the mass returns rapidly and invades the uterine wall. Hemorrhage may be absent. The rapid formation of metastases and early death are characteristic. The secondary tumors develop most frequently in the lungs and the vagina, pulmonary growths being observed in almost every fatal case; vaginal metastases were observed in 58 per cent. of the fatal cases. Death usually occurs within six months of the first appearance of symptoms. To one whose attention has been directed to this class of cases, the occurrence of hemorrhage soon after normal labor, abortion or hydatidiform mole, which recurs after curetting and becomes associated with symptoms of pulmonary involvement and perhaps vaginal tumors, would point strongly to a probable clinical diagnosis of malignant deciduoma. In the early stages diagnosis can only be made by means of the microscope. Here the presence of decidual cells or masses of syncytium making their way between the muscle cells would enable one to make a positive diagnosis, as has already been done by GOTTSCHALK,⁹ MENGE¹⁰ and others. The treatment that would hold out any hopes whatsoever for permanent recovery is total extirpation of the uterus with its appendages after an early diagnosis. Thus far seven cases have been operated on in this manner; three of these died from recurrence of the growth, six seven and twelve months respectively after the removal of the uterus. The other four cases recovered from the operation, but sufficient time has not yet elapsed to allow any judgment of its ultimate success. The onkologic relations and histogenesis of these tumors that have been referred to in the foregoing as representing a distinct clinical group to which the name of deciduoma malignum may not unfittingly be applied, are somewhat difficult to understand and have been variously interpreted by the writers. This fact, it has been pointed out, is strikingly illustrated by the extensive variety of descriptive terms introduced from time to time to express the opinions of the authors as regards the structure and origin of the tumors they had occasion to study.

These tumors arise in a locality in which fetal and maternal tissues come in close contact and in which epithelial and mesoblastic cells are closely blended and consequently the questions which constantly presented themselves have been those relating to the possible origin of the tumor, whether fetal or maternal, and to the histologic structure of the neoplasm, whether carcinoma, sarcoma or mixed. These questions have been quite clearly solved in some instances, in others positive conclusions could not be reached. A very brief review of some of the more typical cases will undoubtedly tend to show that deciduoma ma-

lignum includes tumors of different structure and histogenetic origin. SÆNGER'S, PFEIFER'S, CHIARI'S and BACON'S cases all showed that the solid parts of the tumor as well as the wall of the blood spaces were made up of typical decidual cells lying in a connective tissue stroma, so that one can be quite safe in concluding that these were all instances of sarcoma uteri deciduo-cellulare. In the cases described by MEYER,¹¹ KLEBS,¹² GOTTSCHALK,¹³ FRÆNKEL,¹⁴ MARCHAND,¹⁵ WILLIAMS¹⁶ and others the tumors were composed largely of blood, certain irregular protoplasmic masses that are easily traced to the chorionic epithelium or syncytium, and also certain individual cells concerning the origin of which more or less uncertainty of opinion prevails. The weight of opinion of to-day is in favor of regarding the syncytial covering of the villi as coming from the uterine or tubal epithelium, consequently of maternal origin, and the form of deciduoma which consists essentially of syncytial masses, as in FRÆNKEL'S case, would be, in accordance with this statement or view, a carcinoma of maternal origin (carcinoma syncytiale, choriocarcinoma). The distinct, individual cells which are found in some at least of these syncytial carcinomas have received varying interpretations. Thus MARCHAND,¹⁷ whose recent studies concerning the so-called "decidual" tumors following normal labor, abortion, hydatidiform mole and extra-uterine pregnancy, have attracted so much attention, traces the component elements of many "decidual" tumors to, 1, the syncytium, *i. e.*, the uterine epithelial layer of the chorion from which giant cell-like and irregular protoplasmic masses come, and 2, to the cellular layer of LANGHAN'S, *i. e.*, the ectodermal fetal chorionic epithelium. MARCHAND says that the peculiar symbiosis which normally characterizes these elements likewise explains their combination in the tumor formation; this peculiarity extends to the entire arrangement of the two forms of tissue and to the formation of blood spaces within the syncytium and the lack of other vessels. While MARCHAND'S views in regard to the very important part played by the syncytium has been favorably received as a rule, his teachings as to the origin of the smaller cells found in these tumors have not met with such universal approval. Thus WILLIAMS is inclined to think that the cells which MARCHAND considers derived from the fetal ectoderm, may after all only represent cross sections through syncytial masses; and KOSSMANN¹⁸ regards MARCHAND'S assumption in regard to the chorionic ectoderm as untenable, because the new growth extends outward away from the fetus instead of into the fetus as one would expect. KOSSMANN traces the small distinct cells back to the syncytium and re-

⁹ Berl. Kl. Wochenschr., 1893, No. 4.
¹⁰ Zeit. f. Geb. u. Gyn., xxx, 1891.

¹¹ Arch. f. Gyn., xxxiii, 1888.

¹² Loc. cit. ¹³ Loc. cit.

¹⁴ Arch. f. Gyn., xlviii, 1895.

¹⁵ Monats. f. Geb. u. Gyn., i, 1895.

¹⁶ Loc. cit. ¹⁷ Monats. f. Geb. u. Gyn., Juli, 1895.

¹⁸ Zeitschrift f. Geb. u. Gyn., xxxiii, II Heft, p. 376, 1895.

gards them as having been formed in syncytial masses in which the cell boundaries have reappeared. GOTTSCHALK¹⁹ can not abandon the idea that the tumor described by him as sarcoma of the chorionic villi is in part, at least, a sarcoma and consequently he insists that tumor proliferation may also occur in the stroma of the chorionic villi, as well as in the epithelium. The majority of the writers doubt the correctness of GOTTSCHALK's conclusions.

A case described by MENGE²⁰ seems to represent the third possible anatomic and histogenetic variety of deciduoma malignum, namely a mixed sarcoma and carcinoma. In his tumor there are apparently decidual cells and masses from the syncytium, so that the tumor is derived from both the connective tissue and the epithelial elements of the decidua, if the maternal origin of the latter be accepted. We may summarize the present status of opinion concerning the onkologic relations of the anatomic varieties of deciduoma malignum as follows:

1. There is a sarcoma uteri deciduo-cellulare, cases of which have been described by SÆNGER, PFEIFER, CHIARI, BACON and others.

2. There is a syncytial or chorionic carcinoma of the uterus produced by malignant proliferation in the uterine epithelial layer of chorion (FRÆNKEL, WILLIAMS, KOSSMAN) and in the fetal ectoderm (MARCHAND).

3. There may be a mixed sarcoma and carcinoma (carcino-sarcoma) made up of decidual cells and syncytium (MENGE).

4. The tendency of opinion is to regard all these tumors as of maternal origin, but it must be remembered that definite conclusions on this point can not well be reached as long as the embryologists are not of one mind as to the fetal or maternal nature of the tissues in question.

FIREPROOF STAIRS FOR HOSPITALS AND FACILITIES.

The *Sanitary Record* has the following compilation from German journals concerning the researches and experimentation now progressing in that country for the prevention of life loss by fire, where faulty stairs exist in factories, hospitals, hotels and lodging-houses.

Since the terrible fire at Aachen on Dec. 1, 1893, when a number of lives were lost through the stairs becoming early impassable from smoke and flame, the question of the best means of avoiding such a catastrophe, whether in factories, in industrial block dwellings, or in public institutions, has engaged the attention of many architects in Germany. K. Henrici recommends that all stairs should be completely shut off from the workshops and rooms by absolutely

fireproof walls; that they should be connected with these by open corridors, balconies or bridges easily reached, that the windows of the stairs be so placed as not to be exposed to smoke or flame issuing from the building. With these precautions, and direct access to the open air below it does not much matter, in his opinion, whether the stairs are at the side or in the middle of the building. Oppermann maintains, on the other hand, that perfect safety can be secured only by having the stairs in a tower completely isolated from the body of the building, communication being effected solely by means of bridges. But unprotected iron structures are not to be trusted, since, if exposed to the flames, they become rapidly heated. He would give the preference to arches of brick work without any iron, but remarks that the weight and stress of the arch might be greatly reduced by the use of highly porous Lochstein, while the iron girders necessary for the support of bridges, balconies and galleries, should be well protected by non-conducting and fireproof materials, of which slag wool, enclosed in a shell of one or other of fireproof cements, is certainly the best. The Lochstein mentioned by Oppermann is an artificial stone, a sort of spongy concrete, manufactured at one or two places on the Rhine. For the steps themselves iron would be the very worst material; these, if not of brick or stone, should be of hard, slow-burning wood, as oak or teak, in solid sleeper-like blocks.

THE LAY SUPERINTENDENT AGAIN.

The chief medical officer of the Cook County Lunatic Asylum has just been under trial before the County Civil Service Board for insubordination to the lay head of the institution. It appears that he made arrangements for a post-mortem of a patient whose death he could not otherwise certify without consulting his superior.

It is a strange condition of affairs when a medical chief of a medical institution can not decide medical questions without the interference of a non-medical official and must be tried for insubordination if he attempts so to do. Not long since the profession in this country was profoundly stirred in behalf of a naval surgeon who was court-martialed for not obeying an order of his superior in a matter that his medical conscience would not permit him to act as he was commanded. He, however, was simply a subordinate in a war ship—a fighting machine—where according to naval discipline the combatant officer must be supreme; it was not in a hospital, the main and only function of which is medical, and where every thing in its administration has a medical bearing that can only be properly estimated by an educated physician. To make the cases parallel, the doctor should have court-martialed the admiral for not consulting him in some matter of naval tactics or navi-

¹⁹ Zeitschr. f. Geb. u. Gyn., XXXIII, II Heft. p. 349, 1895.
²⁰ Loc. cit.

gation, as here the man with simply a business training and no medical qualifications whatever assumes to dictate in matters beyond his proper scope and to discipline the one who should in the proper order of things be his chief, for not responding to his dictation.

In an article entitled "Politics and the Insane," in the *North American Review* of last October, Dr. HENRY S. WILLIAMS scores severely the municipal charities of several of the chief cities of our country, and especially those connected with the care and treatment of the insane. Whatever grounds he may have had for his strictures on the others, there is much in the past record of the Cook County institution that support his statements, and the present incident will not advance its reputation as a notable example of what a hospital for the insane ought to be.

The fact is, the medical profession too supinely accepts the situation when so-called business men take upon themselves functions that ought properly to be deputed to qualified physicians. The much talked-of superior business ability of laymen in charge of medical institutions is a fiction; very ordinary business ability is really required, and it should be easily found in subordinates under the direction of one qualified to see the medical bearings of all matters of management and administration. It is not super-eminent "business" ability nearly as much as common honesty that is required in the lay administration of a public medical charity, and experience in the past has demonstrated that this essential can not be too carefully looked after. By the same test of experience it is easily shown that the most satisfactorily conducted asylums or hospitals are always those under a medical head and where the professional rather than the business ideal is supreme.

We should be glad to see the same general interest taken by the medical profession in this as in the Kershner case, and to have a general expression of the condemnation of lay management of purely medical matters and lay dictation in questions that can properly be only decided by qualified physicians. There is no lack of competent medical men, but they are not likely to want to assume positions where their professional feelings will be outraged and their proper functions usurped by those who are incapable of appreciating the one and incompetent for the other. There has been and is too much of this sort of thing, and we are too often impudently asked "what are we going to do about it?" It is time that there should be some expression of medical opinion in regard to it.

The reinstatement of Dr. McGREW was an act of justice, but according to report, the order of restoration was accompanied with a "caution" to be "more careful in observance of the rules." This is equivalent to saying, "not guilty, but don't do it again." The principle involved, the complaint of the medical profession, is thus not recognized.

CORRESPONDENCE.

Typhoid Fever

AS SEEN AND TREATED FORTY YEARS AGO COMPARED WITH THE TREATMENT OF THE SAME DISEASE AT THE PRESENT TIME.

To the Editor: When attending the lectures of Prof. J. K. Mitchell, in the Jefferson, 1853, I remember of his theory that typhoid fever and other fevers were caused by fungi. He wrote a book on the subject. Should any member of the class of 1853 read these lines they will bear me out in these statements. He asked me in the green room what was the duty of a physician when called to a patient with typhoid fever. I gave him in reply the verbatim statement he gave in his lectures, that he should act in the capacity of a pilot or steersman on a boat to steer the craft clear of dangerous breakers. This was found to be a difficult thing to do. We found the tongue heavily coated, dry and cracked, lesion of the glands of the small and large intestines, tympanites, hemorrhage, and sometimes perforation of the bowels with other alarming symptoms. I will not occupy your time reading the treatment of typhoid fever forty years ago, for it was too unsatisfactory with too great mortality. Have we any more light on the subject? Are we treating it more satisfactorily and with more favorable results? I say yes. Thanks to Dr. Woodbridge for his abortive treatment of typhoid fever. I have treated eighteen cases this fall precisely as he directed in papers read by him at San Francisco, Baltimore, and other society meetings, without a single loss. Where the disease was not complicated I had none of those dangerous breaker symptoms. Instead moist tongues, no tympanites, no tenderness, no lesions, no hemorrhage nor perforation of bowels. Why such difference in symptoms and results? Because we sterilize the alimentary canal, preventing parasites from locating and doing mischief therein. If called in time I have no more fear of fatal results in typhoid fever with no complications than I have in bilious or intermittent fever. It used to be a terror to patients to tell them they had typhoid fever: not so now. A case in point: I discharged a young lady yesterday, Miss C. F., of one of the first families in the city. Her father was much alarmed when he found I told her she had typhoid fever. He asked me why I told her. I said because she is intelligent and has confidence in her physician. I told her that her temperature was $104\frac{3}{4}$, that I was using Dr. Woodbridge's abortive treatment of the fever, and that in two weeks her temperature would be $98\frac{1}{2}$. On the fourteenth day she asked to see the thermometer; said she, "98 $\frac{1}{2}$ exactly." She further said I am now not afraid of typhoid fever. I told her she could commence solid food gradually and that she had no further need of my services. This case is a fair sample of those treated by me this fall. I am not writing this to flatter Dr. Woodbridge, but to encourage my professional brethren who have not tried it, to do so at once. The question has been frequently asked me by my professional brethren how I had succeeded. I say up to and beyond my expectation. I find it much easier to handle typhoid fever now than forty years ago. Dr. Mitchell was coming in the right direction with his fungi, but he slept with his fathers ere he had formed the acquaintance of Drs. Pasteur, Koch, and others, or had seen or heard of microbes or bacteria. A number of years ago I found that the temperature in typhoid fever could be controlled and the fever shortened about two weeks with salicylic acid and carbonate of ammonia in solution. I was not aware at the time that I was treating the disease scientifically by sterilizing the alimentary canal. I now see and know that is the secret of Dr. Woodbridge's Abortive Treatment of Typhoid Fever. It is no fad or secret quack remedy, but a scientific and successful treatment. None of us are too old to learn and none of us should be too prejudiced to adopt any treatment that has been shown to relieve suffering and save life.

E. J. MCCOLLUM, M.D.

Some Curious Proper Names.

CHICAGO AS AN ANATOMIC AND PHYSIOLOGIC ENTITY.

CHICAGO, Jan. 1896.

To the Editor:—Some time ago while looking through the 1894 Chicago Directory for the residence of a slow-paying patient we became impressed with the remarkable number of anatomic and physiologic terms made use of by the Human family to distinguish each other, and the idea occurred to us of Making Man in a Shape, Size, Weight and Motion similar to ours from the parts thus obtained. It will be observed that it required no inventive Genius, for the process was purely synthetic. With a Model before us and not being limited to Dust or Mudd, we took a Bone, and then finding any number of Bones, we decided upon having a Full compliment of Ribbe's rather than leave a Ribout. Having thus obtained a Skeleton our next step was to add Joints and Marrow. Looking about us we were Fortunate in finding Brain, Lung, Heart, Liver, Bile, Gall, Stomach, Bowel or Gut and Kidney. Having placed them Each in their Proper Place, we discover that we are slightly handicapped in being Able only to obtain a Vein for the Blood and Kyle. Nothing daunted, however, we Seize what Musil, Flesh and Hyde we can Lay Hold upon and Start at the Pate. Having Given our Friend a a Noble Brow and a Broadhead we hesitate whether he should have Hair or Remain Bald. Finding but one Ey is a cause of Grief, yet with Earee's sufficient there is consolation.

Next Comes the Nose, no restriction as to Style, Hence we make it Roman, adding the Jaus, Chin and Cheek, next the Mouthe and Lips, not forgetting the Tongue or Gums. We can find no teeth, but rejoice in being thus permitted to dispose of a possible Toothaker. So Much for the Head. Now for the Body or Trunk. With a Back, Bussom, Bottom, Belle and Navel in position we make our image High-Breasted, supplying the Arms and adding a Hand with its Palm, Thumb, Finger, Knuckles and Nails it makes a respectable looking Fist. Turning our attention to the extremities which we Lack, we Have in Stock Hip, Legg, Knees, Shin, Shank, Ankel and Foot; also some Corns. As to sex we have our Choice, having Both Penas and Overy. As to Agee, a Baby Boy or Girl, or it may Grow into estate as a Youngman or Maiden, Gentleman or Lady, Damsel or Dame. This Person may be Lean, Lank, Long and Lively, or Stubby, Short, Thick, Fat and Slick. Having fashioned it we set it upright and observe it Wants a Soul with which we endow it. We call it a Gent. Give him a Beard and Clothes and now having Breathed easier, we Hear and See him Speak, Stammer and Read. After a Cough he begins to Chat, Telling us of a Cramp after which he felt a Little Pewki, this was followed by a Severe Chill, during which he thought he would Freeze, but soon came a Fever and Sweat.

He tells of a Boil which was some time in Healing and was very Sore, but is now disposed to Heal, but it will leave a Scarr. He is given a Dose of Pils and we leave him in Peace and Comfort, expecting them to effect a Cure. If he again becomes Ill and should Croak, giving up the Gost under the care of another Doctor, we have a Coffin in which to Bury him and also a Grave, and can thus obtain his Korps and have him Cutup into the pieces from which he was Made.

All the words capitalized I found in the 1894 Chicago Directory.

G. H. S.

An Alleged "Health University."

MILWAUKEE, WIS., Dec. 27, 1895.

To the Editor:—The inclosed advertisement appears daily in the *Milwaukee Sentinel*. Is anything known of this institution in Chicago? Sincerely Yours, JNO. MADDIX.

PERSONAL.—How to become lawful physicians. Course by mail. Illinois Health University, Chicago.

ANSWER.—The Illinois attorney-general has filed in the cir-

cuit court an information against the "Illinois Health University" of Chicago. The charges are that the "University" confers the M.D. degree without personal examination of applicants from the States of Ohio, Indiana, Michigan, Wisconsin, Idaho and Kansas, and such other States as do not require the diploma of a reputable medical college, or an examination before a State board of health. The court is informed that the school is conducted on the "correspondence" basis.

PUBLIC HEALTH.

Beriberi from Punta Arenas.—The American bark, *Herbert Black*, left Punta Arenas, Chili, on July 20, with several of the crew slightly ill. All hands except the captain and three others were down with beriberi early in November. Barbadoes was then the nearest port, and the captain laid his course thither. He arrived on November 22. Nine men were sent to a hospital, where four of them died. The *Black* shipped a new crew and sailed on December 1, arriving at New York harbor December 21. The skipper says that on a trip from Punta Arenas two years ago nearly all of his crew became ill of beriberi. He says that the crews of nearly all sailing vessels taking cargo at Punta Arenas suffer more or less from this disease.

Indiana Board of Health. The Indiana State board of health January 3 announced stringent rules in regard to the introduction of infectious diseases into the State, and the notice is accompanied by the statement that the rules will be rigidly enforced. They provide that any common carrier or person bringing any sick person or persons suspected of being sick with smallpox, diphtheria, membranous croup, scarlet fever, or any communicable disease, shall be liable to certain penalties and the corporations or persons so offending shall also be liable for the charges incident to the care of such sick persons by the local health authorities. It is made the duty of the conductor of a train or the master of a steamboat to notify by telegram the secretary of the board of health of the presence of such sick person on his train or vessel, in order that suitable provision may be made for preventing the spread of the disease, and all trains and vessels coming to Indiana from any point where communicable diseases obtain shall be subject to inspection by the local health officer and the charges of such inspection shall be a valid claim against the corporation. The shipment of any one dying of membranous croup shall not be granted, and no permit shall be issued for the shipment of a body having died of "heart failure" unless the cause of heart failure is stated.

Unstable Sterilized Milk. The workers at the Pasteur Institute are still engaged in the study of the ferments of milk. According to *Public Health*, for November, in a recent number of the *Annales de l'Institut Pasteur*, Dr. E. Duclaux makes an exhaustive examination of the objections against the use of sterilized milk made by Flugge. The latter has stated that the liquid often sold in flask as sterilized milk contains a liquid which has become materially changed. In order to understand how this change is brought about, it is necessary to review the action of ferments on casein. It is well known that ordinarily the formation of lactic acid from sugar precedes the coagulation of casein in milk by a special ferment. Pasteur first showed that milk may coagulate under the influence of ferments in a neutral medium. The ferments of casein secrete a second diastase antagonistic to the first, which reduces the coagulum formed by the former. Then the coagulum again becomes liquid, and the passing coagulum may have been overlooked; this transformation although hidden is very great. In milk, casein, we know, is not in solution, but in suspension, forming with the serum a stable emulsion, of which the elements are fine enough to pass through filterpaper, but too gross

to pass through porcelain. When the second diastase has acted, the albuminoid matter is completely dissolved. Furthermore, a portion has been decomposed into the intermediary products which lead on to leucin, etc. The hygienic question in connection with milk is the determination of the microbes causing it to produce infantile diarrhea. It is notorious that such diarrhea is diminished, or even prevented, by the use of boiled milk. Is it the ferments of lactose, or those of casein which are inimical? Dr. Dueleaux thinks it is the former among other reasons, because experience shows that it suffices to render milk harmless (so far as diarrhea is concerned) for ingestion to Pasteurize it, *i.e.* to heat it 70 to 75 degrees, a temperature at which the lactic ferments are killed, but which the ferments of casein and bacilli resist.

Compulsory Cleanliness for the Homeless in New York.—At a meeting of the new Department of Public Charities, New York city, amid the whirl of Christmas-tide, a salary or so was raised, and a few more nurses allowed. Also Commissioner Faure in a matter-of-fact way favored the establishment of a float alongside the pier at East Twenty-sixth Street, as a tramps' lodging house. Here he proposes to house all the tramps of the city, thus relieving the police station houses. The motto of the place he said, would be "No bath, no bed." Each day the lodgers of the night before would be taken to the Island, and they would be kept there three days until their cases could be investigated. Then the regular vagrants would be sent to the workhouse, and the deserving ones sent to their friends. It will be hard indeed, in these days of popular rights, to tell whether or not the lay press might not stigmatize the project as a gross outrage, familiar as they have become with the buncombe speeches of damage-suit lawyers and of a bench drawn from the same element. As for our Western tramp, not so much the product of a motley over-dense population, he is more cleanly and being more submissive to the advances of civilization has long since, in the words of Emerson "Converted an experiment into a sacrament." As we take it, a bath to some temperaments must be much worse than "sawing wood and saying nothing," although the people so far have seemed to view the matter with indifference. The organ of the reformers should no longer separate the bath-master from the Ambulance-Surgeon whose blunders come to us from the cities of the far East. The tramp, as a rule, is a mild mannered man attempting to anticipate his millenium, whose virtues should exempt him from the hardships of soap and water. To sum up the situation we must deplore the advent of a new party since the Constitution impliedly guarantees the right of every man to go to bed unwashed, and if needs be, with his boots on. Besides too, we can not refrain from depriving the drama of so picturesque a character as a tramp, even though he begs more beds than he really needs. In fact the insidious encroachments of tyranny must be resisted, even though it comes to us in the trappings of sanitary reform. No citizen is obliged to submit to a clean skin any more than to a free vaccination.

Health Reports. The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Ohio: Martin's Ferry, Dec. 1 to 28, 139 cases, 3 deaths.
Michigan: Detroit, Dec. 21 to 28, smallpox reported.
Tennessee: Memphis, Dec. 14 to 31, 22 cases.

SMALLPOX—FOREIGN.

Batoum, Dec. 3 to 10, 1 death.
Cairo, Nov. 26 to Dec. 2, 1 death.
Havana, Dec. 19 to 26, 1 death.
Glasgow, Dec. 14 to 21, 3 deaths.
Madras, Nov. 16 to 22, 1 death.
Madrid, Dec. 10 to 17, 9 deaths.
Montevideo, Nov. 23 to 30, 9 cases.
Naples, Dec. 11 to 18, 4 cases, 4 deaths.
Nogales, Mex., Dec. 21 to 28, 1 death.

Odessa, Dec. 7 to 14, 10 cases, 1 death.
Rotterdam, Dec. 14 to 21, 4 cases.
St. Petersburg, Dec. 7 to 14, 12 cases, 4 deaths.
Tuxpan, Dec. 14 to 21, 1 death.

CHOLERA—FOREIGN.

Bombay, Nov. 27 to Dec. 10, 6 deaths.
Calcutta, Nov. 16 to 30, 118 deaths.
St. Petersburg, Dec. 7 to 14, 78 cases, 43 deaths.
Yokohama, Dec. 19 to 26, 5 cases, 2 deaths.

YELLOW FEVER—FOREIGN.

Havana, Dec. 19 to 26, 5 cases, 2 deaths.
Sagua la Grande, Dec. 14 to 21, 23 cases, 3 deaths.
San Juan de Puerto Rico, Nov. 29 to Dec. 20, 63 cases, 23 deaths.

BOOK NOTICES.

An Atlas of Ophthalmoscopy, With an Introduction to the Use of the Ophthalmoscope. By DR. O. HAAB, Professor of Ophthalmology, University of Zurich. Translated and edited by ERNEST CLARKE, M.D., B.S. (Lond.), Fellow of the Royal College of Surgeons, etc. New York: William Wood & Co. 1895.

This is the first of a series of five medical atlases William Wood & Co. propose to publish and to sell by subscription at \$15 for the set. If the present volume can be taken as a standard for the whole series, the subscribers will get five excellent and useful works at an astonishingly low price.

This atlas contains in sixty-four colored plates ninety-eight ophthalmoscopic pictures with descriptive text, and a good short introductory lecture on the ophthalmoscope and its uses. All these pictures were carefully sketched from nature by an expert ophthalmoscopist (Professor Haab) and skillfully reproduced in excellent chromo-lithography.

The collection comprises seven pictures of the various appearances of the normal fundus, eight pictures of congenital malformations, fourteen pictures of diseases of the optic nerve, fifty pictures of the diseases of the retina, and nineteen of the diseases of the choroid. No word paintings, however artistic, could give the student of ophthalmoscopy an adequate idea of the appearance of the eye-ground in health and disease as vividly and accurately as these beautiful drawings.

That the book is not a large cumbersome volume—as the word "atlas" might suggest but of the very convenient small octavo size, and that the descriptive text for each plate is printed on the page facing it, are two points showing the excellent judgment of the publishers of what is needed to make a book convenient for ready use and reference.

Spectacles and Eyeglasses, their Forms, Mounting and Adjustment. By R. J. PHILLIPS, M.D., Adjunct Professor of Diseases of the Eye, Philadelphia Polyclinic and College of Graduates in Medicine, etc. Second edition, revised. Philadelphia: P. Blakiston, Son & Co. 1895.

This little book gives in its hundred pages a wealth of information which is not found in our text-books on ophthalmology, but which is indispensable to every oculist and physician who wants to become an expert in the fitting of spectacles and eyeglasses. And what makes the book particularly commendable is its simple, comprehensive language, free from the scientific jargon which renders many ophthalmologic books so distasteful and indigestible to students.

The New York County Medical Association. We have received a copy of the annual handbook or register of this large society for the year 1895-6. It is a well-printed and well-bound book of 176 pages, and contains a large quantum of useful professional information, beside the regular personal lists. It is illustrated by a fairly good portrait of the late Dr. William Detmold, the first President, in 1884, of the now great local organization of over one thousand in membership who have not bowed the knee to the Bial of the agnostic banner of the old State Society of New York.

Literary Announcements.

The *Popular Science Monthly*, now in its thirtieth year, has added new departments on Invention and Electricity, and the number of pages have been doubled. These signs of prosperity are indeed rather gratifying to all friends of popular education.

IN OUR notice of the volume of *Medico-Chirurgical Transactions* of London, on page 824 of our last volume, it was stated that most of these papers had been published elsewhere. This was an error, as the papers printed in these Transactions are not allowed to be elsewhere printed. Gentlemen desiring to read these papers will therefore have to purchase the Transactions.

ASSOCIATION NEWS.

Celebration of the Centennial Anniversary of the Discovery of the Protective Power of Vaccine Virus by Dr. Edward Jenner, 1796.

The committee appointed by the AMERICAN MEDICAL ASSOCIATION and the auxiliary committee appointed by the American Public Health Association to prepare a proper program for this centennial, propose the following order of proceedings designed to occupy one entire day of the annual meeting of the AMERICAN MEDICAL ASSOCIATION to be held in Atlanta, Ga., May 5 to 8, 1896:

THURSDAY, THIRD DAY OF THE MEETING.

Morning Session.—Address on "The Character of Dr. Edward Jenner and the History of his Discovery of the Value of Vaccination," by Dr. N. S. Davis, Chicago, followed by discussion on the history and status of vaccination in this country.

Afternoon Session.—Paper on "The Scientific Researches Relating to the Specific Infectious Agent of Smallpox, and the Production of Artificial Immunity in this Disease," by Dr. George M. Sternberg, Surgeon-General U. S. A. Also paper on "The Propagation, Preservation and Use of Vaccine Virus," by Dr. Francis C. Martin, Boston, Mass. Discussion, especially on the scientific principles involved in the papers.

Evening Session.—Paper on "The Statistic Evidences of the Value of Vaccination to the Human Race," by Dr. Eugene Foster, Augusta, Ga. Discussion as far as time will permit.

COMMITTEES.

OF AMERICAN MEDICAL ASSOCIATION: Drs. N. S. Davis, Chicago, Ill.; J. M. Toner, Washington, D. C.; H. D. Didama, Syracuse, N. Y.; J. F. Hibberd, Richmond, Ind.; J. S. Billings, Philadelphia, Pa.

OF American Public Health Association: Drs. T. George Simons, Charleston, S. C.; C. A. Lindsley, New Haven, Conn.; Angel Contreras, Pueblo, Mexico; J. M. Toner, Washington, D. C.; N. S. Davis, Chicago, Ill.

Jan. 4, 1896.

SOCIETY NEWS.

XII Congress International de Medecine.—Sous l'auguste patronage de Son Altesse Impériale le Grand Duc Serge Alexandrovitch. Moscou, 19-26 août 1897. Comité Exécutif: Président, Prof. I. F. Klein; Vice-Président, Prof. A. J. Kojewnikow; Trésorier, Prof. N. F. Filatow; Secrétaire Général, Prof. F. F. Erismann; Secrétaires, Prof. P. I. Diakonow, Prof. W. A. Tikhomirow, Prof. I. I. Neyding; Membres, Prof. A. A. Ostrooumow, Prof. S. S. Korsakow.

COMMUNICATION.—In accordance with the august approval of His Imperial Majesty the Emperor of Russia the XII International Medical Congress will be held in Moscow between the 19 and 26 of August (new style) in the year 1897, under the Patronage of His Imperial Highness the Grand Duke Serge

Alexandrovitch. Further details about the organization of the Congress will be published at as early a date as possible.

Secretary General, PROF. F. ERISMAN, M.D.

We shall publish the rules next week.

NECROLOGY.

JAMES E. REEVES, M.D., of Chattanooga, Tenn., Jan. 4. He was born in Amisville, Rappahannock County, Va., in 1829. He was one of the founders of the American Public Health Association, and was president of that body in 1885. He removed from Wheeling, W. Va., to Chattanooga some years since. As a sanitary authority he was able and conservative. He was distinguished as a microscopist, and before the days of bacteriology he was a skilled manipulator; his mounted specimens were beautiful and much sought after. He was an inventor of many useful methods and recently wrote a small book, reviewed in this JOURNAL, which contained much valuable information on this subject. He was a valiant and uncompromising upholder of the code of ethics of the AMERICAN MEDICAL ASSOCIATION, and while not long a member of the Board of Trustees, his influence was always thrown strongly in favor of measures for the exclusion of objectionable advertisements from the columns of the JOURNAL. He was an active and useful member, and his death is deeply regretted by the remaining members of the Board.

FRANK PUTNAM BUFFUM, M.D., of Chicago, January 6.—**J. M. Taylor, M.D.**, of Corinth, Miss., December 28. He was born in Jackson County, Ga., in 1826. He was twice chosen President of the Mississippi State Medical Association, and served for many years as a member of the State Board of Health.—**Thomas S. Powell, M.D.**, of Atlanta, Ga., December 30, aged 70. He was born in Brunswick County, Virginia, in the year 1826. In 1864, shortly after the war, he went to Georgia, locating in Sparta, where he commenced the practice of his profession. In 1878, Dr. Powell moved to Atlanta and has been identified with the practice of medicine ever since. He was noted for his great charity and his kindly feeling toward the poor. Dr. Powell's greatest professional accomplishment was the founding of the Southern Medical College, of which he was President up to his death.—**William Compton, M.D.**, of Lancaster, Pa., December 13, aged 70.—**V. R. Bridges, M.D.**, of Mattoon, Ill., December 20.—**E. J. Alter, M.D.**, of Aspinwall, Pa., December 15, aged 32.—**A. C. Peters, M.D.**, of Iowa City, Ia., December 18, aged 34.—**E. Francisco, M.D.**, of Parsons, Kan., December 18, aged 84.—**M. B. Folwell, M.D.**, of Buffalo, N. Y., December 10, aged 54.

MISCELLANY.

Dr. E. L. B. Godfrey, of Camden, has been elected Secretary of the State Board of Medical Examiners of New Jersey, in place of Dr. Wm. Perry Watson, of Jersey City, who resigned to accept the position of Medical Supervisor of the Prudential Insurance Company at Newark.

A Poorhouse and Insane Asylum Burned. The Jefferson County poorhouse and the asylum for the insane near Fairfield, Iowa, were both destroyed by fire January 8. There were over thirty inmates in the two buildings but all were rescued without loss of life. The loss is estimated at \$10,000. Insurance \$4,000.

Appointments. Dr. George Dock, at present Professor of Practice of Medicine and Pathology in the University of Michigan, Ann Arbor, has been elected Professor of Pathology and Bacteriology in the Jefferson Medical College.

Professor Daniel R. Brower of Chicago, has been appointed a member of the Illinois State Board of Health, *vice* Dr. George Thilo resigned.

A Condensed Code Dating from the 14th Century.—Guy de Chauliac, French surgeon, author and teacher, was the chaplain and physician-in-chief for Urban V and two other popes of Avignon. He was educated at the universities of Bologna and Montpellier and a long while a practitioner at Lyons. He was born about the year 1300. He inculcated the following embryo code of ethics:

"Bold when sure. Cautious in danger. Kind to the weak and sick. Friendly with fellow-workers. Constant in duty. Not greedy of gain."

College Library.—The library of the College of Physicians and Surgeons of Chicago has received 1,378 bound volumes since the first request was made for donations of books six months ago. These books have all been accessioned and nearly all catalogued and thus made available to students. There are a great many pamphlets, unbound books and unbound periodicals not included in this list. The more important American and a few European medical serials are represented by complete sets. This library is open only half the day at present, and yet the number of readers is increasing steadily. The librarian would be glad to receive further donations and solicits correspondence with that end in view. The duplicates will be exchanged with any library in need of them.

Blind-fold Practice.—Sir Edwin Arnold, in his introductory address at St. Thomas' Hospital, London, on "Medicine; its past and future," after a reference to the customs of that benighted land which absolutely forbids the high caste Indian ladies availing themselves of male European skill says. "I was dining once in Jeyhore at the table of Surgeon-Major Hendley, the able and trusted friend of the Maharajah, when a message came that the chief Queen had been taken ill and begged the advice of the British hakim. He went and on return told us that although for seventeen years a familiar visitor of the palace, and the private advisor of the Rajpoot Prince, he had been obliged to suffer his head to be enveloped in a silken bag, and so equipped had been led into the zenana, where he had felt the pulse of her Highness, and had examined her with the stethoscope without seeing an atom more of his patient than a glimpse of one jewelled slipper through the strings of the bag." This would seem to open up a good field for blind practitioners of the male sex, as well as for female doctors, and many of the latter have made a marked and rapid success of it, by locating in those Oriental cities where males are not wanted in the zenanas.

A Long-Haired Colored Woman. In *Leslie's Weekly* for January 2, there appears an account, with an illustration of the "only living long-haired negress," named Nancy Garrison, a resident of Holly Springs, Miss. She is a true negro, black and with kinky hair; and her age is 48 years. When she was thirty years old a change took place in her hair, subsequent to an attack of fever. "Until 1878, after the yellow fever epidemic, there was nothing remarkable about Nancy, but during the scourge she had the fever and came near dying. It was months before she was able to leave her house. Immediately after her convalescence her short, kinky hair began to grow rapidly: in a year's time it grew from three inches to three feet in length, thickening as it grew. A few years later and the crispy mass of hair fell below her knees. About this time a wonderful change of color took place: the jetty locks turned white as snow and remained so until two years ago: since then the hair has gradually turned to its natural blackness. It continues to grow and now measures eleven feet. Prominent physicians have examined her head and hair and are disposed to think that the spell of fever produced the unnatural growth. Nancy is a living curiosity, visited by hundreds who handle her massive braids before they believe the truth."

The Hospital Hotel. The pay wards of the hospitals of New York city are getting to be more freely used by the well-to-do

classes, especially by the males, and still more especially by those who need to undergo surgical treatment. According to *Polyclinic*, even millionaires, having their own luxurious private homes, find in the hospital surroundings that are more favorable for a prompt and sure recovery than they can get elsewhere. Not only is this true where surgery is involved, but in many cases where medical treatment alone is necessary. Cases of typhoid fever are well represented among many other ailments, and occasionally, though not often, a consumptive, even, will decide to end his days amid the peace and quiet of the "hospital hotel." Wealthy patients, who may choose and pay for anything that their fancy dictates, are beginning to appreciate very decidedly the advantages of becoming private patients in any of our best hospitals.

Trained nurses may be secured now at short notice at home it is true (two are necessary, alternately relieving each other) but aside from this, both physician and patient have discovered that during a case of dangerous illness, or in recovering after an operation, the perfect quiet and routine of the hospital régime are more desirable than being surrounded by home and friends or any amount of luxury. The benefit, it appears, lies chiefly in being removed from the every-day, familiar scenes, where every object is apt to remind the invalid of some duty undone or some mountain ahead. It is a species of "rest cure." There seems to be a dreamy, drowsy atmosphere about a hospital patient's existence which is very soothing to invalid nerves. They have a vague idea, to be sure, that it is all very tedious, and that they are not keeping up with the procession properly at all, but it is only a shadowy impression. Then there is every possible patent contrivance at hand in a hospital, and there is always the house surgeon to be summoned at any minute, should the patient so desire.

The private rooms vary in price, ranging from \$25 to \$60 a week, including board and nursing. An hour's time where a great surgeon is employed, is apt to mean a few extra hundred, possibly an extra thousand or more. The rooms are plainly but tastefully furnished, draperies of any kind being rigidly excluded. Draperies encourage microbes. Aside from the suffering involved, there are many pleasant memories connected with a few week's stay. There comes a time when the pains and aches are a thing of the past, and then the patient relapses into that delightful, dreamy, *dolce far niente* existence called getting one's strength back. There is a feeling of abject dependence upon the white-capped nurse: no returning nightmare of duties undone is suggested in this peaceful spot, and really the only effort demanded of one is to select a small list of delicacies for the next meal.

The nurses are, almost without exception, well bred, well educated specimens of womanhood. This profession requires considerable tact and although beauty is not absolutely required, there are many of the hospital nurses who have rather more than their share. They are highly appreciated, as a rule, and many enduring attachments are formed between patient and nurse.

Essentials to Recovery from Druggist for Giving Injurious Medicine.

Several fundamental principles of importance are established by the Supreme Court of Iowa in the case of Rabe vs. Sommerbeck, where it, on May 21, 1895, reversed a judgment for the plaintiff. This was an action brought against a druggist for damages resulting from alleged negligence in giving the plaintiff injurious medicine. First of all, the court holds that in an action of this character the plaintiff must aver and prove a want of negligence on his part contributing to the injury complained of. It says that this, in the application of the rule, is much like the case of Baird vs. Morford (29 Iowa, 531), where the negligence complained of was in reducing a dislocated shoulder joint, and where it was distinctly laid down that "a party claiming to recover for the negligent or unskillful acts of another must show him to be in the wrong, and also prove, i

issue thereon is made, that no negligence of his own caused the injury." The opportunities for contributory negligence in the two cases are much the same. At the particular time of treatment, in each case, there seems to be but slight opportunity for such negligence, but still there is some. In both cases, after the treatment, there is a demand for reasonable care, and a want of it may become contributory negligence. In the second place, the court holds that the jury should have been instructed: "If you find from the evidence that croton oil was by defendant administered to plaintiff in dangerous quantity, as is alleged, then you will consider whether or not it was the proximate cause of plaintiff's sickness and injury, as alleged; and if you find that it was not the proximate cause thereof, or if the plaintiff was sick at the time of administering the croton oil, if any was administered, and the same did not increase the sickness or pain, or the duration thereof, then you should find for the defendant." The plaintiff was sick when he went for the medicine, and whether or not it was the drug administered that caused the sickness and suffering that followed, the court explains, was a very important fact in the case. True, the instructions which were given only permitted a recovery if the drug administered caused the injury; yet there was nothing in them to call the minds of the jury to the importance of distinguishing between these two facts, either of which might have been the cause of the suffering and the condition complained of. The court also says that the symptoms of the plaintiff after taking the drug are proper in determining its character, and also that, with the proper foundation, expert evidence is competent for that purpose. If the facts having support in the evidence are stated hypothetically to the expert, it is proper for him to state the conclusion whether or not croton oil, or any drug which is a subject of injury, would produce such symptoms or results.

Practical Notes.

The Gouty Nature of Persistent Hiccough.—The *Lancet* for October 26 has some remarks on the above subject by Dr. John Roche. Rheumatic gout is a frequent cause in those cases where no lesion of the cerebrum exists. Salicin in thirty-grain doses three times a day will effect a cure in four days or less, if my surmise be correct. If the case should be due to centric nervous system derangement producing an erythematous condition of the nasal, pharyngeal and gastric mucous tracts of an intermittent nature small doses of arsenic, nux vomica and iron three times a day, with milk and lime water night and morning, will be the remedy. He has known the case of a gentleman affected with sneezing which suddenly attacked him after intervals of a few weeks, and lasted day and night continually. He has known a case where hiccough, sneezing and laryngeal asthma were periodic visitants. Arsenic and tonics relieved the first; salicin cured the second.

Trephining for Chronic Hydrocephalus; Recovery.—A case of Mr. William Thelwall Thomas is reported in the *Lancet*, of a young man, aged 19 years, who was subjected to the operation of trephining about six months previous. The history of the case showed a very severe and progressive headache, generally occipital, for eighteen months, extreme giddiness and ataxia, with falling to the right side. There were nystagmus, diplopia, paralysis of the right superior oblique, and marked double optic neuritis. The circumference of the head was 25 inches. The right cerebellar fossa was opened and the tense, non-pulsating dura mater bulged; this was opened and then the brain bulged. By exploring with the finger no tumor could be made out, but the space under the cerebellum was closed by a membrane; this was easily broken through with the finger, and a quantity of clear fluid liberated. The medulla and floor of the fourth ventricle were distinctly felt. The bone was not replaced. The headache soon disappeared, and the man quickly regained all his faculties and is now apparently quite well, six months having elapsed since the operation. Dr. Glynn, when he suggested the performance of this operation to Mr. Thomas, thought the case was one of cerebellar tumor. The patient was nearly blind at the time of the operation. It

was remarkable that it should not only have been followed by temporary relief, but also by permanent recovery. It was possible that a posterior meningitis had been followed by adhesions between the membranes in the neighborhood of the fourth ventricle, and had in this manner caused chronic hydrocephalus.

On the Irrigation of Pus-Joints. In the *Bulletin* of the Johns Hopkins Hospital, the treatment of pyarthrosis is reported upon by Dr. Finney, the operation being that of a free incision and an abundant irrigation with a bichlorid solution. One of his cases was a young man aged 17, who was admitted to the hospital August 8, under Dr. Bloodgood's care. Early in June he had a pain in his left knee, which was followed by some swelling and tenderness and slight pain on motion. He was unable to walk with comfort for about a week; after that it gave no further trouble. This was clearly a case of synovitis. Two days before admission to the hospital, while playing baseball, he fell and injured the same knee. This was followed by rapid swelling, great pain and tenderness. On admission his temperature was 104 degrees; pulse, 120; face flushed. The left knee was contracted almost to a right angle; it was most comfortable in this position, resting on the outer side. The joint was much swollen, with the patella floating. There was considerable fixation, due to the muscular spasm; some redness about the joint, and it was extremely tender. The joint was first aspirated and a cloudy fluid withdrawn. Later it was incised in the manner about to be described. This method is the point of especial interest to us. It was suggested by Dr. Halsted because of the uniformly unsatisfactory results of the old method, which was by inspiration or incision, followed always by the insertion of drainage tubes. The final result of that operation was, in the most favorable cases, a stiff knee. In many there was a resection of the joint later, and in a large proportion of cases an amputation of the leg. The operation done in this case was, after applying a tourniquet to the thigh, to make a long incision into the joint on either side of the patella, through which the joint was irrigated with several gallons of 1 to 1000 bichlorid solution. Then the tourniquet was removed, the wounds covered with protective and treated in the ordinary way. There is little to be seen now except two parallel granulating wounds. He has been recently anesthetized and the fibrous adhesions which had formed broken up. Dr. Welch discussed the bacterial side of the case briefly. He said that this procedure of opening and irrigating pus joints is interesting in reference to the question of disinfecting surfaces of the body. There has been a good deal of experimental work done by Schimmelbusch and others, with the object of ascertaining whether it is possible to disinfect an infected surface or to prevent infection. Dr. Williams has made some observations here with reference to that point in cases of streptococcus infection of the endometrium. He has shown that the micro-organisms are so deep that one can not possibly think of the disinfectant reaching them. While there appears to be no doubt of the superior efficacy of irrigation with disinfectant solutions, as opposed to simple salt solutions, the grounds for this are not altogether apparent, as experiment show that these disinfectants do not actually kill all of the organisms even on exposed surfaces, and do not reach those in the depth of the tissues. Of course these remarks relate only to the possible theories or explanations of the process of cure and are not a criticism of the efficacy of the procedure, which is determined only by experience.

Paracentesis of the Spinal Sheath. According to the London *Lancet*, Quinke, of Kiel, is among the first, if not the first, to practice puncture of the spinal sheath in cases of cerebro-spinal meningitis, whether tuberculous in origin or not. This expedient has not been much practiced elsewhere, and in some cases has not been followed by permanent results. It is obvious that if it is to be of use in tuberculous meningitis the case must be one in which no other region or organ is the seat of miliary tubercle, and that may explain the fact of failure to insure recovery even after a marked improvement as regards

the cerebral symptoms, such as disappearance of coma has followed the lumbar puncture and drainage. He affixes a manometer to the trocar and thus measures the degree of pressure within the canal. Failure to secure a flow of fluid is to be attributed to imperfect performance of the puncture. *e. g.*, the passage of the needle between the nerve-roots outside the sheath, or the presence of thick pus which will not flow through a too fine needle. He is convinced of the therapeutic value of the plan especially in rapidly developing forms of acute serous and sero-purulent meningitis. The assistants at Dr. Quinke's clinic are now engaged in the preparation of a detailed report of his cases.

Dr. Von Ziemssen is quoted as to having said that he had seen ample confirmation of the reports as to the diagnostic and therapeutic value of the lumbar puncture since its introduction by Prof. Quinke. He himself had injected a weak solution of iodine into the canal by this means. He did not use a trocar, but Dieulafoy's needle. Sometimes the patient, shrinking at the moment of puncture, approximated the vertebrae and thus hindered the entrance of the needle, and he thought that anesthetics should be given in the case of adults. No reaction followed, and in some cases examined after death no trace of the puncture could be seen. Furbinger has reported to the Medical Society of Berlin that he has tapped the vertebral sheath in eighty-six cases, making the puncture over one hundred times. The puncture is made in the second, third or fourth intervertebral space in the lumbar part of the spine: the patient sitting up rather than lying on the side. The author states that anesthetics are unnecessary, and that aspiration is more painful than the puncture itself. The amount of fluid withdrawn varies from a few to 110 c.c. Out of thirty-seven cases of tubercular meningitis, of which twenty-seven were verified by autopsy, the tubercle bacillus was not found in seven cases. Of this 80 per cent. in which the diagnosis was established, there was a number of cases which could not be diagnosticated from the clinical symptoms. The therapeutic results were unsatisfactory. In three cases of serous meningitis there was a transient amelioration of the symptoms. Dr. A. Frankel holds that the operation is harmless if done correctly. The puncture should be made about on the plane of the junction of the superior and middle thirds of a spinous process, about two fingers' breadth from the median line. After passing through the skin the needle should be directed slightly upward and inward, and it then enters the canal without difficulty. He failed to find tubercle bacilli in meningitis, notably those in which the arachnoid membrane was affected, and therefore the absence of tubercle is no proof that the disease does not exist. In the *Boston Medical and Surgical Journal* for December 12, Dr. T. M. Rotch reports a case observed by him at the Boston Children's Hospital, in a female aged 2 years, who had marked cerebral symptoms. "We punctured the spinal canal, using for the purpose a needle from an antitoxin syringe, and withdrew six cubic centimeters of a clear fluid which looked like distilled water. No tubercle bacilli were found in this fluid and only rarely a cell of any kind. The albumin was quantitated and found to be less than one-twentieth of 1 per cent. Cultures made from the fluid were negative. The child showed marked stupor at the time, and when aroused acted as if blind. Examination of the eyes showed them to be normal. There was an acute, double, sero-purulent otitis media: but although paracentesis was performed and the ears carefully treated, the symptoms persisted. These were moderate temperature of an irregular type; urine negative; persistent diarrhea, five to six movement daily, of a green color and more fluid than normal. Immediately after tapping the canal the child became restless, throwing herself about the bed, clutching at her hair and giving vent to short cries. The patient recovered and the diagnosis was never made. From the examination of the fluid withdrawn from the canal it was evident that there was no inflammatory exudation in it, which was of some value in diagnosis. Although it is

not at all uncommon in infants and young children to have cerebral symptoms in cases of otitis media rather than local ones, still, after paracentesis has been performed it is usual for the symptoms to subside very quickly. In this case they persisted for more than a week afterward. If a moderate diarrhea can account for the symptoms in any way, whether toxic or not, it is a unique experience. The child had been ill for ten days, as nearly as we can find out, and remained for three weeks in much the same condition in the hospital. Recovery gradually occurred.

Society Notes.

THE MINNEHAHA MEDICAL SOCIETY, Sioux Falls, S. D., have considered a proposition from the medical society at Sioux City for the organization of a tri-State Medical association made up of the members of the fraternity in Northwestern Iowa, Southwestern Minnesota and Southeastern South Dakota. It is the plan to hold meetings of the proposed association quarterly for the discussion of questions of interest to the members.

Hospital Notes.

THE BOARD of Cook County Commissioners held the first meeting of the year January 6. Various reports were received and referred to the proper committees. That for the poor-house showed the number of inmates on Dec. 1, 1895, to be 1,535, the number admitted during the month 400, and the number of births 2, making a total of 1,937. The discharged numbered 283 and the deaths 31, leaving an attendance at date of 1,623. The report of the Cook County Hospital showed the number of patients during the last month had averaged 801. Dr. E. C. Fortner was appointed County Physician for the year ending December, 1896.

Louisville Notes.

SOCIETIES. The Clinical Society will be entertained January 11 by Dr. J. M. Krim, the title of his essay being "The Use of Forceps in Difficult Labor." Dr. Louis Frand will entertain the Surgical Society on the 13th, the title of his paper being "Strangulated Umbilical Hernia, with Report of Case." Dr. W. R. Blue entertained the Falls City Medical Society on January 1, reading a paper upon "Electricity in Dermatology and Genito-Urinary Diseases." The Louisville Academy of Medicine met in their rooms in the College of Pharmacy building on the 6th, Dr. Hugh N. Lavell reading the essay on "Chloroform Anesthesia."

DEATH REPORT.—The report of Health Officer White for the month ending January 3, shows a total of 293 deaths. The total number of deaths during the same period last year was 335. During the month pneumonia and consumption each caused forty-one deaths, eighteen died from organic heart disease, fourteen from typhoid fever, and eleven from bronchitis. There were thirty-two stillbirths.

COLLEGES. The Hospital College of Medicine began its regular session on January 2 with a large medical and dental class. The Kentucky School of Medicine began on January 3, with 210 matriculates. There is every indication of a prosperous year, both schools requiring three years' study for graduation. The 1897 term will inaugurate the four years course.

St. Louis Notes.

WEEKLY HEALTH REPORT. Total number of deaths reported during the week ending December 28, 200, compared with 167 for the preceding week, and 135 for the corresponding period of 1891. Total number of births reported during the week, 231. For the week ending January 4, total number of deaths 180, compared with 146 for the corresponding period of 1895. Births reported, 310.

Contagious diseases reported during the week ending December 28: Diphtheria 94 cases, 13 deaths; typhoid fever 6 cases, 3 deaths; measles 16 cases; scarlatina 9 cases; whooping cough 14 cases, 1 death. For the week ending January 4: Diphtheria 83 cases, 12 deaths; croup 7 cases, 1 death; typhoid fever 9 cases, 2 deaths; cerebro-spinal fever 1 death; measles 12 cases.

THE ST. LOUIS MEDICAL SOCIETY held its fifty-ninth annual meeting on the evening of December 28. Reports of the officers and committees of the year closed were submitted. The election of President, for the ensuing year resulted in the choice of Dr. W. G. Moore. At the meeting January 4, Dr. Moore assumed his office, and, after a short address announced the following committees: Ethics—Drs. F. D. Mooney, L. P. Pohlmann and Hall G. Tupper. Elections—Drs. J. P. Heinrich, John H. Duncan and John B. Shapleigh. Publication and Debate—Drs. G. M. Phillips, Chas. L. Wilson and F. C. Ameiss. Executive—Drs. Keating Bauduy, Given Campbell and C. M. Nicholson. Library—Drs. Ludwig Bremer, Wm. Johnson and S. Pollack.

DR. L. CH. BOISLINIERE, the venerable physician, lies critically ill at his home. Hopes are entertained of his recovery.

THE CASE OF J. M. BEECHER.—On December 23, J. M. Beecher was brought before the probate court for an investigation of his mental condition. The point of peculiar interest was the circumstance that he had been confined in the city asylum more than two years as a patient, and had made every effort possible under the circumstances to prove his sanity and his right to liberty. He is possessed by the delusion that he is the head of a great detective agency and called to hunt down all enemies of society. Aside from his delusions he is acute and logical in all his mental activities, and it was deemed best by the authorities to have his actual status determined beyond all cavil. The remarkable feature of the case is that the jury had no hesitancy in declaring the patient to be insane, though as compared with the paranoiac, Dr. Duestrow, his mental irresponsibility is much less evident.

THE ANNUAL MEETING OF THE STATE BOARD OF HEALTH was held at Jefferson City, January 2. The routine business of the board was attended to. The matter of midwives in St. Louis advertising as physicians was discussed and a rule adopted prohibiting such signs from being publicly displayed. The following officers were elected for the ensuing year: Dr. F. J. Lutz, St. Louis, president; Dr. T. H. Hudson, Kansas City, vice-president; Dr. Willis P. King, Kansas City, secretary. The board adjourned to meet in St. Louis Monday, January 6, when the question of the necessary qualifications of students who enter medical colleges will be determined.

Detroit Notes.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION was entertained Monday, December 30, by Dr. Geo. Henry Fox of New York, who gave a lecture illustrated by stereoscopic views. The Doctor exhibited a great many original slides, the most of them being syphilitic lesions, others being smallpox, psoriasis, eczema, acne, lupus and lichen planus. The first was of a primary lesion, syphilis on the lower lip. It was characteristic and showed the lymphatic involvement along the angle of the jaw. The next few slides were of secondary syphilis, then came one of erythematous syphilid which the speaker dwelt upon for a few moments and brought out the point that the case was one of recurrent: then a slide or two of papular syphilid. The Doctor took occasion to remark that there were no cases of syphilis that were not vesicular, and syphilitic lesions do not itch. Here was shown a very nice case of alopecia of the early second stage, then several slides of smallpox and chickenpox; these were in the umbilicated stage and showed the depressions very nicely. The next was a case of psoriasis. The Doctor then remarked that in syphilis we have considerable infiltration of the skin, but in psoriasis the opposite is the rule. His case of lichen planus was a beautiful case; the color and the papules showed very nicely. His cases of acne were very characteristic, being one of punctate, one of sebaceous and one of molluscum: and the remark was made that of 100 men that were taken at random and their chests and backs examined, 80 per cent. of them would be found afflicted with this trouble. In those of scabies and phthieriasis the diagnosis was made in the latter case by the parallel lines made with the finger nails of the patient seeking relief,

and the lecturer said that the latter disease was much more contagious than the former. In returning to syphilis, he said, we have four varieties, squamous, papulosus, pustulosus and macular. As to skin lesions in syphilis the further away from the stage of incubation that the eruption appears the more likely are we to find a grouping of the lesions. A beautiful picture was shown of ring-worm, upon the outer edges of which was what appeared to be syphilitic lesion. This was confirmed by examining the patient's mouth when the lecturer made his ultimate diagnosis. A case presenting Hutchinson's teeth was shown with accompanying secondary eruption: the next a late syphilis accompanied with papillomata of the vulva. The lenticular papular ulcer on the palm after the secondary lesion has disappeared is a positive means of diagnosing syphilis. The eruption in syphilis is generally unilateral, the further away from the primary lesion, especially after the first year. A case of tubercular or nodular syphilis was then shown. Then several cases of lupus were shown. In making the diagnosis between this disease and syphilis age should be taken into consideration as lupus begins generally before one has been exposed to syphilitic contagion, and lupus is a slow growing lesion, while syphilis in marked contrast spreads rapidly. Lupus, the speaker said, was not an incurable disease, but one that required a long time, months even years to cure, and its ravages knew no bounds. In showing some cases of eczema of the leg it was noted how syphilis affected the upper part of the leg and eczema the lower part. In showing his case of psoriasis he commented upon the fact that in this disease ulceration does not occur and that the healing generally is from the center. Here was shown a view of a hand, in the center of the palm of which were seen scaly patches. This, the Doctor said, was also characteristic of syphilitic lesions. In speaking of the treatment of syphilis, he said there was no disease so amenable to treatment, that the remedies were mercury and potassium iodid, and that he had found no better way of giving them than by the mouth, as he does not like inunctions. As illustrative proof of this, he showed a tubercular syphilid in which the tubercles were upon the upper lip and the end of nose, the eight or nine being as large as the last joint of one's thumb. This case had had the usual heroic treatment. He had taken the case, quit all treatment, insisted upon the patient's taking a good walk every day, regulated the diet, and was gratified in the short space of a fortnight by seeing marked improvement in his patient. Dr. Fox further said that he knew that his listeners understood that all cases of this kind need good food and air, but he brought this forward to emphasize the importance of diet and exercise.

HEALTH OFFICE REPORT for week ending Jan. 4, 1896. Deaths under 5 years 27, total 64. Births, male 55, female 54, total 109. Contagious diseases: Diphtheria, last report 34, new cases 16, recovered 22, died 5, now sick 23. Scarlet fever: Last report 22, new cases 7, recovered 9, died none, now sick 20. Smallpox: Last report 2, new cases 1, recovered 1, died none, now sick 2. Measles: Last report none, new cases 2, recovered none, died none, now sick 2.

Washington Notes.

WEEKLY REPORT OF THE HEALTH OFFICER. The report of the Health Officer for the week ended December 28 shows the health of the city during the past week continued to average above the normal. The deaths numbered 107, and the annual death-rate was 20.2 per thousand inhabitants as against 22.6 in the corresponding period of last year. The principal features of the week's health history were the gradual rise in the prevalence of heart troubles from which there were eleven fatal cases, and from lung maladies causing thirty-four deaths. There were five deaths from typhoid fever as compared with four therefrom in the corresponding week of last December. Malarial diseases present no phase of importance, and with the exception of four deaths from diphtheria, the dangerous contagious ailments were in abeyance. The mortality among children under five years of age was forty-one, of which thirty were under one year old. The mortality among this class was mainly pneumonia and cognate lung maladies in connection with brain disorders, which are accountable for twenty-nine of these cases. A general review of the pathologic conditions justifies the con-

clusion drawn from the death list, that the health of the district is above the average.

BIOLOGICAL SOCIETY'S OFFICERS.—The Biological Society has elected the following officers for 1896: President, Surgeon-General George M. Sternberg, U. S. A.; Vice-Presidents, Richard Rathbun, C. D. Walcott, L. O. Howard, B. E. Fernow; Recording Secretary, M. B. Waite; Corresponding Secretary, F. A. Lucas; Treasurer, F. H. Knowlton; Members of Council, F. W. True, C. W. Stiles, W. H. Ashmead, F. V. Coville, and C. L. Pollard.

SELECT COMMITTEES OF THE SENATE APPOINTED. The following are some of the Select Committees of the Senate appointed by the presiding officers:

Epidemic Diseases. Vest, chairman; Harris, Irby, Jones (Nevada), Gallinger, Quay and Butler.

To Investigate the Condition of the Potomac River Front of Washington—George, chairman; Martin, Blanchard, Frye, Sherman and Perkins.

To Establish University of the United States—Kyle, chairman; Sherman, Hawley, Frye, Nelson, Jones (Arkansas), Turpie, Walthall and Mitchell (Wisconsin).

THE WOMAN'S CLINIC.—The quarterly meeting of the Woman's Clinic was held on the 4th inst., at the office of the Society. Reports of officers were read and other important business transacted; the report shows the work of the hospital to have largely increased.

CENTRAL DISPENSARY AND EMERGENCY HOSPITAL. At the regular monthly meeting of the staff held on the 4th inst., the following report of its work done during the past month was read. Number of new cases 832; visits 2,250; emergency cases 197; redressings 358; ambulatory cases 42; prescriptions compounded 3,508; deaths 2; post-mortem examinations 2. A great deal of the work done was for the relief of serious accidents and included abdominal and brain surgery.

TO PRACTICE IN NEW ORLEANS.—Dr. Meyer Herman of this city, formerly one of the assistants at the Emergency Hospital, has gone to New Orleans, La., to begin practice there. Dr. Herman left a large and lucrative practice and a host of friends.

PHYSICIAN VS. PATIENT. Dr. H. L. E. Johnson has entered suit in the Circuit Court here to recover fees amounting to \$250 for professional services.

A PATIENT THREATENS DAMAGE SUIT. A patient of a prominent physician here is on the verge of entering a suit for \$10,000 damages. The patient claims to have been injured permanently by the performance of an injudicious abdominal section. It is understood that a compromise is to be effected if possible.

THE POST-GRADUATE SCHOOL OF MEDICINE OF THE DISTRICT.

At a recent meeting of the directors of the school the recommendations of the Curriculum Committee to arrange the subjects and assign the professors as follows was adopted: Gynecology, Dr. H. L. E. Johnson; Surgery, Orthopedics, Skin and Venereal Diseases, Drs. James Kerr, J. Ford Thompson and Thomas E. McArdle; Practice of Medicine and Physical Diagnosis, Drs. W. W. Johnston, Samuel C. Bussey, G. Wythe Cook, G. Boyd Harrison and Middleton F. Cuthbert; Diseases of Children, Drs. Samuel S. Adams and Geo. N. Acker; Diseases of Throat, Nose and Ear, Dr. Chas. W. Richardson; Diseases of Eye, Dr. W. Holland Milner; Diseases of the Nervous System, Dr. Edmund L. Tompkins; Obstetrics, Drs. J. Foster Scott and Henry D. Fry; Pathology, Bacteriology, etc., Dr. Edward M. Parker.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

The 238th meeting of the Society was held on the 3d instant. Dr. Kelley read a paper on "Fibroid Tumors of the Uterus with Pregnancy." He gave the history of some cases and presented a large fibroid uteri containing a small fetus which he had removed by abdominal section. Dr. Deale read a paper on "Movable Kidney," and reported some cases. Full and interesting discussions followed the reading of each paper. Dr. H. L. E. Johnson presented a colloid cyst of the left ovary and a smaller cyst of the right ovary, successfully removed from a woman 54 years of age.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from December 28, 1895, to January 3, 1896.

Major James C. Worthington, Surgeon, leave of absence granted on surgeon's certificate of disability is extended six months on account of sickness.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending January 4, 1896.

Asst. Surgeons M. S. Guest and C. P. Bagg, ordered to examination for promotion.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the sixteen days ended December 31, 1895.

Surgeon H. R. Carter, granted leave of absence for twelve days, Dec. 17, 1895.

P. A. Surgeon L. L. Williams, granted leave of absence for fifteen days, Dec. 30, 1895.

P. A. Surgeon W. P. McIntosh, to proceed from Boston, Mass., to Louisville, Ky., and assume command of Service, Dec. 28, 1895.

P. A. Surgeon B. W. Brown, granted leave of absence for nine days, Dec. 17, 1895.

Asst. Surgeon Emil Prochazki, to proceed from Buffalo, N. Y., to Detroit, Mich., for duty, Dec. 28, 1895.

Asst. Surgeon A. R. Thomas, to proceed from St. Louis, Mo., to Boston, Mass., for duty, Dec. 28, 1895.

Asst. Surgeon H. S. Cumming, granted leave of absence for sixteen days, Dec. 16, 1895. Leave of absence extended four days, Dec. 26, 1895.

BOARDS CONVENED.

Board to revise regulations regarding uniforms, Surgeon Fairfax Irwin, chairman, P. A. Surgeons C. E. Banks and B. W. Brown, recorders, Dec. 17, 1895.

Board for the examination of officers for promotion and candidates for admission to the Service, to meet in Washington, D. C., Feb. 10, 1896. Surgeon George Purviance, chairman, Surgeons H. W. Austin and H. R. Carter, recorders, Dec. 30, 1895.

Change of Address.

Beebe, C. E., from Woodland to Watsonville, Cal.
Blitz, A., from Indianapolis, Ind., to Rooms 21-22, Sidle Bldg., Minneapolis, Minn.

Coe, H. W., from 138 E. 29th Street to 115 W. 49th Street, New York, N. Y.
Frisby, E. G., from 229 Geary Street to 803 Sutter Street, San Francisco, Cal.

Hopkins, W. E., from 533 Sutter Street to 803 Sutter Street, San Francisco, Cal.

Hunt, Florence W., from 236 Michigan Avenue to Lexington Hotel, Chicago, Ill.

Rogers, D. F., from Marceline, Mo., to Ottawa, Kan.

Sims, S. N., from St. Joseph, Ill., to Philadelphia Polyclinic, Philadelphia, Pa.

Werner, O. E., from Brillion, Wis., to 517 W. Chestnut Street, Louisville, Ky.

Wood, Horatio F., from Masonic Temple to 1003 Reliance Building, Chicago, Ill.

LETTERS RECEIVED.

Allnut, Henry, St. Paul, Neb.; Armstrong, S. T., Asbury Park, N. J.; Arnold, H. A., Ardmore, Pa.

Barr, Martin W., Elwyn, Delaware County, Pa.; Butler, F. C., Malden, Mass.; Buckmore, J. H., Evanston, Ill.; Bellamy, B. C., Stockton, Cal.; Bartholomew, Geo., New York, N. Y.; Bell, A. N., Brooklyn, N. Y.; Buxton, L. Haynes, Guthrie, Okla. Ter.; Bellwood, W. S., Alliance, Neb.; Blitz, A., Minneapolis, Minn.

Curfman, G. W., Denver, Colo.; Chicago Post-Graduate Medical School, Chicago, Ill.; Cook, G. F., Oxford, Ohio; Cone, Andrew, New York, N. Y.; Cushing, H. K., Cleveland, Ohio; Carr & Manning, Durham, N. C.; Chambers, J. H. & Co., St. Louis, Mo.; Cochran, Jerome, Montgomery, Ala.; Clarke, Almon, National Home, Wis.; Columbus Phaeton Co., Columbus, Ohio.

Dunfield, H. F. (2), Pittsfield, Ill.; Daignean, F. E., Austin, Minn.; Davls, D. G., Washington, D. C.; Davls, G. S., Detroit, Mich.

Enke, Ferdinand, Stuttgart, Germany; Elliott, W. H., Savannah, Ga.; Eschliuer, Dr., Chicago, Ill.; Eskridge, J. H., Chicago, Ill.; Edwards, W. M., Kalamazoo, Mich.

Franklin, C. P., Philadelphia, Pa.; Fernandez, J. D., Jacksonville, Fla.; Fred Macey Co., The, Grand Rapids, Mich.

Gregory, L. L., Chicago, Ill.; Grady, Z. T., La Fayette, Ala.; Gilchrist, T. C., Baltimore, Md.

Haralson, H. H., Forest, Miss.; Horlbeck, H. B., Charleston, S. C.; Horner, Frederick, Marshall, Va.; Holtgrewe, F. W., St. Louis, Mo.

Jenkins, J. F., Tecumseh, Mich.
Kenyon News & Postal Sub. Co., (2), Chicago, Ill.; Kessinger & Kessinger, Sanborn, Ind.

Lemen, L. E., Denver, Colo.; Lichenwallner, J. B., Springfield, Neb.; Lord & Thomas, Chicago; Lillard, Benj., New York, N. Y.; Lehn & Fluk, New York, N. Y.; Lovenson, M. L., Chicago; Longman, Green & Co., New York, N. Y.

Manley, Thos. H., New York city; Marsh, W. Q., Sierra Mojada, Mexico; Mullan, E. A., Chicago, Ill.; McEnroe, J. F., Schenectady, N. Y.; Moore's Newspaper Subscription Agency, Brockport, N. Y.; Murray, J. A., Cincinnati, Ohio; Meyer Bros. Drug Co., St. Louis, Mo.; Macey, Fred Co., Grand Rapids, Mich.; Moran, Jas., New York, N. Y.; Morice, J. Henry, Philadelphia, Pa.

Ozone Co., Chicago, Ill.; Payne, Jno., Hillman, Ala.; Pugh, F. H., Bryan, Ohio; Peacock Chemical Co., St. Louis, Mo.; Perkins, L. J., Pendleton, Ore.

Kahnes, D. F., Manitowish, Mich.; Raeder, J. W., Wilkes Barre, Pa.; Read, E. W., Menden, N. D.; Reddish, G. M., Somerset, Ky.; Reder, Henry, Aurora, Ill.; Regar, G. H., Co., Philadelphia, Pa.; Robinson, Byron, Chicago, Ill.; Rumbold, T. F., St. Louis, Mo.; Rhoden, J. C., Chicago.

Schulke, M., Chicago, Ill.; Selden, Julia S., Norfolk, Va.; Sims, S. N., Philadelphia, Pa.; Stearns, F. & Co., Detroit, Mich.; Sternberg, Geo. M., Washington, D. C.

Truax, Chas., Greene & Co., Chicago, Ill.; Thomson, St. Clair, London, England; The G. F. Harvey Company, Saratoga Springs, N. Y.

Woodward, A. P., San Francisco, Cal.; Wyman, H. C., Detroit, Mich.; Winslow, J. R., Baltimore, Md.; Werner, O. E., Louisville, Ky.

Zumo Pharmaceutical Co., St. Louis, Mo.

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No. 3.

ADDRESS.

THE IDENTITY OF LUPUS VULGARIS AND LUPUS ERYTHEMATODES.

Chairman's Address, Delivered in the Section on Dermatology and Syphilography, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY ALFRED E. REGENSBURGER, M.D.

CHAIRMAN SECTION ON DERMATOLOGY AND SYPHILOGRAPHY.
SAN FRANCISCO, CAL.

In common with all other branches of medicine, dermatology has felt the result of modern bacteriologic investigations. The brilliant discoveries of Koch, the father of bacteriology, have shattered many idols and put a different aspect upon many things. The advances wrought have been so enormous as to thoroughly have revolutionized some matters. The etiology and pathology of many diseases have been cleared up and the way leading to the elucidation of many mooted questions pointed out.

Lupus vulgaris is one of the questions upon which the search-light of bacteriology has fallen with most beneficial effect. Prior to Koch's time its etiology and pathology were misunderstood. Now nothing is more surely established in medicine than that it is a tuberculosis of the skin. The crucial test of inoculation with pure cultures and with tubercular matter proved the identity of lupus vulgaris and tuberculosis. It is true that animals were successfully inoculated with tuberculosis with matter that was called scrofula before Koch published his experiments but to him belongs the credit of being the modern medical Moses who led his brethren out of the wilderness of darkness.

Koch inoculated and produced tuberculosis with material from tuberculous tissue in over five hundred animals. Other observers corroborated Koch's experiments and brought additional facts to our knowledge. Inoculations of tuberculosis were successfully accomplished in various ways by Koch's disciples.

Cornet, in Koch's laboratory, proved the possibility of inoculating tuberculosis through abrasions of the skin. He demonstrated that lupus tissue and pure cultures of tubercle bacilli when applied to an abrasion of the skin produced a local tuberculosis and also of the adjacent lymphatic glands, followed by a general miliary tuberculosis in most cases. Cornil and Leloir implanted lupus tissue into the peritoneal cavity of guinea pigs and in five out of fourteen cases induced peritoneal and general tuberculosis.

In eleven cases of Leloir and Cornil, and in four cases of Koch, which were examined for the purpose of proving the identity of lupus and tuberculosis, tubercle bacilli were found in every instance. Doutrelepont, Pfeiffer, Koch and Pagenstecher found tubercle bacilli in artificial lupus caused by the implantation of tuberculous products.

Bollinger has shown that the more concentrated

the material and the greater the number of the bacilli in the injection used the more severe and the more rapid was the development of the lesions caused thereby. It was estimated that about eight hundred and twenty bacilli are required to produce fatal tuberculosis in guinea pigs.

The reasons for the identity of tuberculosis and lupus vulgaris are so well stated in Demme's classic brochure upon that subject, that his résumé from that source, making use of the translation as found in Senn's Surgical Bacteriology, page 172, are here given:

- "1. Similarity of histologic structure.
- "2. Presence of the bacillus of tuberculosis in granulation tissue of lupus.
- "3. The production of typical tuberculosis in animals not immune to this disease by the implantation of lupus tissue or the injection of a pure culture of the bacillus of tuberculosis obtained from lupus tissue.
- "4. The fact that patients suffering from lupus are frequently attacked by and die from tuberculosis of other organs.
- "5. The prevalence of tubercular affections among relatives suffering from lupus (hereditary predisposition)."

These views are accepted at the present time by the medical world as the correct ones. Beside the foregoing distinctive anatomico-bacteriologic landmarks, lupus vulgaris has also well defined clinical aspects which belong to it exclusively and serve to differentiate it from every other cutaneous disease and therefore entitle it to recognition as a separate affection.

In spite of all this, claims have been advanced by eminent clinicians, particularly in France, that lupus vulgaris is identical with lupus erythematodes (or erythematosis as some call it); in other words, that these two maladies are one and the same. At first sight there may seem to be no foundation for such a hypothesis, yet upon closer investigation and study one can not resist the view that there are certain similarities between the two diseases, indeed, that there are more similarities than dissimilarities and that the pretensions of relationship between the two merit some consideration.

There appear to exist certain facts which would tend to show that there may be a connection, at least, between these two affections, if they are not really one and the same. There are certainly some points of resemblance. For many lupus vulgaris and lupus erythematodes are but two forms of cutaneous tuberculosis, which must be differentiated. In France they are regarded by many as but varieties of one and the same disease.

The gifted and talented Besnier is the most prominent champion of this opinion. In proof of the correctness of this view its adherents mention the frequent occurrence in those afflicted with lupus

erythematodes, of glandular swellings, tuberculosis of the joints, complicated with tuberculosis of internal organs. Besnier lays great stress upon these complications or sequelæ and explains the fact that their existence is denied upon the ground that they are overlooked and only recognized when particular attention has been called to them. He further makes the statement that it is an every-day occurrence with him to encounter tubercular affections complicating cases of lupus erythematodes, and if not in the party affected, then in the family of the sufferer, or in those with whom he has been in intimate and close connection during the prevalence of a tuberculous affection.

The majority of observers, however, do not affirm the correctness of Besnier's dictum. For those who believe in the identity of lupus vulgaris and lupus erythematodes, there remains this incontrovertible fact which is seemingly a very strong argument, that there exist stages of transition from lupus erythematodes to lupus vulgaris, to such an extent that a lupus erythematodes may be seen passing into a lupus vulgaris so that the symptoms of one affection fade insensibly into those of the other in such a way that the characteristic symptoms of the two affections are combined in one patient.

The two forms may coëxist in the same subject at the same time. Sometimes we see the two running imperceptibly into one another. Vidal believed that a lupus erythematodes may precede or antedate a lupus vulgaris. As Brocq puts it, a lupus vulgaris may begin as a lupus erythematodes.

Besnier insists also strenuously upon this point. There is no doubt but that such cases do occur, where one disease antedates the other and where these two diseases shade so together and lose their clinical identity as to make it impossible to differentiate by looks one from the other. As a very good example of such a condition the following case (taken from Jamieson's book on diseases of the skin, p. 518) is here transcribed:

"In it a well-marked symmetrical lupus erythematosis of the cheeks passed imperceptibly into a lupus vulgaris of the alæ of the nose, with characteristic ulceration and crusting. The two diseases, too, ran inextricably one into another under and behind the lobe of each ear, one, the right, being more prominently affected. The history was unfortunately obscure. This case would show either that the disease may occasionally be transformed in appropriate situations into the other, or that the two forms" (?; the interrogation point is mine,) "of lupus may coëxist in one and the same individual."

This excerpt which occurs a little further on is also worthy of being mentioned:

"There are forms of lupus vulgaris which touch very closely on the limits in that direction of lupus erythematodes, and we could almost construct a series of cases leading by gradual steps from one to the other." That is just what some of the French authors have done.

This would seem to be very seductive reasoning could not the circumstance of the coëxistence of the two affections, contemporaneously, in the same patient be explained upon these two grounds: 1. That a lupus vulgaris may be superadded to an already present lupus erythematodes by inoculation with tuberculous matter, or with the active principle of tuberculosis, the possibility, aye probability, of which re-

ceives additional confirmation in that lupus vulgaris has so frequently its seat on uncovered and exposed parts as the hands and face. Very easy is this when there is an abrasion of the skin or where the skin is in a very susceptible condition, having lost its resistant power by disease and its penetration rendered facile by the persistence of some other affection as lupus erythematodes. What is there to prevent a lupus vulgaris to be inoculated on a patch of lupus erythematodes? All things being favorable to an inoculation, it can not be said that the presence of lupus erythematodes renders the subject immune to inoculation with lupus vulgaris. Even Dr. Besnier virtually admits this when, in dilating upon the treatment of lupus vulgaris, he opposes the use of cutting or surgical methods because they tend to a local tubercular reinfection and thus increase the number of those suffering from phthisis. If this be true in a patient suffering from lupus vulgaris, how much the more so in one affected with lupus erythematodes? 2. The presence of two different cutaneous affections in the same subject at the same time does not prove that they are related or are one and the same disease, were they even met with oftener together at the same time in the same individual, instead of very rarely and exceptionally so as in the two diseases under discussion.

Different affections are encountered in the same subject in dermatology quite frequently. We might just as well say that because a person affected with acne becomes infected with scabies, that these two affections are related to each other.

We must admit that these cases are exceptional, and where such a state of affairs exists it is simply a coincidence and has no etiologic or other significance. The anatomic and histologic data of lupus vulgaris and lupus erythematodes are entirely different.

Bacteriologically they diverge as wide if not wider. Leloir and no other competent observer has ever been able to find the tubercle bacillus in lupus erythematodes and never has lupus erythematodes been transferred to man by inoculation with tubercular matter or with pure cultures from tuberculosis. They have nothing which links them together except the name, or rather the misnomer lupus, a term which is not a desirable one, as it gives no idea either of their etiology, histology or of anything else connected with them. We are therefore forced to these conclusions: That lupus vulgaris and lupus erythematodes are two entirely separate and distinct diseases. That lupus vulgaris is a local tuberculosis of the skin. That the term lupus vulgaris should be eliminated from our nomenclature of diseases, and the affection in question designated as tuberculosis cutis qualified by the name of the part of the surface affected. That the term lupus erythematodes may be retained, as it has usage and custom to recommend its continuance, until we shall have a better understanding of the pathologic processes of the disease, with the knowledge that it refers to a chronic inflammatory process of the skin of whose exact nature we are ignorant of at the present time.

DISCUSSION.

DR. OHMANN-DUMESNIL, of St. Louis, said that the tubercle bacilli were never found in lupus erythematosis, except as an accidental infection.

DR. BELKLEY, of New York, expressed the opinion that he agreed with Hebra that there was no relation between lupus

vulgaris and lupus erythematosus. He referred to two cases in his own experience where lupus vulgaris had developed in patients with lupus erythematosus, but he believed it was by the subsequent inoculation of the tubercle bacilli on the lupus erythematosus base. He also thought that in Paris true lupus vulgaris of a superficial character was often called lupus erythematosus, and so confusion was apt to result as to the relationship between the two diseases. He had used phosphorus with success, in the form of Thompson's solution, with glycerin and alcohol; whereas the treatment produced no effect on lupus vulgaris. He considered that lupus erythematosus was a congestive seborrhea. In one perfectly typical case of lupus erythematosus on the hands and face the patient developed pulmonary tuberculosis, and after watching her for ten years she died of consumption.

ORIGINAL ARTICLES.

FOUR RECENT CASES OF EXTRA-GENITAL SYPHILIS IN PRIVATE PRACTICE.

Read in the Section on Dermatology and Syphilography at the Forty-sixth Annual Meeting of the American Medical Association at Baltimore, Md., May 7-10, 1895.

BY L. DUNCAN BULKLEY, A.M., M.D.

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While cases of syphilis innocently acquired are not of very infrequent occurrence, and the number of reported cases is increasing rapidly, the following recent instances in private practice are thought to be of sufficient interest to warrant placing them on record. They serve to call attention to the dangers which arise from the disease on every side, and to illustrate the diverse locations where the initial lesion of syphilis may be found, as well as the modes by which the poison may enter the system:

Case 1.—Chancre of the Cheek. Mrs. W., aged 24, was sent to my office in consultation May 28, 1894, on account of a sore on the right cheek, just below the zygoma, which had refused to heal. It had begun six weeks previously, as a small pimple like a mosquito bite, which had soon broken down, leaving a raw surface, which increased in size to the time of the visit.

When first seen the sore was almost circular, about half an inch in diameter, pouting above the level of the skin a little and with considerable induration: the surface was partly exposed and presented a red, glairy appearance, and was partly covered with a brownish crust; the glands beneath the jaw on that side were enlarged and hard. A little later she called with an exquisite maculo-papular syphilid.

The husband was found to be syphilitic, in an acute stage, but the exact mode of inoculation was not learned: it is readily understood, however, how the small abrasion following the first lesion, which was presumably non-specific, could easily become inoculated during the intimate relations of the married life, from mucous patches in the mouth of the husband.

She was then pregnant four months, and on Jan. 22, 1895, she was sent to me again with the child, then aged four months, presenting the perfect picture of inherited syphilis: there was an enormous amount of papulo-squamous eruption, involving the head and limbs mainly, including the palms and soles, with the drawn "old man" facies so commonly seen. The child had been born free from eruption, but had had "snuffles" almost since birth: the eruption had developed one month before the visit, when the child was three months old.

Case 2.—Chancre of the Finger. Dr. D., aged 29, consulted me Jan. 14, 1895, for the diagnosis of a very general macular eruption, which had begun three days previously, on the abdomen, and rapidly increased, until at the time of the visit, it covered the body and limbs very generally. It was attended with a very general adenopathy, which followed pretty quickly upon an enlargement of the glands of the right elbow and axilla in connection with the local sore on the right middle finger. He had had some rise of temperature for a length of time: a month previous it had registered 100 degrees, and was 99.2 a day or two before the visit. For two weeks he had had pain and tenderness over the sternum.

The origin of the sore was a little interesting. He had for some time had an ordinary wart on the pulp of the last phalanx of the right middle finger, near the center, but as it annoyed

him in gynecologic work (he having a large dispensary, obstetric and gynecologic practice) he had attempted to get rid of it. For this purpose he had burned it with nitric acid in the preceding September. He had covered the lesion with cotton, with collodion over it, but it suppurated, and the wound was again cauterized with nitric acid three or four weeks later, and again carefully covered with cotton and collodion. As it did not heal he burned it again with nitric acid, four or five weeks previous to the visit, when it appeared to heal: a small crust, however, remained in the center, and a considerable area of hardness beneath. He was not conscious of having exposed it to infection, and as he had feared this because of the nature of his practice, he kept it carefully protected.

When examined there was a small crust, hardly a line in diameter, in the center of the flexor surface of the last phalanx of the right middle finger, and beneath it an induration, about one-third of an inch in diameter, rather movable: there was little redness and no pain, and, were it not for the adenopathy at the bend of the arm and that in the axilla, the size of a chestnut, and the general symptoms, it would have been hardly possible, even for one familiar with extra-genital lesions, to have given a positive diagnosis of chancre of the finger. It is needless to say that the subject of venereal infection was gone over, and that there had been no venereal exposure nor was there other initial lesion of syphilis elsewhere.

Case 3.—Chancre of the Right Nostril. Mrs. C., a previously healthy lady, was brought to my office with what had been supposed to be an epithelioma of the right nostril, on May 18, 1894. As I learned from other sources, her son had had active syphilis, and his wife had been confined in the preceding December, the child soon developing hereditary syphilis, of which it died on April 30. She had had almost constant care of her grandchild, up to its death, it having abundant eruption, mouth lesions, etc.

On April 15, she had first noticed a soreness in the right nostril, which had increased to the time of the visit, the first sensation was like a "cold in the nose," the nostril being closed by edematous swelling, and very shortly there was much pain through the right temple and back of the head.

When first seen there was a hard mass in the right nostril, quite within it, against the septum, which blocked the lumen to a considerable degree, so that she did not breathe through it. The lower edge was quite sharply defined, and, as far as could be felt, it presented a hard cartilaginous feeling; the surface of most of it was superficially ulcerated.

There was already a slight macular eruption about the neck, and a few large flat lesions behind the right ear. The lymphatics beneath the right jaw were very much enlarged, and there was also some adenopathy behind the right ear.

Feeling quite sure of the diagnosis on the first examination, it was still thought best to defer instituting specific treatment until further study of the case and until I could learn more of the probable source of infection. I gave her only a soothing lotion and ointment. It was after the second visit that I learned from another son in regard to the syphilitic child and her care of it.

About one week later I saw her again when the eruption was found to have increased greatly over the back, chest, and arms, and was unmistakable. She had some general osteoscopic pains, and tenderness of the shins. The ulcer was about the same, little if any influenced by the local treatment. She was then given a tablet containing one grain of mercury and chalk every two hours.

Two weeks later it was noted that she was feeling very much better in every way. The ulcer in the nose was greatly improved and she could breathe through that nostril. The eruption had already somewhat faded. She had averaged about eight tablets daily, sometimes had taken ten.

Three weeks later the ulcer in the nose had entirely healed and she breathed almost perfectly through that nostril. There had been no local mercurial treatment, only a little mild camphor and zinc ointment had been applied from the first. The eruption had then almost entirely faded, but there were still glandular swellings beneath both jaws, and the shins were yet tender. She had diminished the tablets to two or three daily, for the previous week, because the teeth felt sore. On July 28 the sore was noted as completely healed, with a depressed surface where it had existed: the eruption had quite vanished, but there were some mucous patches on the lips. She has been seen occasionally since that time, and as she is rather neglectful of treatment she occasionally has had manifestations of her disease. In regard to the source of her infection, although she could not trace it to any particular event or action, there can be no question but that in her ministrations to her syphilitic grandchild she carried the poison to the nostril, probably with the finger.

Case 4.—Chancre of the Left Tonsil. Mr. E., aged 59, was brought to me by his physician on May 14, 1894, on account of a very general maculo-papular eruption covering the body and extremities.

He had been suffering for four weeks from very severe general pains in the neck and back, and also aching of the bones all over. This had been considered rheumatic or neuralgic by his physician, and he had had plasters in various places and treatment with the Turkish bath, Rochelle salts, quinin, colchicum, etc. He had also complained of soreness of the throat much of the time, and a cough. Four or five days before his visit, an eruption began on the forehead which had increased rapidly up to the time of his visit, when it had become very general. There could be no mistaking the maculo-papular sypphilid which he presented, which extended over his bald head, upon the trunk and limbs, even on the palms.

In searching for the source of infection, examination of the genital region showed no trace of a primary lesion, and it was learned that he had had no connection for a year. Nor was there any sign of a chancre, past or present, on any other external part of the body, nor had he had any sore.

He had had, however, trouble on the left side of the throat, with swelling beneath the left jaw, which latter had, however, about disappeared at the time of the visit. There was not very much to be seen in the throat except a dull redness of the left tonsil, with a little superficial ulceration. There was no record made as to hardness, and the facts regarding this have escaped me. But from a total absence of any other possible site of infection, and from the amount of trouble he had had on the left side of the throat, with the adenopathy beneath the jaw on that side, I have no doubt whatever that the infection took place in that locality. Among the fifteen cases of chancre of the tonsil, which I recently reported,¹ the tonsillar lesion was relatively insignificant in some instances, as we know it often to be in the genital region and elsewhere; although it may often produce large tonsillar lesions, giving rise to much trouble and pain, this is not at all necessary to secure infection, and it is well known that chancre within the cavity of the mouth, especially in children, may very frequently be overlooked, until other signs of syphilitic infection call attention to their presence.

All the localities represented in these cases have been repeatedly observed to be the seat of syphilitic infection. Few realize, however, with what relatively great frequency the point of entry of the syphilitic poison is in the region of the mouth and throat. Thus, in my recent study of the subject,² out of a total of 9,058 extra-genital chancres, I found records of no less than 307 cases of chancre of the tonsils; there were also 264 cases where the location of the chancre was "deep oral and nasal;" and in 734 cases it was recorded as in the "buccal cavity." These, together with 157 cases on the tongue and 42 on the gums, make no less than 1,504 cases where infection took place within the cavity of the mouth, or over 16.5 per cent. of the entire number analyzed. Adding these to 1,810 cases of chancre of the lip, there collected, we have a total of 3,314 cases or 36.5 per cent. in which infection occurred in the region of the mouth. With this very great relative frequency in this locality, it is well to be on the lookout for instances where the poison has been here introduced.

In addition to the four cases here detailed, where the site of non-venereal infection was definitely known, several other cases have been observed in my private practice where there was every reason to believe that the disease was thus acquired, but where even careful investigation failed to demonstrate with sufficient certainty for report the exact location of the primary sore; some of these have been very interesting and puzzling, but need hardly be detailed here. This is quite exclusive of instances of marital or hereditary syphilis of which a number have also been under observation.

Including the four cases above narrated, of extra-genital chancre, no less than 120 instances of this form of infection have come under my personal observation and care. The histories of 116 of them are given in the recent work referred to on "Syphilis in the Innocent." For those who may not have seen the list, I will present it here in full, in order to illustrate the frequency with which other portions of the body than the genital region may become the seat of the initial lesion of syphilis. These instances occurred among something over 2,000 cases of syphilis seen in various forms and states; the extra-genital infection being demonstrated in about 6 per cent. of all the cases seen.

PERSONAL CASES OF EXTRA-GENITAL CHANCRES.

Location.	Male.	Female.	Total.
Chancre of the lip	20	31	51
" " tonsil	9	7	16
" " finger	14	2	16
" " breast		8	8
" " tongue	3	3	6
" " cheek	5	1	6
" " eyelid	3	1	4
" " chin	3	1	4
" " hand	1	1	2
" " nose	1	1	2
" " ear	1		1
" " temple		1	1
" " neck		1	1
" " forearm	1		1
" " sacral region	1		1
Total	62	58	120

Of these 120 cases it will be seen that the males are slightly in the preponderance, which is rather contrary to the common belief. I think, however, that these figures, although small, probably show the correct proportion; as a rule, the patients with syphilis have come on account of the eruptions present some time during the course of the disease, or because of the local sore present, which is commonly supposed to be a skin lesion. Therefore, both the proportion of extra-genital chancres, and the relation of the sexes are more likely to be correct than in an experience drawn from venereal practice alone, where many of the extra-genital sores would not present themselves.

The cases here narrated, and those represented in the table also, show how careful we should be when having to do with syphilis in a patient, not to necessarily charge the individual with wrong doing, for the disease is much more frequently acquired innocently than is commonly thought. Among the cases of syphilis presenting themselves in my private and public practice, about 6 per cent., or one person in sixteen or seventeen had received the disease through extra-genital infection; when we come to include the cases of marital and hereditary syphilis it is quite probable that over 10, perhaps 15 per cent. of all cases acquire the disease quite innocently of all sexual transgressions.

4 East 37th Street, New York.

ULCERATIVE SYPHILID OF THE PHARYNX.

Read in the Section on Dermatology and Syphilography, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY A. RAVOGLI, M.D.

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Syphilis attacks the pharynx like any other organ, and cases have been reported in which the initial lesion was found in the upper pharynx, the infection

¹ Transactions Medical Society, State of New York, 1893.

² Syphilis in the Innocent (Syphilis Incontinentum), Bailey & Fairchild, N. Y. 1891.

being communicated by means of the Eustachian catheter. In the secondary stage syphilis attacks the pharynx as a result of a specific erythema, which from the soft palate and the tonsils spreads to the surface, and sometimes it produces a catarrhal inflammation without characteristic specific symptoms. Mucous patches which we so frequently meet with on the tonsils, faucial pillars and soft palate, very rarely are found on the wall of the pharynx. Zeissler never saw a mucous patch on the pharynx, and in my experience I do not remember to have seen mucous patches on this region.

Ulcerative syphilid affects the pharynx at an advanced secondary period. As the affection is not a common one, I find it worthy to be submitted to your attention.

In a large number of syphilitic patients in my practice I find only four cases of this peculiar lesion recorded. All four were men and all used to drink alcoholic liquors and chew tobacco.

The affection began at the time when the patients were in apparent good health, two to three years after the infectious chancre had first appeared. Feverish reaction, and an intense pain in the act of deglutition and in the articulation of words were constant symptoms in each case. The lesion consisted of an inflammatory prominence, of the size of a dime, dark red, which soon showed ulceration in the middle. The center of the ulcer, like a crater, was deep and covered with a yellow diphtheroid detritus; the edges, brown-red, were sharply cut and elevated above the surface of the mucous membrane, and were surrounded by an inflammatory halo. Recovery took place with a whitish superficial scar, which remains always perceptible.

Case 1.—J. S., 25 years old, butcher by trade, man of a splendid physical constitution, had hard chancre on the internal surface of the prepuce in February, 1885. In May of the same year had a papular eruption accompanied by mucous plaques of the mouth and of the anus. He was subjected to intramuscular injections of sublimate 1 per cent. After twenty injections every symptom had entirely disappeared. He was in good health, had no syphilitic symptoms, and refused further treatment. On March 19, 1886, came again to consult me for sore throat and fever, which he thought due to a cold. He was somewhat emaciated. A superficial examination of his throat did not reveal any specific lesion of the soft palate, the tonsils were normal, but the posterior wall of the pharynx looked very red. As speaking was difficult and the voice had a nasal tone, I subjected him to a rhinoscopic examination. On the upper portion of the pharynx behind the velum palati, I found an ulcer of the size of a five cent piece deeply and sharply cut in the mucous membrane, covered with a yellow diphtheroid detritus with elevated swollen edges, surrounded by an inflammatory halo. The diagnosis was not difficult, knowing the preceding history. A mixed treatment of inunctions with mercurial ointment and large doses of potass. iodid, combined with local applications of peroxid of hydrogen for cleansing the surface and then blowing powdered iodoform, soon brought about recovery.

Case 2.—M. P., Italian laborer, 37 years old, good constitution, used to smoke pipes and drink whisky, came to my clinic on July 15, 1893. He complained of excessive pain in attempting to swallow anything, had some remittent fever and was wasting away rapidly. The man had been under my treatment nearly one year before for papular syphilid, which yielded easily to fifteen intramuscular injections of sublimate 1 per cent. There remained a stubborn sternal neuralgia, and for this he took iodid of potassium, followed by pills of protoiodid. The patient was well, and I did not see him any more until said date, nearly one year after the first treatment.

At present the patient is very pale, of sallow hue, emaciated; a few enlarged glands can be found on the cervical region as evidence of the past trouble. No mucous patches in the mouth, none on the throat, which is scarcely red. By the aid of the tongue depressor a vivid redness can be seen at the base

of the pharynx, which surrounded a round ulcer the size of a quarter of a dollar. The edges of the ulcer were sharply cut, inflamed, elevated on the surface of the mucous membrane, the hollow of the sore showed a yellow diphtheroid appearance, discharging purulent matter. The patient was treated with mercurial inunctions and iodid of potassium in large doses. Locally the ulcer was washed with peroxid of hydrogen and covered with iodoform powder. In twenty days the ulcer had completely healed up and the patient was discharged.

Case 3.—W. F. F., a young man 27 years of age, barkeeper by occupation, of good and sound constitution, has always enjoyed good health. In April, 1892, he called on me with a syphilitic roseola. The initial lesion of syphilis was found on the second phalanx of the thumb of the right hand on the internal side. It was an ulceration half cicatrized on an indurated base. The epitrochlear gland of that side was hard and swollen. The patient received twenty intramuscular injections of sublimate 1 per cent. and on the ulcer emplastrum hydrargyri was daily applied. In a short time the roseola had completely disappeared and the ulcer of the thumb thoroughly cicatrized. The patient was discharged, with the advice to take two pills a day of protoiodid hydrarg. for two months longer.

In January 1893, he came again with a pustular syphilid. A few ectymatous ulcerations were scattered on the scalp and on the face. He was subjected to another course of treatment, and when better was not seen again.

The patient kept on in his occupation and used to drink a good deal of whisky and to smoke. On August 1893, he came to my office complaining with difficulty of speaking and swallowing. He had fever and was greatly emaciated. Pushing down the tongue with the depressor a round ulcer could be seen on the base of the pharynx of the size of a quarter of a dollar, surrounded by an inflammatory halo, with swollen edges, sloping down to a yellow grayish bottom. A mixed general treatment was begun, and local washing with peroxid of hydrogen and dressing with iodoform powder in short time brought about recovery.

Case 4.—In my hospital service, T. P., on February 18, 1895, was admitted with one of the same ulcers on his pharynx. He had acquired syphilis nearly three years before, and had been treated in the same institution. He had high fever and experienced great difficulty in swallowing.

This man like the others had been used to drink liquors and was in the habit of chewing tobacco.

The treatment, general and local, was like that of the other cases and in three weeks the ulcer was perfectly cicatrized and the patient left the hospital.

In the literature on syphilis of the pharynx there is not much said about this kind of lesions. Seifert¹ speaks of ulcerations, hard chancres, mucous patches of the tonsils and palate, but does not speak much of the pharynx. In the same way J. N. Mackenzie—"Syphilis of the Upper Air Passages"—speaks of secondary lesions of the pharynx as a result of lesions of the surrounding parts, mentions tertiary lesions, but nothing definite on this affection.

In my opinion, I find this ulcerative syphilid of the pharynx to be rather a rare one, considering that in a large number of syphilitic patients only four showed this affection. All the four cases were in men, and I never met with this affection in women.

I find this affection of great importance for the diagnosis, for the possibility of being exchanged with ulcerations of diphtheritic or of any other origin.

I do not consider the affection as a true tertiary lesion, but only as a late secondary ulceration. From the habits of the four patients I should come to the conclusion that the use of alcoholic liquors and chewing tobacco has a great deal to do with the production of this ulcerative affection. The irritation produced on the inferior portion of the pharynx by the passage of the alcohol and of the saliva saturated with the irritant tobacco juice is sufficient cause to excite a syphilitic inflammatory affection resulting in ulceration.

The affection is very painful, prevents the patient

¹ Syphilis der oberen Luftwege. Deutsche Med. Wochens., 1893.

from eating, and in all the cases was accompanied with fever.

The ulcer heals up readily when with a general antisyphilitic treatment a local antiseptic medication is used. A superficial, whitish scar is the result of this ulcerous syphilid, which remains always perceptible on the mucous membrane. I have never seen deep scars resulting from this affection, like those from the true gumma of the pharynx, which may result in a stricture and impairment of the function of the organ.

The coexistence of fever with this affection and the stormy inflammatory symptoms cause me to place it rather among the secondary symptoms of syphilis than among the tertiary. In the tertiary affections we see more tendency to a slow process of hypertrophy, as it is in the production of gumma, while in all secondary lesions we see a tendency to inflammation.

The local irritation as mentioned above, from the use of tobacco and alcohol, is the most effective factor in producing this peculiar ulcerative lesion of the pharynx.

LUPUS TREATED BY GALVANISM.

(ILLUSTRATED BY PHOTOGRAPHS.)

Read in the Section on Dermatology and Syphilography, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY B. MERRILL RICKETTS, M.D.

CINCINNATI, OHIO.

So much has been said concerning the various forms of lupus that I refrain from speaking of it from any other than a personal point of view. I would refrain from speaking of any other treatment than is herein mentioned, especially as I presented a paper to the Pan-American Congress upon the extirpation of lupus tissue.

It is conceded that constitutional treatment avails nothing in this disease, and I think that I am safe in saying that caustics and the curette are of little use unless carried to the extreme.

I wish now merely to report one of several cases in which I have used the galvanic needle with the greatest satisfaction. There is, however, one great objection to its use—that is the length of time required—but as the treatment is not imperative, the disease being exceedingly slow in its progress, I do not think that good results should be sacrificed for the want of time.

The length of time required to destroy a given area affected with lupus, depends upon the degree of tolerance on the part of the patient.

However, if the patient is an adult, or even a child, the amount of galvanism used may be almost without limitation, if a small amount of cocain has been previously injected within and about the affected area. In this way the tissue may be destroyed more rapidly.

Where there are several lesions to be treated, the effects of cocain in any one will pass off before it is necessary to inject another. In this way the length of time of a sitting may be indefinite, and the amount of cocain practically disregarded, if the amount used in any one lesion is not more than absolutely necessary to produce anesthesia.

As stated on a previous occasion, an operator should accustom himself to the use of but one kind of cocain, and he should familiarize himself with the



Mrs. M., white, aged 51, born in Ireland, mother of several healthy children. Lupus erythematosus began at the age of 30 on the face and neck. Treated for years for syphilis without result. Twenty-two lesions treated by galvanic needle, with twenty-one cured, not having returned in eighteen months; twelve excised with knife; three returned and were afterward treated by galvanic needle and did not return.



use of that kind, which should always be made into solution at the time of the operation.

By following these few thoughts I can hardly conceive of any accident occurring, or any pain resulting from the use of the needle.

The means of determining when the diseased tissue is destroyed are rather difficult to understand—experience counting more than all other things in determining that.

The insertion of the needle should be in every direction through the diseased tissue, and the application continued until all evidence of redness has disappeared.

The needle should extend through the integument, it not being necessary to attack anything beneath it; at least, this has been my experience.

I believe that galvanism is to the lupus bacillus

suggest. This she readily consented to do. There was at this time about fifty-eight lesions, both large and small. I excised twelve of the smaller ones with the knife and destroyed twenty-two, several of which were the largest, with the galvanic needle.

Three of those excised by the knife returned, while there was but one of the twenty-two destroyed by the needle which returned, that one being upon the forehead; its location caused me to discontinue the current before the lesion was entirely destroyed. I had reason at the time to believe that it would return. All of the four lesions returned within six months, and the three which had been excised were destroyed by the needle. The one on the forehead, however, has never been interfered with, and allowed to develop *ad libitum*. It has increased in size about one-fifth.



what arsenic is to the cells of epithelioma. I have not been able to find any other influence so satisfactory in their destruction.

The principal case in question is as follows:

Mrs. M., white, aged 51, born in Ireland, the mother of several healthy children, consulted me in the summer of 1889 for a number of lesions about the face and neck, which had existed about sixteen years and had been considered by many professional gentlemen as of syphilitic origin. She had used large quantities of iodid of potassium and mercury, both internally and externally, without any effect whatever. It had, however, been diagnosed as lupus vulgaris by one or two physicians in the community.

During my absence, my assistant again placed her upon the protiodid and large doses of iodid of potassium, without any result. She was under our care for several months and then disappeared from my notice. In the fall of 1893, she again consulted me and I then advised her to accept whatever I might

Of the thirty-four lesions destroyed, but one remains to be seen.

Sickness, death, and other misfortunes in her family have rendered it impossible for me to continue my work in this case, which I regret exceedingly.

I herewith present the photographs taken six months after the treatment had been commenced. There are, of course, cicatrices as the result of the destruction of tissue.

It is now twenty months since I began the work, and but one of the fifty-eight lesions remain—that upon the forehead—which had been attacked by either the needle or knife.

I hope, in course of time, to make a subsequent report upon this case, and I herewith submit it for your consideration, fully realizing the discouraging feature of any treatment in any form of lupus.

"The Trinidad."

SUGGESTION AS AN IDEO-DYNAMIC FORCE.

Read at the meeting of the Chicago Academy of Medicine.
Dec. 15, 1885.

BY W. XAVIER SUDDUTH, M.A., M.D., F.R.M.S.
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CHICAGO.

Among the many curative agents that have been brought forward during the last few years none is attracting wider attention at the present time than the subject before us. Technically speaking suggestion is the active principle of all psycho-therapeutic measures. Its discovery was the result of years of labor in the laboratories of the biologist and experimental psychologist. In the fullest sense it is therefore the legitimate child of science and not an outcast as some would try to make out. With such parentage it behooves us to look well into its claims and study the phenomena of its manifestations.

Like many other curative agents discovery of suggestion came about through close observation of pathologic conditions. Just as the study of bacteriology in its relation to pathology resulted in the formulation of the germ theory of disease and the subsequent discovery of antiseptics and serum therapy, so has the study of morbid psychology established the value of suggestive therapeutics in the treatment of functional derangements.

The late Daniel Hack Tuke was the Virchow of psychologic medicine and his works stand to-day as classic monuments to his memory. His labors extending over a full quarter of a century have thrown a flood of light upon the influence of the mind on the body in the production of disease. He was a pioneer in the field of morbid psychology and while he was preceded by great lights, yet his light showed clear to the end.

Unzer, as early as 1771, wrote "Expectation of the action of a remedy often causes us to experience its operation beforehand," and the immortal John Hunter, whose breadth of intellect enabled him to grasp many scientific truths generations ahead of his time, lectured to his classes in 1786-7 on the subject of "Attention and Expectation." Johannes Muller in 1838, gave added light to our understanding of the influence of mental states over bodily functions. He held as a general fact "that any state of the body, which is conceived to be approaching and which is expected with an unfailing confidence, will be prone to ensue, as the mere result of an idea, if it do not lie beyond the bounds of possibility." Braid, in 1841 threw a flood of light on the influence of the mind upon the body by his investigations into mesmerism, which he rechristened hypnotism. In the compiling of his book "Influence of the Mind upon the Body" Dr. Tuke drew upon an extended personal experience and from over one hundred authorities upon the subject. I should be vain indeed to hope to add to the scope of his labors in that direction but such is not my intent; in this paper my sole purpose is to offer a possible explanation of the method of application and the operation of suggestion in the treatment of disease.

In order that we may proceed intelligently to the consideration of the subject let us first seek to establish a definition for suggestion.

James Mark Baldwin, M.A., Ph.D., Stuart Professor of Psychology in Princeton University, in a recent work (1895) on the "Mental Development in the Child and the Race," discusses the subject and

defines suggestion "as the tendency of a sensory or an ideal state to be followed to a motor state" and says "it is typified by the abrupt entrance from without into consciousness of an idea or image, or a vaguely conscious stimulation, which tends to bring about the muscular or volitional effects which ordinarily follow upon its presence." Janet defines suggestion as "a motor reaction brought about by language or perception." This narrows the field to certain classes of stimulations, well defined in consciousness, and overlooks the more subtle suggestive influences emphasized by the Nancy school (of theorizers). Schmidkunz makes it: *die Herbeiführung eines Ereignisses durch die Erweckung seines psychischen Bildes.*¹ This again makes a mental picture of the suggested "event" in consciousness necessary, and, besides, does not rule out ordinary complex associations. It neglects the requirement insisted upon by Janet, *i.e.*, that the stimulus be from without, as from hearing words, seeing actions, objects, etc. Wundt says: *Suggestion ist Association mit gleichzeitiger Verengerung des Bewusstseins auf die durch die Association angeregten Vorstellungen.*² In this definition Wundt meets the objection urged against the definition of suggestion in terms of complex association, by holding down the association to a "narrowed consciousness;" but he, again, neglects the outward nature of the stimulus, and does not give an adequate account of how this narrowing of consciousness upon one or two associated terms, usually a sensori-motor association, is brought about. Ziehen says: *In der Beibringung der Vorstellung liegt das Wesen der Suggestion.*³ Here we have the sufficient recognition of the artificial and external source of the stimulation, but yet we surely can not say that all such stimulations succeed in getting suggestive force. A thousand things suggested to us are rejected, scorned, laughed at. This is so marked a fact in current theory, especially on the pathologic side, that I have found it convenient to use a special phrase for consciousness when in the purely suggestible condition, *i.e.*, "reactive consciousness." The phrase "conscious reflex" is sometimes used, but is not good as applied to these suggestive reactions, for they are cortical in their brain seat, and are not as definite as ordinary reflexes. Baldwin continuing says, "For my present purposes, the definition I have given from my earlier work is sufficient, since it emphasizes the movement side of suggestion. The fundamental fact about all suggestion—not hypnotic suggestion alone, which some of the definitions which I have cited, have exclusive reference to—is, in my view, the removal of inhibitions to movement brought about by a certain condition of consciousness, which may be called suggestibility. The further question, what makes consciousness suggestible, is open to debate. There are two general statements—not to elaborate a theory here however—which are not done justice to by any of the earlier theories. We may say, first, that a suggestible consciousness is one in which the ordinary criteria of belief are in abeyance; the coefficients of reality, to use the terms of my earlier discussion of belief, are no longer apprehended. Consciousness finds all presentations of equal value, in terms of uncritical reality-feeling. It accordingly responds to them all, each in turn,

¹ Psych. der Suggestion.

² Hypnotismus u. Suggestion.

³ Philos. Monatschrift, xxix., 1893, p. 489.

readily and equally. Second, this state of things is due primarily to a violent reaction or fixation of attention, resulting in its usual monoideism, or 'narrowing of consciousness.'"

Professor Baldwin's studies as outlined in his book, were made upon his own children and constitute the most elaborate line of research on the subject yet published, and beginning as they do with the dawn of consciousness they are specially valuable as being divested of any suspicion of auto-suggestion, the result of previous education. On this point he says, "Observation of an infant for the first month or six weeks of its life leads to the conviction that its life is mainly physiologic. The vacancy of consciousness as regards anything not immediately given as sensation, principally pleasure and pain, precludes the possibility of ideal suggestion as such. The infant at this age has no ideas in the sense of distinct memory images. Its conscious states are largely affective. Accordingly, when the reactions which are purely reflex and certain random impulsive movements are excluded, we seem to exhaust the contents of its motor consciousness."

"Yet even at this remarkable early stage, first six weeks, H. was found to be in a degree receptive of suggestion,—suggestion conveyed by repeated stimulation under uniform conditions. In the first place, the suggestion of sleep began to tell upon her before the end of the first month. Her nurse put her to sleep by laying her face down and patting gently upon the end of her spine. This position soon became itself not only suggestive to the child, of sleep, but sometimes necessary to sleep, even when she was laid across the nurse's lap in what seemed to be an uncomfortable position."

On the point as to what constitutes a suggestion we have long held that anything that suggests or conveys an idea to the sensorium is a suggestion. (*Vide* JOUR. AMERICAN MED. ASSOCIATION, Nov. 30, 1895.) In this position we are supported by Professor Baldwin also who, in discussing various sleep suggestions, says: "From the first month on, there was a deepening of the hold upon the child H. of the early method of inducing sleep. The nurse, in the meantime, added two nursery rhymes. Thus position, pats, and rhyme sounds were the suggesting stimuli. Not until the third month, however, was there any difference noticed, when the same suggestions came from other persons. I myself learned, during the first month, to put her asleep, and learned with great difficulty, though pursuing the nurse's method as nearly as possible. Here, therefore, was a suggestion, from the personality of the nurse, her peculiar voice, touch, etc., of which mention is made more fully below. At this time I assumed exclusive charge of putting H. to sleep, in order to observe the phenomena more closely. For a month or six weeks I made regular improvement, reducing the time required from three-quarters of an hour to half an hour, finding it easier at night than at midday. This indicated that darkness had already become an additional sleep suggestion, probably because it shut out the whole class of sensations from sight, thus reducing the attention to stimulations which were monotonous. I found by accident, in this connection, the curious fact that a single flash of light would often put H. immediately to sleep when all other processes were futile. In her fifth month I despaired one evening, after nearly an hour's vain effort, and lighted the

gas at a brilliant flash unintentionally. She closed her eyes by the usual reflex, and did not open them again, sleeping soundly and long. I afterwards resorted to this method on several occasions, carefully shielding her eyes from the direct light rays, and it generally, but not always succeeded. Shortly after noticing this in the columns of *Science* (Feb. 27, 1891), I heard from a prominent psychologist that his wife could confirm the observation from experience with her own children.

"In the following month (sixth), I reduced the time required day or night, to about a quarter of an hour, on an average. In this way I found it possible to send her off to sleep at any hour of the night that she might wake and cry out. I then determined to omit the patting, and endeavor to bring on sleep by singing only. The time was first lengthened, then greatly shortened. I now found it possible (sixth to seventh month) to put her to sleep, when she waked in the dark, by a simple refrain repeated monotonously two or three times. In the meantime she was developing active attention, and resisted all endeavors of her nurse and mother, who had been separated from her through illness, very stubbornly for hours, while she would go to sleep for myself, even when most restless, in from fifteen to thirty minutes. This result required sometimes firm holding down of the infant and a determined expression of countenance."

"At the end of the year, this treatment being regular, she would voluntarily throw herself in the old position at a single word from me, and go to sleep, if only patted uniformly, in from four to ten minutes. This continued through the second year, even when she was so restless that her nurse was unable to keep her from gaining her feet, and when she screamed if forced by her to lie down. The sight of myself was sufficient to make her quiet, and in five minutes, rarely more, she was sound asleep. I found it of service, when she was teething and in pain, to be able to thus give her quiet, healthful sleep."

The Dictionary of Psychologic Medicine says: "Suggestion in its widest sense may be defined as an act by which an idea is introduced into and accepted by the sensorium. Every idea is transmitted to the brain by a sense organ, but it does not, however, become a suggestion unless it is accepted, and this acceptance often takes place by reason of the tendency to credence inherent in the human mind. The idea may be transmitted directly by the suggested speech to the brain as a direct suggestion; or, again, it may be created by the brain in consequence of an impression received—indirect suggestion. In the latter case psychic individualism comes into play, so that the same impression may give rise to different suggestions, because each brain-reaction in its own peculiar way transforms the impression differently. The first impression is the germ of the suggestion, and is elaborated by the fertile mental soil. The suggestion having been made, and the idea accepted by the brain, there then follows a centrifugal phenomenon—every suggested idea which has been accepted tends to become an act—i. e., sensation, visual image, movement, action, passion, etc., or in other words, every cerebral cell stimulated by an idea stimulates those nerve-fibers which are to realize this idea. This is the law of ideo-dynamism, as we call it. No one has understood this law better, and illustrated it by more numerous examples, than Dr. Hack Tuke in his

'Influence of the Mind on the Body.' The idea thus may become a sensation—*e. g.*, the idea of having fleas causes the sensory phenomenon of itching. The idea may become an image—*e. g.*, hallucinations during sleep and when awake. The idea may become a visceral sensation or organic action—*e. g.*, the administration of bread-pills as a purgative, vomiting by a substance believed to be an emetic, etc.; or the idea may become movement or action—*e. g.*, table-turning and the phenomena of thought-reading are based on this fact."

Foster's Encyclopedic Medical Dictionary gives the following definition: "The act of suggesting; the thing suggested: Hypnotic suggestion; the process by which an hypnotized person is made to accept a hint or statement, although it may be unfounded, and to act accordingly."

It will be observed that both Tuke and Foster raise the point of credulity in the hypnotic state. It is this very condition of childlike faith found in hypnosis that makes that state so favorable for the presentation of suggestions. Born of our life experiences we build up in our minds certain conceptions of our body, its functions and its diseases. In most instances they are crude and imaginary, but nevertheless they are real to us. It is strange how these self-developed ideas dominate our after existence, many times to our serious physical injury. This is also true of our conceptions of our material environment, so much so that sometimes I feel like saying that the thing perceived is to the perceiver only what to him it appears to be.

In the hypnotic state these self-constituted pictures of persons including our own selves, and things are to a very great extent set aside and a childlike condition of mind established. The mind becomes, as it were, a clean sensitive plate for the reception of all concepts or ideas that are brought within the range of its vision, provided the ideas suggested do not antagonize the individual's conception of right and wrong or directly endanger his physical welfare. While it is true that we do not fully comprehend the *modus operandi* by which suggested ideas are carried out, yet we do know that physical, intellectual or moral experiences, in order to influence mental states, must find recognition within the sensorium. Otherwise they are inoperative. It is not, however, essential that they come within the grasp of consciousness, as some hold, in order that they become causal impulses. This is shown by the results of post-hypnotic suggestions that are made in the hypnotic state with total amnesia upon awakening. Such suggestions are often carried out in the waking condition after an indefinite lapse of time. Then again, we only hear a fragment of the unending song of weal and woe and catch but a passing glance at the panorama of printed matter that flows constantly from the jaws of the unnumbered printing presses, that form such important factors in our daily experience. Neither do we apparently take cognizance of the on-rushing tide of humanity that sweeps by continually, but nevertheless it all goes to make up our individual environment and has its molding influence upon our lives.

An idea, sensation or experience that once comes within the grasp of our sensorium, consciously or unconsciously, remains ever after to influence our bodily functions and actions in life. Changes in consciousness are reflected in the domain of the physical whenever the circumstances or conditions are propi-

tious for their production. Time will not permit to enter into the discussion of the modifying influences of preëxisting states of consciousness upon new perceptions; permit me to say, though, in passing, that the latest thought acquisition has to pass through the test of digestion and assimilation much as does organic matter in the physical body, before it finds its place among recognized mental states.

The intimate relationship existing between mental states and physical conditions is only to be understood by a close investigation from the standpoint of psychology. Biology, except to reveal the mechanism, has thrown very little light upon the subject, by reason of the fact that biologic processes, to a greater or less extent, annihilate the vital element in nature by the methods necessarily used in its investigation, consequently the only rational manner of approaching the subject is from the side of psycho-physics, which let us proceed to do.

Impulses arise as the result of central nervous activity that is generally sub-conscious in character, although back of this unconscious cerebration there may lie a sensorial experience. All function, conscious and unconscious alike, has its inception in the sensorium. Our personality, physiognomy and bodily form as a whole is but the visible expression of this subtle, all-pervading, central force. Tendency and desire constitute the mainspring of all function and exert an irresistible influence upon form as well. "As a man thinketh in his heart, so is he," is as literally true of the physical as it is of the moral nature. By tendency is meant the hereditary influences, both physical and mental, which undoubtedly have their direct influence upon volition.

In the main the will may be classed as an inhibitive force, and as such it serves an excellent purpose in nature by regulating desire which might otherwise run away with the organism were it not thus restrained. According to Schopenhauer,¹ "emotion and feeling are states of the will and include all conditions of apprehension from mere wishing to the intensest passion." Volition is the outward expression of desire coupled with belief in the attainability of the object desired. Motion and emotion are distinctly separate experiences, yet we find them closely related in life; in fact, the only way that emotions can rise into the realm of the conscious is through the objective or physical organism, for they are undoubtedly subjective characteristics. The intimate inter-relationship of the subjective and objective parts of man's nature forms a most intricate study over which much contention has arisen.

Ladd, with whom our investigations lead us to agree, says, in his "Philosophy of Mind:" "The dualistic theory is the popular and only justifiable metaphysics for the investigator who wishes to confine himself as closely as possible to the scientific study of either mental phenomena or the phenomena of the physical sciences. It is the only intelligible and defensible conclusion of a critical metaphysics as applied to the study of the real relations of body and mind." "The ordinary objections to the dualistic view of the real relations of body and mind have reference to certain differences in conceptions of the nature and application of the principle of causation." "On this point the opponents of dualism are wont to criticise its adherents for their view of the interaction of these two alleged

¹ Fourfold State and Will in Nature.

substances." "The word interaction may be used appropriately enough to describe under one term all relations in reality between the body and mind, if only clear and consistent conceptions as to the meaning of the word be formed and maintained."

The more radical school of evolutionary psychologists, perhaps best represented by James, of Harvard, holds to the theory of a "mind dust" and says "that if evolution is to work smoothly, consciousness in some shape must have been present at the very origin of things." While I am willing to admit the reasonableness of the latter part of the proposition, I do not see any reason for claiming a "nebular" origin for mind or intelligence upon such a premise. It would seem more rational to hold to the theory of superiority and preëxistence of intelligence, which in this instance would represent mind, and claim that it finds expression in nature, body, as an essential part of it; molding, modifying and using it to suit its own purpose, and when finally done with it casting it aside as a worn-out garment.

Individual intelligence is a matter of growth based upon personal experiences rising out of special environment. This intelligence is not a *de novo* product of highly endowed matter, because even the lowest forms of life present some degree of intelligence, but in its higher manifestations it is the outgrowth of two forces working conjointly for the upbuilding of a more perfect organism. The first principle, therefore, to be laid down as offering a working hypothesis as to the probable channel through or by which suggested ideas may be made to assume definite form in action or activity of bodily function, is to be found in the reciprocal interdependence of body and mind. We learn, as children, of our ability to perform certain acts by finding ourselves involuntarily performing them. Indifferently it may be at first, but action once born, we go on voluntarily, improving upon our first efforts until a certain degree of perfection is finally acquired. Some one has said that confidence, or faith, is born of the knowledge of having once successfully performed an act.

In the main, voluntary function is performed within the realm of consciousness, but what of so-called involuntary function? Hypnotic experience is rapidly convincing experimenters in this field of psychologic investigation that there is really no such condition as involuntary function, but that which passes for such, is only so because of the lack of knowledge of how to induce a condition of voluntary activity in any particular organ or tissue. Any attempt to discuss this phase of the question leads to the consideration of the nature of causation and the principles that underlie the inception of any given chain of movements or series of bodily functional activities, to which let us now turn our attention with the view of determining, as far as possible in the limited time at our disposal, how the mind operates upon the body in health and disease.

I have already alluded to the interdependence of mental states and bodily conditions, and indicated the fallacy of having one theory for the principle of causation of mental states and an entirely different theory for the phenomena of bodily function. We speak of the former, mental states, as being caused, influenced and determined by the latter, therefore if the law of interdependence be true we should not hesitate to speak of mental states as causative agents in determining bodily conditions, within certain lim-

itations. Favorable physical conditions are a prime necessity for the highest state of functional development. Diseased conditions of the mind invariably cause disease of the body by perversion or inhibition of normal functional activity, but it is not our intention to enter into this part of the subject any further than is necessary in order to establish the channel of action in diseased conditions and point out the probable line of procedure necessary to establish healthy function when once it has been disturbed, by calling to our aid the active coöperation of suggestion, attention and desire as dynamic forces of the mind.

Nature has beneficently arranged her plans so that all necessary function is pleasurable and, in the main, performed within the realm of unconsciousness. Whenever any function comes prominently into the field of consciousness so as to fix itself in the attention, it is in serious danger of becoming diseased. It is neither comfortable nor safe for the working of any bodily function, except under the direction of a skilled physician, to come under the influence of the attention for any considerable length of time. This danger will be more fully appreciated when it is known that attention is the offspring of the emotions and consequently embodies motor phenomena. It, attention, therefore may become a serious vital depressant or hyper-excitant, and the converse is also true, that rightly directed it may be made a powerful stimulant to increased functional activity, and thus aid in the restoration of healthy function.

Ordinarily attention is an effect and not a cause, and nature has so ordained it; otherwise it might be made to hold on to some one function (persistent idea) to the exclusion of all others, and thus act to the detriment if not the fatal injury of the organism as a whole. The highest achievement of volition conceivable is the fixing, by force of the will, a disagreeable object or function in the attention and there keeping it continuously until ideomotor impulses have arisen. In such instances the fact is plainly demonstrated that attention is an effect with motor impulses and under the control of the will of the individual. The will in this instance operates by inhibition and suggestion operating through the will tends to fix the attention on one object or set of ideas, consequently making attention its basis of operation.

Attention may be divided, for convenience of study, into two forms; natural or involuntary and educated or voluntary. The first is exhibited by all animals, man included, and is the lowest form of this force. It is the form also that has to do with most bodily functions. The second form, educated attention, is the higher of the two and to a very great extent is confined in its manifestations to educated man and a few of the domesticated animals. The power of attention is in a direct ratio to the intelligence or intellectual attainments of the individual, irrespective of genera, species or sex, and depends upon the action of the mind for its maintenance and is therefore essentially a motor phenomenon acting through the muscular system. It may become an inhibitive force when so directed by the mind as well as a progressive power. Healthy function, as we have indicated, is a pleasurable habit, or should be, and in its natural performance belongs to the realm of involuntary unconscious activity. This is shown by the bodily habits of dumb brutes and uncivilized man. In the gratification of their animal desires

and the performance of necessary bodily function these respect neither times, places nor persons. The same may be said of the infant offspring of civilized man and household pets in general. Not until they have been taught by experience do they show any sense of the fitness of things. Even in those commonest of functional activities—micturition and defecation. Necessity and the frequent calling of the attention to the ethics of the matter finally, if the individual is possessed of any degree of intelligence, places these functions on the voluntary list and brings them under the domain of voluntary attention, thus demonstrating that voluntary attention is a child of education, the product of civilization.

Now, if compulsory education can be made operative in the above instances and in many others, had we time to recount them, it stands to reason that if the means of enforcing or directing the attention could be known for each and every function, voluntary functional control in healthy organs could be established at all times and also reestablished when suspended provided the sensori-motor tracts had not been abolished by disease processes. I believe that the day is not far distant when so-called involuntary function will be superseded and that man will be able to bring all his organs under subjugation to his will. The heart and uterus have hitherto been classed as involuntary organs, but physiologic investigations in the domain of hypnosis have demonstrated that they are amenable to suggestion to a greater or less extent in susceptible subjects, and if this is true in certain cases it goes to show that if the right line of procedure were adopted, that their control might be made universal to the great advantage of the individual in the treatment and prevention of disease. The rapid advances made in the study of physiologic chemistry within the past few years has thrown much light on the nature of function, and it now remains for experimental psychology to point out the means for its control. The law of nature is in harmony with a constant tendency toward restoration when once discord or disease exists.

With all that has been said and may be said, truthfully or otherwise against psycho-therapeutics, no physical injuries can be laid to its door, which is more than can be said of any other specific line of treatment. I say specific because where it is applicable, no drug can be more certain in its results. It has its limitations just as any other therapeutic agent, and its advocates do not put forth claims for it as a "cure all," but do strongly urge its use in its proper sphere. Suggestion is a positive force and a direct causative agent in the control of functional activity and a most useful therapeutic agent in the restoration of healthy function when once it has been disturbed by any cause, except wasting disease that has destroyed the organ itself, in which case no agent can do more than relieve the distress, and in this phase of treatment suggestion stands without a rival. Beginning as an empirical practice, even as more material medicine did, in many instances psycho-therapeutics is rapidly reaching a scientific basis in Europe and to some extent in this country. It has been my good fortune to have had the opportunity to look into the methods of its advocates abroad to a considerable extent and I have become fully convinced of its efficacy in the treatment of certain pathologic conditions. It is true that up to the present these have been

largely in the nature of neuroses, but with the rapid advance in our knowledge of the nature of function through researches in physiologic chemistry and experimental psychology I look forward to a much wider field of usefulness for this natural remedy of perverted function. Let me therefore for a few moments call your attention to the probable line of its application.

As we have before seen, all function has its inception in the sensorium and any derangement in this center, either functional or organic, is liable to find expression in disordered functional activity. Diseased mental states, however, are much more common than we are wont to think, because they do not show as such directly but are often times reflected in different parts of the system. The emotions, fear, grief, anger and hate have long been known as having a marked effect upon the human barometer and should receive careful consideration at the hand of the general practitioner. Fear is especially most subtle and lasting in its influence. Many cases might be cited where fatal results have been produced through fright, and on the other hand, joy is also said at times to kill. The quickest way to effect cures in bodily ailments arising from emotional causes is to go directly to the seat of the disease, the mind, and disabuse it of its hallucinations by appealing to its understanding rather than to the organs, which only reflect the central disease. It is generally well to treat urgent symptoms from the standpoint of general therapeutics because most patients have been brought up with the material idea of the potency of drugs, consequently the strongest suggestion that can be made under such circumstances is the administration of some medicament with the action of which he is more or less familiar, the idea being to create the quickest and firmest mental impression possible. But every physical suggestion, even if it is only in the nature of a placebo, should be accompanied by verbal suggestions. Many a case has been relieved by similar lines of treatment and a permanent cure established by continued suggestion directed toward the restoration of healthy function. There is hardly a diseased functional condition to which the human body is prone that may not be directly benefited, if not permanently cured, by the aid of suggestive therapeutics; not only this but many organic lesions are improved, indirectly, by controlling the vascular supply and inhibiting destructive metabolism until vital processes may be restored.

Pain may be thus inhibited, a fever lowered and the pulse controlled. Nervous dyspepsia is often permanently cured. Also neuropathic affections, including hysteria, insomnia and paralysis, have been cured. The various forms of nervous prostration are specially amenable to treatment by suggestion. Chorea is easily handled; epilepsy controlled as by nothing else and dysmenorrhea cured. Organic diseases of the nervous system are improved indirectly by relieving the reflex symptoms and thus doing away with the strain upon the organism as a whole. Stammering, in cases where there are no physical lesions, which are seldom found, readily succumb to suggestion. The extended field of reflex neuroses are benefited by suggestion and nearly all the disagreeable symptoms of rheumatic affections relieved. Alcoholic and other forms of inebriety, including tobacco and other vicious bodily habits in general, are successfully treated in most all cases. Perver-

sions of the sexual instinct are most happily handled by suggestion. Melancholia and paranoia in general form a fruitful field for its application.

Suggestion may be administered in the waking state, but the happiest manner of presenting it is in the hypnotic state, because in that state there exists the special form of passivity which is most conducive to the highest receptivity of suggestion. After a patient has been hypnotized several times this method is dispensed with and suggestions made in the waking state. By reason of the fact that the subjective mind is incapable of inductive reasoning, it is necessary that the successive steps to be pursued in the treatment of any given case should be specifically outlined at the beginning of each sitting in order that the best results may be attained. This rule is equally applicable to suggestive treatment in the waking state, as such methods are based on pure psychologic grounds and tend to secure the greatest degree of confidence in the line of treatment adopted and best operates to secure the establishment of ideo-motor and ideo-dynamic impulses in the restoration of healthy function.

The phenomena of perverted functional activity have long been before us, the fullest application of the cure is yet to be made, for as yet we have only caught a glimpse of the boundless possibilities of suggestive therapeutics coupled with a judicious use of specific drugs. Bernheim says: "It is a physiologic law, that sleep puts the brain into such psychic condition that the imagination does accept and recognize as real the impressions transmitted to it. To provoke this special psychic condition by means of hypnotism and cultivate the suggestibility thus artificially increased with the aim of cure or relief, is the rôle of the psycho-therapeutics." Couple with this a careful scientific explanation of the functions of the disordered part and the specific line of action of any drug in aiding nature in the cure of the condition, and an ideal line of treatment is established. While suggestive therapeutics is not a new subject, it has only within the past few years been placed upon anything like a scientific basis. With the advance in our knowledge regarding the physiology of function through physiologic chemistry and psychology we are becoming better prepared to direct it. The power of the imagination has long been called upon to assist in the cure of diseased conditions. Lack of knowledge as to how the special functions of the body produce results has prevented the intelligent use of this agent in the past. History is, however, full of the miraculous cures of all manner of disorders. The strong hold that faith cure and Christian science have gotten upon the people, witnesses the power of suggestion in the treatment of disease.

Suggestive therapeutics, like all other lines of treatment, has its limitations, else final dissolution could be abolished. The first limit is lack of faith in the complete efficacy of the remedy. We stop short of success in many things in life by reason of our inability to persist to a finish. This is not always the result of lack of faith, but is, many times, a physical defect. Poor human nature becomes exhausted, and we give up the ghost, literally as well as figuratively. There is a limit to the resistive quality of protoplasm just as positively as there is a point where cohesion in the molecules of metals fails, and yet it goes without dispute that

the will has saved the life of many a man by carrying him over the crisis. Physicians all recognize it in the treatment of disease.

In conclusion, I desire to say that I am a firm believer in the value of suggestion in medical practice, and that experience, based upon years of scientific study in the phenomena of function, leads me to earnestly advocate the use of hypnotic suggestion alone in the treatment certain forms of disease and its general use as an adjunct to already accepted therapeutic measures.

100 State Street.

A SIMPLE METHOD OF DRESSING FRACTURES OF THE EXTREMITIES. AN AUXILIARY TO THE BANDAGE.

Read in the Section on Surgery and Anatomy, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY JOHN EPH. LINK, M.D.

TERRE HAUTE, IND.

My object in this paper with demonstration, is to present a simple, effective and convenient method of dressing injuries of the extremities, especially the lower, whether of fracture as the paper is headed or dislocations, sprains or contusions and lacerations of muscle or tendon, everything indicating rest of tissue; a dressing embracing the principle of rest without restraint; a simple auxiliary to the bandage.

I hope to be able to demonstrate at some future time that all progressive tendency to displacement from reflex irritation can be avoided by placing the muscles in a state of rest by simply encasing the limb in an easy environment.

The bandage of old, well worn muslin in successive layers comes as near meeting these indications as any other and with nack can be made almost, if not quite, as effective in soft even cushioning as with the cotton batting and much more retaining.

The device that I have adopted is the thin shavings of birch wood used in commerce for packing tubs and buckets, which I here present; and as you will, I think, readily comprehend enables one to lay the bandage equally as smoothly and is a safe-guard, against their being easily displaced; a most desirable consideration where it is so desirable, as in cases of fracture, to maintain the parts in a fixed position for a considerable length of time. The advantage of this over the plaster dressing is two-fold, first, ventilation, the admitting of free air and free exhalation from the body, as we have markedly here the advantage in irrigation and washing of limb and dressings without removing the covering. The bandage and splints are susceptible of being washed clean from all fouling of secretions; even the skin made so in bathing through the covering either with hot or cold water, as may be preferred, in a few minutes time, by continuous irrigation. After a thirty minutes' washing the dressing will again dry in a little longer time, say in one hour. The special advantage that I have found in the use of the shavings of wood over zinc tin, is that there is just sufficient roughness in their surfaces to make a firm cohesion with the bandage when applied wet, and more or less pliable alike whether wet or dry, and in their extreme thinness, easily fitted, by fraying, to the irregularities of the limb, protuberances and depressions.

You will notice in the illustration I present you that the spreading is easy and graceful, fitting over the enlargements and that the overlapping at points of narrowing is not bungling; and further with a pair of blunt scissors which you may carry in your vest pockets, the parts of segments can be clipped away so as to avoid even this small amount or irregular thickening if desired, and at the same time not interfere with the utility of the splint, and as layer after layer can be sandwiched with the consecutive layers of the bandage we can easily so shift the pieces as to compensate in the one for the deficit of the other, and when after the limb is once so environed we have lightness and strength combined a perfect retention with a minimum part of cumbersome restraint to the injured tissue. There will be also a lack of the feeling of arbitrary force as in the more cumbersome dressing and, as I think you will at once comprehend, a better physiologic reparative condition.

Excuse me, if I here may seem to impose upon your time and patience in suggesting a further thought,



As applied on an artificial limb for demonstration before the session.

that with the interwoven splint and lines of the roller bandage circular, diagonal and longitudinal, up and down the axis of the limb, that the changing of any part of your dressing to the extent of weakening the support or adding to the discomfort of the patient by pulling in cords drawing or pressing from thickening, as is liable to be the case in the cotton under the plaster, or of the plain roller bandage, without stiffening. You will find after weeks of wearing of the shavings that your dressing, bandage and everything else is as smooth and perfect as the hour you first adjusted it.

My experience in observation is that there will be, in no instance, that stiffness of joint or shrinkage in the muscles as is apt to be the case with the more stiff and arbitrary enveloping of the limb, as in plaster or silicate dressings. There will be, at no time, during the time of applying this dressing any danger

of losing the proper control of the injured member, as from sudden stiffening nor delay of hardening, as in the use of plaster of paris.

The nature of the stiffening from non-friableness and cohesiveness of the wood and muslin as above, is such that if timely looked to can be changed a little here or there, more or less. You will, I have no doubt, be surprised to learn, in some of these efforts at changing, and appreciate the firmness with which even a small piece or mere splinter, it may be, will remain in its place and thus be assured of the reliability of the method. When you have finished with a few layers completely surrounding the limb, you can lift it with impunity, changing from place to place with the least danger of displacement of the fragment and a minimum of discomfort to your patient. I can only assure you that I have frequently dressed a compound fracture of the leg with loss of substance of tibia and fibula of several inches, with perfect results in the normal line and length. The parts were kept healthy and clean by irrigation or washing for weeks, and until repair was perfect, without changing.

ASEPSIS AND ANTISEPSIS IN OTOTOLOGY.

BY J. HOLINGER, M.D.

CHICAGO.

The application of the principles of asepsis in all their details has brought great progress in general surgery, in hygiene and in the particular branches of gynecology, obstetrics and ophthalmology; but in some other departments of medicine much is still to be done, before the ideal condition desired by the friends of asepsis will have been attained. Among these latter it seems to me that otology must be included, and that as regards it, the greatest number of scientists underrate the value and misunderstand the necessity for the strictest asepsis. Of course in large operations the instruments are boiled, the patient is cleaned, and as a rule the operator's hands are more or less carefully disinfected. But between this and a complete, consistent and thorough asepsis there is a wide difference. The principles of asepsis should be carried out in otology in the routine examinations of the ear, and especially in the seemingly unimportant details of ambulatory practice. A little reflection will show that hardly anywhere is strict asepsis of more value than in ambulatory practice. Except in cases of very small children we have to use instruments in every examination, and to use them in parts of the body normally covered by only a very tender epidermis, parts that are not accustomed to nor able to endure irritations and that hence are extremely vulnerable. Furthermore, there is no physician who comes so much into contact with putrid and virulently infective material as the otologist. Yet it must be admitted that there are many otologists who do not acknowledge the necessity of asepsis in their department. Their view is not based upon the absence of ill results in their cases, because such results do exist though they are not always readily recognizable and their recognition demands an experienced eye. Even when recognized, there is often lacking in those who are responsible for them the courage to admit them either in public or in private. If a confinement case be managed improperly and uncleanly, the evidences of infection will appear within a few days at the very spot where it occurred

and a violent form of sickness results. In that case there are hundreds of widely open lymph channels to carry the infection into the blood; but in diseases of the ear the avenue of infection is less apparent and the process is slower, since it takes place through minute openings in the bone. A violence done to any soft part with an infected instrument will show its effects at the very spot within a few days in the form of an acute inflammation, but in otology the place, the time, the manner, the where, when and how of infection are entirely different from what we expect. This is proved by a few examples. Who would expect an erysipelas of the face to originate in a minute injury made by an unclean Eustachian catheter on the mucous membrane far back in the nose? Yet precisely such cases are not infrequent. Again, it would seem hardly possible that a middle ear suppuration of twenty years' standing and ending in necrosis, cholesteatoma, deafness, cerebral abscess and death should have been due to the use twenty years earlier of an unclean ear speculum or probe used by a doctor, or of a hairpin used by a mother in cleaning her baby's ear. Yet such is the origin and history of cases that occur not infrequently in practice. The explanation becomes clear to any one who will follow up the results of bacteriologic examination of aural secretions. It has been established by the independent researches of many investigators that the pus of acute otorrheas contains as a rule only one species of bacilli or cocci and only exceptionally any streptococci; whereas in chronic cases these latter are usually present. In other words, *acute infections of the ear are due to a single species of microorganism and heal quickly; while chronic otorrhea is due to a mixed infection with streptococci.* Hence the force of the old saying: "As soon as you treat (with non-sterilized instruments) an acute suppuration of the ear, it becomes chronic." No more apt vehicle for mixed infection can be conceived than an ear speculum if it is not properly disinfected, for when used in a suppurating ear its lumen is certainly soiled by the pus and when applied to the next patient's ear the infectious material is carried inward by the probe and cotton. Thus a chronic otitis is generated which insidiously destroys hearing, and perhaps after the lapse of years even imperils the victim's life. Not less frequent is infection of the soft parts of the external meatus through imperceptible and scarcely avoidable excoriations made by unclean specula. Sometimes the whole meatus is filled with pus, and this a careless examiner may press into and massage into the tissues. The infection will manifest itself either in the form of a general inflammation of the auditory canal or in a local furunculosis. It will not endanger life nor will it last for years, but it causes much pain, and by depriving the patient of sleep and appetite may injure him seriously.

Beside these forms of infection which remain localized, unclean aural instrumentation may be also a means of introducing chronic general poisons, such as those of tuberculosis and syphilis. Many otorrheas are tuberculous, and they may be so without there being any other tuberculous affection present in any part of the patient's body. Cases are recorded of general miliary tuberculosis following a tubercular osteitis of the temporal bone. In the case of syphilis, the sequence can be traced out more directly and more surely. A number of cases have been published of syphilitic primary lesions within the nose

and doubtless many more have not been published or have escaped observation. The statement may seem exaggerated, but I believe that it furnishes an explanation for some obscure cases of syphilis without any visible scar of a primary infection on the whole body. Some practitioners may shake their heads and smile at these views and go along in their old dirty ways. So did others when Pasteur and Lister published their principles and results. Time will prove the right. Certain I am that when legislation deals fully with the permissible and the criminal acts of physicians, it will devote a chapter to avoidable infections.

Antiseptic solutions, such as carbolic acid, etc., are generally not thorough enough for disinfection. They serve rather to lull our consciences. Therefore I would state the following practical rules for aural work:

1. Every instrument should be so constructed that it can be easily cleaned and examined.

2. Before every examination the instruments (speculum, probe, catheter, middle ear instruments) should be sufficiently boiled, and immediately after use they should be washed in cold water, so that the pus, mucus and blood may not coagulate and dry on them. Of course, it goes without saying that the hands must be kept clean according to the general rules of asepsis.

A recent article mentions a handy way of sterilizing the cotton. After being attached to the probe it is dipped into an alcoholic solution of boric acid, and then held in a flame till the alcohol is burned out, the boric acid preserving the cotton from burning.

The carrying out of these principles involves much trouble, time and expense, but they should not be spared in private and especially in *dispensary practice*, where so many cases, chronic, acute, specific, etc., pass through a rapid examination. The benefit may not be expressed in numbers, but it exists and is worth attaining.

HOW TO SECURE ASEPTIC LABOR.¹

BY DOWLING BENJAMIN, M.D.

CAMDEN, N. J.

It was a bright day for women when the leaders of scientific investigation in the medical profession announced this discovery that the infectious fevers were caused by minute organisms, called germs or pathogenic bacilli; for it was only by the discovery of the cause of child-bed fever that we were enabled to prevent its occurrence.

To show the importance of this subject I may simply quote you a few figures. Taking New York alone, from 1886 to 1887 there were 3,342 deaths incident to child bearing. Of these deaths 1,947 were due to child-bed fever, or the infection to the lying-in period. (See Pepper's System of Medicine, vol. 1.)

Fully half of the deaths, therefore, that occur at the confinement period are due to infection, septicemia, pyemia and from blood poisoning, caused by fever germs getting into the system through the abrasions caused by parturition. And you must also remember that aside from any other lesion, there is always after every confinement a large, raw surface left on the interior of the womb by the separation of the afterbirth, which is one of the most dangerous fields for the growth of diseased germs and their ready entrance into the woman's system.

¹ Extract from a lecture by Dr. D. Benjamin, Obstetrician at Cooper Hospital.

For the proper and successful care, therefore, of a mother at this important period of her life, it is of the greatest importance that you not only understand but apply the principles of asepsis. Since the alert members of the profession have thoroughly comprehended the importance of this subject, child-bed fever has been so rapidly diminished in frequency as to arouse the hope of making a case a rare curiosity.

My own experience in this matter, during a practice of nearly twenty years, in which I have endeavored to apply the principles of antiseptic practice, has been that I have had but one case of puerperal fever and that fortunately recovered.

How then shall we proceed to secure our patient against the dangers of sepsis?

Call upon your patient at least once after having been engaged and explain to her the importance of this subject and, as well as you can, briefly the principles involved. Then direct her to make the following preparations:

1. Keep clear, if possible, from all contagious and infectious diseases.

2. Avoid sores (wounds included) and especially erysipelas.

3. Warn her to advise you of any abnormal symptoms, such as headache, dizzy spells, swelled feet, etc., which might presage albuminuria or other dangers.

4. Tell her to have on hand as soon as the first symptoms of labor begin, or before if possible, two or three gallons of sterilized water (either boiled or distilled) in a sterilized boiler or pitcher, properly covered from the dust. This sterilized water must not be cooled by adding cold, unsterilized water, a thing that unskilled attendants will be very apt to do unless you watch them. Even the baths that a patient takes before or after confinement should be in sterilized water, or at least aseptic water, and since many cities take their water supply from streams in which their sewage is emptied this is difficult to do unless the infected water be boiled. You actually infect patients who might be aseptic by giving them a bath in such water as is supplied to many of our cities.

5. All water used in the lying-in room must be sterilized. Also the hands, or anything, can be washed much cleaner in a stream that is being poured from a pitcher, than if they are dipped into a basin containing the dirty water in which they have been washed, even though no discoloration can be seen in the water.

6. Everything to be used about the patient and bed in the way of clothing, etc., must be washed, boiled and ironed, wrapped up from the dust in a paper and put away to be ready for use when the time comes. (The conditions present and the antiseptic preparations are essentially the same as you would expect to have in a great surgical operation.)

7. She must have at least one dozen aseptic pieces of muslin, about fifteen inches square, boiled, washed and ironed (an old sheet torn up will do), wrapped up in paper and put away to be used for wiping away the discharges, for wash-rags, napkins, etc.

8. One large pad about one yard and a half square, made of cheese cloth that has been boiled in water containing a small quantity of soda and stuffed with new cotton, or what is better, absorbent cotton. If ordinary cotton is used it will have to be baked for an hour to secure sterilization. About a pound and

a half of cotton will be enough, although two pounds would not be too much. This is to place under the patient during confinement, first, second and third stage, and must be removed soon after the first stage to be replaced by a lighter one, also sterilized. Everything if the least bit soiled must be removed from the patient, bed and child promptly, lest culture-fields be formed for germs.

9. One sheet of impervious cloth, about a yard and a half square, to be put next to the mattress for its protection.

10. One maternity binder, about eighteen inches wide and long enough to go around the patient, sterilized.

11. One piece of sterilized soap (hydronaphthol) or carbolized.

12. One new sterilized syringe, "Household No. 3" or "Fountain" will do.

13. Two-ounce box of antiseptic cosmoline or sweet oil.

14. One skein of sterilized silk floss.

This much preparation I have always been in the habit of ordering my patients to make and is in the reach of those in the most ordinary means. These things should all be wrapped up properly from the dust, so that they may all be found without confusion when the time comes. For a complete and perfect outfit which could be inclosed in one neat box, I would suggest the following. Though a little more expensive, it should be gotten up by a manufacturer of antiseptic supplies, put up in a neat package, and would be a great convenience to patient, nurse and doctor.² Nay, I feel warranted in going further, and stating that the adoption generally of the practice herein suggested and urged will introduce an era in obstetrical practice marked by a lower death-rate than that of any preceding period of practice.

THE BENJAMIN MATERNITY OUTFIT OR OBSTETRIC ANTISEPTIC CASE.

1. Two aseptic sponges.
2. One card No. 14 sterilized silk.
3. One-half ounce of salicylated cotton.
4. One half-curved needle.
5. One-half dozen sterilized safety pins.
6. One dozen aseptic cloths about fifteen inches square.
7. One dozen antiseptic absorbent pads.
8. One large aseptic absorbent pad one and one-half yards square.
9. One maternal binder, sterilized.
10. One cake sterilized soap.
11. One jar sterilized petrolatum.
12. One sterilized Fountain syringe.
13. Two clinical charts (Wilson's) for mother and child.
14. One obstetric chart and report (Benjamin's).
15. One impervious sheet, a yard and a half square.

The articles in this collection to be used as follows: The aseptic sponges may be used to cleanse lacerated or bruised surfaces in mother or infant.

The sterilized silk to be used for tying the cord, and together with the surgeon's needle may be used to stitch up any lesion of the perineum, and may sometimes save the patient and the doctor a great deal of trouble.

The salicylated cotton will be used to apply to the navel.

² If placed upon the market.

The needle for any lacerations that may occur during the parturition.

The safety pins may be used for the maternal binder, and also for the child.

The aseptic cloths are to be used to absorb discharges during all stages of labor and for washing purposes, and for tampons if need be.

The antiseptic absorbent pads, one and one-half yards square, are placed immediately under the patient or under the sheet which has been sterilized by boiling and ironing for the occasion, and may be pinned or tacked to the sheet or to the impervious mackintosh beneath.

The maternal binder to be placed around the patient after delivery in the usual manner.

The sterilized soap, made especially from pure castile and imbued with naphthol and boracic acid, is used for all the ordinary purposes of the soap, and is perhaps one of the best combinations that can be used for ordinary purposes.

The sterilized petrolatum is used in the place of lard, which on account of its dangerous impurities should not be allowed in the lying-in room.

The sterilized Fountain syringe is to be used for ante-partum and post-partum, vaginal or uterine douches.

The clinical charts should always be started at the beginning of labor, if not before, for the mother, and for the child as soon as practicable after birth.

The obstetric chart and report gives the physician not only a good record of the case, but the information necessary for making his official report to the public authorities. It can be filled up by the nurse at her leisure and will save the physician much of the usual delay in obtaining the necessary information.

The impervious sheet, one and one-half yards square, is made of gum cloth and is to be placed next to the mattress for its protection and under the large absorbent pad and sheet, to which it may be pinned or tacked, and after the confinement is over will be found exceedingly useful to spread under the infant to protect the mattress. In cool weather it should be placed under the sheet.

We might add to this outfit to make it more complete, one dozen of corrosive sublimate tablets, containing seven and three-tenths grains each, so that the nurse and physician may sterilize their hands before touching the patient or the outfit. One dissolved in a quart of warm water makes a solution of 1 to 1,000.

Caution.—As they are exceedingly poisonous their use must be accompanied with great care and strictly in accordance with the instructions of the attending physician. They must be kept out of the way of children, and solutions made from them carefully guarded and thrown away as soon as use is finished, to prevent being mistaken for drinking water. These solutions of corrosive sublimate must not be kept in any vessel used for drinking purposes.

And we might also add as the seventeenth item one ounce of saturated solution of boracic acid, with which the baby's eyes should be thoroughly washed out immediately after delivery.

The foregoing I have designed especially for private practice.³ In the maternity department of the Cooper

Hospital, which is under my charge, some slight modifications I have necessarily made in this outfit so as to adapt it to hospital use. By this careful preparation and its proper use we will generally be able to avoid that unfortunate and fatal affliction of motherhood, puerperal fever. In the lying-in room the nurse should be the picture of neatness, cleanliness and pattern of aseptic practice.

What a contrast to this preparation and picture which I have just presented to you, is the situation a physician so often meets with; too often.

The following is the form of the obstetric chart and report:

OBSTETRIC CHART AND REPORT.

No.	Date	18 . . .
Physician in attendance.		
Nurse		
MOTHER.		
Maiden name.		
Age		
Residence		
Nativity		
Number of preceding children.		
Number by this marriage.		
Number of children living.		
CHILD.		
Male	Female	Color.
Name		
Weight		
Presentation		
Position		
Time of birth . mo. . . . da. . . . hr. . . . m. . . . 18 . . .		
DURATION OF LABOR.		
First stage	hr.	min.
Second stage	hr.	min.
Third stage	hr.	min.
Total.		
ASSISTANCE.		
Kind.		
Cause		
FATHER.		
Name		
Age		
Nativity		
Occupation.		
Remarks.		
(As devised by Dr. Benjamin.)		

SCIENTIFIC CHARITY.

Read at the meeting of the Physicians' Club, Dec. 30, 1895.

BY BAYARD HOLMES, B.S., M.D.

PROFESSOR OF SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS. CHICAGO.

There are two distinct ideas pictured by the word charity, and the notions which these ideas convey have little intrinsically in common. In one sense charity stands for fellowship, fraternity, good will, love, human sympathy and justice. In this sense charity is good and will always be of unexceptional application. It is in this sense that Paul and Portia used it in those well-known and much-abused paragraphs.

In its second sense, charity embraces all those ideas represented by alms, almsgiving and all those institutions, organizations and systems employed in giving gratuitous relief to the poor. It is in this latter sense alone that charity is used by me in this discussion.

In this sense there can be but a limited application of the terms scientific charity. Scientific charity is really no charity at all, because science and reason direct all the energies of society not to the alleviation of the suffering of the poor, but to the prevention of poverty. Science insists upon the fact which true humanity has always believed, namely, the ability of the earth and man's labor to produce enough and more

³ I have been of late in the habit of ordering such of my patients as could do so, to purchase it at the antiseptic supply stores, put up according to the above directions.

than enough for all. Therefore there need be no poor. There should be no almsgiving. Still the fact remains. Poverty and nakedness and hunger are present in spite of too much wheat and corn, too much coal and oil, too much wool and cotton, too much lumber and iron, too much labor and machinery, too much power and too many labor-saving inventions. In fact just as the products of the earth, of the hands of men, of machinery and of the devices of genius multiply, just in that proportion does poverty, idleness and wealth increase. And since the poor are with us almsgiving is necessary, just as much so as calking is necessary to the ill-built ship. It is perhaps worth while to inquire into the source of the various groups that demand alms.

The first to receive gratuitous aid and support are the very old and the very young. At both ends of life man must depend upon the product of others' labor and the services of others for support and comfort, and this seems reasonable and just. This helplessness of the old and young seems to be the foundation motive of the family unit. Only rarely is the community called upon to care for the old or young except on the dissolution of the family unit to which they originally belonged. When the maintenance of the family unit is not guarded by the community then this group of dependents increases. Some one may ask how scientific charity directs alms to be given to this group. In this as in many other public matters Australia has given the best answer. That is a country without an orphan, without an orphan asylum and without an old people's home. All the dependent babies, children, old women and old men are adopted by the community, and with proper supervision they are boarded out in homes in the colonies where their presence is welcome, where they have the cheer and the comfort and love of home life. In these homes, too, the young are prepared for a useful manhood and womanhood. Scientific charity blushes at the sight of the imposing architecture of the orphan asylum and the old ladies' home no less than at five thousand homeless children on the streets of Chicago.

The second to demand alms are those who suffer from disease, from injury or from mental or physical defects. As medical men we are most interested in this group, and naturally they are our special care. As physicians and surgeons we attend the sick gratuitously in all public hospitals. No other profession gives so valuable a public service without pay. But we rarely consider the motive which most promotes that symptom of social disease known as hospitalism. This mania for hospital building breaks out wherever injustice and oppression most prevails. When the severities of feudalism pressed hard upon the people, Europe was dotted with hospitals. Now that commercialism and capitalism are crushing all manliness out of Americans, hospitals are filling the land. The real motives of hospital building are these: To furnish a place into which to shove off unwelcome servants, friends and relatives when they are sick; to furnish a means of altruistic activity for women who suffer from this constant exercise of the cruelty, inhumanity and injustice of modern society, and to help the employer to beat down the wages of his men. If an employer is obliged to pay for labor a dollar a day before a hospital is built in his community, he can cut down that amount an appreciable per cent. as soon as an institution is established. Hospitals and dispensaries lower the standard of life in a community in

which they are built and the medical man who serves in hospitals without pay is taking the bread from the mouths of professional brethren and doing the laboring classes the greatest injustice. It is obnoxious to the high ideals of our profession to suppose for a moment that any true physician coöperates with spread of hospitalism, knowing its real significance. Yet there is a growing class of physicians who look with equal disfavor upon the professional hospital builder and the professional hospital physician. The one works on a commission of 20 per cent. of all he can get out of the rich and the other takes all he can detract from the physicians who endure the heat and burden of the day.

It is often said "capital takes all the risk" but with the growth of machinery this adage must give way. In the United States in 1892 there were 821,000 men employed on railways and 2,500 of them were killed outright, and 28,000 injured. These injured men and their families demand alms largely because men are cheaper than better material equipment. The one can be had for a dollar or two a day, the other requires interest and a sinking fund.

The deaf and blind furnish shining examples of the defectives who require alms. Three million dollars were expended from the public purse for the care and education of these unfortunates in the year 1892. It is the opinion of all experts who have spoken on this point that more than three-fourths of this blindness and deafness could be prevented by a better medical education and a better medical supervision and yet while the general government alone spends three-quarters of a million a year in study of the diseases of swine, not one-tenth this sum is expended by all the States together in teaching medicine, not to say in medical research.

In the third class come those who demand alms, not because they are infirm, defective or diseased; not because they are unable or unwilling to work and produce but because all opportunity of productive industry is denied them. This is the great group shut out from work because they have committed the unpardonable crime of producing too much—the great army of the unemployed. This group out-numbers many times all the others put together. The benevolent employer of labor smiles with satisfaction when he is called upon for a contribution from his private purse to carry these fellow citizens over a hard season of idleness. He knows they are the most efficient instrument of beating down wages, of lowering the standard of life, and teaching all labor the arts of thrift.

He contributes gladly from his own or better from the public purse and immediately figures on a 10 per cent. reduction of wages and a great increase in his donation to the Armenian Mission or the home for orphaned cripples. That there should be such a condition of affairs as this in a country with over-production of all that is good to eat and wear and enjoy is a sad commentary on a hundred years of American democracy. Almsgiving to this group only poultices the sore which is eating the heart out of our country, and fast reducing us to the conditions of France a hundred years ago.

In the fourth group come those for alms who find charity pays better than any profession or trade into which they can gain access. Here we find the men and women who make begging a business and conduct their affairs on the same principles that govern

all successful business now-a-days. They do not stop begging when they get enough to supply the necessities, decencies and even luxuries of life. They go right on begging and begging and begging as long as it pays better to beg than to do anything else. They are not in business for their health nor are they doing a missionary business. They are there to win.

All that one can say for this group is that they are perfectly practical and consistent. To be sure they are not reformers. They simply take things as they are.

In conclusion, let me make the following epitome: Charity, almsgiving, is an opiate now much used in treating humanity for that fell disease of which it suffers. This disease is known as competitive production. The three humors of this disease are rent, interest and profit. These humors are produced by a parasite known as special privilege. When the disease reaches its height, it is manifested by a bluish of idleness, poverty and misery which is soon followed by an eruption of benevolent societies, asylums, institutions, hospitals, dispensaries, jails and penitentiaries. In the treatment of this disease narcotics are dangerous. Almsgiving, suppression of facts and refusal to investigate have all proved fatal. These and all other methods of symptomatic treatment should be removed and the parasite should be attacked with the sharp edge, rational justice.

BACTERIOLOGIC RESULTS FROM MECHANICAL FILTRATION.

[Abstracts from a Report made by E. B. Weston, C. E., of Providence, R. I., upon Experiments made by Natural Filtration and in the use of the Morison Filter for Period of Nine Months.]

Read at the Meeting of the American Public Health Association, Denver, Colo., October, 1895.

BY GARDNER T. SWARTS, M.D.

SECRETARY OF STATE BOARD OF HEALTH, RHODE ISLAND.
PROVIDENCE, R. I.

At the last meeting of this association at Montreal the statement was made in the report of the committee on water supplies that no data had been available to show that filtration by the so-called mechanical methods was successful in removing bacteria. The writer at that time referred to experiments which had been made in the city of Providence, R. I., in order to determine this question for the purpose of establishing a plant capable of filtering 15,000,000 gallons daily if the experiments were successful.

The figures showing these results were not at that time available, and as they have never been published and as no experiments of a similar character have been made, it seems desirable to place these facts before the Association, inasmuch as many municipalities are agitated over the advisability of introducing the so-called natural or sand-bed filtration or mechanical filtration.

The mechanical form of filter used in the experiments was of the type in which quartz or sand is used as a supporting bed to a film of precipitated coagulant or fixative of organic matter, produced by the introduction into the water, before filtering, of some chemical such as iron or alum; a filter which is also cleansed by means of a reversed current of the water passed through the filter assisted by the use of a rake made to revolve in the bed of the quartz while the washing is being done.

The filters used in this line of experiments were two of the natural sand-bed form imitating the usual

filter bed. The mechanical form was represented by one of the New York Filter Company's filters and one of the so-called Morison filters. After the first seven months the sand filters were discontinued, it having been satisfactorily ascertained that the length of run was much less than the mechanical filter before the bed became clogged and the rate of flow in the natural bed was but 30,000,000 gallons per acre in twenty-four hours, while the mechanical filter was run at the rate of 125,000,000 gallons per acre in twenty-four hours. The efficiency of removal of bacteria was not as high, and the results variable, either as the result of cracks in the filter or from some unknown reason. Although both of these natural filtration beds were constructed exactly alike, the results from the second were much poorer than the first. When the natural bed was transformed or assisted by the addition of alum, thus converting it into a mechanical filter, the removal of bacteria was increased to nearly the same as on the Morison filter, but the length of the run was correspondingly decreased.

The sand used in the natural beds was a natural river sand, not over sharp, while the sand used in the mechanical filter was crushed quartz having sharp edges.

In the beginning of the experiments the New York filter gave such varied and unreliable results that its use was abandoned, while the so-called Morison filter was continued in use during the whole series of experiments, which lasted for a period of about ten months, the working of the mechanical parts of the filter being perfectly satisfactory and the results obtained being successful.

The filter bed used in this mechanical filter was two feet ten inches in depth, supported upon a base of iron with circular perforations of about 4 inches in size, which were covered with screens. The crushed quartz used was the "effective size" of 0.59 millimeters. The filter was washed by a reverse current which caused the quartz to boil. The agitation and friction of the particles were increased by means of a rake with long teeth which revolved about a central column in the filter; the rake penetrating the bed by a screw motion from top to bottom.

From the various kinds of coagulant or precipitant used basic sulphate of alumina was selected as being the most satisfactory and effective and was used in all the experiments mentioned. The amount of alumina used was $\frac{1}{2}$ grain to the gallon of water filtered, a lesser quantity failing to satisfactorily remove the organisms, while the amount of $\frac{3}{4}$ or one grain per gallon did not increase the removal of the bacteria, while the efficiency of the filter was greatly decreased by reducing the amount of the flow through the filter bed.

The alumina was applied in a free flow at the beginning of a run by pouring into the filter, as the water entered, a pint of the coagulant containing about 911 grains of sulphate of alumina for an average flow of 128,000,000 gallons per acre. The solution was made by adding one part of the alumina to six parts of water; as a result of this addition there forms a white flocculent precipitate over the surface of the grains of quartz and is the actual medium through which the filtration takes place, the quartz serving merely as a supporting bed or sieve. It required about six minutes to form this layer. When applied at the rate of a drop at a

time and not in a "free flow" it required about a half an hour before the filtering layer would be formed. As soon as the filtering layer was formed the alum solution was dropped in continuously during the run from a regular stop at the rate of a drop a second. The effect of the presence of this layer was to reduce the head or pressure .28 of a foot for 128,000,000 gallons per acre. The depth of the water above the bed at the commencement of the run was nine inches; the average length of the run was about eighteen hours.

Under these conditions it was determined how long after the commencement of the run the filtering ability was at a maximum and also the capacity of the filtering media to remove organisms and also the possibility of removing organisms foreign to river water and simulating pathogenic bacteria in their life history. In this last experiment the Cruikshank bacillus and the bacillus prodigiosus were used, since from their pathogenic properties they could be readily distinguished from the water bacteria.

For an understanding of the proportion of bacteria found in the applied water and the number to be found in the filter water, table No. 3 of the report is here appended.

As a result of the whole series of experiments the totals shown in table No. 9 will give an idea of the averages. In consideration of this table it must be remembered that the introduction of only one result, which may be far below the average, will readily reduce what would otherwise be a most favorable average, to a lower point. This one result might occur from a temporary contamination of the effluent pipes at the time of collecting the sample, and which might not represent the exact results of filtration.

TABLE NO. 3.—FILTRATION EXPERIMENTS.—MORISON'S FILTER.

Growth of about ninety hours, of water bacteria in the sample of applied and filtered water, which were taken at the same hour; which was one hour or more after the water commenced to flow from the filter.

Date.	Gallons of Water Filtered per acre per Twenty-four Hours.	Bacteria per Cubic Centimeter.		Per Cent. of the Applied Bacteria Removed.	Average Percentage of the Applied Bacteria Removed.	Grains of Sulphate of Alumina Added.
		In Applied Water.	In Filtered Water.			
1893						
July						
20	125,000,000	2,000	11	99.5		0.75
21	122,000,000	9,477	16	99.8		0.90
Oct.						
3	125,000,000	905	6	99.3		0.60
4	128,000,000	610	2	99.7	99.5	0.58
5	131,000,000	1,002	25	99.4	(By totals, 99.6)	0.55
17	125,000,000	6,175	26	99.6		0.57
27	122,000,000	9,700	41	99.6		0.61
30	128,000,000	1,700	7	99.6		0.56
31	131,000,000	100	9	97.8		0.59
Nov.						
1	132,000,000	15,112	19	99.9		0.61
2	123,000,000	6,950	26	99.6		0.81
3	122,000,000	9,400	50	99.5		0.81
4	132,000,000	3,100	63	98.1		1.20
9	125,000,000	2,200	26	98.8	99.2	0.60
11	125,000,000	3,650	25	99.3	(By totals, 99.5)	0.82

COMMENCED TO USE THE BACILLUS PRODIGIOSUS.

Nov.						
23	120,000,000	15,850	218	98.6		0.60
24	132,000,000	7,600	361	95.2		0.59
Dec.						
2	128,000,000	4,900	190	96.1		0.75
4	128,000,000	1,475	91	98.0		0.60
1894						
Jan.						
2	132,000,000	2,150	91	95.6		0.85
3	137,000,000	2,000	118	94.1		0.81
4	134,000,000	2,275	41	98.1		0.85
5	130,000,000	1,925	60	96.9	96.1	0.82
8	130,000,000	2,375	181	92.3	(By totals, 96.9)	0.58

CEASED TO USE BACILLUS PRODIGIOSUS.

Jan.						
9	130,000,000	1,850	51	97.1		0.60
10	134,000,000	800	28	96.5		0.84
11	130,000,000	750	20	97.3		0.61
12	132,000,000	350	52	85.1		0.81
13	132,000,000	600	36	94.0		0.72
15	134,000,000	925	88	90.5		0.84
16	134,000,000	375	44	88.3		0.58
17	130,000,000	2,150	64	97.0		0.82
18	134,000,000	1,500	62	95.9		0.54
19	136,000,000	1,450	80	94.5		0.83
20	130,000,000	2,800	58	97.9		0.72
22	132,000,000	3,350	62	98.1	94.6	0.85
23	132,000,000	2,300	64	97.2	(By totals, 96.3)	0.80

WASHED FILTER BED WITH CAUSTIC SODA.

Jan.						
24	128,000,000	2,100	6	99.7		0.60
25	125,000,000	2,225	18	99.2		0.82
26	128,000,000	4,650	54	98.8		0.58
27	128,000,000	4,875	72	98.5		0.58
29	128,000,000	1,575	82	94.8	98.2	0.59
30	130,000,000	1,400	28	98.0	(By totals, 98.5)	0.58

During the application of the cultures of bacillus prodigiosus in large quantities suspended in the nutrient media, the numbers of the common water bacteria materially increased in the effluent, the particles of quartz becoming covered with a slimy brownish deposit. Unsuccessful efforts were made to cleanse the quartz of this growth by steaming and boiling the quartz for one hour. Finally on the application of a solution of one pint of caustic soda to twenty-four parts of water and steaming, the normal white color of the quartz returned. The efficiency of the filter was raised by this process of cleansing from 92.8 per cent. to 98.8 per cent. As to the mooted dangers attending the use of alum in the applied water and which is held up as a warning by the opponents of mechanical filtration, this much may be said in reference to this series of experiments:

While it was necessary to add half a grain of sulphate of alumina per gallon of water filtered in order to obtain the most satisfactory results, yet upon comparison by the most careful chemical tests of the water applied to the filter and that of the effluent, there was found to be less alum in the filtered water than in the river water itself.

Inquiry from numerous manufacturers using alum as precipitant in various quantities in excess of the amount used in the experiments, revealed in no instance any incrustation or scaling in the boilers where such filtered water had been used. Communications with the various boiler insurance companies elicited no report of scaling where such water was used. There is no recorded instance where alum-treated water as a drinking water has produced any ill effects upon the consumers.

This work was done by order of the City Council of the City of Providence and under the direction of a commission consisting of the Superintendent of Health, the City Engineer and the Commissioner of Public Works. The immediate supervision of the operation was under the supervision of Dr. C. V. Chapin, the Superintendent of Health and a member of this Association, while the application of the various tests was made under the direction of Mr. Edmund B. Weston, C. E., from whose compilations and reports these abstracts have been taken. Most of the bacteriologic work was done by the writer.

Inasmuch as the writer, as well as every person connected with the experiments, commenced the investigation with the firm belief that successful mechanical filtration was not possible from a bacteriologic view, it must be stated now, after examination

of these figures, that mechanical filtration under these conditions can be firmly indorsed.¹

The foregoing paper and table of percentages was briefly discussed, first by Dr. P. H. Bryce, who thought the facts contained therein were most valuable and that he felt personally that the thanks of the Association were due to Dr. Swarts for submitting them, and by Dr. Rudolf Gering.

THE SURGICAL TREATMENT OF AURAL POLYPI.

BY P. B. WING, M.D.

TACOMA, WASHINGTON.

It is the purpose of this paper to describe in a brief and concise manner the treatment which I have found most effectual for the permanent removal of those morbid growths known and described as aural polypi. Gruber defines aural polypus as a neoplasm originating in the auditory canal or in the deeper parts of the ear, which is pedunculated and consists principally of histologic elements of the soft connective tissue order. Granulations springing from a broader base are generally called polypoid proliferations. These growths have received a great variety of names by different writers, but I am of the opinion that no observer can say that this is a mucous polypus or a fibrous, but that he will find a combination of both mucous and fibroid tissue. I am also of the opinion that all polypi are at the very commencement granulation tissue and that as they grow in size they change in structure, and that they have received their classification from the tissue that happened to be most prominent in each particular case; also that the epithelium covering a polyp has the character of the tissue from which it springs until it is changed by exposure to external influences. A word only as to the cause. I believe that whenever aural polypi and granulations are found, pus is always the cause, and when we come to treatment, we should never lose sight of this fact.

I shall confine myself to the treatment of those that are benign in character and shall make no mention of the tuberculous, syphilitic and malignant.

The first step in treatment is to thoroughly cleanse the ear. There is usually a profuse discharge of fetid pus, and it is for this discharge that patients usually seek relief, for unless the growth is large, the majority of patients are ignorant of its presence. After cleansing the ear as much as possible, the next step is to make out as accurately as we can the origin of the polyp. In small growths, this is usually easy, but in large polypi, that have filled and by long continued pressure caused absorption and dilatation of the canal, this is sometimes difficult and can only be made out approximately by passing a probe around it.

After we are satisfied as to the point of origin, the removal of the growth is the next point for consideration. How shall we best accomplish it? We are all armed with an instrument known as the snare, but I believe it falls far short of filling the purpose for which it was designed. The loop is formed and adjusted to the size of the tumor, and after applying cocain, or in some instances giving chloroform, the loop is passed over the tumor and as near the origin of the growth as possible. The loop is then pulled home. After pulling the loop tightly around the pedicle, Dr. Pomeroy says that he brings the growth

away by two or three jerks. Dr. Sexton says that it is often difficult to cut through the pedicle and they often have to be brought away by avulsion. I feel like making a little stronger statement and say that it is always difficult to cut through the pedicle of a large fibroma, and that I have always had to give the snare a few turns to twist off the growth. I see a reason why a snare can not be made that will work as well on aural as the Jarvis snare does on nasal polypi. After the polypus is removed, or as much of it as is possible with a snare, the hemorrhage, which is seldom severe, can be controlled by hot water or packing with absorbent cotton. I usually wait until the following day before I proceed to treat the stump. In the majority of cases, we are obliged to use some form of cautery, and in my opinion, no form of cautery is equal to chromic acid.

A small bead of the crystals is fused on the end of a silver probe and applied under perfect illumination. After applying the acid, it is well to wait a few seconds watching the effect, and then touch the spot with a little moist cotton on a probe to take up any superfluous acid. I have used chromic acid in this manner for five years in a great number of cases and have found it perfectly safe. It gives almost no pain and its action is easily controlled. A surface treated with chromic acid suppurates little and heals rapidly. After cleansing and treating with chromic acid, I apply a little finely powdered iodoform and boric acid or hydrastis and boric acid and place a pledget of cotton in the ear. The chromic acid can be applied as often as the slough separates, usually every four or five days. The ear is kept clean during the intervals by using a solution of bichlorid of mercury, about 1 to 2,000, and after cleansing and drying, applying either of the above mentioned powders. This treatment is kept up until the pedicle is destroyed and when the growth is removed, the discharge in a large majority of the cases will cease. Small polypi are usually softer and bleed more easily than the large ones. The snare is perhaps more effectual in this class of cases.

However, there are very few cases treated by the snare that do not require subsequent cauterization. In small polypi, where the point of origin can be easily seen, the pedicle may be touched with chromic acid. The acid penetrates the growth, shuts off the blood supply, and in three or four days the polypus dries up, drops off and comes away as a small, black mass. This process is painless and bloodless, has the advantage of being easily done and is very convenient in treatment of children who are afraid of instruments.

Polypoid proliferations more often spring from the wall of the canal and, I think, are dependent upon some previous furuncle. These growths are to be removed by cauterization and I prefer the acids, used with the same precautions as in other places.

There is one condition resembling polypoid proliferation, which should not be confounded with it. I refer to a swollen and protruding mucous membrane of the middle ear, which may project through a perforated drum-head and be mistaken for granulation. Such cases are made worse by the application of any form of cautery. While speaking of cauterization I have not mentioned the galvano-cautery, for while I prefer it in all nose and throat work, I must say that I consider the acid superior in the treatment of the ear. It can be applied on a small wire, which does

¹ The complete report with tables and estimates of construction will be published in the Rhode Island State Board of Health Report for 1894.

not obstruct vision. The electrode is larger, obstructs vision more and is not so easily handled. The acid in most cases is painless and can be applied without the patient knowing it.

I shall mention a few only of the drugs used in such cases. Iodoform and boric acid I have already mentioned as suitable dressings, but they have no influence over the growth of polypi. Tannic acid, alum, etc., are worse than useless. Argentic nitrate may be used to stop a discharge of pus, but I am sure that it stimulates the growth of polypi and of granulations. Hydrogen peroxid is useful only as a cleansing agent and is inferior to a solution of bichlorid of mercury. Notwithstanding all that has been said of alcohol, I believe that it has absolutely no influence over the growth of polypi or granulations, but it does lessen the discharge of pus. Injection of the growth with Monsel's solution is effective, if well done, but is painful and can be used on large polypi only. Patients will ask us if the growth will return and we ask ourselves what shall be done to prevent a recurrence.

Now, I think we are all of the opinion that suppurative disease or caries is always the cause of polypi and of granulations. It is therefore necessary to stop the suppuration and remove all necrotic tissue before we can say that our patient is cured, for polypi and polypoid proliferations will not grow in dry soil like sage brush and cacti in our western deserts, but like toadstools, they require shade and moisture, and this moisture is pus.

Let us always put in practice that old, sound surgical principle that wherever there is pus, let it out if possible and establish free drainage. If the growth returns and if the perforation is small, we should not hesitate to make it larger and when necessary remove one or more of the ossicles, thus establishing free drainage and giving us an opportunity to treat the diseased parts effectually; always remembering, however, that it is not a trifling operation, but must be skilfully performed and subsequently carefully treated, for cases of meningitis following it are not unknown and I think we are too apt to cover our failures and publish our successes.

TUMOR OF THE BRAIN INVOLVING THE OCULAR NERVES.

Specimen presented to the Medical Society of Washington, D. C.

BY CLARENCE R. DUFOUR, PHAR. D., M.D.

WASHINGTON, D. C.

Physician in Charge of Eye Department Eastern Dispensary; Ophthalmologist and Otologist to Sibley Memorial Hospital; Assistant in Eye and Ear Department of Central Dispensary and Emergency Hospital, and Instructor in Ophthalmology and Otolaryngology, Georgetown Medical College.

Mrs. H., widow, age about 56 years was referred to me at the Woman's Clinic, in the summer of 1894, on account of her eyes. Upon examination I found a complete paralysis of the muscles supplied by the third, fourth and sixth nerves, an exophthalmus and optic atrophy, all on left side. I diagnosed the trouble as being in the brain and so told the daughter who accompanied her. I could obtain no specific history. She had been operated upon some months previous for empyema of left antrum, the opening being made in the cavity of second molar tooth; there was free drainage through the nostril when I saw her. I kept the antrum well washed out with sol. boric acid and gave her sat. sol. iodid of potassium, 10 gtt. three times daily, increasing one drop

daily, until she was taking 30 gtt. three times daily. Any attempt to increase this amount produced such constitutional disturbance that it could not be done. She was kept on this treatment until complete symptoms of iodism were manifested, when it was changed to 1-16 gr. bichlorid of mercury and 3 grs. potassium iodid three times daily, and continued for months with occasional intermission of a few days. No result whatever from the treatment. About the middle of the summer she began to complain of intense pain in her head, which at first yielded to anodyne treatment but which soon became constant and nothing but morphia would allay. About this time there began to be symptoms of loss of sensation on side of face and anesthesia of cornea, indicating that the first division of the fifth nerve was being implicated. This condition continued, with no abatement of the symptoms; she had periods of hallucinations, and as her daughter was obliged to work away from home, and there being no one to leave the mother with, the latter was sent to the hospital. It was thought best to reopen the antrum so as to establish freer drainage; this was done, considerable pus escaping. It was then washed out with antiseptic solution two to three times daily. An examination of the urine was made with results as follows: Amber in color, cloudy ppt., acid reaction; small amount of albumin, epithelial cells and pus were found. After operation on antrum the pain in head subsided for a few days but began again and continued with occasional periods of intermission. She was discharged from hospital in the early part of November. Her condition gradually became worse, her right eye began to show symptoms of incipient atrophy of the optic nerve and an external squint was manifested. She was able to go about until April 1895 when she had to go to bed. She grew worse, her mind wandered and word deafness became manifest. On May 3 she died. On the following morning the skull was opened and the brain removed; It was put into a 2 per cent. solution of formalin, and a few days later the examination revealed the following condition: Gumma of dura mater in the anterior part of left middle fossa; this involved by extension the left anterior temporo-sphenoidal lobe; the growth surrounded the internal carotid artery, exerting pressure on the cavernous sinus and involved the left optic nerve at the commissural origin; considerable edema of the left anterior sphenoidal lobe. A second and smaller gumma involved that part of the brain mass which constitutes the left olfactory convolution; the third and smallest lay in the angle at the right optic commissure. The bone around the first growth had lost its compact covering and had become porous; the dura was very adherent to the bone. The ocular conditions during life were cleared up, I think, satisfactorily by the findings at the post-mortem. The cavernous sinus receives anteriorly the ophthalmic vein through the sphenoidal fissure, and on its inner walls is found the internal carotid artery and the sixth nerve; on its outer wall are the third, fourth and the first division of the fifth nerve.

The pressure exerted by the tumor upon the sinus explains the paralysis of the muscles and the anesthesia of cornea, etc., this pressure together with pressure upon the ophthalmic vein, accounts for the exophthalmus by preventing the return flow of blood through the angular and ophthalmic veins into the cavernous sinus. The pressure also being exerted

upon the optic nerve in front of the chiasm, was the cause of the optic atrophy of left eye. The edema of the temporo-sphenoidal lobe, would, I think, satisfactorily explain the word deafness. The atrophy of the right eye was due to the smallest tumor in the angle of the right optic commissure. The cause of the external strabismus is somewhat obscure, as there was no implication of the third nerve on that side; my opinion is that there was pressure exerted upon this nerve in the region of the sphenoidal fissure, probably as it passed through it. The case was referred to me by Dr. Heiberger, and the post-mortem was made by Dr. D. S. Lamb of the Army Medical Museum, of this city.

1016 I Street, N.W.

OBSERVATIONS ON CONGENITAL DISLOCATION OF THE HIP.

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Congenital dislocations of the hip are for the most part traumatic. Displacements occur also, however, through deficient development.

Any obstruction at birth, whether through malformation of the pelvis or caused by the position of the child—the breech for instance, presenting, or the child or its head being unusually large, may occasion this dislocation.

In a breech presentation the thighs are flexed upon the abdomen, so that the head of the femur presses on the posterior and inferior portion of the capsule of the joint. But in this position, the application of the slightest force in downward traction will displace the head of the bone and cause it to pass away from the acetabulum and to lie upon its brim. And lying on the border of the cotyloid cavity, extension of the limb at birth is alone sufficient to displace the head beyond the brim. The blunt hook or the finger in the bend of the thigh, to facilitate and hasten the birth, may easily thus displace the head of the bone. And, indeed, such is the result of downward traction. A sensation of sudden yielding of the limb is felt by the hand of the accoucheur, as the head of the bone is displaced from its socket, and at the same time a click is heard. At that moment the caput femoris escapes from the acetabulum, and is found lying immediately beyond the brim of the cotyloid cavity. It is only after the weight of the child has been borne on the feet, as in standing and in walking, that the head of the femur arrives at the external iliac fossa. Shortening of the limb necessarily increases as the head of the femur becomes farther removed from the acetabulum and lies upon the dorsum of the ilium, and, equally, lameness increases.

Dr. Tyler Smith informed me that such was his experience in regard to these accidents at birth.

After my essay¹ on this subject was published, I saw two cases of congenital dislocation with Dr. Tyler Smith. One was a boy, aged fifteen months, with dislocation of the left femur, and the other was a girl, aged five months, also with dislocation of the left femur. The boy was a well-developed and large child and the girl had a large head. There was not any other abnormality in either of these children. In both birth was considerably delayed; in the first by

a breech presentation, and in the second by the large head. In each case reduction of the dislocation was easily effected, and there was not any subsequent displacement.

Some imagine that these dislocations are not truly congenital because they are not observed at birth, nor until efforts are made to walk. Then, if the child falls as probably he will, it is supposed that in falling he has dislocated his hip. But dislocation does not occur in this manner. And without intending to mislead, parents are apt to connect the lameness with the fall, forgetting that the child has always been more or less lame and unable to walk.

It has already been stated that children in whom this dislocation occurs are not infrequently unusually large. This was especially remarked with regard to two boys in St. George's Hospital. I admitted these boys as in-patients, each having congenital dislocation of both hips. One aged twelve years, was as big as a large boy of fourteen, and the other, aged fourteen was like a strong boy of sixteen or seventeen. So much was this the case that doubt was expressed on this question of age, and special inquiry was made, when the facts were verified. And in the case referred to by Mr. Holmes,² and recorded at greater length by myself,³ in which the right femur was dislocated, the child's head was of unusual size. Also in a case where I operated with Dr. De la Cour, and where both hips were dislocated the head was enormous.

But traumatic congenital dislocation does not alone occur at birth; it may also be occasioned *in utero*. I have recorded several instances where, as the result of accident and shock, spasmodic action was set up, and this was followed by dislocation and fracture and distortion.

Cruveilhier⁴ has given a representation of a full-grown fetus with luxation of the heads of the thigh-bones, and with clubbed hands and feet; and he observed that the heads of the thigh-bones, as well as the cotyloid cavities, were progressing to their normal development. Also, there is found in the hydrocephalic and the anencephalic fetus every form of luxation and subluxation, together with muscular retraction in every variety.

Grawitz⁵ records that in every case examined by him there was not only dislocation of the hip, but also club foot, club hands, scoliosis, ectopium abdominis, spina bifida, and other deformities and malformations present. And such is also the case with Mr. Lockwood's⁷ specimens; they are malformations and deformities due to arrest of development.

In pathologic museums dislocations, occurring whether *in utero* or at birth, whether alone or complicated with fracture or distortion, with malformation or monstrosity, whether development is complete or arrested or irregular, are all treated as though they depended on a common cause; and thus much confusion has arisen and misunderstanding.

Many of these deformities are wrongly styled dislocations. Neither was the head of the femur planned to occupy an acetabulum, nor is there an acetabulum to occupy; they are malformations. And

² The Surgical Treatment of the Diseases of Infancy and Childhood, p. 220.

³ St. George's Hospital Reports, vol. i, p. 219.

⁴ Medico-Chirurgical Transactions, vol. xliii, 1860. Holmes' System of Surgery, vol. iv, art. "Intra-uterine Fractures," 1861.

⁵ Anatomie pathologique du Corps humain, tome i.

⁶ Ueber die Ursachen der Angeborenen Hüftgelenksverrenkungen. Archiv für Path., Anat. und Phys., Bd. lxxiv.

⁷ Transactions of the Pathological Society of London, vol. xxxviii, p. 303.

¹ St. George's Hospital Reports, vol. i, 1866.

some of the examples in pathologic museums which are labeled "congenital dislocation," have nothing in common with this class of affection, but are results of disease, whether in the adult or in the child.

Thus I have endeavored to show that the agencies producing congenital dislocation are various, and that the conditions of the femoral head and of the acetabulum vary as the period at which dislocation is produced varies. And, since there are varieties of congenital displacements of the hip, treatment must also vary. For instance, when the child is well developed, and there is no other abnormality existing, reduction of the dislocation may be effected within two years after birth; and this period may be extended to three or four years when exercise has not been permitted. The *caput femoris* may then not only be easily reduced, but it will probably be retained in the acetabulum. But after this time the acetabulum becomes more or less filled up with fatty, or with fatty and fibrous matter, and retraction of the trochanteric muscles takes place; so that, even though the head of the femur may be drawn down, difficulty will probably be experienced in retaining it *in situ*.

The head of the femur in such cases is usually of the normal size, and it is covered with cartilage. It remains unaltered or scarcely altered in shape until ten or twelve years of age, or even later; in Mr. Canton's case the change was only slight at thirty-two years of age. Also the acetabulum may retain its depth, but it will probably be filled with fatty matter. Such is the case when dislocation has been produced at birth. When, however, dislocation has occurred *in utero* the acetabulum may not become fully developed, as in the case mentioned by Grawitz⁹ where the acetabulum was not more developed than in a fetus of five months.

It is important to determine the length of time during which the acetabulum may be expected to retain its depth and cartilage and the head of the femur its size. And in illustration of this question I will refer to specimens taken from a boy 16 years of age by Fournier, and presented by him at the Société Anatomique, of which Professor Cruveilhier was president, and on this occasion in the Chair.

"The cotyloid cavity," says Fournier, "retains its form, except that the outer lip is slightly flattened; also it retains its depth and cartilage. The cavity contains a fatty substance, with which it is entirely filled." A new cavity for the head of the femur had been formed, and the head itself was somewhat flattened, but it retained its normal size, and it was covered with cartilage. There was no trace of the round ligament. Inasmuch as there was a history of a fall and subsequent lameness when the child was three years of age, M. Broca raised the question whether this was a congenital or a traumatic dislocation; and M. Legendre observed that congenital dislocation usually passed unobserved until the child began to stand or walk, and if he then fell it was supposed that dislocation occurred at that time. Whereupon Cruveilhier summed up the discussion, and expressed his opinion that neither the position of the femoral head, nor the condition of the cotyloid cavity, nor the absence of the round ligament, were characters sufficiently decisive to enable him to determine whether this was a congenital dislocation or an old traumatic dislocation—"de décider si la lux-

ation est congénitale ou seulement traumatique et ancienne."

Thus Cruveilhier, than whom no one was better able to judge, acknowledged that in congenital dislocation of the hip, even after sixteen years, the acetabulum may retain its form, depth, and cartilage, and the femoral head its size and cartilage.

I have many times found that the depth of the acetabulum was normal at various ages and up to twelve years; and having first ascertained with a needle probe that such was the case, I have proceeded to replace the head of the femur. But if there was difficulty in overcoming the force of the retracted muscles, I have divided these subcutaneously, viz., the trochanteric muscles and the adductor longus. Lying as it does, superficially, it is easy to judge of the size and shape of the *caput femoris*, and to know with certainty if it can occupy such a cavity as the acetabulum.

Having thus divided the various muscles at their several insertions, the head of the femur may be drawn down and firmly fixed with bandages, and with weights attached to the knee and the ankle. The head of the bone remains fixed, and there is no tendency to displacement, so that after four weeks passive movements may be instituted. In another fortnight active movements in the recumbent position are allowed to commence; and when the limb can be fairly abducted and flexed voluntarily, the patient is fitted with a suitable support, and is then allowed to stand and walk.

Fifty-two cases of this form of dislocation have come under my care during the last thirty years; and perhaps the following case will sufficiently illustrate the manner in which I have treated a large number of similar dislocations.

In April, 1895, I divided, with Mr. Henry Baker and Mr. Bailey, the trochanteric muscles and the adductor longus in the left femur of a well-developed and healthy girl 12 years of age, in whom there was not any other abnormality present, having previously probed the acetabulum to ascertain its depth. The femoral head was then dislodged and drawn down. Extension was made on the fourth day, when the wounds had healed; and the head of the femur was then firmly fixed in the acetabulum; from which there was no tendency to escape. The hip-joint was firmly bandaged and extension was kept up day and night. In the course of four weeks passive movements were instituted, and two weeks later active movements were made in the recumbent position. In twelve weeks she was fitted with a hip support, and was allowed to stand and walk. In standing both limbs were of the same length; and although there was slight yielding of the limb, there was no displacement in walking. In July the child walked firmly and without limping; and when recumbent she could flex the thigh entirely on the abdomen.

Where the acetabulum is so much filled up that it is impossible for the *caput femoris* to find a lodgment, I have with a specially curved gouge removed so much of the deposit as I could subcutaneously, to deepen the cavity sufficiently to retain the head of the femur; but I have not done this through an open wound, after the manner of Professor Lorenz, of Vienna, and of Dr. Hoffa, of Würzburg; nor have I found any difficulty in working the gouge subcutane-

⁹ Op. cit.

⁹ *Bulletins de la Société Anatomique*, 1855, p. 267.

ously. But where the gouge has to be used the joint movements are less free, and there is a tendency to ankylosis.

Notwithstanding, this operation is a great gain when the dislocation is single or, after good motion has been established on one side, when dislocation is double. When consolidation has taken place, and a new articulation has been formed, as in Fournier's case I never interfere; but at any period before consolidation is complete, the head of the femur may be drawn down after the trochanteric muscles have been divided, and with or without the gouge, the head of the femur may be safely and permanently restored to the acetabulum.

AN ANTISEPTIC TABLET FOR NASAL WASH.

BY JOHN EDWIN RHODES, M.D.

CHICAGO.

The necessity of a cleansing and an antiseptic wash for the nasal cavities is indicated in a variety of conditions. In cases of simple chronic catarrhal inflammation in which there is an excess of mucus which gathers and forms crusts in the cavities, often due to a slight nasal obstruction and accompanied with an unpleasant "catarrhal odor," the indications for treatment are often chiefly fulfilled by some antiseptic wash which will effectually dislodge the secretions and counteract the odor. In another class of cases instead of obstruction, we find an enlarged passage, atrophy of the membrane, and sometimes of the turbinated bones. Here even an exaggerated expiratory blast of air is inefficient in dislodging the secretion. This rapidly dries upon the surface of fine membrane, decomposes and causes pathologic changes in the tissues, and the patient gives as one of the most distressing features of the condition the bad odor that accompanies it. Here there is an indication for an agent that will both cleanse the nasal passages, disinfect them and stimulate the mucous glands. After operations of various kinds, as the removal of exostoses, the cauterization of the membrane, the removal of polypi, tumors, etc., an agent is needed that will render the parts thoroughly aseptic until healing has taken place. In operations about the fauces, the naso-pharynx, the pharynx, the tonsils, it is always advisable to use some strongly antiseptic solution as a spray or gargle for a few days succeeding the operation.

To meet such indications as have been briefly enumerated above the following formula has been found to possess the requisite agents in suitable proportions. The tablets can be employed in all conditions, and are unirritating if used in the strength of one tablet in from one-half to two-thirds of a glass of lukewarm water. In cleansing the nares it is much to be preferred that the patient should draw the water gently through the passages from the hand than to use any kind of a douche, as the latter in very many cases is improperly used, and the liquid is carried through the nasal passages with such force as to do local damage and perhaps reach the middle ear through the Eustachian tubes and set up a middle ear inflammation. This formula has been thoroughly tested by use in a large number of cases in private practice in the last two years, and is more satisfactory than any agents I have ever used for like purposes.

It has been put up in the form of compressed tab-

lets, which, as prepared by Gale & Blocki, are readily soluble, and in every way satisfactory. Each tablet contains the amount indicated in the formula.

DR. RHODES' NASAL TABLETS.

Potass. chlorate	2 1/2 grs.	15
Soda bicarbonate	10 grs.	60
Soda chlorid, C. P	10 grs.	60
Soda salicylate	5 grs.	30
Soda biborate	5 grs.	30
Thymol	1/8 gr.	007
Eucalyptol	1/4 min.	015

MYRINGITIS ACUTA—MYRINGITIS BULLOSA.

BY FRANK ALLPORT, M.D.

PROFESSOR OF CLINICAL OPHTHALMOLOGY AND OTOLGY IN THE MINNESOTA STATE UNIVERSITY, PRESIDENT OF THE MINNESOTA STATE MEDICAL SOCIETY, ETC.

MINNEAPOLIS, MINN.

Miss M. C., age 20; left ear; general health not good; has had naso-pharyngeal colds for two or three weeks, accompanied by a hard cough. Nov. 11, 1895, at about 11 P.M., experienced suddenly a severe earache, which continued with increasing severity till the morning of November 12, when I was consulted. I found the view of the membrana tympanum obstructed by three large bullæ situated as follows: One at the upper anterior quadrant, extending down nearly to the inferior extremity of the handle of the malleus. This was large and deeply congested, the redness passing on to the meatal wall, as it joins the drum-head.

Another was situated at the junction of the drum-head with the posterior meatal wall, and was more on the latter than the former. This was also much inflamed and large. Another blister occurred exactly at the inferior extremity of the malleus, and was smaller than the others—quite white and not inflamed. A cluster of prominent blood-vessels extended from this to the posterior blister. The bullæ were separate and distinct, for I punctured all three, as each one required a separate incision to liberate its individual serous fluid. I was careful not to penetrate beneath the dermic layer of the membrane, and a thorough inflation of the middle ear with the catheter and air bag after the puncture was made evidenced an intact condition of the underlying membranous coats. The hearing in this ear was somewhat but not markedly reduced. The case was seen by Dr. W. N. Porteus, of this city, at my request.

November 13, I found the blisters all thoroughly collapsed; some membranous inflammation, no pain, slept well, hearing almost completely restored. November 19, drum-head fully restored to a normal appearance and hearing perfect.

THE DEGENERATE EAR.

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY EUGENE S. TALBOT, M.D.

FELLOW OF THE CHICAGO ACADEMY OF MEDICINE.
CHICAGO.

(Concluded from page 58.)

Figures 10, 11 and 12 illustrate the different stages of excessive and arrested development of the helix. For the purpose of giving a better description of the stigmata of the ear I have divided the ear into upper, middle and lower third. Figure 10 shows arrest of the helix as far up as the upper third, while the upper part is well developed. Figure 11 shows the helix normally developed. Figure 12 illustrates the lower

third normally developed, while the upper middle and upper third are excessively developed.

When the whole or a large part of the helix is arrested the ear is usually (not always), larger and the antihelix is excessively developed. On the other hand, when the whole helix or larger part is excessively developed the ear is usually (not always) small and thick, with arrested antihelix. When the ear is at or near an angle of 90 degrees the helix is usually quite or entirely arrested or very thin. When it is small and at an angle of from 10 to 45 degrees it is usually well developed and thick. The root of the helix is sometimes arrested. When this is the case



Fig. 10.

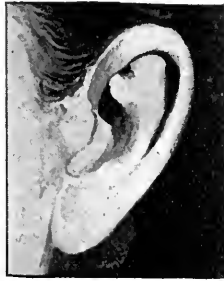


Fig. 11.

it is lost in the floor of the concha. When normally developed it produces a distinct ridge extending across the floor and when excessively developed it divides the concha into unequal parts. In 465 criminals at Pontiac, there were 236 arrested, 55 medium, 174 excessive; 181 folded, 48 medium, 236 open. Root of helix, normal 157, abnormal 308. In 1,041 criminals at Elmira, there were arrested 771, medium 52, excessive 206; 294 folded, 747 open. Root of helix, 907 normal, 132 abnormal.

The most singular deformity of the helix is the tubercle of Darwin (Fig. 13), which is a little blunt point projecting from the inwardly folded margin or



Fig. 12.



Fig. 13.

helix. When present it is developed at birth and according to Prof. Ludwig Meyer, more frequent in man than in woman. Figure 13 shows ear and tubercle taken from Darwin's "Descent of Man."³ These points not only project in toward the center of the ear, but are often a little outwards from its plane, so as to be visible when the head is viewed from directly in front and behind. They are variable in size and somewhat in position, standing either a little higher or lower; and they sometimes occur on one ear and not on the other. They are not confined to mankind, for Darwin observed a case in one of the spider

monkeys (ateles bulzebuth) in the Zoological Gardens. Dr. E. Ray Lankester tells of another case in a chimpanzee in the garden at Hamburg. The helix obviously consists of the extreme margin of the ear folded inward, and this folding appears to be in some manner connected with the whole external ear being permanently pressed backward. In many monkeys which do not stand high in the order, as baboons and some species of macacus, the upper portion of the ear is slightly pointed and the margin is not at all folded inward; but if the margins were to be thus folded, a slight point would necessarily project inward toward the center and probably a little



Fig. 14.



Fig. 15.

outward from the plane of the ear, and this Darwin believes to be their origin in many cases.

The hundreds of these cases observed by me have always been found among the neurotic and degenerate. As according to Darwin, "when present it is developed at birth," it therefore must have formed when the ear was developing before the fourth month of fetal life. At birth, however, it is not as prominent as it will become when the ear has obtained its full development, although prominent enough to be recognized.

Prof. Meyer finds these tubercles more common among men than women. This is in accordance with the general rule in evolution that women are truer to the type than men. According to Meyer, it is due to



Fig. 16.



Fig. 17.

arrested development of the helix. In my experience, it is due to both excessive and arrest of development of tissues. I have observed not infrequently both conditions upon the helix of one ear. Tubercles may be located upon both ears or upon one. They also vary in number, one only, or sometimes three, even four have been noticed upon one ear.

The position of these tubercles depends entirely upon the shape of the helix. If the helix is turned toward the center of the ear, the tubercles will point in that direction; if at right angles, they will stand at right angles. If the ear lies perfectly flat without a helix, the tubercles will stand in direct line with

³ The Descent of Man, page 15.

the flat ear and point backward or upward; whether they can be observed standing in front, at the side or back, will depend upon the position of the ear to the head. Some ears stand close to the head, others at an angle of ninety degrees. The location of the tubercle upon the helix varies in different individuals. The most frequent localities, however, are at the upper border of the middle third, as illustrated by Darwin; also at any point on the helix from its origin to its insertion; again, just above and below where the root of the antihelix crosses the root of the helix in the floor of the concha. I have also observed upon the left ear of a physician, which measured 3 inches in length, 1.50 in width, and stood almost at right angles, five tubercles in the upper third of the helix, due to arrest of development. Again, one may be located on the outer border looking outward, and the other on the inner border, looking inward. (Fig. 14.)

In one family coming under observation, the grandmother has three tubercles on left ear, one at the lower border of the middle third, one above and below on the root of the helix where the root of the antihelix crosses it in the concha. A daughter has one on the root of each helix, in the concha below the point where the root of the antihelix crosses it.



Fig. 18.



Fig. 19.

The oldest grandchild, eighteen years of age, has the same tubercles in same places as mother, and also half-developed tubercles on the root of the helix above the point where the root of the antihelix crosses the helix. The second grandchild, a boy ten years of age, has a fully developed tubercle upon each root of helix below the point where the root of the antihelix crosses it, and a semi-developed tubercle on each helix just above that point. The third child (Fig. 15), a daughter one year of age, has four tubercles upon the left ear, two on the root of the helix, like grandma, one at lower border of middle third and one at lower border of lower third; on right ear two on root of helix like other side, and a semi-developed tubercle at the lower border of middle third.

It is impossible to illustrate the tubercles on the root of the helix, owing to the fact that they are situated inside the concha. Figures 13, 14 and 15 form an excellent illustration in the regicide, J. Wilkes Booth; one at the top, the other just below the middle of the helix. In Cesare Giovanni Santo, one at the top, the other at the lower third. In Patrick Eugene Joseph Prendergast, one at the locality pointed out by Darwin, the other at the lower third, near the lobule.

A young professional man, 29 years of age, is a marked neurotic; nervous temperament, suffers con-

tinually with indigestion; has insomnia; possesses a good mind, is a great reader; has full forehead, wears glasses for astigmatism; stigmata show arrest of development of the bones of the face and upper jaw; asymmetrical head; V-shaped arch; high vault; arrest of development of the lower jaw; possesses a long, narrow, handle-shaped ear, with arrest of the upper third and outer border of the helix, showing two distinct tubercles, one near the cranium, the other at the outer border as illustrated by Darwin.

A remarkable case is that of a degenerate whose left ear is 2.75 inches in length, 1.12 inches in width, possesses a tubercle at the lower border of the lower third, one at the middle of the upper third upon the border which looks downward toward the concha, and another just on the opposite side of the helix looking upward; the one looking downward is due to arrest of the edges of the helix, the other to excessive development of the outer border of the helix. From what has already been said it will be observed that these tubercles are in all stages of development from a minute point to the size of a large pea.

As stated at the outset, these tubercles are always observed among the neurotics and degenerate classes; they are due to arrest and excessive development of the helix. Sometimes there is a total arrest of the



Fig. 20.



Fig. 21.

helix, giving the ear the appearance of having been cut or burned away. When these tubercles are observed upon one or both ears, marked stigmata are also observed in other parts of the head, face, jaws and body. This is nicely demonstrated in the case of Prendergast.

In the ear illustrated by Darwin, are other points which demonstrate more clearly developmental neurosis, or degeneracy, than his tubercles. Since this ear was modeled by the celebrated sculptor, Woolner, it certainly must be very accurate. The first thing to be noticed is a general arrest of development. This ear is only about two-thirds the normal size and is unusually thick. (I have already observed that when the ear is unusually large, it is also very thin; when unusually small, it is very thick.) The lobule is arrested to such an extent that it is almost obliterated. The tragus and antitragus are almost entirely undeveloped, leaving the concha unprotected. The helix is rolled upon itself, the result of general arrest. The arrest of development of the rim of the helix at two different places and its development in a small sphere, produces the tubercle. From such a degenerate ear, one accustomed to the study of degeneracy could describe the deformities of the face of the individual possessing the ear, without difficulty.

Sometimes these tubercles grow to an immense size; thus, a business man, 35 years of age, possesses

an ear at right angles, with tubercles equal in size on each ear, as large as the end of the little finger; these are located at the upper middle third. The helix is entirely arrested.

Another singular case is that in which the helix of the left ear is excessively developed. At the extreme upper border there is a large tubercle at the inner edge, looking downward; and opposite, on the upper border looking upward, is another of the same size. Both of these are due to excessive development. Another case is that of a baby 14 months old. There are four tubercles on the left ear and none upon the right. One at the upper middle third, one at the ex-

opment of the helix, the antihelix is excessively developed, and *vice versa*.

This would seem to be a natural compensation for the purpose of collecting the waves of sound. In apes the antihelix is rudimentary, thus showing that the helix is most usually developed. It is claimed by some scientists that the antihelix is also wanting in the most pronounced forms of insanity and in criminals. The following are the results of a most thorough investigation of criminals:

At Pontiac, arrested, 195; excessive, 271. At Elmira, arrested, 317; medium, 13; excessive, 722.



Fig. 22.



Fig. 23.

treme top of the helix, both due to arrest of helix; and two on root of helix, in the concha, one anterior, the other posterior to the lower root of the antihelix, making a groove through which it is to pass.

The same exists in a brother and sister, mother and grandmother, and not in the father of the children. They are not, however, exactly alike in all generations, or in the same generation. This is, no doubt, due to malnutrition.

According to Frigerio, the exaggerated tubercle of Darwin is seen exceptionally in normal individuals, rarely in non-hereditary insane; with an average of 36.95 per cent. in hereditary cases and of 27 per cent.



Fig. 24.



Fig. 25.

in neuropathic degenerates, and not so marked in criminals.

I have taken statistics of tubercles of 1,000 so-called normal persons, with the following results: Right 414, left 446. In 100 noted men, right 33, left 29.

In an examination of 1,506 criminals, making 3,012 ears, these were found upon upper third, right 152, left 127; middle third, right 504, left 452; lower third, right 2, left 3; none, 1,772 ears.

ANTHELIX.

Figures 16, 17 and 18 show arrested, medium and excessive development of the antihelix. My experience has been that where there is arrest of devel-



Fig. 26.



Fig. 27.

TRAGUS.

Figures 19, 20 and 21 show arrested, medium and excessive development of the tragus. The tragus and antitragus are most frequently malformed in the degenerate, though the helix and antihelix are more noticeable. One of the peculiar forms of degeneracy noticed in the tragus is a fissure dividing it into two distinct lobes. Sometimes it is very slight, making a long, double tragus with a slight depression in the center. Again, a little deeper, showing two tubercles, and again, two distinct organs.

In an examination of criminals at Pontiac: Arrested, 117; medium, 244; excessive, 124. At Elmira: Arrested, 534; medium, 70; excessive, 427.



Fig. 28.



Fig. 29.

ANTITRAGUS.

Figures 22, 23 and 24 show arrested, medium and excessive development of the antitragus. This organ is very frequently absent among the degenerate classes.

Examination of criminals at Pontiac shows: Arrested, 313; medium, 59; excessive, 76. At Elmira: Arrested, 693; medium, 21; excessive, 216.

LOBULE.

Figures 25, 26 and 27 illustrate long, medium and short lobule. Perhaps no part of the ear has received so much attention by scientists as the lobule. The long, handle-shaped ear (meaning, of course, the

long lobule) is a marked sign of degeneracy; the short ear, without lobule, also denoting arrest of development. Very little, therefore, is left for a normal lobule. So frequent do we find these conditions among normal individuals that, without other stigmata, either excessive or arrested lobule would be without significance. In extreme cases the lobule

will develop forward and frequently double upon itself, not unlike the ears in the lower forms of animal life.

Figures 28, 29 and 30 illustrate attached, medium and separated from the face. These conditions have also received considerable weight by scientists and neurologists, as demonstrating stigmata of insanity

STATISTICS OF DEGENERACY OF THE EAR.

		Auricle.																			
		Length.										Width.									
	Number.	Large.	Medium.	Small.	1.75	2.00	2.12	2.37	2.25	2.50	2.75	3.00	.84	.75	1.1	1.12	1.37	1.25	1.50	1.75	2.25
Normal persons, right ears...	1,000	595	68	253																	
Per cent...		59.5	6.8	25.3																	
Normal persons, left ears...	1,000	561	68	372																	
Per cent...		56.1	6.8	37.2																	
Noted men, right ears...	100	62	5	33																	
Per cent...		62	5	33																	
Noted men, left ears...	100	56		44																	
Per cent...		56		44																	
Criminals...	1,506				1	.33	9	9	295	930	196	33	2	2	100	275	172	824	115	3	1
Per cent...					.03	1.09	.30	.30	9.79	30.88	6.51	1.09	.06	.06	3.32	9.13	5.71	27.36	3.82	.10	.03
Insane...	443					.35	1		118	208	53	28			36	110	8	237	43		
Per cent...						3.95	.11		13.32	23.48	5.98	3.16			4.06	12.41	.90	26.75	4.85		

Helix.								Anthelix.				Tubercles of Darwin.						Lobule.								
Development.			Form.		Root.			Development.			Upper 3d.		Middle 3d.		Lower 3d.		Attachment.			Shape.			Development.			
Arrest.	Medium.	Excessive.	Folded.	Medium.	Open.	Abnormal.	Normal.	Arrested.	Medium.	Excessive.	Right.	Left.	Right.	Left.	Right.	Left.	None.	Close.	Medium.	Separate.	Broad.	Narrow.	Long.	Arrested.	Medium.	Excessive.
667	13	312	325		667	325	667	627	13	352	33		378		3		605	920	74	8	554	444	13	447	33	520
66.7	1.3	31.2	32.5		66.7	32.5	66.7	62.7	1.3	35.2	3.3		37.8		.3		60.5	92	7.4	.8	55.4	44.4	1.3	44.7	3.3	52
532	14	435	449		532	339	532	532	14	469		78		365		3	592	865	72	17	580	421	7	429	7	565
53.2	1.4	43.5	44.9		53.2	33.9	53.2	53.2	1.4	46.9		7.8		36.5		.3	59.2	86.5	9.2	1.7	58	42.1	.7	42.9	1	56.5
59	41	41	59		59	28	72	41	59	59			33				100	100	59	41	58	41	1	41	1	58
59	41	41	59		59	28	72	41	59	59			33				67	100	59	41	58	41	1	41	1	58
57	43	43	57		57	17	83	43	57	57		2		29			79	94	5	1	55	45		46		54
57	43	43	57		57	17	83	43	57	57		2		29			79	94	5	1	55	45		46		54
1007	107	380	475	48	983	440	1064	512	13	993	152	127	504	452	2	3	1008	1140	354	19	1065	465	68	736	37	711
33.43	3.55	12.62	15.77	1.59	32.64	14.61	35.33	17.00	.43	32.97	5.05	4.22	16.73	15.01	.06	.10	33.47	37.85	11.75	.63	35.36	15.44	1	26.44	1.23	22.61
296		147	147		296	119	324	119	290	77	77	174	172	3	3		222	418	25		255	188	1	237		206
33.41		16.59	16.59		33.41	13.43	36.57	16.82		32.73	8.69	8.69	19.64	19.41	.34	.34	25.06	47.18	2.82		28.78	21.22	1.11	26.75		23.25

Tragus.			Antitragus.			Concha.			Angle.			Relation.		
Development.			Development.			Development.			Development.			Development.		
Arrested.	Medium.	Excessive.	Arrested.	Medium.	Excessive.	Large.	Small.	Deformed.	Right.	45°	Close.	Right Higher.	Left Higher.	Normal.
677	38	287	728	24	256	522	156	324	38	244	723			
67.7	3.8	28.7	72.8	2.4	25.6	52.2	15.6	32.4	3.8	24.4	72.3			
571	33	377	684	11	306	427	235	339	39	282	699			
57.1	3.3	37.7	68.4	1.1	30.6	42.7	23.5	33.9	3.9	28.2	69.9			
83	1	16	83	1	16	56	16	28	4	24	72			
83	1	16	83	1	16	56	16	28	4	24	72			
63		37	78		22	54	29	17	2	30	68			
63		37	78		22	54	29	17	2	30	68			
651	314	551	1006	80	392	679	403	423	302	719	483	52	95	1359
21.61	10.42	18.29	33.40	2.66	13.01	22.54	13.38	14.04	10.03	23.87	16.01	1.73	3.15	45.12
337	1	107	326	1	116	269	56	119	3	34	406	2	4	437
38.04	.11	12.08	36.79	.11	13.09	30.36	6.32	13.43	.34	3.84	45.82	.23	.45	49.32

AVERAGE.

	Length.	Width.
Children from 6 to 18 months	1.90	.96
Children from 8 to 12 years	2.19	1.06
Persons from 12 to 50 years	2.50	1.22
Panpers over 50 years, right ear	2.73	1.26
Panpers over 50 years, left ear	2.76	1.26
Criminals from 15 to 26 years	2.50	1.25
Insane from 18 to 60 years	2.50	1.25

and criminality. Like the length of the ear, no more stress can be placed upon these conditions than upon the length, without other stigmata.

In an examination of criminals, the following results are obtained:

Attachment.			LOBULE.		Shape.		Development.		
Close.	Medium.	Separated.	Broad.	Narrow.	Long.	Ar'st.	Med.	Exc'y.	
PONTIAC.									
309	163	11	334	104	33	255	12	198	
ELMIRA.									
831	191	19	671	361	35	481	25	513	



Fig. 30.



Fig. 31.



Fig. 32.

Figures 31, 32 and 33 illustrate ears of illegitimate children at birth. Owing to their age their mentality is not fully determinable, but numbers 32 and 33 have every appearance of idiocy.

Figures 34 and 35 show the congenital elephantine ear in monstrosities. For the purposes of comparison, the results of my investigations are given in full.

The tables show that the various parts of the ear are often not in harmony with each other.

In the study of aural relations to degeneracy, it is customary to speak of large, medium, small or handle-shaped ears without setting a definite standard for

comparison. Having ascertained the average size length 2.50 and width 1.25 inches, of a given number of ears of normal persons, it may be stated that an ear which measures below 2 inches can be considered a very short ear, between 2 and 2.25 inches short, between 2.25 and 2.75 inches medium, between 2.75 and 3 inches long, and above 3 inches very long. In regard to width an ear below 1 inch is narrow, between 1 and 1.50 medium, and above 1.50 wide.



Fig. 33.



Fig. 34.



Fig. 35.

There is no means at hand of knowing what changes occur in the length of the ear at different ages over 50 years in normal persons. There seems, however, to be a gradual increase in length and width. I have noticed, casually, the ears of a number of persons on the street, and should judge that a large percentage of people possessed ears from 3 to 3.36 inches in length and from 1.50 upward in width. Comparison of the length and width of the ears of paupers, criminals and the insane, indicates that degenerates possessed much the largest and widest ears.

The statistics show that the ear is not in harmony

in its relation to its various parts, and that so-called normal individuals have just as deformed ears as criminals and the insane.

On comparison of the figures of the table it will be seen that the percentage of deformities of criminals and insane is nearly the same, and taken together is about one-half as great as the normal.

There is a somewhat prevalent theory that persons whose lobule is attached its entire length have insane tendencies. The foregoing data do not corroborate this, since in an examination of 1,000 normal persons 92 per cent. are found to have attached lobules, while among the insane only 47 per cent. was found. It follows that an attached lobule is more common among the normal than among the insane. Among criminals is found 37 per cent., and in noted men 9 per cent. for left ears, 10 per cent. for right ears.

The table shows that the tubercle of Darwin is not always found at the upper part of the middle third of the helix (Fig. 13). Tubercles, practically identical, may be found at any point on its border. These tubercles are obviously similar in appearance and due to the same causes that produce the tubercle of Darwin (arrest and excessive development of the helix). Hence, the theory advanced by Darwin that this tubercle is a rudimentary point on the ear is not sustained. In normal persons 3 per cent. of the tubercles of Darwin occur on the upper third, 37 per cent. middle third, 3 per cent. lower third, in right ears, while in criminals 5 per cent. occur on the upper third, 16 per cent. middle third, 3 per cent. lower third, right ears, and in the insane 8 per cent. upper third, 19 per cent. middle third, and 34 per cent. lower third, right ears. They are obviously more numerous upon the middle third of the helix. There is a larger percentage among normal individuals than with the degenerate class.

The left ear, however, seems to be least affected in either the normal or the degenerate. That these tubercles denote degeneracy may be admitted, but it does not seem probable that it comes under the type of degeneracy to which Darwin ascribes it.

The ear at 90 degrees is said to be a marked sign of degeneracy. The figures, however, do not bear out this claim. In normal persons this occurred in 3 per cent. right and left ears, 4 per cent. and 2 per cent. right and left ears of noted men, 10 per cent. right and left in criminals, and 3 per cent. in the insane.

In the relation of the ears to each other there is found a larger percentage of right ears higher than left ears; in criminals 17 per cent. right were higher than left and only 3 per cent. left higher than right, while in the insane 2 per cent. right were higher than left and 4 per cent. left higher than right. In the 1,000 normal individuals there were more deformities upon the right ear than upon the left. This is also true of the 100 noted men. At the time of the examination of criminals and insane these were not classified, as in the normal persons and noted men, except as to the tubercles of Darwin and the interrelations of the ears.

That the external ear as an organ is tending to disappear is shown by the feeble power of its muscles which, except in cases of reversion or special training, are inactive. Changes in the ear by themselves are merely suggestive and not demonstrative of degeneracy, except in accordance with the general rule that accumulation of defect constitutes strong evidence.

SOCIETY PROCEEDINGS.

Chicago Medico-Legal Society.

Regular Meeting, held in Handel Hall, Jan. 11, 1896.

THE PRESIDENT, DR. E. J. DOERING, in the Chair.

The minutes of the previous meeting were read and approved.

DR. F. E. DANIEL, of Austin, Texas, contributed a paper entitled

A PLEA FOR REFORM IN CRIMINAL JURISPRUDENCE, which was read by the Secretary, DR. JOHN RIDLON, in the absence of the author.

He referred, at the outset, to a paper which he presented on "Castration of Sexual Perverts," read at the International Medico-Legal Congress, held in Chicago in 1893, in which he advocated castration of sexual pervers, and especially as applied to rapists, as being more humane, more rational, and more effective as a deterrent than hanging, and more in accord with science, progress and an enlightened civilization; not as a penalty, but as a therapeutic measure in some cases, and prophylactic in all, for the present protection of society, and as a guarantee against a like progeny to curse future generations. Incidentally the author advocated the castration of certain criminals also in this paper, and for the same reasons. In the light of the rapid and alarming increase of crime and criminals in this country, it is evident not only that there is something radically wrong with our system in dealing with crime and criminals: that our penal methods are a dismal failure, but that reform has become an imperative, pressing and immediate necessity. According to the United States census for 1890, there were in 1850, 6,737 prisoners in the United States, or one to every 3,442 of population. In 1890 there were 82,329 prisoners, or one to every 757 of population. The end and object of all penal enactments are supposed to be the protection of society against crime and criminals, and it is unfortunate that no measures are provided as a protection against this increase, principally by heredity. Nothing could testify more emphatically to the inadequacy of our system than the figures just given, nor appeal more forcibly for reform. The thinking members of the medical profession are being rapidly converted to the belief that crime is a disease: that criminals are sick persons, and that their condition calls for a more enlightened method of management. They know that many, if not most of them, are subjects of hereditary transmissions of vicious temperament, and all of them the victims of vicious environment.

The classification of criminals can only be done by medical men. When the character of the crime has been determined by the court, it would seem to be in accord with the requirements of the case and the dictates of an enlightened humanity, that there should be a commission of medical men to diagnose the criminal and prescribe the course which is best calculated to meet the demands. If it be one of the curable class, the treatment, consisting of restraint, discipline, hygiene, education, environment and healthy labor should be such as to induce a determination never to offend again. Pride and self-respect should be fostered, for they are the highest incentives in life to good behavior. The term of imprisonment should depend upon the progress made in reformation, and on good behavior: the culprit made to realize that when he gives evidence of fitness to be trusted with his liberty it will be restored to him. The incurable—the born criminal of Lombroso—should be dealt with as a permanent enemy to society, and the first aim in his case, after sequestration, should be precautions against a progeny. When a man has been diagnosed as a natural criminal, twice convicted of any felony, along with the forfeiture of liberty for life and all other rights, he certainly should be deprived of the right to inflict upon the next generation a progeny sure to be like him. Why not? Can any one give a single reason why this right should be respected when all others are taken away? The author thinks not. The criminal insane should also be embraced in this category. Were it understood that being insane at the time of the crime, or becoming so after, makes no difference, and that castration is to follow, sane or insane, there would be fewer pleas of insanity, and thus would be stopped one loophole of escape by which

many defeat the ends of justice. The author then quoted the case of the notorious Jukes family, with which the readers of the JOURNAL are familiar.

Capital punishment is becoming more and more abhorrent to thinking people, and is being very generally condemned by medical writers as barbarous, useless and unjustifiable. Castration is rapidly growing in popular favor as a substitute for it. In my State (Texas) the agitation of the subject has become a movement. At the last session of the Legislature a bill to that end was actually introduced and found favor. But owing to other and exciting questions, it was pigeon-holed and lost sight of. Texas may yet set the example in this rational reform. Even a decade ago there was much intolerance on the subject, and one was bold indeed who would advocate it. Dugdale in his history of the Jukes was clearly of the opinion that castration was the only rational thing for the born criminal, but he was afraid to say so. Flint quotes him as saying: "In dealing with habitual typical criminals, where we can not accomplish individual cures, we must organize extinction of their race. They must be sternly cut off from perpetuating a noisome progeny either by propagation, or perversion of a coming generation. The old laws attempted this extinction by hanging." And, in commenting upon this sentence, Flint says: "Dugdale evidently did not care to suggest a method of organizing extinction of their race;" but one less severe than hanging readily suggests itself. It would not be difficult to devise a method of sterilization of irreclaimable born criminals which would not offend sentimental public opinion: this to be applied, not as a punishment for any particular class of crime, but merely for protection of society, and after a full scientific investigation of every case.

Dr. Daniel closed his contribution in the following words: "The time has come, and the occasion demands that science should boldly advance its standard and plant it upon the bulwarks of entrenched ignorance, bigotry and intolerance and compel attention. Humanity demands it: public safety demands it. By an organized effort on the part of the two learned professions, Congress can no doubt be aroused to the necessity of being advised by them and induced to create a department of public health and hygiene. Its ramifications extending into each State, the knowledge necessary to intelligent legislation in the interest of society and the public welfare will then find its way to utilization through legislatures, however unwilling, and reform will be the order of the day."

MR. R. W. McCLAUGHRY, Superintendent of the Illinois State Reformatory at Pontiac, discussed

THE HABITUAL CRIMINAL.

He first defined the word habit which, according to the Standard Dictionary, "is an acquired disposition to reproduce certain acts already performed several times, and which, by this repetition, become more easy, more rapid, and more sure. It is an acquired instinct, a second nature." Crime is well defined as an act of which the State disapproves and for which it provides a penalty. Crime has been ascribed by many writers to a lack of will, and while this expression is too indefinite to form a satisfactory explanation of many species of crime, it can be directly applied to the habitual criminal. First among the characteristics of the habitual criminal, even before his inordinate vanity, and his faculty for colossal, gratuitous, aimless lying, stand his lack of will power and his absolute disregard of consequences. The author then drew a distinction between the habitual and the professional criminal. The expression "habitual criminal" was a synthetic term and included many varieties of the malefactor. The moral idiot, the born criminal, the professional criminal and the frequent criminal, were all correctly described as habitual. While they formed connecting links in the criminal chain, they were still separate, and to the expert observer there could be no confusion. The professional criminal he defined as "one who daily or frequently repeats, with a fair certainty of escaping detection, the same crime or misdemeanor which furnishes him with a regular and assured livelihood." There were not many varieties of criminals who could properly be placed in this class. Perhaps a fair instance of the type was the receiver of stolen goods, the professional "fence." Never, or rarely, committing a direct offense against either person or property, this type of criminal thrives upon the proceeds of crime, does more by precept, suggestion and "pressure" of various kinds to educate and turn out upon society finished and dangerous criminals, than any other agency that the devil has in his employ for this purpose. He is the modern type of Dickens' Fagin. This Fagin is the meanest, most treacherous, conscienceless, cowardly scoundrel in the whole catalogue of villains. He never permits either agent or operator to retain more than 10 per cent. of the proceeds of the booty that he has risked life or liberty to ob-

tain. To the author's mind, the absolutely typical criminal was the fully developed, habitual thief, and it was in this class that all the signs of mental and physical degeneracy, characteristic of the crime class, were found. It was in this class that we find with startling certainty and frequency the malformations of the skull and the various anomalies which indicate a badly balanced organization. All these malformations could be found in persons of undoubted honesty and good reputation, but it had been proved by a series of searching and thorough experiments, that these anomalies are more than five times as numerous among criminals as they are among non-criminals. Moreover, it is rare to find a normal man presenting more than one of these anomalies, while it is almost impossible to find an habitual thief in whose physique there are not several typical malformations.

The question of responsibility and punishment of criminals is one on which the most widely divergent opinions are held by various schools of scientists and philosophers. According to the Italian school the criminal is an atavistic anomaly. He can not help it. It is not his fault that he was born with a natural inclination to do evil. His crime is the result of a malformation of his brain, and in the opinion of Mr. McClaughry it is fair to punish a man for his deformity. To illustrate this point, he selected the case of Prendergast, the assassin of Mayor Harrison. It was claimed by the lawyers and experts for the defense that the assassin was insane. "The fact that Prendergast, an uneducated person, seriously considered himself qualified to discharge the duties of Corporation Counsel would, he thought, indicate of itself that his mind was unbalanced. Moreover, the comparative measurements of Prendergast's skull proved that he possessed all the stigmata of the paranoiac. But he did not consider that the fact of Prendergast being unbalanced rendered his execution unjust either to society or to himself. As regards society he was one of its vermin, and as such his removal was necessary. This removal could have been equally accomplished by confinement for life, but so strong is the power of suggestion upon people of his kind that, if it had been for the unfaltering and decisive action of public opinion in his case, we would have seen an epidemic of assassination in various parts of the country. The verdict in Prendergast's trial was a foregone conclusion, the same as was the verdict in the case of Guiteau, and of the Chicago anarchists. The three verdicts were the result of those periodical outbursts of public sentiment, against which the eloquence of council, legal technicalities, or even evidence itself are of no avail. Their results may be harsh, but they are healthy. They cleanse, for a time at least, the moral atmosphere."

Concerning the criminal who had passed beyond the reach of preliminary or preventive measures, the author said that the joint experience of hundreds of persons, who had for years made daily observation of this class, was to the effect that the habitual criminal was absolutely incurable. More than this, he was a constant source of untold harm to society, and should be eradicated, as we eradicate the germs of a pestilence. In the first place it should be carefully established by the courts acting under certain well understood principles, whether or not the accused is a habitual criminal. The failure to put this or that technical phrase in the indictment should be no bar to the submission to the court of conclusive evidence showing his real criminal character. Under our present system the face of the accused may be as familiar to the judge as is that of the State's Attorney. He may have been convicted before the same judge twenty times; but if, on the twenty-first trial, the fact has not been set forth in the indictment, no evidence can be permitted to prove it. Now, upon its being clearly proved that the accused is a perpetual criminal, a social parasite, who has given repeated evidence that his liberty is a direct and serious menace to the community the punishment should be decisive. The penalty should be no longer correctional but preventive, and imprisonment for life appears to offer the only solution of the problem. This, the essayist admits, is drastic treatment, but it is required. The greatest latitude should be allowed the courts and the prison authorities in the matter of imprisonment. Take our courts and our prison management out of politics and we will have removed the greatest obstacle to the protection of society, through the administration of its laws. Justice should no longer be represented as blind-folded. Take the bandage from her eyes and then she will see to weigh other things beside the mere criminal act in her balance. She will weigh, not only the circumstances surrounding the act itself, but the past and the probabilities of the future in the case of each offender, and when she is permitted to do this she will see that only permanent removal from society will meet its needs so far as regards that contagious pest, the incurable habitual criminal.

DR. HAMILTON D. WEY, Superintendent of the New York State Reformatory at Elmira, followed with a paper entitled

MORBID SEXUALITY IN A REFORMATORY.

in which he said that the medical man swayed by no sentimentality should in a scientific spirit accept conditions as he finds them, not confounding nor mistaking a *post hoc* for a *propter hoc*. The spirit and function of the law constitute the protection of society and conservation of morality, the according of privileges and restraint of license, while the formulation of the several statutes looking to the above end is based upon a knowledge of mankind as at present existing, and not upon an ideal man. The author is of the opinion that perverse, morbid and pathologic sexuality exists to a greater degree than is commonly supposed by those who had given the subject little consideration and attention. Abnormal sexuality was found in the city, and it flourished in the country. Nor was the speaker convinced that the morals of the country in this respect were superior to those of the city. It is not surprising that sexual malpractices are found in penal institutions despite the exercise of most constant and unrelaxing supervision. As the medical officer of a State Reformatory, receiving males between 16 and 30 years of age, upon first conviction of felony, it had fallen to him to have at various times under his observation and care a greater or less number whose sexuality found expression in unnatural ways during imprisonment. All the boys and men in the institution with which he is connected were sexual free-livers prior to conviction. Some habitually gratified themselves in a natural manner and were sexually normal, but under the restraining influences of imprisonment became either active or passive pederasts according to opportunity, or practiced onanism. The most common and widespread phase of sexual activity that comes to his notice is masturbation. He does not think that there is the unanimity of opinion there should be between alienists and prison physicians as to the ultimate disastrous effects upon the nervous system and mind, and coincidentally upon the body, of long-continued, frequently indulged-in masturbation. Each views the habit from a different standpoint and under different conditions, and each is correct in his conclusions from his point of observation. The former comes to look upon the sexual deviation he sees in mental disease as an outcome and accompaniment of insanity and refers to cases in which exaggerated and morbid sexuality, obscene language, indecent exposure, etc., appeared after mental disease had declared itself. These conditions are the concomitants of insanity—the effects. The trained eye of the prison physician speedily recognizes the habitual masturbator, detects him in his practices, notes physical and mental decline as self-indulgence increases and intervening periods of sexual quietude decrease in length, until finally there is a lapsing into dementia preceded by a transient and active mania, or melancholia ensues. Indeed, it seems as if some youthful prisoners yield themselves in confinement to morbid sexuality as if this was all that was volitional remaining in them. At this juncture the author dwelt upon several phases of sexual perversion and cited typical cases.

In closing he submitted three propositions:

1. Have prison officials, without the liability of laying themselves open for damages, the right to castrate, asexualize or sterilize a sexually morbid prisoner against his will, when indications of such operation are manifest? And is there the same justification for such surgery as in the operation for the relief of a strangulated hernia and the elevation of depressed bone in a fracture of the skull performed upon the person of a dissenting convict?

2. Is an imprisoned convict competent to execute an instrument declaring his wish to be asexualized and granting immunity from damages for abrogation of sexual capacity? If he be a minor, could he so consent without the concurrence of his parents or guardian: and could the latter compel him, without his consent, to submit to asexualization?

3. On such consent having been voluntarily given and subscribed to in due form in the presence of witnesses, could he at the termination of his imprisonment maintain a suit for damages? If as above stated, could the factor of imprisonment in the case be construed as coercion operating to obtain the consent above named, and become the basis of litigation? The author is not aware that asexualization has been employed in the treatment of those convicted of heinous sexual offenses and the sexually morbid and degenerate criminal. There are, however, precedents for its employment in the treatment of demented whose mental impairment followed perverted sexuality, and in connection with the care of certain defective dependent classes.

MR. MAT. W. PINKERTON, of Chicago, followed with a paper on

THE ECONOMICAL TREATMENT OF THE HABITUAL CRIMINAL.

A comparative study of crime and criminals has led to the

introduction of more humane methods, which have revolutionized the ancient theories of punishment. Theoretically the element of revenge has been eliminated and the security of society, together with the reformation of the offender, made the prime objects. We now aim to do the criminal as little harm and as much good as possible, while protecting the rights and interests of the public at large. The economical treatment of criminals is a question by no means limited to the amount of money involved. There is such a thing as suppressing crime in a manner that increases it in other directions, thus in the aggregate multiplying vice. In the speaker's judgment, our present methods partake largely of this character, and need radical revision. If prevention is better than cure in medicine and the ordinary ills of life, it must be equally true when applied to the evils that infect society. In dealing with criminals he would attack them in their cradles, and not wait until they have propagated a numerous progeny and become fit subjects for the prison or the gallows-tree. He would propose a more vigorous enforcement of existing laws, and the enactment of new ones with especial reference to the children of born or habitual criminals. Such persons should not be permitted to educate their children for the workhouse and penitentiary: to guide the feet of those born with a predilection for crime in the path that terminates at the gibbet. The children of such parents should at the earliest possible age be removed from their care and custody, placed in proper institutions and there reared and educated at the expense of the State, except where the parents are possessed of means, or the ability to earn money, when they should be made to pay for the maintenance of their offspring. To execute such a plan satisfactorily would cost a large sum of money, but it would still be an economical one. The greatest good would be conferred upon the children themselves, who would thus have a fair opportunity to become respectable members of society, instead of thieves, prostitutes and murderers. Such a system would have a decidedly good effect upon the criminal parents themselves. Mr. Pinkerton believes that castration of criminals would increase the morbidity and render the subject more dangerous in all respects, save one. He was hardly willing to admit that this exception would exist, except in the matter of procreation, since depraved fancies and impulses would most assuredly take the place of natural passions. Asexualization would not render desperate criminals docile or reduce their disposition to commit crime. He favors the imprisonment of habitual criminals, without leaving the slightest hope of release while they remain criminals: their children should be provided with proper homes, education and trades, and in adopting new methods, they should be such as will harmonize with humane notions and the progressive spirit of the age.

MR. W. S. ELLIOTT, of the Chicago Bar, discussed

THE LEGAL ASPECT OF THE TREATMENT OF THE HABITUAL AND SEXUAL CRIMINALS.

He stated that his contact with criminals had taught him charity, and he had learned this charity largely through the kindly offices of medical men who had taught him as a criminal lawyer, surveying the terrible crimes which are committed in communities, that nearly all of them are the results of conditions for which the so-called criminal himself was not responsible. Nearly all crime lies behind the criminal himself. He finds from his experience in meeting with people praying for divorces, that their children could never be anything else but animals, for the parents themselves entered into sexual congress merely as animals. Some months ago a mother came to him, asking him to defend her son. She said to him, "My son has the peculiarities which have caused this crime if he is guilty of it, because they are born in him." She also stated that "there was no night during the entire time that she carried that child during the period of gestation that her husband did not have access to her body from four to five times." How could the child be anything else but a sexual pervert, a masturbator. If it were worth while, he could state other cases of a similar character where women apply for divorces under similar conditions, saying that life is a burden to them, and that death is preferable, and that they can see in them the progeny coming from such sexual connections the causes which lead to this perverted condition. We will not be able to devise any method probably which will cure all crime.

The subject of asexualization is submitted for our consideration from at least two different standpoints, each of which would require a different answer, and he would touch briefly upon one point, namely, as to the legality of the supposed beneficial results of castration. So far as its being a proper legal measure as a punishment for crime, it would not be legal: that it would be considered without question an unusually harsh and cruel punishment, which is inhibited by the constitution

of the United States, and, so far as he knows, by the constitution of every State in the Union. It would be illegal, therefore unconstitutional, and he believes it is absolutely impossible to make it constitutionally legal by any legislature of any enlightened State. That they might be able to do it in Texas he deemed it possible, perhaps, but in Illinois or the great States where intelligence is moving forward, men would never consent to such a wicked and outrageous proposition as castration as a punishment for crime. As to the propriety of castration for the purpose of curing people who are given over irretrievably to masturbation and those terrible vices described by Dr. Wey, he thinks it would be just the same as though a leg should be cut off if it were necessary in order to save a man's life. There are a large number of people who are greatly relieved when society lays its hand upon their children, takes them and carries them away into penal reformatories. They are glad to get rid of them and to have society assume their clothing and their board. There are very many parents who would be glad to consent to this act, but over and above all, in the case of a minor it would be necessary for him to have somebody to speak for him. Not to pursue to any further extent the legal aspects of the subject under discussion, Mr. Elliott said he would like to discuss the subject briefly from his own ethical standpoint.

"I think it would be a very unfortunate step to proceed to the punishment of criminals by castration. I do not think that any of us have yet arrived at that degree of perfection where we dare reach out our hand and lay it upon any single fellow being and say, you stand where we may deprive you of that which God invested you with first of all, when he said, 'Increase, multiply and replenish the earth.' If you have that right, you have the right to kill a man, and you have the same right to kill him that you have to castrate him—no greater and no less in one instance than in the other.

"Again, it does not necessarily follow that a criminal is going to procreate a criminal. It does not at all follow that the brightest and most intelligent minds are the product of uncriminal ancestry; for some of the most brilliant minds that have dazzled mankind are nothing more nor less than abnormal forms of illegalized lust, and some of those names which dazzle history,—some of those stars which have shone brightest in the constellations of literature, are bright and brilliant and coruscating simply because of the result of abnormal conditions, and had they not taken that drift they might have taken some criminal form. I have been thrown in close contact with men whose minds were as bright as the morning star, yet who were as vicious as hell at heart and capable of the most damning offenses which, if society knew, it would spurn them. Furthermore, great intellectuality by no means indicates purity of heart, or purity of character. Nor dare you say, nor dare that man say of great personal vigor, power of mind and body and physical courage, that he himself will not be the procreator of criminals and of crime. And there is not a man probably within the sound of my voice, who has been an observer of men and things, who does not know that the men of the finest, strongest bodies and characters become the fathers of dwarfs and insignificant progeny. You can not recall now to your mind scarcely from the great Washington down through all of the proud galaxy of statesmen who have dazzled our political world and our American statesmanship, very many men who have sons that have risen to anything like the commanding position which their fathers have, and many of them have had sons who have disgraced the paternal name, and whose names can be found recognized in the reformatory institutions of this country only by numerals. And it is a well recognized fact, as I understand it, by medical men, that through an atavistic tendency to reproduction in one age men will be of small stature, of criminal tendency possibly, but by happy marriages may in their progeny reproduce splendid, noble specimens of manhood. It seems to me that we are not authorized as human beings to lay our hands upon any citizen and say, 'You have forfeited the rights with which the Almighty God invested you,' but that we will have to go back, in order to benefit our race, to the Sunday school, under the droppings of the sanctuary, and teach those people to grow up into the 'nurture and admonition of the Lord.' I believe castration would make people worse. I do not believe it would make them better."

At the close of Mr. Elliott's remarks, Dr. D. R. Brower moved that a committee of three be appointed by the President to draft resolutions embodying and expressing the leading principles of the papers that had been read, and that the report be submitted at a subsequent meeting of the Society. Carried.

The President appointed on this committee Drs. D. R. Brower, James Barry and G. Frank Lydston.

On motion, the Society adjourned.

SELECTIONS.

The Klebs-Loeffler Bacillus and Its Mystifying Congeners.—A discussion has recently taken place at the Pathological Society of London that has caused considerable confusion in the minds of those who have been hoping for a greater clearness of views regarding the causative factors of diphtheria. The editor of the *Medical Press and Circular* expresses this growing confusion in a leading article entitled "Bacteriologists to the Rescue," the gist of which is the need for a clearer differentiation of the bacilli that occur in the different conditions, sometimes pathologic and sometimes not pathologic, of the mouth, throat and nares. The articles is as follows:

The more the subject of the bacillus diphtheriae and its congeners is discussed the more confused does it appear, witness the recent discussion at the Pathological Society of London. We have got used to hearing bacteriologists speak glibly of the long and the short variety, but we had scarcely become familiar with this summary classification before we were confronted with a subdivision into "big ends and little ends," that is, in technical parlance the clubbed and non-clubbed. As if this were not enough to puzzle us we are now asked to consider an apparently unlimited number of pseudo-diphtheria bacilli some of which are morphologically indistinguishable from the general article. The difficulty, not to say the impossibility, of distinguishing between the genuine and the spurious bacillus is such that reliance can, it seems, only be placed on experiments on animals with the object of determining the virulence of the incriminated organism. A bacillus, however successfully it impersonates the pathogenic microbe, is contemptuously dismissed if, on inoculation into animals, it does not forthwith bring the life of the animal aforesaid to a premature and more or less violent conclusion. Unfortunately, although this is the only test we can at present hold on by, the most enthusiastic bacteriologist does not venture to claim that it is absolutely trustworthy. Indeed, there is much reason to believe that the virulence or otherwise of a given culture is largely dependent on conditions of environment, such conditions, like so much else in this department of scientific research, being at present very imperfectly understood. Then, again, the pathogenic significance of these numerous varieties, confining our attention for the nonce to the pathogenic organisms, is a matter of controversy. Some observers, possibly the majority, associate the long variety with certain clinical gravity, while the short microbe is credited with determining only mild attacks of the malady. On the other hand, the long bacillus, occasionally, at any rate, fails to correspond to a grave attack, while the short form, it is affirmed, has been known to cause death at short notice. Before we leave the subject we should like to indorse the protest that has been uttered against the misleading term pseudo-diphtheria bacilli—applied to certain non-pathogenic bacilli of the diphtheria type. They are either diphtheria bacilli or they are not, and in the latter case it is not easy to see what assistance can be derived from calling them by a name which is only a negation. We might as well call the colon bacillus the pseudo-typhoid bacillus, to employ the trite analogy suggested by Dr. Kanthack. It is superabundantly evident that several years' work will be required before we shall begin to see clear in this direction. It can be no subject for surprise that there should be many varieties of bacilli conforming to the diphtheria type. There are hosts of vibrios and crowds of bacteria, and analogy would lead one to anticipate that the diphtheria family is not less numerous. What we have to do is to study their morphologic peculiarities and life history, in order to be enabled to distinguish those which are responsible for the production of the syndrome of symptoms which we associate with diphtheria from the others.

Hyperpyrexia in Typhoid Fever.—Dr. Wm. Osler, in the *Bulletin of the Johns Hopkins Hospital*, October, treats of three cases of fever whose temperature exceeded 107°. He says that among the 389 cases of typhoid fever under treatment in the hospital during the first six years of its work, there was only one case (fatal) with a temperature of 107°. Within the past few weeks there have been two cases in which the temperature registered 107° and over. One of these recent cases, A. B., a male was admitted after having been ill about two weeks. For a few days he seemed to be doing very well. "The most unpleasant feature of this case was the constant mental apprehension. On the fourth day after admission the temperature

reached 104°, and then ranged between 103° and 104° till the seventh day. The sponges reduced his temperature fairly well. I saw him at half-past eleven on the seventh day, and he then seemed to be somewhat better than he had been for a few days. He had been delirious through the night and tried to get out of bed. The abdomen was slightly distended. There was no pain in the right iliac fossa. At half-past eleven the temperature was 104°. At 1 P.M., he had a severe shaking chill. The respirations were hurried; there were loud expiratory groans; the expression was that of fright, and the patient cried out that somebody was trying to kill him. The pupils were widely dilated, but equal; the eyes had a wild, vacant stare. He sweated profusely. The temperature at noon was 104.2°; at 1:45 it was 106.2°. About 1:45 the shaking became less. The patient all this time was cyanosed: hands purple, lips blue, face dusky. At 1:45 the pulse could hardly be felt. At this time there was a slight twitching of the left side of the face but no actual convulsion. The cyanosis became more marked, the patient became weaker, the temperature rose at 2 o'clock to 107.5°—the highest recorded temperature we have had in typhoid fever—and he died at 2:45.

"The second case, a colored girl, at present in the hospital, was admitted about the third week of the fever. She looked very ill, and the nervous symptoms were pronounced. She had excessive jactitation, tremor and delirium. The temperature was 103°, and rose at 8 P.M. At 2 A.M. it was 102°, and then rose gradually till at 8 A.M. registered 107.2°. With ice-sponging her temperature was reduced very promptly. She was sponged at eight, ten, twelve and two, and by 2 P.M. her temperature was reduced to 102°, and by 8 P.M. to 100°. From that time she did remarkably well."

Experimental Sand Filtration of Water in Pittsburg. There is a general prejudice against household filters, on the ground that they rarely receive the attention which their safe use demands. This prejudice is in some degree well founded, but it should not be extended to city filters, where water is purified by slow and careful sand filtration with all necessary supervision. Sand filters are common in Europe and are likely to be soon adopted by all American cities which now use contaminated river water and are suffering the usual penalty for so doing, viz: excessive typhoid fever mortality.

The Craig Street filter, of the Citizen's League, is an experiment to test the adaptability of the European method to our local conditions. The city water of Pittsburg is being continuously filtered, at the rate of 2,500,000 gallons, per acre, per day, through four feet, six inches of common washed Allegheny river sand, in a manner which may be seen by anyone who cares to visit the plant. (Craig Street, near Fifth Avenue, Bellefield.)

Since October 28, 1895, the sand having at that time settled together thoroughly, the filtered water has been of a uniformly satisfactory character with the exception of a brief interval following the November 12th scraping (when half an inch of sand was removed to prevent continued clogging).

Bacteriologic tests of the filtered and unfiltered water have been made almost every day since September 22, when the filter was started. Two chemic analyses have been made. A few results follow:

		Per cent. of bacteria removed by filter.
September	23	none
"	25	27 per cent.
"	27	46 " "
October	4	69 " "
"	12	89 " "

Soon after this the percentage of bacteria removed by the filter reached and exceeded 99 per cent. It remained approximately the same until the scraping.

I now give for comparison the bacteriologic analyses following the scraping of the filter on November 12. It is generally

supposed that the efficiency of a filter is very much impaired by the cleaning process and that no good work is done until the "Schmutzdecke" is restored. Our experience seems to indicate that good results are obtained in a few hours (93 to 94 per cent. removal) and that the efficiency soon returns to the normal.

		Raw water. Bacteria per Cc.	Filtered water. Bacteria per Cc.
November	12 ¹		13
"	13 ²	505	30
"	14	778	64
"	15	1156	56
"	16	782	8
"	18	946	8
"	19	424	8
"	20	196	6
"	21	612	7
"	23	232	8
"	25	350	4
"	26	176	10
"	29	1414	7
"	30	not counted	

¹ Filter scraped; $\frac{1}{2}$ inch sand removed.

² Twelve hours after second start.

The removal for a few days (November 13 to 16) amounted to 95 per cent. (average). The removal for the next nine days averaged 98.66 per cent.

CHEMIC ANALYSIS.

	Raw. Part. per 100,000.	Filtered. Parts per 100,000	Percentage re- moved by filtration.
October 31, 1895.			
Free ammonia . . . . .	.00093	.00026	72 per cent.
Albuminoid ammonia . . .	.00620	.00180	71 per cent.

Aside from the chemic and bacteriologic improvements which filtration effects, it is also interesting to note that the filtered water is superior to the raw in the following respects:

Odor, taste, suspended matter and most of the dissolved coloring matters are removed by the filter. When the filter is at its best, the effluent resembles distilled water and is even more palatable. At present, although the bacteria are being satisfactorily removed, the water has a slight brown color and a very faint opalescence, but is without odor or taste. The raw water just now is very brown, from dissolved vegetable matter, and very muddy also. At the present rate of filtration, the interval between scrapings seems to be about seven weeks.

The experiment thus far has been very encouraging. Our available river sand is suitable for city filtration and it is to be hoped that it will soon be so used. The experiment will be continued for the purpose of testing different rates of filtration, and the intermittent as well as the continuous system.

Additional financial aid for this enterprise will be greatly appreciated. JAMES OTIS HANDY in *Pittsburg Medical Review*.

St. Luke, the Beloved Physician.—The patron saint of medical churchmen is Luke, the writer of the third Gospel. From a book recently issued by Mr. Henry Burton, the following paragraphs have been selected as showing utmost and most recent knowledge of the personality of that immortal name: "Concerning the life of St. Luke the facts are few. While some regard him as being a Grecian by birth, others maintain that he was that nameless one of the two Emmaus travelers. But both these suppositions are set aside by the fact that the Evangelist carefully separates himself from those who were "eye-witnesses," which he could not well have done had he taken part in the closing scenes of the Lord's life, or had he been honored with that "infallible proof" of the Lord's resurrection. That he was a Gentile is evident; his speech betrayeth him; for he speaks with a Grecian accent, while Greek idioms are sprinkled over his pages. Tradition, with unanimous voice, represents him as a native of Antioch, in Syria.

Responding to the Divine Voice that bids him "write," St. Luke brings to the task new and special qualifications. Familiar with Old Testament Scriptures at least in their Septuagint form, as his many qualifications show—intimately

acquainted with the Hebrew faith and ritual, he yet brings to his work a mind unwarped by its traditions

And so the Gospel of St. Luke is the Gospel of the world, greeting "all nations, and kindreds, and peoples, and tongues" with its "peace on earth."

The only other fact of the Evangelist's life we will here notice is that of his profession: and we notice this simply because it enters as a factor into his work, reappearing there frequently. He was a physician: and from this fact some have supposed that he was a freedman, since many of the Roman physicians were of that class. But this by no means follows. All physicians were not freedmen: while the language and style of St. Luke show him to be an educated man, one, too, who walked in the upper classes of society. Where he speaks natively, as here in the introduction, he uses a pure Greek, somewhat rounded and ornate, in which there is a total absence of those rusticisms common in St. Mark.

The calling of a physician naturally develops certain powers of analysis and synthesis. It is the art of putting things together. From the seen or felt symptoms he traces out the unseen cause. Setting down the known quantities, by processes of comparison or of elimination he finds the unknown quantity, which is the disease, its nature and its seat. And so on the pages of the third Gospel we frequently find the shadow of the physician.

We recognize the "physician" in St. Luke's habits of observation, his attention to detail, his fondness for grouping together resemblances and contrasts, his fuller reference to miracles of healing, and his psychologic observations. We find in him a student of the humanities. Even in his portrayal of the Christ it is the human side of the Divine nature that he emphasizes; while all through his Gospel, his thought of humanity, like a wide-reaching sky, overlooks and embraces all such earthly distinctions as position, sex or race."

SOCIETY NEWS.

Règlement du XII Congrès International de Médecine, Moscou, 7 (19)—14 (26) Août 1897.

1. Le XII Congrès International de Médecine est placé sous l'Auguste patronage de Son Altesse Impériale le Grand-Duc Serge Alexandrovitch.

2. L'ouverture du Congrès de Moscou aura lieu le 7 (19) Août 1897 et sa clôture le 14 (26) du même mois. Sa durée sera de huit jours.

3. Le Congrès se composera des médecins qui se seront fait inscrire et auxquels il aura été délivré une carte de membre.

Indépendamment des médecins, les personnes munies d'un titre scientifique, qui désirent prendre part aux travaux du Congrès, pourront également en faire partie aux mêmes conditions, mais en qualité de membres extraordinaires. Pourront également en faire partie, en qualité de membres extraordinaires, les vétérinaires, les pharmaciens et les médecins-dentistes.

4. Les personnes qui désirent prendre part au Congrès doivent, pour obtenir leur carte de membre, effectuer un versement de dix roubles (vingt cinq francs). Ce versement leur donne le droit de prendre part à toutes les occupations du Congrès et de recevoir toutes ses publications ainsi qu'un exemplaire des "Travaux du Congrès," aussitôt après leur publication.

Remarque.—Les membres extraordinaires ne prennent part qu'aux travaux des Sections du Congrès dans lesquelles ils se sont fait inscrire. Ils reçoivent toutes ses publications, mais n'ont pas droit de vote dans les questions qui concernent son organisation.

5. En faisant leur versement au Trésorier du Congrès, les membres doivent indiquer exactement et lisiblement leur nom, adresse et profession. Il serait en outre à désirer que ces renseignements fussent accompagnés de la carte de visite du souscripteur.

6. Le but du Congrès est exclusivement scientifique.

7. Les travaux du Congrès se répartissent entre douze Sections: 1° Anatomie (anthropologie, anatomie normale, embryologie et histologie normale); 2° Physiologie (y compris la chimie médicale); 3° Pathologie générale et Anatomie pathologique; 4° Thérapeutique générale (hydrothérapie, climatothérapie, etc.); 5° Pharmacologie, Pharmacognosie et Pharmacie; 6° Maladies internes; 7° Pédiatrie; 8° Maladies nerveuses et mentales; 9° Dermatologie et maladies vénériennes; 10° Chirurgie (y compris les maladies du larynx, de l'oreille et des dents) et Ophthalmologie; 11° Accouchements et gynécologie; 12° Hygiène (y compris la statistique sanitaire, la médecine sociale, l'épidémiologie, l'épizootologie et la science sanitaire technique); 13° Médecine légale.

Remarque.—En cas de nécessité, il pourra encore être organisé des Sous-Sections supplémentaires.

8. La gestion du XII Congrès International de Médecine appartient à la Faculté de Médecine de l'Université Impériale de Moscou. Son organisation générale est confiée à un Comité, présidé par M. le Curateur de l'Arrondissement scolaire de Moscou et composé de tous les membres de la Faculté de Médecine, des présidents des Comités de Sections et de Sous-Sections et de membres honoraires. Les questions concernant l'organisation du Congrès sont confiées aux soins immédiats d'un Comité exécutif présidé par le doyen de la Faculté de Médecine et composé de huit personnes choisies parmi les membres de cette Faculté.

9. Le Comité d'organisation et le Comité exécutif continueront à fonctionner pendant la durée du Congrès.

10. Les séances du Congrès auront lieu chaque jour, soit dans les assemblées générales, soit dans les Sections.

11. Il a été décidé de tenir deux ou trois assemblées générales. L'époque de leur réunion sera déterminée par le Comité d'organisation. A l'ouverture de la première assemblée générale, le président du Comité d'organisation proposera aux membres du Congrès d'élire les présidents honoraires et les secrétaires de ces assemblées.

12. Les heures auxquelles se réuniront les Sections seront fixées par le Comité exécutif après entente avec les présidents des Comités de Sections.

13. Le Comité exécutif, après entente avec les présidents des Comités de Sections, indiquera en temps utile ceux des savants étrangers qui pourront être élus présidents honoraires des Sections.

14. Les assemblées générales ont pour but: a) de décider les questions relatives aux travaux et aux affaires générales du Congrès; b) d'entendre les discours et communications offrant un intérêt général.

15. Ne pourront prononcer des discours dans les assemblées générales que les membres qui auront reçu une invitation à cet effet du Comité d'organisation.

16. Les propositions relatives aux travaux du Congrès devront être communiquées au Comité d'organisation avant le 1er (13) Janvier 1897. Le Comité décidera s'il y a lieu de donner suite à ces propositions ou de les examiner pendant le Congrès.

17. Dans leurs séances les Sections s'occuperont de l'examen des questions et des thèses proposées par leurs présidents et approuvées par le Comité d'organisation. Le principal objet des travaux des Sections consistera dans l'audition des rapports des savants désignés par le Comité et des communications ayant trait à la thèse choisie.

Si le temps le permet, on pourra examiner d'autres communications et d'autres thèses proposées par les membres du Congrès et acceptées par les présidents des Sections qu'elles intéressent.

18. Les questions scientifiques ne pourront être résolues par voie de vote.

19. Le temps assigné à chaque communication ne devra pas dépasser vingt minutes et les orateurs qui prendront part à la discussion ne pourront pas parler plus de cinq minutes chacun.

20. Les membres qui prendront part aux débats devront remettre, le jour même, aux secrétaires des Sections respectives l'exposé écrit de ce qu'ils ont dit pendant la séance.

21. Le français est reconnu comme la langue officielle du Congrès pour toutes les relations internationales. Dans les assemblées générales il sera permis de prononcer le discours dans d'autres langues européennes.

Quant aux communications et aux débats dans les sections du Congrès, ils pourront avoir lieu en français, en allemand et en russe.

22. La personne chargée de présider une séance devra diriger les travaux conformément aux règles admises.

23. Les étudiants en médecine et les personnes étrangères qui s'intéressent aux travaux annoncés pour telle ou telle séance, pourront y être admis par les présidents honoraires, après entente préalable avec les présidents de Comités de Sections.

24. Les communications et les questions concernant les travaux de telle ou telle Section du Congrès devront être envoyées au président du Comité de la Section qu'elles concernent. Toutes les autres communications et questions devront être adressées au Secrétaire général du Congrès.

25. Dans une des assemblées générales on désignera le lieu de réunion du XIII Congrès International de Médecine.

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SATURDAY, JANUARY 18, 1896.

A NEW FORMULA FOR CRANIOGRAPHERS.

That the results of craniology thus far have been in great degree negative, is the deliberately expressed opinion of DR. HARRISON ALLEN, and this not very creditable state of affairs he ascribes to the fact that individual characters of both intrinsic and relative importance, have hitherto failed to receive attention. At the meeting of the Association of American Anatomists, recently held at Philadelphia, DR. ALLEN demonstrated a new method of recording the peculiarities of the human skull and proposed the adoption of a formula to be used in the description of every skull, embracing the data contained in the following list of characters: "In the frontal norma observe the glabella and supra-orbital ridges, defining the degree of curvature and of deflection in each. The external angular process of the frontal bone and the degree that it is inclined downward from a horizontal line. The frontal and maxillary portions of nasal bones are each to be separately measured, as well as the convexity of the bone from side to side. The root of the nose is recognized as a separate anatomic quantity; it extends from the fronto-nasal suture to the position of the small foramina on the dorsal aspect of the bone. The bone from the line of these foramina to the free distal border receives the name of the *salient*; the deviation of both the root and the salient to be recorded in degrees from the vertical. The recognition of the pre-maxilla as a constant quantity is important, especially to recognize the nasal aspect of the pre-maxilla as it extends from the incisive foramina to the end of the nasal spine. The length and height of the incisor crest are to be measured and other peculiarities of the pre-maxillary portion of the floor of the nose are to be

noted also. The distance from the border of the anterior nasal aperture to the free border of the alveolar process is to be taken. In the lachrymal bone indicate the union or absence of union between the hamular process and the maxilla; the relations existing between the lachrymal groove and the orbital surface; the length of the suture between the lachrymal bone and the os planum of the ethmoid. Note in the malar bone, whether it does or does not enter into the spheno-maxillary fissure; whether or not there is a process of the posterior surface of the temporal border; whether or not there is a suture trace on the inner side of the zygomatic surface.

"Viewing the skull from beneath and proceeding from behind forward, record the following points: The shape of the hard palate whether parabolic, hyperbolic, or U-shaped; the choanæ, whether or not the lower margin is wider than the upper; the pyramidal process of the palatal bone, measuring its length; the petro-sphenoidal fissure, whether it is over-lapped by the spinous process of the sphenoid, or free therefrom; the foramen lacerum medium, whether it is open throughout, or closed from the basal aspect; the petrosal portion of the temporal bone, whether narrowed or inflated along the median border.

"Turning the skull on the side, the following points are to be observed, passing from before backward, the notch back of the external angular process, its depth and other peculiarities; the temporal ridge, noting the degree of interruption between the frontal and parietal portions at the stephanion; the parietal bone, whether or not a mortice-like process is present on the inferior border of the posterior mastoid crest; the mastoid process of the bone, whether or not marked by vessel-grooves above the line of the mastoid foramen; the lambdoidal suture, whether serrated or harmonic near the asterion.

"The vertical aspect of the skull yields the following points, from before backward; the sagittal suture back of the bregma, whether it is or is not carinated; the curve of the sagittal suture as it joins the angle of the occipital bone, whether it is continuous with the curve of the occipital or exhibits an interruption; and finally, the interval (sconce or skull-roof) between the temporal ridges."

In reviewing the items of this formula, it is noticed that they have been obviously selected because of their contrast to characters possessed by the anthropoid apes and for their value in establishing data for studies of variation in different individuals of the human race. The region of the supra-orbital ridges differs greatly, as is well known, between the higher apes and man, and also in early forms of man as compared with the later forms. The external angular process inclines more abruptly in long, narrow faces than in short broad ones. The entire region of the external nose, from

the fronto-nasal process to the alveolar process, is in DR. ALLEN's opinion, of great value in craniology, especially in defining race. The nose also distinguishes the apes among themselves, and apes from men. The terms that define the shapes of the palate are those which were employed by BROCA; while the peculiarities of the sagittal suture are in general use to distinguish skulls; especially in differentiating the Eskimos from other races and general individual forms of low mental grade from those having a higher degree of mental development. The use of the other characters is original, so far as the lecturer knew, and for them he assumes responsibility. Among the more important of these may be mentioned the size of the spinous process of the sphenoid bone; the degree of closure of the foramen lacerum medium; the shapes of the choanæ; the lengths of the pyramidal process of the palatal bone; the interruption of the temporal ridge at the stephanion, and the changes in the lambdoidal suture as it approaches the asterion.

It is asserted by DR. ALLEN that a skull which is described by the formula above given, could readily be identified, if all labels or other arbitrary means of identification were lost, for, in his judgment, it would be physically impossible for any two skulls to have all the points of the formula the same. It will be observed that no measurements are along lines which convention indorses in describing crania, and nothing is said with regard to cubical capacity. The data embraced under the two heads last-mentioned, are entirely independent of the formula, and it goes without saying that the formula here given supplements rather than supplants them.

TUBERCULOUS BONE DISEASE OF CHILDREN TREATED BY INJECTIONS OF IODOFORM.

DR. WIELAND reports to the *Deutsche Zeitschrift für Chirurgie* that he has come to regard the conservative treatment with a 10 per cent. iodoform injection for tuberculosis of the soft parts, bones and joints, much more satisfactory in children than in adults; and analyzes in support of his view the report of the Children's Hospital at Basel for the last five or six years. He finds that tuberculous abscesses treated in this way healed very often. The method employed was to empty the abscess with an aspirator, then irrigate with a 4 per cent. boric acid solution, and after the cavity had been well washed out to inject 20 to 50 c.c. of a 10 per cent. iodoform emulsion, either in glycerin or oil or in water, adding a small quantity of gum arabic to hold the iodoform in suspension. As often as the abscess refilled the operation was repeated. It is essential to keep the part treated at rest, and to firmly support it with a flannel bandage.

Of twenty-one cases treated in this manner sixteen, or 80 per cent., were fully cured, four were removed from the hospital by parents before treatment was

completed, and one case was a positive failure. In eleven of the sixteen successful cases one injection sufficed; in one, two were necessary; and in four, the patient required three injections. Fistulæ at the point of injection occurred four times, and once there was a septic infection of the large abscess.

Twelve cases of joint tuberculosis were treated in this way. Nine, or 75 per cent., were cured and two cases were much improved. Joint cases required from six to thirteen injections given during a period of two to six months.

Four cases had acute nephritis from the iodoform, which, however, speedily disappeared. In one case there was severe iodoform intoxication, but in this case 20 per cent. emulsion was employed.

SENN,¹ after an exhaustive review of the subject several years previously, came to a similar conclusion, but when does a continental authority quote an American? SENN's summary should be kept in view to fully appreciate the force of this remark (page 278). *Conclusions.*—"1. Parenchymatous and intra-articular injections of safe antibacillary substances are indicated in all subcutaneous tubercular lesions of bones and joints accessible to this treatment. 2. Of all substances so far employed in this method of treatment, iodoform has yielded the best results. 3. The curative effect of iodoform in the treatment of local tuberculosis is due to its antibacillary power and its stimulating action on the healthy tissue adjacent to the tubercular product. 4. A 10 per cent. emulsion in glycerin or pure olive oil is the best form in which this remedy should be administered subcutaneously. 5. The ethereal solution should never be employed, as it is liable to cause necrosis of the tissues overlying the abscess and iodoform intoxication. 6. Tubercular abscesses and joints containing synovial fluid or tubercular pus should always be washed out thoroughly with a 3 to 5 per cent. solution of boric acid before the injection is made. 7. Injections should be made at intervals of one or two weeks, etc.," and then follow other aphorisms pertinent to the subject.

It is thus seen that WIELAND simply repeats substantially the conclusions of SENN, made three years before. The long list of continental surgeons favoring the iodoform treatment is fairly stated by GANGOLPHE,² although that author himself favors the method of LANNELONGUE—by chlorid of zinc. MIC-KULICZ, VERNEUIL, MOSETIG-MOORHOF, BRUNS, KRAUSE, VERCHERÉ, GRYNFELDT, DUPIN, BLAIZOT, MARTY, OLLIER, TRIPIER, TRENDLENBERG, VINCENT, and stoutest partisan of all, KOENIG, are quoted by GANGOLPHE as attesting the efficacy of the injection of iodoform emulsion in joint tuberculosis. KOELISCHER and ALBERT, of Vienna, recommended the acid phosphate of

¹ Tuberculosis of bones and joints, 1892.

² Maladies infectieuses et parasitaires des os, 1891.

calcium, but according to GANGOLPHE, a case of gangrene of the foot, consecutive to this treatment, decided him against the remedy.

In conclusion, it may be stated concerning iodoform emulsion injections as GANGOLPHE said of chlorid of zinc: "It is not a panacea, but a powerfully modifying agent." But our own experience fully justifies the hope of curing 30 per cent. of the less advanced cases of tuberculous joint disease by its use.

CASTRATION OF CERTAIN CLASSES OF CRIMINALS.

At a recent meeting of the Chicago Medico-Legal Society several papers were read on the management of some phases of sexual aberration in criminals and degenerates, that were somewhat noteworthy both from their substance and their authorship. The first was one by DR. F. E. DANIELS, of Texas, advocating castration as a punishment for certain sexual crimes, a proposition that has been before advanced from several different quarters, as well as by his own papers, but which so far has received no general approval. The same subject was taken up or alluded to more or less fully in the communications of DR. HAMILTON D. WEY, of the Elmira reformatory, and MR. MATT. W. PINKERTON, both in their special departments criminologists of national repute, and also by MR. W. S. ELLIOTT, a leading lawyer of Chicago. The general consensus of opinion of the speakers seemed to be against the views of DR. DANIELS, and the legal and constitutional objections to the proposed change in the criminal law were very strongly presented. The subject has, however, a medical side which was also brought out, though more by the lay speakers than by the physicians, and some stress was laid on the injury to character that might be thus produced, a danger that, considering the material thus to be operated on, might seem to the ardent advocates of the procedure as a rather negligible quantity. The possible danger, however, to mental integrity which was less prominently mentioned is a more serious one, and would be of greater weight in a purely medical point of view as regards the constitutional question whether it is or is not to be properly considered an unduly cruel form of punishment. But even here we have to consider whether these criminals are not already mentally as well as morally unsound, and this question arises especially in regard to the senile offenders who make up, as was stated by the legal gentleman in the discussion, a larger proportion of those committed for this form of transgression of the criminal law. The efficiency of the penalty would be doubly dubious in such cases.

If natural developmental impotence is no security against the commission of sexual crime, what guarantee is there that an artificially induced disability will be any more a deterrent? The argument that

by this procedure we prevent the propagation of criminals and degenerates loses its force when it is considered that it is proposed to be applied to only a very limited number of individuals, and those often late in their lives when perhaps all possible mischief has been done. The moral effect as a preventive is undoubtedly overestimated, as any medical man can see from a little consideration is likely to be the case; and leaving all sentiment aside, it would appear that the penalty can be condemned for its probable inefficiency alone. Its proposal, however, bearing in mind the tendencies of lynch law in such cases, might seem prompted by benevolence rather than by cruelty, and as an attempt to divert popular passion rather than to vindictively add to the criminal code such a cruel and unusual punishment as is forbidden by the Constitution or the United States.

The therapeutic value of castration in cases of sexual aberration and perversion, which was especially discussed by DR. WEY, is also very much open to question and its legal bearings are not less important. The reported brilliant results of a Kansas physician with feeble-minded children will hardly, by themselves, suffice to give the operation a good medical standing; certainly not without confirmatory experiences elsewhere. There is moreover a certain amount of testimony by alienists and others that is not in support of his views, at least as regards the operation in the male, and the *a priori* considerations taking every aspect of the subject into account, will be claimed by a large proportion of the profession to be decidedly against them. Even if can be proven a legitimate therapeutic measure and as justifiable as amputation of a limb when it is indicated, there will still be the damaging possibility of legal complications that was very strongly emphasized by DR. WEY in his paper, to affect its popularity. It is not likely to become a common practice with prudent practitioners, and as a recognized therapeutic procedure it can hardly be said to have a brilliant and useful future. In other columns we present an abstract of the meeting.

LIABILITY FOR ACTS OF OTHER PHYSICIANS.

A practicing physician promised a party to attend his wife professionally during her confinement. A short time before that event took place he left the city for a three-days' vacation; having first visited the woman, and made an examination of her condition, from which he concluded, as he informed her, that his services would not be needed for a few days. Before his return, however, she was confined. The husband, when his wife's travail came on, telephoned to the house of this physician for him to come at once; and in response to this message another physician arrived, stating that the first one was out of town, and that he represented him, and proceeded to take charge of the

case, and to deliver the woman of her child, without any objection being made. It was not suggested that his treatment of the wife was unskillful, but in an action brought by the husband to recover damages from the first physician, evidence was offered to show that after the birth of the child the substitute physician improperly severed the umbilical cord so close to its body that it was impossible afterwards to tie it, and that the child consequently died, in a short time, of umbilical hemorrhage. The shock caused by her child's death, it was testified, so affected the mother as to seriously injure her health and render her an invalid for months, thereby depriving the plaintiff of her services and companionship, and making it necessary for him to incur expenses which he would not otherwise have been called upon to meet. The trial judge adopted the theory advanced, that the substitute was the agent and representative in this matter of the first physician, and that, therefore, he was legally liable for such loss of services and companionship, and for such expenses resulting from the second physician's unskillfulness. But the court of errors and appeals of New Jersey holds that this was wrong and reverses a judgment rendered in favor of the husband. (MYERS vs. HOLBORN, decided November 20, 1895.) These were both practicing physicians, having no business connection with one another, except that the second was attending the patient of the first while he was temporarily absent. Even if it be admitted, therefore, that the second was employed by the first to attend upon this woman, the reviewing court holds that that fact did not render the first physician liable for the other's neglect or want of skill in the performance of this service, for an examination of the authorities will show that a party employing a person who follows a distinct and independent occupation of his own is not responsible for the negligent or improper acts of the other. But if it had reached the conclusion that the second physician was the agent of the first in this instance, the court further says that under the New Jersey statute no recovery could have been had in this case, the pecuniary injury sustained being that which resulted from the death of the child causing the sickness of the mother attended by loss of her services and an increase of expense on her account.

THE MEDICAL SOCIETY OF THE DISTRICT.

The Medical Society of the District of Columbia is fortunate in having for its president, Dr. SAMUEL C. BUSEY, whose aims are the highest, and whose activity is not at all diminished by his length of service. The Society has acted wisely in continuing him as president.

In his annual address just published, he takes up the work of the Society during the past year, especially in regard to legislation for the District, and a

complete record is given of the doings of the committee having in charge the various bills to regulate the practice of medicine, in which the many difficulties encountered by the Society are fully dealt with. We regret to say that the Society's recommendations have not yet met the approval of Congress by statutory enactment, although the committee having the matter in charge distinctly informed the Senate that they would be willing to accept for the District any of the medical practice acts in force in forty-one States of the Union.

Concerning the publication of the Society's Transactions, some interesting local history is given, and then the author recommends as a means of advancing the interest of the Society, that an annual volume of Transactions be published. In this recommendation he disclaims any intention of being inimical to the excellent *National Medical Review*.

RULES OF THE XIITH INTERNATIONAL MEDICAL CONGRESS.

We publish in another column the original rules issued for the organization. We are informed by that document that the Congress is placed under the patronage of His Imperial Highness the Grand Duke Serge Alexandrovitch. The Congress will be held at Moscow beginning Aug. 7, (19 old style) 1897 and continuing eight days. Ten rubles (25 francs) is the membership fee. There will be twelve sections. The Organization of the Congress will be under the general direction of the Medical Faculty of the Imperial University of Moscow. The time assigned to the papers will not be allowed to exceed twenty minutes, and there will be only two or three general sessions. French is recognized as the official language of the Congress for all international relations, and other European languages will be permitted in the General Assembly, but communications to the Sections must be made in French, German or Russian. All communications should be addressed to the Secretary General of the Congress, Moscow.

CORRESPONDENCE.

Jeanel's Emulsion—a Correction.

LOUISVILLE, Jan. 13, 1896.

To the Editor:—I regret to note that in spite of my correction of the proof in the formula containing Jeanel's emulsion, the typesetters have persisted in the use of the *ounce* mark instead of the *drachm*. The prescription as originally written and corrected in the proof was as follows:

R Jeanel's emulsion of copaiba ʒii
Distilled water ʒvi

The emulsion is very powerful, and, in the strength you print, it would be quite sufficient to dissolve the corneal epithelium. The matter is so important that I beg you to correct it as soon as possible. I am, sincerely your friend,

DUDLEY S. REYNOLDS.

NOTE.—The corrected proof was not received at the publication office until that portion of the JOURNAL had been printed.

Tribadism.

DUBUQUE, Jan. 10, 1896.

To the Editor:—Referring to your note in reply to Dr. King, in issue of January 4, page 41, would say: I have consulted Thomas' Medical Dictionary, International, Funk and Wagnall's, and American Encyclopædic dictionaries, all I have at my immediate command, for definition of *tribadism*. Believing others beside Dr. King and myself are ignorant of its meaning, will you or the author enlighten us.

Fraternally, J. H. GREENE.

ANSWER.—The term is defined in Dunglison's, Billings', Foster's and Gould's dictionaries, as a form of sexual perversion. By looking at any of these dictionaries you may find the word.

PUBLIC HEALTH.

Smallpox Stamped Out.—The smallpox epidemic at Martin's Ferry, Ohio, appears to be at an end, Wheeling and Bridgeport having raised the quarantine against that city.

Death Rate in Chicago.—The Report of the Bureau of Vital Statistics of Chicago, Ill., shows the following: Total deaths from all causes during the month of December, 1895, 1,771; annual death rate, twelve months ended Dec. 31, 1895, per 1,000 of population, 15.12. The corresponding death rate of year 1894 was 13.36.

New Jersey State Board of Medical Examiners.—Dr. E. L. B. Godfrey, of Camden, N. J., has been elected secretary of this board, *vice* Dr. Wm. Perry Watson, resigned. The next meeting of the board will be held at Trenton, N. J., on the third Tuesday and Wednesday of June next, and applications for examination must be filed with the secretary at least ten days before that time.

Duluth Water Officials Indicted.—Press dispatches from Duluth, Minn., of January 13, state the following: "The reign of the Duluth Gas and Water Company, which caused an epidemic of typhoid fever and many deaths here by furnishing impure water, is at an end. This afternoon the grand jury returned indictments against William Craig, the general manager, and James Stewart, the chief engineer, at the main pumping station. Craig is indicted on a charge of manslaughter in the second degree for the death of Harry W. Smith, caused, it is alleged, by the negligence of Craig, acting as manager of the gas and water company, in furnishing impure and unwholesome water."

Anti-Alcoholic Physiology in the Public Schools.—New York, as well as certain other States, has a law upon the statute books, requiring that the dangers of alcoholic drinks shall be lectured about or taught in the public schools, under the guise of physiology. There has been some rebuke of the educational authorities of New York city because so very little has been done, so that recently the superintendent has been set to work to complete a schedule of lessons to be taught in the balance of the current year. It is reported that teachers intend to apply to the legislature for a repeal of the act that requires such instruction, on the ground that it interferes with more important work.

Homes for Consumptives at Glasgow, Scotland.—The great work, conducted by Mr. Quarrier, for the relief of the orphan children of Glasgow, has nearly closed a quarter century. His homes "handle" not less than 1,000 boys and girls yearly and he now aims to provide a retreat for the orphans and others who develop tuberculosis. About every third child coming under his charge has a hereditary contact with consumption. These children do not fall victims to that disease, he says in his report, "because they were lifted out of the horrible pit and made to stand solid and straight by fresh air, good food, and surroundings that went to make health." He proposed that the

consumptive homes would be constructed on the most scientific principle. In all he would require another £45,000 to build hospital accommodation for 200 patients, each with a separate bedroom. During the year they had taken in 400 additional children, making in all 1,400 dealt with in the twelve months. He thanked all who had helped the work by their gifts and sympathy, and said that as he had got during the past year for all purposes the £28,000 he had desired, so now he required £35,000 for the ensuing year, and expected to get it.

Co-relation Between Meat Inspection and Ocular Cysticercus.—An article in the *London Lancet* for October 19, informs us that in the twenty-fifth *Compte Rendu* of the ophthalmologic clinic of Dr. G. Hirschberg there is fresh evidence of the happy influence of meat inspection on the prevalence of ocular cysticercus in mankind. It appears that, from 1853 to 1866, Von Graefe had met with ninety cases of this affection among 80,000 patients suffering from diseases of the eye. From 1869 to 1885 Dr. Hirschberg examined the eyes of 60,000 people also affected with various eye diseases, and in seventy the cysticercus was discovered. From 1853 to 1885, this form of parasitism was met with in the proportion of 1 in every 1,000 clinic cases, and in certain years, as in 1876, it was 1 in 420; 1 in 450 in 1879; and 1 in 800 in 1877. When the organization of meat inspection was further perfected these proportions were considerably modified in the course of time, but not immediately. For instance, from 1883 to 1885, the cases of ocular cysticercus were still relatively numerous, but in the four following years, between 1886 and 1889, of 30,000 patients at the eye-clinic only one had this entozoön in the ocular cavity; and among 43,000 who came under his observation from 1890 to 1894 there were but two thus affected and they were strangers to the district. These figures go far toward showing that a good system of meat inspection, in suppressing the issue of diseased flesh as a food for man, has at the same time almost completely abolished a rather frequent source of human ocular parasitism.

Law for the Prevention of Milk Typhoid in New Jersey.—A recent bulletin of the State Board of Health of New Jersey states that during the year 1894 an outbreak of typhoid fever occurred in Essex County which could have been arrested after the appearance of the first case, if the local health board had been prepared to act. No suitable action was, however, taken and as a consequence 115 cases of the disease developed in the locality, 107 of these persons having partaken of milk which was produced on the farm where the disease first appeared. Fifteen deaths attended this epidemic.

During its last session, the legislature of that State passed the following act which gives to the State Board of Health an equal authority to proceed, in such emergencies, with the local boards.

"That when the State Board of Health, or any officer thereof, duly authorized in writing by such board to act for or on behalf of said board, shall have reason to believe that any milk has been contaminated by the emanations, exhalations or discharges of any person sick with communicable disease, it shall be lawful for the said State Board of Health, or the officer so authorized to act in the premises, to prohibit the transportation or sale of any milk suspected to be contaminated as aforesaid, and also to prohibit the transportation or sale of any milk which may be produced, stored, kept or found upon any premises infected by such disease: such prohibition shall continue until the State Board of Health, or the officer authorized to act in the premises as aforesaid, shall in writing remove such prohibition.

"That any person or persons who shall transport or sell any milk the sale and transportation of which has been prohibited, pursuant to the provisions of the first section of this act, shall be liable to a penalty of \$50, to be recovered by the State Board of Health in an action upon contract for the uses of the State of New Jersey in any court of record within said State."

This act does not lessen the responsibility of local boards of health, nor in any respect relieve them of the duty of making

and executing ordinances to prevent the spread of disease by milk. It only provides a method whereby the citizens of the State may be protected in cases where local boards fail to take advantage of the privileges accorded them by the laws.

Variable Milk Standards. The following interesting report of a milk-case appears in *Public Health* for November, showing only too clearly how transitional is the situation in England, as to the standardizing of milk. In the number of this JOURNAL for October 26, we referred to views and testimony of Mr. Richard Bannister regarding the fluctuating milk-standards. As will be seen below, his evidence in the case was promptly followed by a dismissal of an otherwise well-supported charge of the local health officials. "In a case heard on September 26, at the Harlesden police court, the Middlesex County analyst Mr. Bevan, working to a standard of three, certified that 10 per cent. of the milk fat had been abstracted. The milk also contained boracic acid. The defendant had his third of the sample analyzed by another analyst, who certified to dilution with 8 per cent. of water, but disagreed as to the removal of milk fat. The same milk was sent to Somerset House (by which is meant that branch of the English local government that has charge of questions of food-adulteration) and a certificate received to the effect that the government chemists were unable to say that fat had been removed." At the hearing, Mr. Richard Bannister, on behalf of the Somerset House chemists, stated that the limit now adopted was 2.75, and that the difference was so small between 2.69 and 2.75 that they could not say any fat had been abstracted; moreover, this year had been a bad season, and they had found the milk fat somewhat lower than usual. The bench, on Mr. Bannister's evidence, dismissed the case. It is generally known that some few years ago the Somerset House chemists never supported an analyst's certificate for fat removal, unless the fat found was under 2.5 per cent.; latterly, as Mr. Bannister says, the limit has been raised to 2.75 per cent. Nothing can show more clearly the great public inconvenience of variable standards than the above case. Mr. Bevan works to a standard of 3; another analyst, as stated in the evidence before the Food Products Adulteration Committee, works to 2.5; the Somerset House chemists "wobble round" 2.75, allowing in practice a few hundredths for differences in season. It is to be hoped that the voluminous evidence taken before the committee of the last parliament will be utilized, added to, and a bill next season brought in, codifying, enlarging, and amending the existing law, and laying down definite standards, so as to render it impossible for any wide divergence of opinion on identical facts to interfere with the administration of the law, and to protect those rapacious dealers who would grind the poor, by selling them adulterated foods.

Tennessee State Board of Health. The Tennessee State Board of Health held its quarterly meeting January 8.

John W. Ross, M.D., of Clarksville, was unanimously nominated to Gov. Turney as member of the board to fill out the unexpired term of the late Dr. Daniel F. Wright. The governor expressed cordial approval of this nomination. That portion of the Secretary's report respecting the importation of smallpox into Tennessee from points in Arkansas and Mississippi was taken up and discussed, Mr. Graves in the chair. Dr. Plunket read from the *Nashville American* of January 5, a special telegram from Memphis as to the action of the conference held at Memphis January 4. In this connection the following resolution, offered by Mr. Graves, was unanimously adopted:

"The attention of this board has been called to a special dispatch from Memphis, under date of January 4, and published in the *Nashville American* of January 5, to the effect that the Tennessee State Board of Health was represented in a conference held in Memphis, January 4, in connection with health

authorities from Arkansas; said telegram indicated that drastic measures were adopted at this conference, and that it was agreed that negroes were to be given to understand that they were to submit to vaccination or be shot; that the white people proposed to take care of their families whose lives were being endangered by the crazy action of negroes. We wish now to state that no such action was had, recommended or even hinted at. Therefore, be it

Resolved, That this board disclaims any connection with any such proceedings, as there were none such had at the conference held at Memphis.

Resolved, Further, that this board condemns and rebukes in strong terms the sending forth of such untrue and sensational telegrams either by the associated press or newspaper correspondents. That the entire action of the meeting is, in fact, embraced and set forth in the communication sent by the members of said conference to the governor of Arkansas and being embraced in the report of the secretary of this board to this meeting.

Dr. Plunket then called attention to the condition of affairs in Arkansas and Mississippi relative to smallpox and offered the following resolution:

WHEREAS, There has existed for some weeks past a number of foci of smallpox among negro settlements located near the Mississippi River, in the State of Arkansas; and,

WHEREAS, For weeks the lives and health of the people living in those counties of Tennessee which form the opposite bank of said river have been placed in constant jeopardy by the practice of surreptitiously passing to and fro of the inhabitants of these infected centers, a number of instances have thus recently occurred in which smallpox was brought into the State by these people and which practice, under ordinary means, is practically impossible to prevent, therefore be it

Resolved, That the Surgeon-General of the United States Marine-Hospital Service be, and is hereby requested to take, without delay, such steps as will give the western boundaries of Tennessee that protection from this pest, which under recent Federal law is provided for the States and which under the circumstances our people are so justly entitled to."

Dr. Elcan offered the following resolution:

WHEREAS, This is the centennial of the admission of Tennessee into the Union; and,

WHEREAS, The State has determined to hold an exposition for the purpose of showing to the world the great resources and varied products of the State, and the progress made in the arts and sciences during this period, and

WHEREAS, The public health service of the State has been and now is an important factor in its development,

Resolved, That the State Board of Health publish a bound volume, to be known as the Centennial Reports of the State Board of Health, showing the climatology and topography of the State, the endemic and epidemic diseases which have prevailed from time to time, together with the origin and history of the State Board of Health, and the benefits derived therefrom by the people of the State, and in order to carry into effect the objects and purposes of this resolution, the President of the board is hereby authorized and instructed to appoint the following special committees, whose duties it shall be to collect and formulate the facts and statistics in the form of reports, to be made to the October session of this board. These reports together with the secretary's reports, then to be compiled by secretary into a bound volume for use by the State.

"Committees 1, The origin and history of the State Board of Health; 2, The endemic and epidemic diseases occurring in the State; 3, The climatology and topography of the State."

Ohio Board of Health. The following is a summary of the tenth annual report of the Ohio State Board of Health for the year ended Oct. 31, 1895:

So far as reports enables us to speak the year seems to have been one of general good health, except at its close, when typhoid fever was more than usually prevalent. We must again deplore the fact that Ohio is without a proper system for the collection of vital statistics, which would enable us to present accurate data showing its healthfulness as compared with other States, and the healthfulness of its cities and towns as compared with one another. Thousands die and thousands are born of whom no official record is made. It is recommended that the laws be changed providing for the registration of births and deaths by boards of health instead of by assessors.

During the year, that is to October 31, smallpox was reported in Ohio as follows: Cincinnati 131 cases, Cleveland 17, Toledo 3, Columbus 2, Mansfield 2, Lima 5, Martin's Ferry 6, Bridgeport 16. Pease township, Belmont county, 7; Gallipolis township, Galia county, 7; Deerfield, 4, Wellington 3, Addyston 2, Westwood 3, Williamsport 2 and Ripley 1, a total of 206 cases. The disease was still prevailing at Bridgeport and Martin's Ferry at the close of the year.

Attention is called to the fact that smallpox is a very expensive disease. "A single case of smallpox in a small village has been known to cost many hundreds of dollars in actual outlay and loss of business, while an epidemic of the disease may bring a community to the verge of bankruptcy."

General vaccination and revaccination are urged as a sure preventive of smallpox, and one which business men, from financial considerations, if from nothing else, should be interested in having enforced. In regard to pollution of public water supplies the board says: "Few if any of our rivers escape sewage pollution, and none of them affords a perfectly satisfactory supply in an unpurified state. Increasing population will soon make it absolutely necessary for the protection of the public health to prevent the pollution of sources of public water supplies, or to require such supplies to be purified by artificial means."

"The experience of thickly-settled Europe teaches that both of these measures will eventually be necessary."

During the year the board acted upon applications for approval of public water supplies for the following places: Canal Dover, Celina, Columbus, Columbiana, Delta, Fostoria, Lebanon, Logan, Lorain, Montpelier, Osborne, Painesville, Port Clinton, Salem, St. Bernard and Wapakoneta. These were all approved excepting Columbus, Lorain, Painesville, Port Clinton, and Salem. Approval for supplies for Lorain and Port Clinton was withheld pending further investigation.

The question of a new water supply for Columbus is considered and it is said: "The typhoid fever death rate in Columbus for the past eight years shows conclusively that a contaminated water supply is being used. During that period 415 deaths have occurred in that city from this disease, which is equal to 3.86 per cent., of the deaths from all causes. This is a higher rate on that basis than that of any other large city in the State. Columbus can not hope to escape being scourged with this disease until a purer water supply is introduced, and polluted wells, wherever found, are closed."

The board acted upon applications from the following places for approval of sewerage systems: Ashland, Cincinnati, Cleveland, Delaware, Evanston, Hamilton, Logan, Marysville, Tippecanoe City, Warren and Wyoming. Approval was refused in the case of Cincinnati and Cleveland. These sewerage system of Ashland, already in use, was condemned. In most instances approval was granted on condition that the sewerage be properly purified within a reasonable but specified time.

Attention is called to the gross pollution of streams by sewage at Bucyrus, Tiffin, Findlay, Mansfield and Lima; also to the pollution of streams by waste from strawboard works. The enactment of proper laws to deal with these rapidly-growing evils is urged. Special reports are given of inspections of several public building and of investigations of nuisances arising from various causes. There are now 1,738 local boards of health in the State, all of them in close communication with the State board. "While in many places the duties of a board of health are greatly neglected, as a rule excellent work is being done by these local organizations. Homes have been made healthier and happier, the ravages of contagious diseases greatly lessened, and the public health measurably improved by their efforts."

Six counties of Eastern Ohio sent delegates to a conference with the Ohio State Board of Health, January 8, at Bellaire. About sixty were present.—Localized epidemics of measles are reported from Union, S. C., Coopersdale, Lambertville and Titusville, Pa., and Port Morris, N. J.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, December 1 to January 4, 10 deaths. Michigan: Detroit, smallpox reported present December 28 to January 4.

New York: Brooklyn, January 4 to 11, 2 cases, 1 death.

Tennessee: Memphis: January 4 to 11, 7 cases.

SMALLPOX—FOREIGN.

Dublin, December 14 to 28, 2 cases, 2 deaths.

Hong Kong, November 16 to 23, 1 death.

London, December 21 to 28, 1 death.

Madrid, December 17 to 24, 7 deaths.

Montevideo, December 1 to 7, 4 cases.

Naples, December 18 to 25, 10 cases, 10 deaths.

Odessa, December 14 to 21, 7 cases, 1 death.

Prague, December 14 to 21, 26 cases.

Rio de Janeiro, November 23 to 30, 36 deaths.

Rotterdam, December 21 to 28, 1 case.

St. Petersburg, December 14 to 21, 8 cases, 7 deaths.

Warsaw, December 7 to 21, 4 deaths.

CHOLERA—FOREIGN.

Austria-Hungary: Galicia, December 10 to 16, 11 cases, 7 deaths; from Aug. 23 to Dec. 16, 1895, in 56 localities, a total of 424 cases, 278 deaths.

Egypt: Borachia, December 4 to 5, 2 cases, 2 deaths; Cairo, December 7 to 11, 1 case, 2 deaths; Damietta, December 5 to 11, 16 cases, 17 deaths; Farascour, December 8 to 10, 10 cases, 13 deaths; Matarieh, December 8, 1 case, 1 death; Zarka, December 7 to 9, 5 cases, 4 deaths.

CHOLERINA.

Morocco: Stellen, December 15, 13 deaths.

Russia: St. Petersburg, December 14 to 21, 68 cases, 44 deaths.

Turkey: Constantinople, December 17 to 23, 2 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, November 23 to 30, 18 deaths.

Cuba: Santiago, December 21 to 28, 12 deaths.

NECROLOGY.

JAMES EDMUND REEVES.—The following is a brief biographical sketch of the late James E. Reeves, notice of whose death appeared in the JOURNAL January 11. James Edmund Reeves, Chattanooga, Tenn., son of the Rev. Josiah Washington and Nancy Mosee (Kemper) Reeves, grandson of Thomas Washington Reeves, was born April 5, 1829, Amissville, Rappahannock County, Va. Obligated to assist his father, who was a tailor, his early education was neglected, and he had to leave school at the age of 14; but he was determined to gain more knowledge, and by extra work made money with which to purchase books. At the age of 19 he commenced the study of medicine with Dr. Elam D. Talbott, at Philippi, Va., and after one year's instruction under this preceptor, he went to New Market, Va., and became the pupil of Dr. Jacob Neff. Here he was given every possible opportunity to study disease at the bedside, and frequently had charge of patients. In the spring of 1850 he opened an office at Sutton, the county seat of Braxton County, now West Virginia, and by the following October had earned enough money from his practice to enable him to attend a course of lectures at Hampden Sydney Medical College, Richmond, Va. His second course of medical lectures was at the University of Pennsylvania, and he was graduated from that institution in 1860. He remained one year at Braxton Court House, after that nine years at Philippi, seven years at Fairmount, twenty years at Wheeling, W. Va., and for the past five years and a half at Chattanooga, Tenn. Soon after settling at Wheeling he began to agitate the subject of municipal hygiene, and secured the passage of an ordinance establishing a city health department. In 1869 he was elected city health officer and county physician, which office he held four years. Subsequently he was elected a member of the city council, and served four years. He was one of the founders of the American Pub-

lie Health Association, of which he was president in 1885. In 1867 he prepared and sent out the call for the establishment of the State Medical Society, of West Virginia, and was elected its first secretary, and in 1881 chosen its president. He was one of the executive committee, for West Virginia, of the International Medical Congress, in Philadelphia, 1876. In 1882 he was elected a member of the Judicial Council of the AMERICAN MEDICAL ASSOCIATION. In 1884 he was elected an honorary member of the Connecticut State Medical Society. For many years he has been a corresponding member of the Pathological Society of Philadelphia, was one of the vice-presidents of the Section of Public and International Hygiene of the International Medical Congress, Washington, D. C., 1887; vice-president of the American Microscopical Society, 1886; member of Advisory Council Pan-American Medical Congress, also Demonstrator of Pathological Histology, at the meeting in Washington, September, 1893. He was a member of the Association of American Physicians, was the author of the law creating State board of health of West Virginia, of which he was a member, and its secretary for five years. He was employed by the State board of health of Tennessee to make sanitary inspections of the State's defences against yellow fever during the Jacksonville epidemic of 1888. He was particularly interested in microscopic investigations, and has devised sundry microscopic appliances.—*Physicians and Surgeons of America.*

MICHAEL ALOYSIUS CREMIN, M.D., a long time resident of New Haven, Conn., died December 28. He was a graduate in arts, and an alumnus of the College of Physicians and Surgeons, New York class of 1875. He was a licentiate in midwifery from the Royal Rotunda Hospital, Dublin. He had been prominent in municipal and educational circles in New Haven, Conn. The cause of death was ascribed to neurasthenia. He left a widow and family; his age was 43 years.

GEORGE HENRY KIRWAN, M.D., of Wilkes Barre, Pa., who died December 28, aged 41 years, was one of the prominent practitioners of the Wyoming valley. He received his degree in 1882 from the College of Physicians and Surgeons, New York. He had been United States Examining Surgeon and attending surgeon at the Luzerne County prison. He died at his home without a rally from an operation done for relief from an attack of appendicitis.

M. N. BARBER, M.D., of Milwaukee, Wis., January 6, aged 75.—Oliver A. Dailey, M.D., of Kansas City, Mo. January 5, —G. Weston Wood, M.D., of Minneapolis, Minn., January 6, aged 53.—A. N. Barrows, M.D., of Hartford, Conn., January 3, aged 79.—Thomas H. Moss, M.D., of Hartford, Mo., December 25, aged 64.—R. Elliott, M.D., of Knoxville, Iowa, January 8.—J. A. Throckmorton, M.D., of Houston, Tex., December 28, aged 75.—H. R. Payne, M.D., of Kansas City, Mo., December 29, aged 68.—G. B. Lathrop, M.D., of Ann Arbor, Mich., December 31, at Los Angeles, Cal.—Jonathan Morris, M.D., of Ironton, Ohio, Dec. 26, 1895, of cerebral hemorrhage, aged 72. He graduated from the Cleveland Medical College in 1847, and had been in active practice ever since that time, serving three years in the U. S. Army as surgeon of the Ninth Virginia Volunteers. He has also been honored with many responsible and honorable positions, among which was representative from the county of Lawrence in the Ohio legislature. He has been a member of the AMERICAN MEDICAL ASSOCIATION for many years, and almost always in attendance at its annual meetings.

MISCELLANY.

John R. Park, M.D., is Superintendent of Public Instruction in the new State of Utah.

Portrait of Dr. Peck.—The many friends of the late W. F. Peck, M.D., will be pleased to learn that a life-sized painting of the distinguished Iowa surgeon will be placed in the historical rooms at the capitol in Des Moines.

Asepsin is the name of a new "cure" for consumption, which the daily press informs us will soon be made public through the columns of an Eastern medical journal.

Transactions XI International Medical Congress.—Perhaps some of our readers can inform us for the benefit of numerous correspondents when the volumes will be ready for distribution.

A Royal Physician.—The Queen of Portugal has just passed the examinations qualifying her for practice as a physician in the land of her adoption. It is the first instance on record of a lady of sovereign rank winning for herself by means of diligent study the diploma of a Doctor of Medicine.

New Medical Journals.—We have received the following new journals: *Lailysdale's Lancet*, edited by John M. Langsdale, M.D., and published at Kansas City, Mo.; *Cleveland Journal of Medicine*, the official journal of the Cleveland Medical Society, edited by Henry S. Upson, M.D., and P. Maxwell Foshay, M.D. We wish the new journals success and prosperity.

English "as She Is Wrote." Dr. Willis P. King, the Secretary of the Missouri State Board of Health, is said to have received the following:

"*Deer Docktur:*—Ples informe me when and whar the State Bord of Helth Meats."

Another interesting correspondent wrote him of a successful operation he had performed on a case of "pendasetas."

Measure of Damages Effected by Miscarriage.—In the personal injury case of Tunncliffe v. Bay Cities Consol. Ry. Co., decided by the Supreme Court of Michigan, Dec. 10, 1895, it holds that if the plaintiff was entitled to a verdict, she had the right to damages for personal pain and suffering, mental and physical, occasioned by the accident, and, if her sickness was aggravated by a miscarriage caused thereby, the attendant pain and suffering were to be considered.

The Livingstone Medical College, London.—This missionary preparatory college has taken up new and more commodious quarters, and are now to be found in East London on Hamfrith Street, Stratford. Dr. Harford Battersby, who has charge of the work, states that in addition to the ordinary lectures on medical and surgical subjects, a special point is made of detailed instruction in the diseases of tropical climates, and lectures are given by those who have been in India, China and Africa respectively.

Reported Suicide of a Faith Healer, following a Failure to Cure.—A dispatch from Rochester, N. Y., informs us that a female healer hanged herself from an apple tree. She was a resident of East Wayland and was the leader of a band of Christian Scientists, or something of that sort. Having been called in to heal a case of meningitis, and having failed, the parents of the patient drove the band out of their house. This failure worried the leading healer to that extent that she threatened to drown herself. She was watched, however, and that mode of self-destruction was prevented, but she managed to elude the watchers so far as to get away and hang herself. This is a very regrettable incident from every point of view, but it is wonderful that there have not been more of the same kind.

Death of a Yellow-Fever Volunteer of 1878.—Robert S. Blakesley, one of the volunteers from New York in the time of the yellow fever plague of Memphis, in 1878, died on Thursday, December 26, after a lingering illness.

Mr. Blakesley was one of the volunteer nurses who went to Memphis in the autumn of 1878, under the leadership of Dr. Thomas S. Easton. The queen city was then in the throes of a serious epidemic. Such of its citizens as could had fled the place, and the remainder were dying daily by scores. Barely enough remained to nurse the sick and bury the dead. A call for help was sent out, and Mr. Blakesley was one of the first to respond. He contracted the fever while on duty, but recovered and returned to his work. He had many thrilling experi-

ences, and some of them were published upon his return. He brought back a gold medal bearing this inscription: "For bravery. Presented to Robert S. Blakesley, for heroic conduct during the yellow fever epidemic of 1878."

Once More a Librarian.—From New York comes the report that Dr. John S. Billings, U. S. A., retired, director of the department of hygiene of the University of Pennsylvania, has accepted the position of chief librarian of the consolidated libraries of New York City, consisting of the Astor, Lenox and Tilden libraries. This offer was made a week ago, and Dr. Billings hesitated about accepting it lest he might inconvenience the trustees of the University. They, however, did not wish to stand in the way of Dr. Billings' advancement, and ordered him to accept the offer. In his letter of acceptance Dr. Billings says that until July 1 he will divide his time between Philadelphia and New York, spending two days of every week in each city. Dr. Billings' reputation as an authority on hospital construction is of the first order, and he is the leading authority the world over in medical bibliography. The two works that gave him the greatest fame were his catalogue of the Surgeon-General's library of 90,000 volumes, and the *Index Medicus*. He is considered the best bibliographer in America, and on the strength of that reputation he was elected a member of the National Academy of Sciences.

The Itinerant Practitioner Not a Vender of Drugs.—The Iowa law requires "any itinerant vender of any drug, nostrum, ointment, or appliance of any kind intended for the treatment of diseases or injury, who shall by writing or printing or any other method publicly profess to cure diseases or injury or deformity by any drug, nostrum, manipulation, or any other expedient" to pay a license of \$100 a year. A practicing physician, whose residence is in Ottumwa, Iowa, advertised in two newspapers that he would be at a certain hotel in Oskaloosa, Iowa, every Tuesday for the purpose of treating patients. That he "made a specialty" of chronic diseases and rupture, and that he would treat catarrh of the nose, throat, and lungs in a most successful manner. He also mentioned other diseases which he would treat, such as chronic stomach troubles, liver, kidney and kindred diseases. It was conceded that he was not a vender in a criminal sense, but it was claimed that he vended medicine in a professional sense. The facts showed that he undertook to effect cures for a named consideration, and, like many other physicians, he did not write prescriptions to be put up at drug stores, but used his own medicines. By so doing, the supreme court of Iowa holds, in the case of State vs. Bonham, decided December 10, 1895, he was not a traveling or itinerant vender of drugs, nostrums, or ointments, or anything else prohibited by statute. The law which the prosecution invoked for his punishment, it declares, was not intended to designate the regular medical practitioner an itinerant vender. The purpose was to tax such itinerant venders as go from place to place advertising and selling proprietary medicines, such as "Wizard Oil" and the like.

Care Required of Druggists.—In view of the dire consequences that may result from the least inattention or want of skill, the appellate court of Indiana says that druggists, apothecaries, and all persons engaged in manufacturing, compounding, or vending drugs should not only be required to be skillful, but should also be exceedingly cautious and prudent. All persons who deal with deadly poisons, noxious and dangerous substances, are held to a strict accountability. The highest degree of care known to practical men must be used to prevent injury from the use of drugs and poisons. It is for these reasons that a druggist is held to a special degree of responsibility. The care required must be commensurate with the danger involved. The skill employed must correspond with that superior knowledge of the business which the law requires. Following this expression of opinion, the court holds, in the

case of *Howes v. Rose*, decided Nov. 26, 1895, that where wholesale druggists furnish a retailer the wrong drug, as for example a package of tartaric acid for Rochelle salts, the same being labeled "Rochelle salts," which the retailer opens, puts into a jar and therefrom deals out a small quantity of, as Rochelle salts, to a customer, that although the wholesale dealers, or those who improperly labeled the drug may be liable to the consumer injured thereby, an action will lie against the retailer providing he has been guilty of any negligence in making the sale. But it holds that the mere sale of the wrong drug under such circumstances as those stated does not establish a presumptive case. The facts constituting the negligence must be established before the plaintiff can have judgment.

Anæmia or Anemia?—To the Editors of *The Lancet*: SIRs.—Spelling is, at the present time, a prominent subject. It has a special interest for us now that so many medical books printed in the United States, present to us spelling which we are not yet sufficiently familiar with to appreciate. The readers of *The Lancet* may be interested in the following letter from Professor Skeat, which he has been so good as to give me permission to send to you. The spelling of the word "anemia" carries with it that of many others.

I am, Sirs, yours faithfully, W. R. GOWERS.

"DEAR SIR.—It is quite impossible to regulate spelling. The one great principle in all cases of doubt and dispute is that every man shall make his own laws, and it is not likely that argument will be listened to or even permitted. In the new English Dictionary the spelling given is *anæmia*; all the same, the spelling *anemia* occurs in one of the examples. It is largely a question of date. The Latin *x* became *e* in French; and when words come into English through French the spelling *e* may easily prevail. For example, we have the word *primal* on a French model. I am trying to introduce the spelling *medieval*, to pair off with this; and I think it is making some headway. We have, in Cambridge, a 'Medieval and Modern Languages Tripos.' The practical objection to *x* and *e* is that they are difficult to write and print. In many cases an *e* would serve the purpose. I need not say that the authorized version of the English Bible (by many considered as good authority) has the form *emerods* instead of *hemorrhoids*; yet no one objects. Ogilvie's Dictionary prefers *hemorrhoids* to *hemorrhoids*, and, I think, with reason. There is no *x* or *e* in English; it is always pronounced as *e*, and might just as well be so written. The use of writing is to represent the sound of the words, not to be everlastingly harping upon the Greek and Latin forms. But few people can see this; and when a thing is wrong they stick to it all the same. Thus *aneurism* is common, and I like it and admit it. But it is false etymology; of course it should be *aneurysm*. And the question for those who defend *hemorrhage* is, Will you, then, undertake to use the form *aneurysm*? If not, why not? I pause for a reply. No one now writes *eclestial*, yet it from the Latin *ecclum*. Again I ask, why not?"

Yours sincerely, (Sd.) W. W. SKEAT."

Cambridge, Dec. 15, 1895.

—*London Lancet*, Jan. 4, 1896.

"A Good Physician is Like a Good Statesman."—One of the quaintest of the episodes growing out of the late war between China and Japan has been the gratitude of Prince Li to his surgeon by whom he was treated at Shemonosaki, after the prince had been shot by a fanatic. After the wounding, a celebrated Japanese surgeon, Dr. Kitasato, was immediately sent by the Emperor of Japan to look after the aged and unfortunate statesman. Dr. Kitasato is a great scholar and one of the most distinguished pupils and followers of the late Pasteur. He took the greatest interest in his distinguished patient, and cared for him nights and days, with the result that Li Hung Chang soon recovered his health. The two men learned to admire and respect each other, and a true and sound friendship now exists between them. The Emperor of China and Li Hung Chang having forwarded some very valuable presents to Dr. Kitasato; the latter sent a letter of thanks, to which the great Chinese statesman has just made the following interesting answer:

"Dear Friend:—When I was wounded at Shemonosaki you were so good as to visit me, and by your exceptional skill to

cure me of my injury. Such was your proficiency in your art that I was surprised to see my wound heal in a little more than ten days. My gratitude to you is so profound that words can not adequately express it.

"You have now placed me under a fresh obligation by favoring me with an epistle overflowing with sentiments of the warmest friendship. In it you acknowledge the receipt of the things forwarded to you through the kindness of Plenipotentiary Ito. Out of respect to my imperial master you have been so kind as to say that these trifling presents will be preserved by you as a treasure. At the same time you are pleased to express thanks to me, which I do not at all deserve. Since my return home I have kept very quiet and my health and spirits have steadily improved, so they are now in a normal condition. Even a rainy season lasting fully a month did not produce the slightest pain in the part where I was wounded.

"Your country abounds with good physicians, but a proficient like yourself is not only too rarely found in the East, but also is equal to any even in the West. A good physician is like a good statesman, for it is the aim of both to alleviate the miseries of earthly existence. Let me hope with you that peace and tranquility may last forever, and that people may be spared from sickness and wound alike. Do not believe that in expressing this hope any selfish motives enter my mind."

Li Hung Chang asserts that he never forgets an enemy nor a friend. His letter certainly seems to justify this statement.

Massachusetts Hospital for Epileptics.—There has been established by law, in Massachusetts, at Monson, on premises previously occupied by the State Primary School, a State hospital to be known as the Massachusetts Hospital for Epileptics. Its government is vested in a board of seven trustees appointed and commissioned by the Governor, with the advice and consent of the council, five of whom shall be men and two of whom shall be women, their term of office to be five years, except in the case of some of the first appointees. This board shall appoint a physician and assistant physicians and such other officers and agents as they shall deem necessary, who shall respectively hold and perform the duties pertaining to their offices and agencies during the pleasure of the board. Provision is to be made for the residence of 200 patients. The trustees are to have the same powers and are to perform the same duties in the management of this hospital as are vested in and required of the trustees of the various State lunatic hospitals. After the establishment of the hospital, they are to receive no compensation for services, though they are to be re-imbursed for expenses incurred in the performance of official duty. They may receive into the hospital for care and treatment any adult person, not a criminal, who is subject to epilepsy, provided such person be neither an idiot, an inebriate or violently insane. They may also receive and detain in the hospital, as a boarder and patient, any person subject to epilepsy who is desirous of submitting himself to treatment and makes written application therefor, but whose mental condition is not such as to render it legal to grant a certificate of insanity in his case; but no such person shall be detained more than three months after having given written notice of his intention or desire to leave the hospital. Otherwise, the provisions of law consistent with the act establishing this hospital, applicable to the State lunatic hospitals, regarding the commitment, detention, transfer and discharge of insane patients, are made applicable to this hospital. When any patient is received at this hospital, the superintendent shall report the particulars of the case to the State Board of Lunacy and Charity, which may investigate the same. Epileptic inmates of the class first mentioned who have been committed to any lunatic asylum may be transferred by the State Board of Lunacy and Charity to this hospital, and when that board has reason to believe that any such epileptic confined in any almshouse or other place is deprived of proper treatment or care, whether such epileptic is a public charge or otherwise, it may cause the transfer or commitment of such person to this hospital, and the board shall transfer from this hospital to some State lunatic hospital or asylum such inmates as may be found to be violently insane and requiring treatment therein.

The charges for the support of the inmates of this hospital as are of sufficient ability to pay for the same, or have persons or kindred bound by law to maintain them, shall be paid by such inmates, such persons, or such kindred at a rate to be determined by the trustees of the hospital. The charges for the support of other inmates shall be paid by their places of settlement or by the commonwealth, at the rate provided by law for the support of patients in the State lunatic hospitals.

Practical Notes.

Availability of Acetanilid in Country Practice.—According to the *Virginia Medical Monthly*, Dr. Ben. H. Brodnax, of Brodnax, La., has found that for "that tired feeling," a pinch of acetanilid put into the mouth, mixed with saliva and swallowed, rests you up in a few minutes, so that you are as fresh as before. For headache from fatigue repeat the above and be relieved. As a dusting powder on burns, or as a surgical dressing, or to use on the "cord" at birth, make a mixture as follows: Acetanilid, boric acid, equal parts powder, dust thickly over the surface, covered with a light pad of absorbent cotton. This acts locally as an anesthetic, and is clean. It deodorizes and relieves pain. For intertrigo on infants or adults, use the above, dusting on and separating the surfaces that rub with absorbent cotton. The same as an ointment with castor oil, is a great soothing to painful surfaces, abscesses, etc. For abrasions of the skin caused by a blow from a hard substance, use as above, or mixed with castor oil. On old sores, use by dusting on thick, then cotton, with bandage. During labor it eases pain and brings on profuse sweat, which helps to relax muscular rigidity.

Urticaria Treated by Friction with Salt.—Dr. Meynet, in the *Revue de Médecine et de Chirurgie* advises the treatment of urticaria by frictions with salt. He says that in order to quell the troublesome itching resulting from the urticarial lesions, he has been led to follow a simple measure, but one which, in his hands, has proved the most successful: The wheals are moistened with cold water and rubbed for ten to fifteen seconds with a few grains of kitchen salt, which adhere to the previously moistened pulp of the index finger. One feels at first a slight burning, followed promptly by an agreeable sensation of coolness, and a notable diminution or even cessation of the itching, after which the papules usually disappear rapidly. Upon the area thus treated, one may then apply a little oxid of zinc ointment or rice or almond powder. If the urticaria is extensive, it is better, in order to avoid too much irritation of the skin, to apply the salt frictions to successive portions and not over the whole surface at one time. It goes without saying that one should not neglect the necessary modifications of the diet, and, if the urticaria be of toxic origin, a purgative should be prescribed, the best of which is calomel. Luke-warm baths may also prove useful.

Mercurial Polynceritis. R. V. Engel (*Prager Med. Wochenschrift*, 1894, No. 607) describes the case of a 29-year-old wife, who had manifested for four months typical luetic symptoms. She was treated with mercurial inunctions and in the course of the treatment some 20 grammes of unguentum cinereum were used up. The local symptoms of the secondary syphilis subsided rapidly during the inunctions, but suddenly nervous disturbances appeared which became more and more intense and consisted of motor paresis in the extremities, abducens paresis, marked diminution of the sensation especially as regards touch and temperature, abolition of reflexes and pronounced ataxia. These symptoms could be interpreted only as due to a multiple peripheral neuritis, which was at first ascribed to the syphilis. The inunctions were consequently continued and 14 grammes more of unguentum cinereum were consumed. The nervous symptoms did not subside, however, except the abducens paresis. In the meantime Leyden's decisive contribution concerning the rare causation of neuritis by

mercury appeared and this led to the abandonment of the inunctions, and then the patient improved quite rapidly, and expectative treatment was followed with a complete disappearance of all the disturbances on part of the nervous system.

Cystic Tumor of Breast Recurring on the Opposite Side.—Dr. Herbert L. Snow, of London, writes to the *Lancet* regarding the occasional experience observed in cystic degeneration of the mamma, showing that that disease has a tendency to recur, or repeat itself, in the second or opposite breast. He has seen three cases that have led him to be guarded in the matter of progress. He says: "It is best when operating carefully to remove the whole breast tissue, and if questioned, as commonly happens, about possible 'recurrence' to give a guarded prognosis so far as concerns the remaining organ. The point that we have here to deal with, a general and not merely a local lesion of the parenchyma, is hardly, I think, sufficiently appreciated by the profession at large, but unless attended to may involve the practitioner in some dispute. The first case was that of a woman aged 48, married, with two children, who was admitted to hospital in October, 1894, with an induration at the root of the right nipple of one year's duration. She complained of some lancinating pain. There had been no injury, but chronic ill health, and latterly she had been unfortunate in business. The tumor appeared as large as a hazel nut. The patient thought there had been discharge from the nipple. There was no gland enlargement. Upon removal it was found to be one large cyst, with the remaining parenchyma pervaded by minute cysts; there were no vegetations and no malignant indications. The patient has, about three months since, had the left breast removed for an exactly similar condition, the right side remaining healthy. The second case was that of a woman aged 35, single, seen in 1892. She was a spare, neurotic woman with a fluctuating tumor in the left breast, which had been noticed six weeks, as large as a pigeon's egg. On removal one large cyst filled with turbid fluid was found: the whole breast tissue was filled with tiny cysts. In July, 1893, the remaining organ was found to be slightly lumpy. In August, 1895, a distinct cyst the size of a bean was apparent in the lower segment, and removal was advised. The third case was that of a widow, aged 46, who had three children: she was seen in November, 1893. In the right breast was a large, prominent, globular tumor the size of a hen's egg, freely movable, hard and solid to the touch. The patient was neurotic through much worry. On removal a multilocular cyst with solid, round fibroma as large as a marble was found. There was no malignant tissue. The patient reappeared in July, 1895, with a tumor the size of a walnut, rounded and hard, in the left mamma. It quickly increased in size from augmentation of the fluid contents, and has just been removed, proving wholly cystic.

"Malaria" a Misnomer.—In the *Medical Bulletin*, November, Dr. Irving H. Bachman presents a summary of his studies in paludal disease. According to his view of the case the word "malaria" should be discarded as misleading, and we should adopt the word "malaqua." His remarks include the following propositions:

"The impression that malaria is caused by purely atmospheric influences has become so fixed in our minds that, unless we come in actual contact with the evidence produced in the use of pure water as against that heretofore used, the physician will, in all probability, be very slow to allow himself to be convinced that the word malaria (*mal*, bad; *aria*, air) is a misnomer, and that malaqua (*mal*, bad; *aqua*, water) is the word that should be used to cover the pernicious effects known under the name of malarial fever.

"The germ, which is of soil origin, is strictly a protozoön and reaches its highest development in low, moist ground with a favorable temperature. Surrounded by the proper soil conditions, this protozoön passes from one stage of life into another with considerable rapidity; so that in the present state of our experimental knowledge it is impossible to identify it, nor is it

probable that by culture we shall be able to produce the accepted Laveran germ outside of the human system.

"As a rule, the potable water from the malarial districts is derived from driven wells not over twenty-two feet deep, in soil with clay or some other impervious substrata, which water is generally cool and palatable, often sparkling clear, but more frequently a little turbid. This water is filled with an incalculable number of these germs in all stages of development, and if used as a potable water they naturally find their way into the system through the alimentary channel. This protozoön passes through so many forms or stages of life that in some stages it is light enough to float and be transported by the moist air of low grounds, but in this state it is comparatively harmless except under most extraordinary conditions; it is not until the surface water is used that the real mischief begins, when, by reason of higher development, it has become much more virulent than that floating in the air. A very short period of incubation is sufficient to develop a severe case of malarial fever in the new-comer who uses the surface water.

"From personal observation I know that the exclusive use of pure, deep-seated water affords entire immunity against malaria in sections of country where no white man dared live using the surface water. Nor must it be understood that the exclusive use of pure water simply fortifies and strengthens the system against the attack of the germ. The water is the primary cause of infection, which acts as the direct carrier of the germ into the system through the intestinal tract."

Cocainization of the Nasal Mucous Membrane Before and During Surgical Anesthesia. Dr. Gerster concludes a study of 100 cases of anesthesia in which the nasal mucous membrane was cocainized before and during administration of the anesthetic somewhat as follows:

As a result of the observations made in the 100 cases of anesthesia serving as a basis for the study, it was found that the cocainization of the nasal mucous membrane preceding and during surgical anesthesia, considerably diminishes the distress and oppression felt by the patient at the beginning. There was among the cases recorded that of a physician, who had been etherized before, and to whom the process then was extremely disagreeable. This time, his sense of smell being dulled, he experienced no feeling of suffocation, no tickling or irritation inviting coughing or retching, and his judgment was, that the new process was certainly a great improvement over older methods. In this as well as in almost all the other cases, excepting those of confirmed alcoholics, the observation was made that, at the beginning of narcosis, the patients manifested less reflex irritation than usual; that they entered insensibility more rapidly and quickly, with less struggling, coughing and nausea; that, especially when ether was used, the mask could be approached to the face of the patient much quicker without opposition or resistance. In conformity with this the later stages of anesthesia were also more quiet and more free from disturbing interruptions than usual. But here again habitual alcoholics formed an exception. On the other hand, perhaps ten times, and in about from twenty to twenty-five minutes after the first application of cocain, with no external reason, such as, for instance, profuse hemorrhage, a marked acceleration of the pulse rate, with facial pallor, was observed, followed by profuse sweating, probably the effect of cocain. It seemed also, that cocain anesthesia of the mucous membrane tended to diminish the depth of the respiration. As to the after effects, the impression was that in the cases observed there have been less nausea, vomiting, headache and general malaise than is the rule in ordinary anesthesia. It must be said, however, that in a few instances patients, who did not vomit at all during the first twenty-four or forty-eight hours, vomited a great deal on the second and third day without any recognizable cause. As to the anesthesia of alcoholics, where there is much need of improvements, Rosenberg's method does not afford any marked advantage over older methods. On the whole, it is safe to conclude that in view of the ease and simplicity of the procedure, of the absence of apparent risk, and on account of the undeniable elimination of the trying subjective effects upon the patient caused by the use of cocain

upon the nasal mucous membrane, its extended and systematic trial deserves encouragement.

Hospital Notes.

FIRE AT THE NEW YORK CONTAGIOUS DISEASE HOSPITAL ON RANDALL'S ISLAND.—A fire recently occurred on Randall's Island, New York City, in one of the cheap frame structures, furnished by the now extinct commission of charities for that city. The fire started at an early hour in the morning in a kind of cottage for the isolation of cases of measles: the inmates being two infant patients and one nurse. The nurse acted with great presence of mind and got the two children out of the place without accident. The building was soon completely burned down: loss estimated at \$300, inclusive of the alcohol lamp that did the damage.

THE ANNUAL REPORT of the Connecticut Hospital for the Insane has been filed. The report shows there were 1,683 patients Sept. 30, 1895, 886 of whom were women classified as follows: Town paupers, 935; indigent, 591; State paupers, 104; private patients 27; old soldiers, 26. The percentage of recovery of those admitted during the year was 18.42. Twenty-five insane convicts were admitted from the State prison during the year, of whom two died, two escaped, one was pardoned and ten were returned as cured. There are forty-two insane convicts in the institution, the terms of nine of whom have expired. It cost \$289,857 to run the institution last year, including the new building, North hospital.

AT A MEETING of the Board of managers of the Chester County Hospital, at Chester, Pa., on behalf of Mrs. S. T. Johnson of Philadelphia, a check for \$3,500 was presented to that institution. This lady has already given \$2,500 to the same hospital.—The annual meeting of the board of trustees of the New York State Hospital was held in Binghamton, N. Y., January 7.—At a meeting of the trustees of the Epworth Hospital at South Bend, Ind., plans were perfected for raising the sum of \$20,000 for the purpose of erecting a new building.—The annual election of officers of the Erie County Hospital medical staff was held in Buffalo, N. Y., January 6. The officers of last year were re-elected.

Society Notes.

THE CENTRAL OHIO MEDICAL SOCIETY held its regular monthly meeting at Columbus, Ohio, January 2.—The Kansas City, Mo., Medical Society held a regular meeting January 4. The following officers were elected: President, J. H. Thompson; Vice-President, C. A. Ritter; Secretary, J. W. Kyger.—The Jasper County, Mo., Medical Society held a regular meeting in Joplin, January 7.—The annual meeting of the Schuylkill County Medical Society was held in Pottsville, Pa., January 7. The following officers were elected for the ensuing year: President, A. P. Carr, of St. Clair; Vice-President, A. F. Bronson, of Girardville; Secretary and Treasurer, George Little, of Tamaqua.—The regular meeting of the Syracuse, N. Y., Academy of Medicine was held in that city, January 7.—The Marion County Medical Society held a regular meeting in Indianapolis, Ind., January 7. The following officers were elected for the ensuing year: President, H. M. Lash; Secretary, T. B. Noble; Treasurer, F. B. Wynn.—The Twin City Medical Association held a regular meeting in Kansas City, Mo., January 7.—The Academy of Medicine of Columbus, Ohio, held a regular meeting January 6.—The annual meeting of the Winona County Medical Society was held Winona, Minn., Dec. 31. The following officers were elected: President, W. A. Chamberlain; first Vice-President, D. B. Pritchard; second Vice-President, G. J. Tweedy; Secretary, J. B. McGaughey; Treasurer, E. D. Keyes.—The annual meeting of the Clinton County Medical Society was held in Clinton, Iowa, January 7. The following officers were elected for the ensuing year: President, J. C. Langan; Vice-President, H. G. McCormick; Secretary and Treasurer, P. S. Kaadt.—

The Inter-County Medical Society held its annual meeting in Spring City, Pa., January 2. The following officers were elected for the ensuing year: President, F. W. Heckle, Spring City; Vice-Presidents, William Brower, Spring City; W. Mars teller, Phoenixville; Recording Secretary, J. S. Morey, Royersford; Corresponding Secretary, Dr. Burns, Royersford; Treasurer, Dr. Finkbinder, of Parker Ford.—The Mobile County Medical Society held a regular meeting in Mobile, Ala., January 3. The following officers were installed: President, E. L. Marshal; Vice-President, D. W. Goodman; Secretary, F. R. Sherrard; Treasurer, J. G. Thomas.—At the fifty-first annual meeting of the Northwestern Ohio Medical Association held December 12 and 13, the following officers were elected for the ensuing year: President, Charles Graefe, Sandusky; Vice-Presidents, Dr. Slocum, Defiance, and Dr. Phillips, Belle Center; Secretary, J. B. Baker, Findlay.

Detroit Notes.

THE WAYNE COUNTY MEDICAL SOCIETY at its regular meeting Thursday, January 9, listened to a very interesting paper by Dr. M. V. Meddaugh, entitled "Caloric, Its Utilization in Therapeutics."

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION at its regular meeting Monday, January 6, was entertained by a paper entitled "The Coal Tar Antipyretics," read by Dr. C. J. Jennings.

HEALTH OFFICE REPORT for week ending Jan. 11, 1896: Deaths under 5 years 39, total 92. Births: Male 46, female 43, total 89. Contagious diseases: Diphtheria, last report 23, new cases 28, recovered 14, died 9, now sick 28. Scarlet fever: Last report 20, new cases 6, recovered 8, died none, now sick 18. Smallpox: Last report 2, new cases none, recovered none, died none, now sick 2. Measles: Last report 2, new cases none, recovered none, died none, now sick 2.

St. Louis Notes.

WEEKLY REPORT OF HEALTH OFFICER.—Total number of deaths during the week ending January 11, 189, compared with 180 for the previous week and 146 for the corresponding period of 1895. Contagious diseases reported during the week ending January 11: Diphtheria, 73 cases, 14 deaths; croup, 6 cases, 6 deaths; scarlatina, 7 cases, 1 death; typhoid fever, 3 cases; measles, 9 cases.

THE DUESTROW CASE.—A futile effort has been made to compromise on a life sentence for the insane murderer, and the beginning of the new trial is set for the 13th inst. The prosecution will be satisfied with nothing but a capital punishment, and thus seems bent on prolonging the legal struggle. The case has now become so well known in Franklin County that it will be next to impossible to obtain an unprejudiced jury, and it is now rumored that it will be impossible to convict him there. It is understood that some of the experts for the defense have refused to testify further owing to misunderstandings with the lawyers, but there can be no doubt that the coming trial will again throw discredit on medical testimony.

THE STATE BOARD OF HEALTH met in St. Louis on the 6th inst. and passed the students of the various medical colleges of the State in review on papers submitted by the faculties. It is clear that the board intends to carry out its rules governing the matriculation of students and the recognition of colleges, and it is to be hoped that the board will meet with support from the schools themselves. The present board has done more than any previous one to elevate the standard of medical education, and the classes matriculated this year give clear evidence of the result.

DAIRY INSPECTION. The Health Commissioner is making an effort to have the city government pass an ordinance looking to the thorough inspection of all dairies. At the present time it is impossible to prevent the sale of impure milk, or to cause dairymen to cease to distribute milk from diseased cows. There

have been several discoveries of anthrax and tuberculosis in small herds of late, and yet nothing can be done to prevent the owners from disposing of the milk and the animals. There is an element in the lower house which has heretofore prevented the passage of any ordinance remedying the evil.

Louisville Notes.

U. S. MARINE-HOSPITAL.—Passed Assistant-Surgeon W. P. McIntosh last week relieved Passed Assistant-Surgeon H. T. Goodwin, commanding the U. S. Marine-Hospital here. Dr. Goodwin goes to Stapleton, N. Y., where he was stationed prior to his removal here.

WATER SUPPLY.—In its efforts to secure a pure water supply, the Louisville Water Company has inaugurated a series of competitive tests in order to find the most perfect system of filtration. These tests are carried on four miles east of the city at the pumping station, and so far the city has obtained no benefit from the filtration. Four companies who make a specialty of filtering the water supply of cities have entered the contest, and three of them have their filters at work. The latest claimant for attention is a company which by February 15 will have erected a plant, which it proposes to secure absolute purity of water by means of electricity and magnets. The process was recently described by the agent of the company. The water is run through a standpipe where it receives 200,000 volts of electricity. The pure water under pressure rises to the top and flows off directly into the mains, while the sediment sinks to the bottom and is carried off by another series of pipes. The Water Company requires of each party that enters the contest to erect plants capable of filtering 20,000,000 gallons of water daily, and that these plants shall remain in continuous operation for at least eight months. At the end of this time the filter making the best test will be chosen. In order to facilitate the tests and determine which filter gives the best continuous result, the Water Company has fitted out an extensive laboratory at the pumping station. This is in charge of experts, who make chemic and bacteriologic tests daily.

AMBULANCE SERVICE.—The annual report of the driver of the ambulance shows that for the year ending Jan. 6, 1896, he has answered 1,123 calls.

LONG.—Dr. John L. Long is an applicant for the position of superintendent of the Lakeland Insane Asylum, and has presented some of the very strongest indorsements from the profession and business men of the Fifth Congressional District. The Board of Commissioners and the Louisville Academy of Medicine have indorsed him and urge his appointment by the governor. Dr. Hobbs, of Jefferson County, and Dr. D. T. Smith are also applicants.

ACADEMY OF MEDICINE.—At the last meeting of this society in their rooms in the Louisville College of Pharmacy Building, Dr. Hugh N. Leavell read the essay on chloroform anesthesia. Dr. H. E. Tuley reported a case of scorbutus in a child 12 months old, which had been fed upon dried food from its birth. Dr. I. N. Bloom, in discussing the case, reported a similar one with the same history.

Philadelphia Notes.

AT THE JANUARY MEETING OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, Dr. J. M. Da Costa was again elected President. Drs. Ernest Leyden of Berlin and Grainger Stewart of Edinburgh were elected to Associate Fellowship. Drs. Patrick Sarsfield Donnellan and Henry Toulmin were elected Fellows of the College. Dr. John B. Roberts presented a specimen of papilloma of the tonsil and Dr. Wm. Hunt some surgical instruments to the Müller Museum. Dr. F. X. Dercum read a communication "On the Functions of the Neuron with Especial Reference to the Phenomena Presented by Hysteria and Hypnotism." Dr. Dercum defined the neuron as the cell-body with all of its processes and claimed for the cell-body special and peculiar physiologic functions in opposition to the view

defended by Dr. Mills that the cell-body has only a trophic function in nerve-centers.

THE PENNSYLVANIA HOSPITAL will erect a new clinical amphitheater and receiving ward during the present year, the plans having been prepared by a committee of the staff and adopted by the managers. The estimated cost is about a hundred thousand dollars.

DR. GEORGE DOCK has been announced as the successor of Dr. Coplin as Professor of Pathology and Bacteriology at Jefferson College. He formerly held a similar position in the University of Texas and more recently in the University of Michigan.

HOUSTON HALL, the new club-house for students of the University of Pennsylvania, was formally opened by Provost Harrison on January 2 and the first smoker was held last Saturday night, when over four hundred students from all the departments were in attendance. The building is a memorial of the son of Mr. H. H. Houston, the young man having died while in attendance at the University some years ago. Mr. Houston gave \$50,000 to the structure and died before it was completed, but his family afterward contributed an equal amount. The building and equipment cost in the neighborhood of \$150,000, the remainder being raised by subscription. It is furnished like a first-class club, including a large swimming pool and a billiard room. There is also a lecture hall with about 360 seats and a miniature stage and dressing rooms, an athletic hall, supper room, and smaller apartment for fraternities, glee and banjo clubs, etc.

DR. WILLIAM T. LUSK, of New York, by invitation of the executive committee of the section on gynecology of the College of Physicians, read a paper on "Recent Bacteriologic Investigations Concerning the Nature of Puerperal Fever," on the 16th inst., at the hall of the College of Physicians. A reception was subsequently given in his honor by the chairman of the section, Dr. Charles B. Penrose at his private residence, which was largely attended by the fellows of the college and other invited guests.

THE PHILADELPHIA CHAPTER of the Alumni Association of the Jefferson Medical College was held January 14, in the college building. Dr. C. Biddle of the Miner's Hospital, Ashland, Pa., by invitation, opened the discussion on the subject of "Sprains." A collation was subsequently held, Dr. S. MacCuen Smith being the host. The annual business meeting of the Alumni Association will be held in the lower lecture room of the college, Saturday, January 18, at 8:30 P.M. Refreshments to be served after the meeting and all graduates of the school are cordially invited to attend.

AT THE ANNUAL MEETING of the Philadelphia County Medical Society held January 15, the following officers were elected for the ensuing year: President, Dr. Jas. C. Wilson, Vice-Presidents, Drs. Jas. Tyson and Thos. J. Mays; Secretary, Dr. I. B. Schneideman; Asst. Secretary, Dr. John Lindsay; Treasurer, Dr. Collier L. Bower.

THIS IS THE WAY the results of the work of the State Board of Medical Examiners and Licensers appear in the public prints: "The three State Medical Boards have sent in reports for the last examinations which they conducted. They are: 'Allopathic' Board, 76 examined, 22 failed; 'Homeopathic' Board, 14 examined, 8 failed; 'Eclectic' Board, 1 examined, none failed."—*Public Ledger*, Jan. 7, 1896.

It would certainly appear that the praiseworthy effort to elevate medical standards has thus far resulted in advancing the cause of sectarian medicine and placing scientific practitioners on a par with homeopaths and eclectics. Who are "allopathic" physicians, anyhow?

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer for the week ended January 4 gives the

following summary: Number of deaths (stillbirths not included): White, 52; colored, 26; total, 78. Death rate per 1,000 per annum: White, 14.4; colored, 15.4; total, 14.7. Death rate per 1,000 per annum corresponding week last year: 21.

DEATH OF DR. BAILEY.—The many friends of Dr. Geo. A. Bailey were shocked to learn of his death on the 9th inst., from typhoid fever. Dr. Bailey served as one of the staff of the Citizen's Hospital which flourished during the last Grand Army Encampment here.

ANTHROPOLOGICAL SOCIETY. At the meeting of the Anthropological Society held on the 7th inst., Dr. D. K. Shute, Professor of Anatomy in the Columbia University, read an interesting and instructive paper entitled "Remarks on Racial Anatomical Peculiarities."

THE FORTNIGHTLY CLUB.—The forty-fourth meeting of the club was held on the 10th inst. at the residence of Dr. W. W. Johnston. The evening closed with a most elaborate banquet. A number of invited guests were present. The membership of the club is limited to eighteen M.D.'s.

A NEW CONTAGIOUS HOSPITAL.—There is a current story in effect that the Commissioners will establish shortly at Columbia Heights a pay hospital for contagious diseases.

DECISION IN FAVOR OF THE HOSPITALS. Judge Hagner, in Equity Court No. 2, has decided that under the will of the late Emma L. Breese, the Children's Hospital and Garfield Memorial Hospital are entitled to receive from the estate the sums of \$5,000 and \$50,000 respectively. Mrs. Breese died at Philadelphia July 30, 1892, and the will appointed her sisters, Charlotte Bostwick, of Philadelphia, and Anna Matilda Maulsby, of this city, to be executrices in trust of the estate. This will was dated March 20, 1888, and in a letter addressed to her sisters, Jan. 12, 1891, Mrs. Breese declared that \$5,000 should be given to the Children's Hospital for its endowment fund, interest only to be used, and that \$50,000 should be used for the construction and endowment of a free gynecian hospital for poor and destitute women, to be built on the Garfield Hospital grounds as a branch of that hospital, and to be known as "The Louisa Lovett Fletcher Free Gynecian Hospital." The question to be decided was, "Did the letter constitute a codicil to the will?"

THE WOMEN'S CLINIC. The Women's Clinic has removed to larger quarters to accommodate the increasing work. The new address is 1833 14th Street.

MEDICAL SOCIETY OF THE DISTRICT. At the State meeting of the Society held on the 6th inst., the following officers were unanimously elected: President, Dr. S. C. Busey; Vice-Presidents, Dr. J. W. Boyce and J. H. Bryan; Treasurer, Dr. C. W. Franzoni; Recording Secretary, Dr. S. S. Adams; Corresponding Secretary, Dr. T. C. Smith; Librarian, E. L. Morgan; Board of Examiners, Drs. Kleinschmidt, Acker, Bowen, S. S. Adams and Ober. Censors, Drs. E. F. King, J. T. Winter and Chas. W. Richardson. Dr. Busey enters upon his fourth term as presiding officer, three of which have been consecutive. At the meeting held on the 8th inst., Dr. Ruffin read the essay for the month of January entitled "Treatment of Typhoid Fever." Dr. McArdle reported a case of osteosarcoma of the foot, and presented the specimen. The report of the Committee on the Publication of the Transactions of the Society, was laid over for discussion at the next regular meeting.

THE POST GRADUATE SCHOOL OF MEDICINE OF THE DISTRICT OF COLUMBIA. The bill to incorporate the Post Graduate School of Medicine was favorably reported by Senator Gallenger, on the 10th inst., and upon his motion was unanimously passed by the Senate. Senator Gallenger is a homeopath physician and all medical matters arising in the Senate are referred to him for a medico-senatorial opinion. The Senator is greatly interested in medical advancement and gives all such matters his personal attention.

REQUEST OF THE DENTISTS. The dentists of this city have united in asking for an amendment to the medical practice bill, now pending before Congress, which is broad in scope. It reads as follows: "Provided that nothing in this act shall limit dentists who are duly registered in compliance with the law applying to that branch of the healing art, in the practice

of medicine and surgery with relation to the teeth, mouth, jaws, and associated parts." The adoption of the amendment would seem to give dentists full right to practice medicine as regular physicians.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from January 4, 1896, to January 10, 1896.

The appointment of James Sprigg Wilson to be Assistant Surgeon with the rank of First Lieutenant, to date from Dec. 16, 1895, is announced. He will report in person without delay to the president of the Army Medical School for instruction. Major Clarence Ewen, Surgeon, is granted leave of absence for six months, on account of disability.

Change of Address.

Bowle, M. K., from Barber Bldg to Saus Bldg, Joliet, Ill.
Connell, M. E., from Wauwatosa, Wis., to 710 Jackson Boul., Chicago, Ill.
Davis, H. L., from 14 Fowley Street to 2962 Wabash Avenue, Chicago, Ill.
Herman, M., from Washington, D. C., to 1535 Callopie Street, New Orleans, La.
Loar, L. T., from Dingess, W. Va., to Darbyville, Ohio.
Mennett, O. H., street address cor. Vermont Avenue and Jefferson Street, Los Angeles, Cal.
Neyman, E. H., from cor. Reed Street and National Avenue to 30 and 31 Mack Block (cor. East Water and Wisconsin Streets), Milwaukee, Wis.
Prentiss, D. W., from Washington, D. C., to Harrington House, Hamilton Parish, Bermuda.
Potts, J. S., from San Jose to 206 S. Broadway, Los Angeles, Cal.
Russell, L. B., from Goodwin to Hoopston, Ill.
Rives, W. C., from Washington, D. C., to 22 W. 33d Street, New York, N. Y.
Schmidt, O. L., from 103 Randolph Street to 3328 Michigan Avenue, Chicago, Ill.
The Medical News, from Philadelphia, Pa., to 111 Fifth Avenue (cor. 18th Street), New York, N. Y.
Thomas, John D., from 1400 K Street N. W. to The Cairo, Washington, D. C.

LETTERS RECEIVED.

American Laundry Machinery Co., Cincinnati, Ohio; Ayer, N. W. & Son, Philadelphia, Pa.; Allen, Benj. G., Robbins, Tenn.; Allnut, H., St. Paul, Neb.; Ashton, W. W., Alexandria, La.; Arnold, H. H., Washington, D. C.
Bowen, Chas. H., Washington, D. C., (2); Balmer, A. F., Brookville, Pa.; Bennett, John, Detroit, Mich.; Bailey, E. S., Chicago, Ill.; Bogle, M. A., Kansas City, Mo.; Bush, J., Foster, Boston, Mass.; Burchmore, John H., Evanston, Ill.; Beck, Carl, New York, N. Y.; Beebe, C. E., Watsonville, Cal.; Bertling, A. E., Chicago, Ill.
Claussen, J. E., Omaha, Neb.; Crenshaw, J. W., Cadez, Ky.; Croft, Benjamin P., New York, N. Y.; Chambers, J. H. & Co., St. Louis, Mo.; Columbus Phaeton Co., Columbus, Ohio; Castle, Wilmot & Co., Rochester, N. Y.
Davis, N. S., Chicago, Ill.; Davis, H. L., Chicago, Ill.; Dudley, L., Chicago, Ill.; Daniorth, L. L., New York, N. Y.; Dillon, T. C., Chicago, Ill.; Damrell & Upham, Boston, Mass.; Dodge, J. D., Cuyahoga Falls, Ohio; Drake, N. A., Kansas City, Mo.; Dameron, L. D., Phoenix, Ariz.
Edwards, S., Oakfield, Wis.; Ely, Ernst S., Barnesville, Ohio; Edwards Geo. A., Syracuse, N. Y.
Frank C. Baker Adv. Agency, New York, N. Y.; Fortier, S. M., New Orleans, La.; Ferguson, F., New York, N. Y.; Fowler, W. S., Chicago, Ill.; Fink, J. W., Chicago, Ill.
Greene, H. J., Mt. Pleasant, Iowa; Goss, I. H., Athens, Ga.; Gifford, H., Omaha, Neb.; Gates, W. C., Ontonagon, Mich.; Gray, J. G., Philadelphia, Pa.; Gallagher, G. W., New Haven, Pa.
Hummel, A. L., Adv. Agency, New York, N. Y.; Hamilton, W. D., Columbus, Ohio; Holmes, Bayard, Chicago, Ill.; Hammond, J. D., Chicago, Ill.; Herman, M., New Orleans, La., (2); Hawley, D. C., Burlington, Vt.; Harvey Co., The, G. F., Saratoga Springs, N. Y.; Hoff, Wm. H., Eaton, Ohio.
Ill. C. L., Newark, N. J.
Jones, W. D., Rising City, Neb.
Kansas City Advertising Co., Kansas City, Mo.; Knox, C. S., Superior, Wis.; Knapp, Chas., Evansville, Ind.
Luehr, Edward, South Chicago, Ill., (2); Loar, L. T., Darbyville, Ohio; Lea Brothers & Co., Philadelphia, Pa.; Lippincott, J. B. Co., Philadelphia, Pa.; Lee, J., Ellwood & Co., Conshohocken, Pa.; Lindsley, J. Berrien, Nashville, Tenn.
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ADDRESS.

CHAIRMAN'S ADDRESS.

Delivered in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY M. H. FLETCHER, M.D., D.D.S.

CINCINNATI, OHIO.

I acknowledge with pleasure the courtesy shown me, in again selecting me as presiding officer; though this Section is not large as a national body, the quality of its work is second to none, and its influences are unbounded. Its tendency is to elevate to a higher standard thereby advancing the science of the profession. In looking back over the past twelve months, these marks of progress are encouragingly conspicuous and, we believe, point to a steady and healthy growth. This is indicated by the increased number of practical scientific workers who are coming forward; by books of scientific value second to none in their line; by numbers of good papers and discussions on important topics, many of which have served largely to add to our fund of knowledge. Errors have been eliminated which is equally important with new discoveries. Superstition and guessing are giving place to accuracy and precision.

It is a fact that all the professions which have man himself for their subject, which aim to rectify his physical deficiencies, are to-day, and always have been, of the greatest interest; their scientific advancements in the past decade are more marked than in any previous one, but our lack of knowledge is still very great. Through the kindness of nature in maintaining her laws regardless of all theories and methods, our patients recover and are even grateful, believing the result to be in exact accord with the laws which we are supposed to understand; but though we may have been both honest and conscientious in our work, does this lessen our responsibility? In other words should we not, and can we not, know better than we do? And do we take all means accessible to inform ourselves?

When we work or reason from wrong principles, nature keeps coming back at us with the same conditions and by continuous knocking at our obtuseness, tries to show us the right way; and when at last we perceive and accept her teachings, we become through our enlightenment, the true benefactors of mankind, and I take it that there is no nobler nor happier position in which a man may find himself. Now in order that we may attain this desirable position, our minds must be constantly on the alert, willing to correct errors, and sensitive to new truths, much as the photographer's plate is sensitive to light and shadow. This might seem a dry and monotonous pass-time, but those who have tried it longest, have gained the most pleasure from life, and have been of greatest usefulness. Lubbock says, "Those who have not tried for

themselves, can hardly imagine how much science adds to the interest and variety of life." This kind of life and work gives us all the poetry we may desire with a limitless field for imagination; it gives us art, for nature is art; it gives us history, for facts about people and nations is history; it gives us science, for knowledge of the laws of the universe is science. Nor is this the limit, for after all our seeking there yet remain truths that are beyond the mind of man to conceive.

I am aware that when I touch upon the best methods of educating students for our profession, I run the risk of being prosy and tiresome; but the subject bears so directly on our standing in the future, that I presume upon your courtesy to the chair, and take advantage of my opportunity. Discussion of this point has not been confined to our specialty alone. Educators in almost every line have been much agitated over the same problem. I am persuaded from what I have read and observed on this topic, that a good way to try to solve the question is through the study of mental philosophy, the laws of which within certain limits are as unchangeable as those pertaining to the physical man. Now if we take into consideration, the fact that it is through sense perception that we receive all our knowledge, would it not seem that the technique classes or laboratory methods would be the most natural channel through which to educate not only our students, but those in all branches of medicine. Recall for instance the delicate technique required of the successful surgeon, the oculist, the throat specialist or gynecologist; even the general practitioner needs a gentle and educated touch, and a most thoroughly trained mind in reasoning from cause to effect, and effect to cause. Good and accurate results come only to him who has learned how to reason after this manner, first on the simplest matters in philosophy; then gradually going on step by step, until he is able to handle in a practical way the more obtruse problems. This training begins in babyhood, from the time the infant first notices the candle light, and by experiment learns that if he touches it, he suffers pain. Thus he accumulates one fact after another, until he finally reaches the last stages of mental development, that of judgment and ideation. In connection with this subject of mental ripening, comes the question, which has been somewhat discussed, as to whether a student showing no adaptability in learning the branches he has chosen, should be allowed to continue at such work; or whether he should be shown his defects, and encouraged to try some branch of work for which he may have capabilities. Pertinent to this point, there is in the February number of *The Educational Review*, an article on "The Education of the Nervous System" by Henry H. Donaldson, in which he says, "No amount of education will cause enlargement or organization where the rough materials, the cells are

wanting; and on the other hand where these materials are present, they will in some degree become evident, whether purposely educated or not;" he further says, "on neurologic grounds, therefore, nurture is to be considered of much less importance than nature, and in that sense the capacities that we most admire in persons worthy of remark, are certainly born rather than made."

Again he says, in speaking of early mental ripening or precocity, "The same conditions which give the individual a generously planned nervous system also favor its early development." In such precocious persons it tends to grow for a longer period than usual, a feature which is fully as important as the precocity itself. It is extremely interesting to see how, among a series of eminent men, excluding men of action, the determination of distinction follows the order in which the brain normally attains the high development necessary to command recognition in a particular profession. He gives the following table based on 287 cases analyzed by Prof. James Sully.

287 Cases analyzed by Professor Sully.	Gave Promise Before 20 Years Old.	Produced Before 30 Years Old.	Attained Distinction Before 40 Years Old.
Musicians	95 per cent.	100 per cent.	100 per cent.
Artists	89 per cent.	98 per cent.	100 per cent.
Scholars	83 per cent.	71 per cent.	90 per cent.
Poets	75 per cent.	92 per cent.	92 per cent.
Scientists	75 per cent.	80 per cent.	92 per cent.
Novelists	75 per cent.	56 per cent.	80 per cent.
Philosophers . . .	67 per cent.	56 per cent.	60 per cent.

"Those professions demanding only small acquisition but a very perfect adjustment between one sense organ and one set of muscles, as between the hand and the ear in the musician, and the eye and the hand in the artist, are precocious throughout, while the philosophers with their need for accumulated information and ripened judgment bring up the rear. Similar investigations on slightly different material yield accordant results."

The art of our profession would naturally compare with the artist in the table, for success in this department is dependent upon the training and skill of the eye and the hand; again, the science of the profession compares with the scientists in the table, who come much lower in the list, showing the necessity for more strength of mind, and a greater accumulation of facts. But to be simply an artisan and a scientist, is not sufficient to enable one to reach the highest standard of usefulness as a practitioner of medicine or its specialties. In our own division one needs to be somewhat proficient in at least four callings, namely: As an artist, a scholar, a scientist and a philosopher. If one of fair ability honestly endeavors to meet the demands of his profession in these four callings, all things desirable will be at his command.

It must be evident that it matters not whether a student be dull or precocious, the amount of his knowledge is proportional to his accumulation of facts and his ability to recall and utilize them. Different men have different abilities. Some persons do with great ease or almost intuitively those things that are only done with the greatest effort by others if they succeed at all. This being the case, the standard of license to practice any department of medicine should be so guarded that no incompetent person could enter its ranks. As to the best methods of educating for this standard, the most natural, as before stated, is that method in which the senses convey knowledge by contact with the objects and

phenomena in actual work, at first in its simplest form, then gradually leading step by step to perfection; by this method the mind is stored with facts and trained to reason, and use them to the end desired.

The "technic system" of teaching was very ably presented last May by Dr. Edward C. Kirk, before the Academy of Dental Science of Boston and well discussed by its members; and I wish to say that I heartily agree with the essayist. There is, however, one feature of education in both dental and medical colleges, which was only touched upon in the paper and mentioned by no one during its discussion, yet I consider it a question of the greatest importance. It is that of having suitably trained instructors in our colleges. This I deem to be as great a defect as any at the present time in our system of teaching.

At the last meeting of the American Dental Association during the discussion of the report of the committee on dental education, Dr. H. J. McKellops struck the key note when he said, "Give me the man who can teach science." If a student is bright and apt in his college work he will make good progress under almost any circumstances, but if he makes good progress with poor instruction, how much better would he do under thoroughly trained teachers. It has been my pleasure to be a student, under instruction, in some branch almost continuously for the past eighteen years, and this feature of ability, or lack of it, to impart knowledge is a point that has impressed me very strongly, with every change of subject and instructor. It is not every one that has knowledge who knows how to impart it intelligently, and the fewer number know how to present a subject in a form most suited to the mental status of their hearers. If the capabilities of all students were equal, and their interest in progress were the same, the matter would not present so many difficulties to the instructor, but were these conditions possible, the same class would progress much more rapidly under one teacher than under another. An article in a recent magazine by a college student compares two professors in the following manner: "Though he thoroughly knows his subject, his instruction is about as clear as mud; with him everything is 'perfectly obvious,' but to us his attempts at exposition are positively confusing; he thinks only of his subject, never of his students; he is cold, unsympathetic, unapproachable. I want to know the nature of this requirement for to-morrow, but if I ask him he will either show impatience at my ignorance or temerity, or misconstrue the motive of my inquiry and stand upon his pedestal of superior knowledge. But with Professor X. we make headway; he seems anxious and able to make every thing clear; he puts himself in his pupil's place; he is always willing to remain after the lecture to answer questions or discuss debatable points."

Charles C. Ramsay, in the January number of the *Educational Review*, speaks of this subject as follows: "True teaching, whether in school or college, is the process of causing another to know through self-activity, and includes the mutual effort of two persons to the same end, the teacher and the learner. Until the two are at this common work the process of teaching has not been begun; until the learner has learned the teacher has not taught." And let it be remembered that the proof of the teaching process always rests with the learner, not with the teacher, whether the scholars be young or old. "The teacher

can prove that he tried to teach; the scholar alone can show that the teacher succeeded." "The measure of information," said Pestalozzi, "is not what the teacher can give, but what the pupil can receive." These fundamental principles of all good teaching are as applicable to collegiate as to elementary and secondary instruction.

Now, if this be the case in literary institutions and universities, where the professors and teachers give their entire time to this work, and should know how to do it in the best possible manner, how much more is it true in dental and medical colleges, where the teaching is done by men whose time is almost wholly taken up with a busy practice; many of them are eminent and skilled in their professional duties, yet are quite marked for their lack of ability to teach; nevertheless, their students are expected to reach a high standard under their tutorage. Is it any wonder then that students pony, and resort to all kinds of methods for getting assistance at examinations, under such conditions?

The subject as to whether the lecture method or that of recitation is best, has been pretty fully discussed amongst our educators, but whichever method is adopted it in no way makes a good or bad teacher. Now, if one needs so much training in order to properly fill a simple cavity or extract a tooth, a procedure which seems so simple to us, how much greater his obligation to be properly prepared before attempting to direct and instruct the intellect of others. The loss of teeth or a limb may be replaced by artificial substitutes, but the loss of time can never be replaced; and time to many students is as valuable as to the professor; probably not from an immediate financial standpoint, but the loss of time to an earnest, intelligent student at an age when he is studying a profession is not a trivial matter. You may say that many students or even most of them care but little for their time, or what they learn, so they are graduated and given a license to practice; granting this to be true, it is all the greater reflection upon their instructors for if the work was made more interesting the number of attentive students would increase proportionally and develop into the kind of practitioner we delight to recognize; it is a known fact that it is not always the pupils who stand highest in a class that show the best results in after life; the plodding, honest ones in almost every class many times outnumber the precocious ones; and under the guidance of properly trained and intelligent instructors, the number of honest plodders might be increased from the ranks of those who are apparently dull and careless, and the list of precocious might be enlarged from those who are brilliant and capable, but who fritter away their time in gait and foolishness. It is not an uncommon thing to find in a class students who outrank many of their professors in strength of intellect and natural ability; not only these, but all students have a right to demand that their instruction be presented to them in the best possible manner.

It is a perfectly easy matter to get professors for the asking, but trained instructors are rare; and even those who have the natural qualities to become good instructors are not numerous. No one doubts that we have professors in almost every college who are thoroughly capable, and who take time and pains to be what they should to the student, but on the other and, a greater number fall far short of this standard.

I believe a majority of students in all colleges are

industrious, and of good intent, and many of them are barely able financially to carry through a three or four years' course; such students, if denied the full measure of their capacities to receive, are defrauded of both money and time, the first of which never is, and the last never can be repaid. There are no normal schools, so far as I know, for the proper training of dental and medical teachers, and if there were, it does not seem practicable for many of our eminent practitioners, who are in other respects most suited for the position of instructors, to leave work and go to other localities for such training; but such a normal school, it seems to me, is demanded in some suitable form, and it would seem a most fitting topic for discussion and action by our national associations of faculties. The distance a missile flies and the velocity with which it goes, is exactly proportional to the force which impels it. The analogy holds good in our colleges, for students of high grade can not be graduated unless the force can be found in their Alma Mater to produce the desired result; consequently, it would seem no more necessary, if as much, to lengthen the term at college, increase the curriculum, and raise the standard of entrance, than it is to increase the quality and ability of college instructors.

ORIGINAL ARTICLES.

ELECTRICITY.

Read in the Section on Physiology and Dietetics, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY E. H. WOOLSEY, M.D.

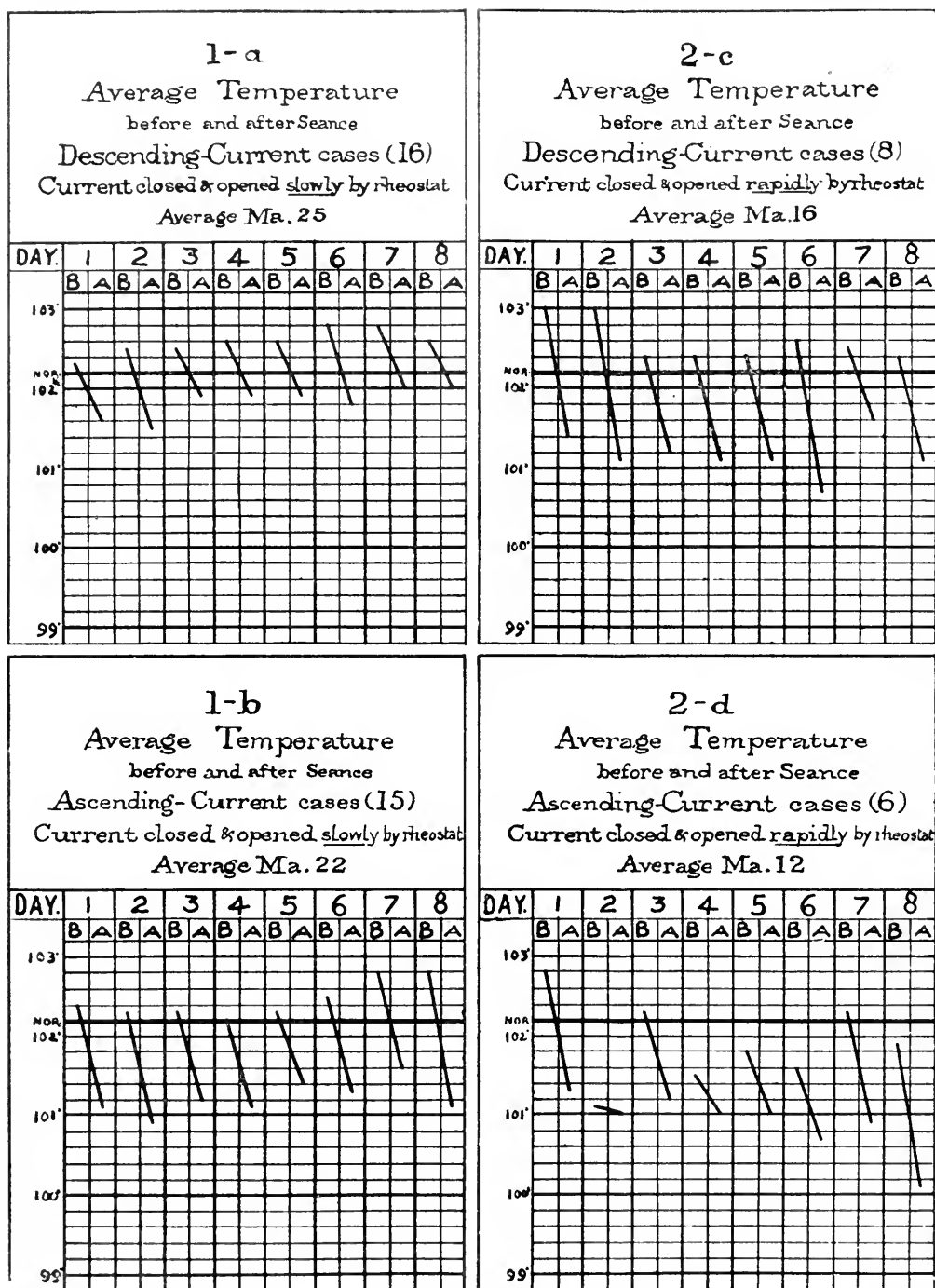
CHAIRMAN OF SECTION.
OAKLAND, CAL.

Last year I presented to this section a tabulated statement of observations made upon rabbits treated by electricity. This experimental work has been continued along nearly the same lines as heretofore, and some additional effects of electricity not previously anticipated have been noted. The observations on the last series of sixteen cases treated, however, have not been tabulated, for I intend to pursue this work further and ultimately to arrange a complete summary of all observations.

In addition to what I have previously said as to polar influence on the spinal cord, lungs, bladder, etc., I have now to announce that with the electrodes placed as I have always used them in the so-called descending and ascending current cases, all of the abdominal viscera are usually affected differently by a different direction of current. The strength of the current used in the last series of experiments varied in different cases from 5 to 20 ma., and in different sets of cases was delivered differently, and yet it was almost uniformly found that the kidneys were congested and the mucous coat of the stomach moist and the contents of the stomach moist in the descending-current cases, and that exactly reversed conditions obtained in the ascending-current cases.

The only line of observations I have worked out to a finish is that on the influence of electricity upon temperature, and I herewith present a series of temperature charts with explanations.

I may here remark that, notwithstanding all statements to the contrary, the immediate effect of galvanism, however administered, is to lower the vital temperature, that this is followed by a reaction which reaches somewhat higher than normal, and this by a



GRAPHIC CHARTS.

Illustrating the Influence of Galvanism on Vital Temperature. Experimentation on Adult Domestic Rabbits.

Readings of charts 1-a to 7 inclusive show temperature observations before and after seance daily for a period of eight days, and of chart 8 at the several times indicated during a period of eight hours following seance.

Seance ten minutes. Milliamperage always the same in each case, but in different cases varied from 5 to 80. Temperature taken carefully by Hicks' thermometer in rectum.

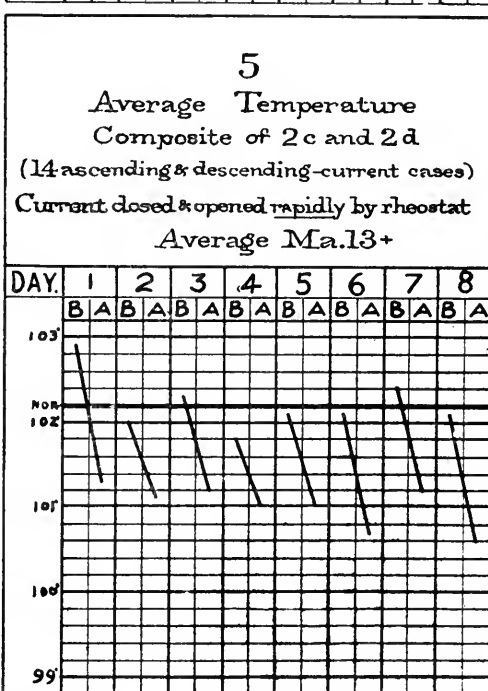
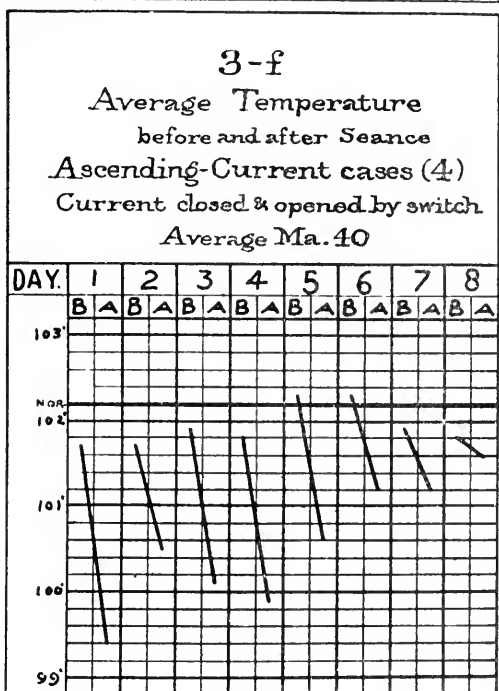
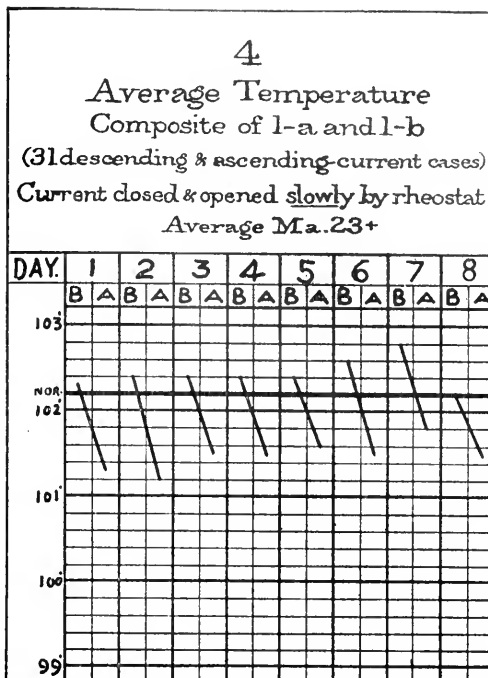
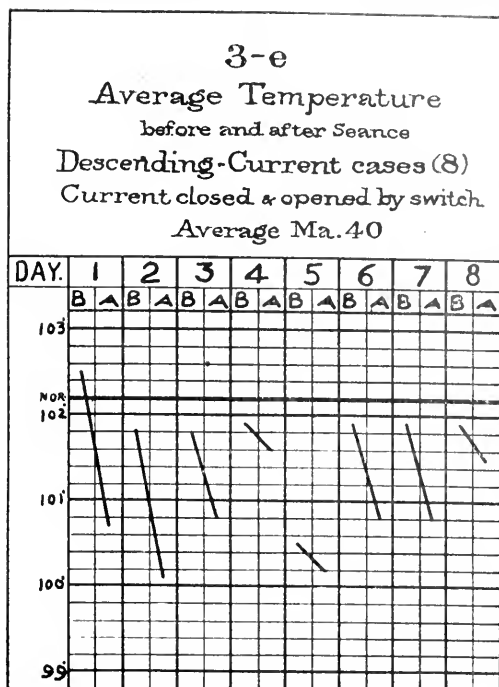
(Normal temperature of rabbits 102.2°, previously determined by taking average of first observations, in the first thirty-one healthy rabbits experimented upon.)

Used stationary gravity battery, Weston's milliamperemeter, Massey's current controller, copper electrodes, $\frac{3}{4} \times 1\frac{1}{4}$ inch, covered by lint wet in salt solution and fixed by body straps over shaved skin at cervico-dorsal and lower lumbar regions of spine.

second reaction which reaches yet higher, and which is succeeded by a fall to near the normal; moreover, that after several days' treatment with strong currents, however delivered, there is a feverish reaction. In general terms it may be said that the stronger the current and the greater the shock in its delivery, the greater will be the fall and the more pronounced the reaction.

I will present to you a few cases which I have selected from my records which will show the range of usefulness of galvanism and incidentally illustrate my methods.

Case 1. Locomotor Ataxia. J. H., 42; locomotive engineer; admitted to my private hospital in 1884 with locomotor ataxia; could scarcely walk with eyes open and could neither stand nor sit steadily with eyes closed; no response of reflexes; perfect anesthesia below the knees; mind occupied constantly with



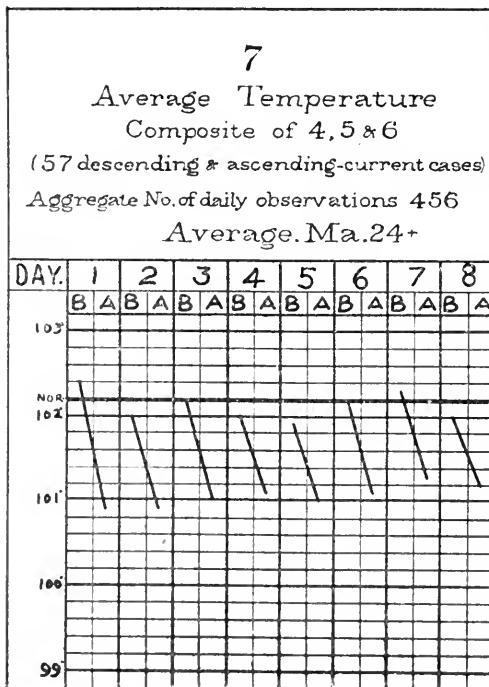
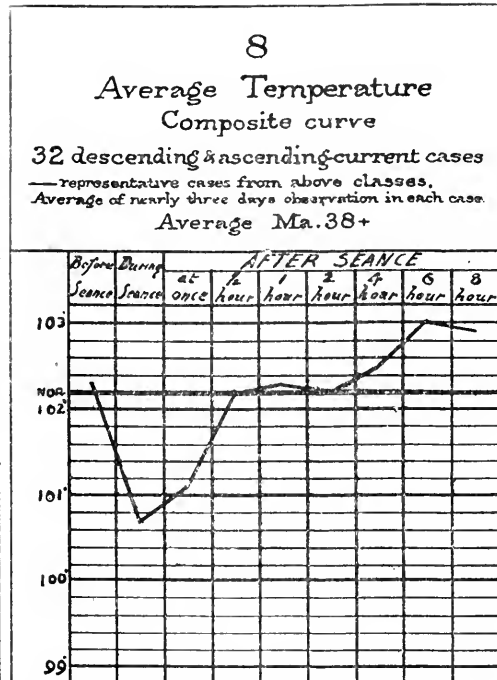
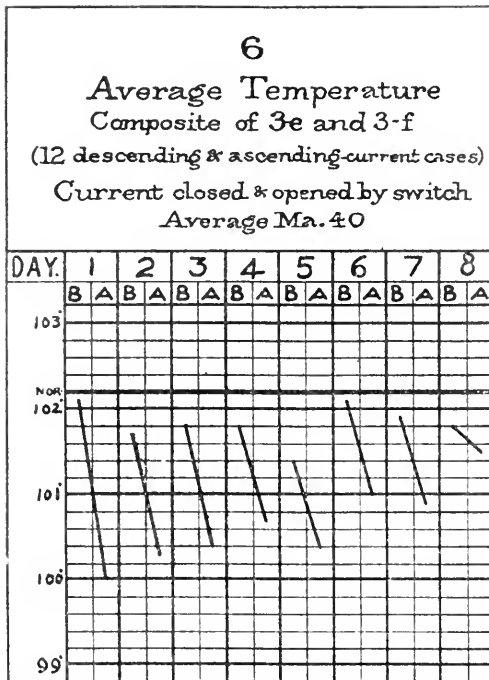
delusions, recognizing members of his family as embodiments of stranger spirits. At end of three months' treatment, consisting chiefly of galvanism, he had some knee-jerk and some sensation of legs and feet and his mind, though occupied by some harmless spiritual delusions, was practically restored to usefulness, and he was discharged for duty, but not to resume his former occupation. He, however, was considered well enough to return to his engine and did so, working for six months, when one day impelled by a spirit to run down a tramp on a trestle, killed him.

He was re-admitted to hospital in about the same condition as upon first admission, though his mind was even more perturbed. He was treated again in the same way as before for two months, and was again discharged as able to work and as fully recovered as at time of previous discharge. Since then he has worked steadily as a machinist. I saw him a few weeks ago and he has again lost the knee-jerk: has lately suffered from numbness of the feet: his mind is slightly perturbed, and he has become somewhat deaf, but is still able to do good work.

In this case I used a mild, stabile, galvanic current: one electrode at feet, the other—three inches wide by one foot long

—over upper part of spine: seance ten minutes daily: direction of current chiefly upward, though reversed to downward direction once or twice during seance, yet always finishing with the ascending current.

Remarks.—This is my usual treatment in cases of this class, modified more or less as to the number of reversals; frequently reversing about every two minutes, but finishing usually with the ascending current; also occasionally modified by labile treatment of the spine and incidentally to other parts of the back, pausing for an instant, especially when handling the positive electrode, at tender or painful points. Occasionally the forgoing practice is modified by placing the upper electrode in the patient's hands. This I believe to be good practice, for in such cases the functions of the upper extremities as well as of the lower are frequently at fault, and



Number of observations on temperature.— before and after Seance, in descending and ascending-current cases. [some of above cases treated longer than eight days] 483

No instances of rise of temp. 41 or 8.49 prct
 " fall " 415 or 85.92 " "
 " " same " 27 or 5.59 " "

stable electricity at hands and feet meet special indications here, besides conditioning such extensive diffusion of the current through the body as to meet most other indications, though the direct application over the spine and particularly over affected areas may be of great utility. In the matter of reversal of current, it is in most cases better to remove one of the electrodes before using the pole-changer for the shock will be very much less; and for the same reason it is even better to gradually withdraw the current by a rheostat before reversing, and then after the change, to slowly turn the current on again.

In regard to current strength my experience is in accord with the growing tendency of electricians to use weaker currents. The terms mild or weak, medium and strong, are only relative, and significant only of the individual views of different writers, one

for example, considering 15 to 20 ma. as mild and 100 ma. as not over strong; another, 10 ma., 20 ma. and 50 ma. as respectively mild, medium and strong; while others with whom I concur, consider that the range of therapeutic currents should be placed very much lower. In spinal cases I commonly use a current of from 5 to 10 ma., though in some cases as low as 3 ma. and in others as high as 30 ma. No definite rule as to strength of current can be laid down for the treatment of this class of cases. However, it may be said in a general way and fairly applicable to all classes of cases, that the current which will usually be most useful is that which the patient can just barely feel. By this rule, however, the milliamperage will vary considerably in different cases on account of individual peculiarities due to the influence of idiosyncrasy or disease. More voltage will

be required if the circuit resistance is increased; if, for example, the patient's skin is dry, or the sponge or other covering of electrodes is imperfectly moistened, or the conducting wires or terminals are rusty; yet, with all such impediments, provided a current of desired strength can be steadily maintained, the treatment may be perfect. Of late there has been much discussion as to the quality of surface electrodes, and I consider that the medical electrician should aim to secure as perfect conductivity as possible; practically that he should not lose sight of the fact that clean metallic connections and perfect moisture of electrodes are useful, and that the conductivity of water is increased by warmth and also by the addition of salt; but it must nevertheless appear that even poor conductivity may exist, and yet, as long as it permits of a steady flow of current, and the voltage can be depended upon to yield a current of sufficient strength to meet the requirements of a case, that there may be no fault of treatment. Whatever resistance may be encountered a perfect milliamperemeter will show the current delivered, and I may here add that a perfect milliamperemeter is indispensable.

Ten minutes has been given as the usual length of séance. It is necessary to consider the quantity of electricity administered, and until we have a more practical means of measuring coulombs we must consider time as an essential factor, and it is therefore necessary to fix arbitrarily a limit to the length of séance. This question is occupying much attention at the present time, and the tendency now is to diminish the dosage of electricity, not only by giving a weaker current, but by shortening the séance.

Experimentation on rabbits has convinced me that the length of séance has a most material influence, for I have observed under uniform conditions that the effect of electricity upon nutrition of internal organs is more pronounced when a current of 10 ma. is given fifteen minutes than when it is given ten minutes; and that a current of 5 ma. given fifteen minutes will produce effects similar to the effects of a current of 15 ma. given five minutes.

At the beginning of treatment daily séances are usually in order that obtained effects shall be maintained, and even two short séances a day may in some cases be useful; but generally speaking, after a patient has begun to show marked signs of improvement, which usually appear when the current is well adapted—in from one to two weeks—then the course of treatment should be broken by giving only four or five séances a week; and as the case progresses the treatment should be less and less frequent; and it may here be remarked, that for similar reasons it is also necessary, when a patient begins to show marked signs of improvement, to diminish either the strength of current or the length of séance or both. My reason for these remarks on interruption of treatment, etc., is that patients, and animals as well, usually show under the influence of daily treatment an increasing susceptibility to electricity, and in the course of a week or two usually exhibit some irritability of temper and, as before stated, especially when giving strong currents, a reactionary rise of temperature; and also exhibit other evidences of being overcharged or over-treated—evidences that electricity is cumulative, or that its effects are so.

One of the first signs of improvement in cases of chronic disease of the spinal cord treated by elec-

tricity is the rise of the patient's temperature. It may not be generally known that the temperature of such patients is almost invariably subnormal and frequently very low; but this is nevertheless a fact which I have determined by a long experience, and a fact which I have come to regard as of great diagnostic value.

This curative rise of subnormal temperature should not be confounded with the reactionary rise of temperature occurring in other classes of cases, and referred to as a result of protracted treatment; nor is there any conflict here with the fact, illustrated by the temperature charts, that the immediate effect of electricity is to cause a temporary fall of temperature.

In an analysis of the tabulated effects of electricity upon rabbits presented to this Section last year I drew the conclusion that "in a downward current the ultimate anodal influence is to cause anemia, and in an upward current the ultimate cathodal influence is to cause hyperemia;" and I am still impressed with this view.

From my earliest successful use of the constant current, I have entertained the opinion that current direction and polar influence were the most important factors connected with its administration. The presumed effect upon the blood vessels by the influence of the positive pole upon the vaso-constrictors and of the negative pole upon the vaso-dilators always seemed to me an easy explanation of the phenomena observed in practice; and my further experience and experimentation strengthen this view.

The catalytic action of electricity no doubt plays an important rôle here, and I am prone to believe that the *modus operandi* of such action most necessary to nutrition is, as Goelet has pointed out, the influence of electricity upon oxygen within the body in changing it into ozone. Erb says that catalytic action is independent of direction of current and yet, while considering chronic forms of disease of the spinal cord he says, "this action alone explains the rationale of cure of such diseases."

REPORT OF CASES CONTINUED.

Case 2. Tetanus. In 1884, M. L., 40; butcher; admitted to hospital with tetanus, caused by a superficial scalp wound which was foul, but readily healed under antiseptic treatment. The opisthotonos was extreme, the trismus was complete, and his efforts at inspiration were distressing and accompanied by a shriek. The battery I used then was a stationary, gravity, 50-cell battery; but at that time the current was delivered by a switch without the use of rheostat or milliamperemeter. I applied a stable descending-current, the anode at the entire spine, supported by a pillow as his body was arched forward, and the cathode at the feet, and turned on the full force of the battery, the latter being in an active condition. This current was maintained for six hours without sensible improvement: was then suspended for an hour, and then reapplied and continued for the night, and on the following morning the patient was better respiration less shallow, expiration less noisy. There was less trismus but mouth could not be opened. The current was withdrawn, but after an hour the convulsions were violent. The current was again applied as before and in less than an hour the symptoms abated slightly, and the current was again withdrawn. In a few minutes severe spasm and rigid opisthotonos again returned, but the application of the current caused some apparent relief in the course of a half hour. It now became evident that we had the case under some control, and the electrodes were left in place (except as they were removed for purpose of moistening); and when the symptoms were aggravated the current was turned on, and when they abated it was turned off: as yet, however, the patient could not move a muscle of his body.

On the third day, when under the influence of the current, his mouth could be forcibly opened a little, and for the first time he swallowed a little water—teaspoonful at a time—but did this with great difficulty: but even now when the current

was withdrawn for an hour or so, spasms returned and instantly held him so rigidly that no external muscle could have been forcibly relaxed without rupture. (About this time an attempt of a new heroic nurse to bend him resulted in the breaking of the foot of the bedstead.) Gradually the current acted more promptly and had a more relaxing effect and the recurrence of spasms became less frequent. In the course of a week the spasms yielded within a minute after turning on the current, and during intervals of repose patient was fairly comfortable and could take liquid nourishment, but he was too sore to move, as the muscles, abdominal and thoracic, as well as those of extremities, seemed to have been nearly torn from their attachments by the violence and persistence of the spasms.

About this time, on an occasion of recurrence of spasms I administered the current experimentally in an upward direction, but instead of controlling the spasm it increased its severity, and upon reversing the current to a downward direction the spasm was again abated. From this time on the current was gradually reduced and the time of its administration diminished. At the end of three weeks' treatment the patient was discharged recovered, though his muscles were yet so sore and stiff from previous tension that upon rising from his bed or chair he could scarcely move for some minutes, and he could not turn his head, but the stiffness gradually disappeared, and he is still alive and well.

Remarks.—In this connection it may be of some interest to state that when a current of extraordinary strength, 70 to 100 ma., is delivered to a rabbit in the descending direction, the spine will be arched forward and the head and tail drawn up; and when delivered in the ascending direction, the spine will be arched backward and the head drawn somewhat downward and close to the trunk, and the tail drawn downward and forward; and moreover, that such contortions will follow such current direction however frequently the current is reversed; and moreover, that rabbits thus severely shocked by such reversals of such current, are likely to die in the course of a few hours with convulsions of a tetanic character.

Case 3. Locomotor Ataxia, from Diphtheria. In 1886, I treated the six-year-old son of S. G. for locomotor ataxia, resulting from a protracted, severe attack of diphtheria. He could not walk even with his eyes open without falling, and had returned to creeping. The reflexes at soles and knees were entirely abolished, and he had aphonia. I called in consultation the ablest neurologist on the Pacific Coast, who agreed with me as to the probable utility of electricity, but he advised the faradic current to be applied to the neck and the galvanic current to the spine, and expressed the opinion that direction of the current was immaterial. The patient's temperature was 96.5. I commenced the treatment as suggested, giving daily seances applied the faradic current to the neck, about as strong as the patient could bear for five minutes, and with electrodes at the feet and spine gave a stabile, downward, galvanic current of 10 ma., delivered by switch, for ten minutes. This treatment was continued for a week, when patient had not only not improved but was rather worse in every respect. I then discontinued the faradic current and applied the galvanic current in an upward direction, but in other respects precisely as before—same strength of current, same time, etc. At the end of the second week there was some improvement; the voice had increased from a low to a husky whisper, and patient could stand a little longer on his feet; his temperature has risen to 97.3—nearly a degree, but there was not the slightest response of reflex tendons. This treatment, namely, the ascending current was continued, though the strength of current was lowered to 6 ma., and the length of seance reduced to eight minutes. At the end of the fourth week the patient was nearly well, though the knee-jerk was still only just perceptible. The temperature had become normal; the voice had returned, though was yet somewhat weak; and he could walk about for a half hour without assistance. Treatment was continued, though only three times a week, for another month, when patient had fully recovered in every respect. He is now alive and well.

Case 4. Locomotor Ataxia, from Tobacco. In 1886, J. F., 38; laborer; admitted to hospital on account of locomotor ataxia. He could not stand or even sit erect with his eyes closed, and staggered like one intoxicated when walking with eyes open. Patellar reflexes absent and no response at soles; skin generally more or less anesthetic did not feel ordinary

pin pricking even at arms or neck or face, nor deep pin pricking at lower extremities; mind not impaired, but speech sluggish. Cause of ataxia seemed to be from excessive use of tobacco. Gave stabile current of 20 ma., delivered by switch to foot and spine electrodes, ten minutes daily; and for three consecutive days, experimentally in a descending direction, with the effect of aggravating the symptoms. Then I administered the same current in an ascending direction and the patient at once—during and immediately after the seance, expressed himself as feeling better and his voice was stronger and he looked brighter. This treatment was persisted in daily except Sundays, and there was daily improvement; sensation and activity of reflexes gradually returned and the ataxia gradually disappeared and he was discharged fully recovered at the end of three weeks' treatment, and has since remained well.

Case 5.—Spinal Meningitis, from Concussion. In 1886, J. L. P., 30, brakeman, admitted to hospital on account of concussion of spine from railway collision. After five weeks' general treatment the acute distressing symptoms passed off but left an apparent congestion at the upper dorsal spine where, upon pressure, there was tenderness and pain, and after exercise severe intercostal pains. A current of 3 to 10 ma. was applied—positive electrode moved over tender part of spine and negative electrode fixed at buttocks. During the seance of ten minutes, finding that he could not at once stand 10 ma., a weak current was given, and after a minute or so he could tolerate it a little stronger, and before the close of the seance could stand 10 ma., providing the electrode over the spine was kept in motion. This treatment was repeated daily for six days when the sensitiveness on pressure and the exaggerated electro-sensibility had greatly diminished. Then, however, the house physician gave the current accidentally in an upward direction with the effect of waking up morbid sensibility of the spine and rendering the patient more nervous and irritable, and that night he was unusually restless. On the following day the regular treatment, descending current, was used, causing immediate relief of tenderness and nervousness and the patient slept for an hour immediately after the seance. This treatment was continued daily except Sundays for two weeks longer, when the patient was discharged. He worked as ticket collector for three years without interruption though suffering at times for a few hours, and occasionally at night, from pain at upper part of back. He was assigned to duty as brakeman and after a few days of such work was again admitted to hospital, in 1890, with acute, spinal meningitis. The dyspnea on account of intercostal neuralgia, etc., was distressing, and cyanosis was marked, and he complained of pain at the back, neck and head, and also at the extremities. He was kept constantly under the influence of morphia. His wife and brother-in-law—a physician, and the membership of the hospital staff expected his death daily. This was the condition in which I found him four weeks after his admission. At once I applied a stabile, downward current without disturbing him much in bed, anode about one foot long and three inches wide over the most sensitive part of the spine, the upper dorsal and lower cervical, and cathode at feet. I began with 5 ma. and increased to 12 ma. during a seance of ten minutes and the relief was almost instantaneous; and before the seance was over patient went to sleep. This treatment was given twice daily for several days and each time with the effect of causing sleep before the seance ended. The patient gradually improved and the number of seances was diminished, but the rather strong current was kept up as the patient always asked to have it stronger, and on some occasions, through the offices of an indiscreet fellow-patient, he got as high as 40 ma. and yet with apparent good effect. But after about two weeks' treatment patient began to complain of pain in the left leg and of abnormal sensations at the foot and of a drawing feeling at the toes. He had now so far recovered that all anodynes had been withdrawn: he was able to sit up in bed; soreness and pain at back and neck had largely abated and his appetite had returned. I continued the treatment daily, except using a weaker current 8 to 10 ma., for a month longer, always with agreeable immediate effects and the spinal tenderness had entirely disappeared; and there was but one complaint, that of pains at left leg and foot. He could walk about town and felt himself improving from day to day, but his face began to be a little edematous. The treatment was continued and there was no indication of return of spinal irritation; but each day there was some new phase of edema and soon it became quite general and very pronounced, the skin being distended to its utmost, and though patient could yet walk when raised up, he could not rise from his bed unassisted. The heart and urine were examined but no evidence of organic lesion was discovered. I now suspected that the current had caused it, and putting my theory to a

further test, gave an ascending current of the same strength—stable, with anode at feet and cathode at lower part of back, keeping far below the site of original irritation. On some days of treatment a transitory irritating effect was occasioned at the meninges of the upper dorsal portion of the cord, but this was always promptly controlled by the temporary application here of the positive pole. After the first day's treatment with the ascending current, the edema began to subside, and during a ten days' course of such treatment entirely disappeared and with it the numbness of left leg; and the patient was discharged recovered. He went to work as flagman and continued at such work for several months, but then caught cold and died suddenly of pneumonia.

Case 6.—Cerebral Hyperemia, from Loss of Sleep. In 1888, Lieutenant L., 28, was admitted to hospital in consequence of having been on ship duty for five consecutive days and nights. He had paroxysms of cerebral hyperemia coming on suddenly several times a day, though there was some premonition such as vertigo and headache. When having such symptoms he could walk a short distance—a half block or so, with staggering gait, but then had to lie down or fall. Upon lying down or falling he would flex his body strongly, and become unconscious and the torpor would be so deep that he could not be waked; but in an hour or so would wake voluntarily and remember what had occurred up to the moment of such sleep. When these spells came on the face became flushed and during the period of unconsciousness cyanosed, but upon waking would resume its natural pale color. Under medication it was found that nothing would abort the paroxysms, but that a large dose of bromid of potassium or soda given promptly when the face began to flush, would render the paroxysm less severe, though the after effect seemed to be injurious, as it left him in a semi-torpid condition for some time after the ordinary duration of the spell. After several days' treatment, he happened one day, when a paroxysm was coming on, to be in the office where galvanism was accessible and I quickly applied a current of 5 ma. to head, moving the positive pole over the forehead and holding the negative pole steadily at back of neck and continued this treatment for five minutes. He experienced immediate relief: the flushing and headache disappeared and the paroxysm was averted. From this time on the same electrical treatment was given whenever he had any flushing of face or headache, and always with the same salutary effect. In the course of a few days, however, it was found that a seance of a minute was all that was required. After two weeks of such treatment the patient seemed perfectly well, but the momentary application of the current was made occasionally, when the patient felt the least anxiety about himself, for some two weeks longer, when he was discharged convalescent, but was advised not to do any mental work for a long period. He, however, soon after resumed his studies: visited Washington and was examined and promoted: and has since been well and in active service.

Case 7.—Cerebral Meningitis, Traumatic. In 1891, S. R., 32; brakeman; was admitted to hospital on account of chronic cerebral meningitis which had resulted from a lateral crush of head between cars three months before. He had been in another hospital during that period, and said that he had not had a half hour's continuous sleep during all that time, though had taken frequent and large doses of anodynes, etc. Along the sagittal suture and between it and the left parietal eminence there was so much hyperesthesia that the lightest touch of the finger caused intense pain. I treated him for a few days with various anodynes and had him watched closely, and it became evident that he could not be made to sleep longer than five or ten minutes at a time. I then had his head shaved, and tried galvanism, placing a large, light electrode over the sensitive part of head and an ordinary sponge electrode in left hand and turned on, by rheostat, a downward current of 2 ma. This was all he could stand, and at times during a seance of ten minutes, it became necessary to shift the head electrode. The current caused some immediate relief of pain and tenderness, and besides a feeling of numbness of left arm. The same treatment was repeated that day, with the same result, except that the relief of pain, etc., of head and the feeling of numbness of left arm lasted rather longer, about two hours, during which time he fell asleep in his chair—the first natural sleep after the accident. On the following day he could tolerate a little stronger current, 3 ma., though the current had to be temporarily reduced to 2 ma., during the seance, on account of severe burning sensation. The experience of relief of pain, and also the feeling of numbness again followed the treatment and lasted for a long time—three hours, and he again slept after the seance. Similar treatment was kept up daily and occasionally twice a day with similar effects. The only modification of application was the shifting, carefully, of the negative pole from

one hand to the other during seance, and in this way numbness of the left arm was prevented. The patient steadily improved: the current was gradually increased in strength: the hyperesthesia and pain became less and less, and the relief after seance gradually lasted longer, until in the course of a month he got sufficient sleep—three or four hours regularly after seance and some at night—without the use of any medicine. At the end of two months' treatment he was discharged cured and has worked steadily since.

Case 8.—Meniere's Disease. Last October Mrs. H., 26, married, and mother of two healthy children, and herself in apparently perfect health, consulted me about "ringing in ears and noises in head" particularly troublesome in the right ear, which had troubled her for two years, and which at times caused such confusion that hearing was difficult. She was examined by an aurist who expressed to me the opinion that the case was one of Meniere's disease. She had accidentally discovered that quinine would relieve her, but also, that when used daily for some time, it aggravated the trouble; so had come to use it only on occasions of social events. I gave her, with ordinary sponge electrodes, from ear to ear, a current of $\frac{1}{2}$ ma., delivered by rheostat, and reversed frequently during seance of five minutes, but reversed by changing the electrodes, as the shock of reversal by pole-changer caused pain. During the seance she expressed herself as somewhat relieved, and on the following day stated that the noises did not trouble her for two hours after seance. I administered the same treatment daily, except Sundays, for a month. The result of each treatment was nearly the same except that from day to day the subsidence of noises, etc., during seance was more and more complete and the after relief more and more prolonged. On two different occasions, however, I finished the seance with the positive electrode at the right ear, and upon her return after such treatment she complained that she had not received the usual benefit. On all other occasions I finished the seance with the negative pole at the right ear. At this time—after a month's treatment, she seemed quite well, except that after any unusual excitement there would be a temporary return of noises, etc. I now gave only three or four treatments a week until Christmas time, and for some weeks she had not had the slightest return of her trouble. I did not see her again until the middle of January of the present year, when she returned in almost the same condition as when I first saw her. I resumed the same treatment, with the same measure of improvement, and for a month she has had but two seances a week and has not had any return of noises, etc.

Case 9.—Abscess of Fallopian Tube. In December of last year Mrs. L., widow, 22, had her menses suppressed by cold and had pelvic cellulitis and evidences of the formation of abscess in the left Fallopian tube or ovary. After general treatment it was deemed proper by consultants to make a laparotomy, but she objected, and after washing out the uterus repeatedly with sublimate solution, though not finding any evidence of intra-uterine disease, the experience of Dr. Lapthorne Smith occurred to me, and I introduced a uterine electrode and carried its point to, and possibly engaged it within the left tube, connected it with the negative pole, placed the positive electrode in her hands and administered a current of 15 ma. carefully through a Massey rheostat for eight minutes. This caused considerable pain, and rather severe back pains followed the treatment and continued for about two hours when she suddenly got relief and this was accompanied by a profuse flow of pus from the uterus. From this moment she improved, and about the only other treatment given was a hot vaginal douche of 1 to 4,000 solution of sublimate, twice daily. The discharge of pus continued freely for about three days and then gradually diminished and in the course of three weeks ceased. She passed the time for her next period without menstruating, except to the extent of a mere show on one day, and then began to suffer pains and from abdominal tenderness; and it seemed that she was likely to have another attack of inflammation and supuration. Feeling sure now that the trouble came from stricture of the left tube I repeated the electrical treatment, but only using a current of 10 ma. eight minutes. This was followed by backache and increased soreness about the left ovary, but during the night her courses came on freely and she afterward had no serious difficulty and has since menstruated regularly, and is now in perfect health.

Case 10.—Suppression of Menses. On March 11 of this year Miss B. B., 20, consulted me at my office. Her menses had ceased suddenly two years before and had not returned, but she had had instead about once a month, a slight, thin, leucorrhœal discharge, preceded by such feeling as she had previously experienced at time of natural menstruation. She was emaciated, weak and anemic, but had no evidence of lung disease. She had been treated by two gynecologists who had

dilated the uterine cervix and had given her emmenagogues and tonics. Upon examination I found such stenosis of the cervical canal that it was with extreme difficulty that I passed the smallest uterine sound. The uterus was normal as to length and position. I was unable to pass the smallest electrical sound, so again passed the small uterine sound through the canal and connected it with the negative cord, and placed the positive electrode in the patient's hands, and turned on a current of 15 ma., and a bloody froth hydrogen gas mixed with a little blood oozed out, as usual, from the os. I moved the sound backward and forward constantly, during a seance of ten minutes and at the close it passed easily. The current was turned on and off slowly, and the patient felt no shock but experienced a slight burning sensation at her hands and some slight abdominal pain, and at the close of the seance complained of backache. It was nearly time for her monthly leucorrhoeal period. A week later she called and informed me that two days after the treatment her courses came on freely and naturally, and that she felt much better. Three days prior to her April period I gave her another electrical treatment like the first, except that I used a larger sound, and except that the current used was much weaker, only 8 ma. eight minutes. A week later she called again and said her menses came on time quite naturally. The stenosis of the canal had evidently been permanently relieved; she had some color; had gained in weight; was stronger and felt quite well. She has since remained well.

Case 11. Rheumatoid Arthritis. On March 20 of the present year I called on Mrs. L., 60, married, and mother of several married healthy children. Found her in a wheel-chair suffering from arthritis of the larger joints of the extremities; those of left side being most affected. She had been disabled for nearly two years and had not been able to walk a step, or lift an ordinary book, for over a year, and could not, on account of weakness of left knee, extend the left leg, nor on account of weakness of the wrists extend either hand. The muscles of the extremities were wasted and flabby, but her face had a good color; her mind was unimpaired and her appetite was good. She had been treated by several physicians, some of them eminent, and one had administered galvanism so strong as to be very painful, for a period of six months, but she had grown steadily worse. Beside such general treatment, similar to what she had previously received, I gave her galvanism daily for two weeks and since then have given her four treatments a week. The strength of the current has been uniformly 6 ma., as this is all she can comfortably bear. (In such cases, and in most cases I may say, I consider that a painful current is usually injurious.) The current has always been delivered with a rheostat: one electrode is placed at the feet: length of seance about ten minutes; during the first five minutes a hand electrode is moved over the spine with an ascending current for four minutes, and finishing with a descending current for one minute; then, during the last five minutes of the seance, the hand electrode is placed in the left hand with the right upon that, or both hands and wrists and occasionally both elbows as well are wrapped in a wet towel to which the hand electrode is applied, and for four minutes of this time the current is given in an upward direction and during the last minute in a downward direction.

This method fits my notion, and it fits the patient, for she is getting well. On one occasion I finished the seance with an upward current, and without the patient's knowledge; and that night she did not sleep and this was the only restless night she has had since I have attended her. The joints are gradually resuming their natural appearance and she is gaining strength and flesh. She can now extend the left leg and the right hand fully and the left hand nearly, and she can walk across the room several times unassisted, and can even walk down a few steps and seat herself in her carriage without assistance.

Case 12. Disseminated Spinal Sclerosis. On March 26 of the present year, I was consulted at office by E. H. W., 54, farmer and miner. He had some symptoms of disseminated spinal sclerosis, though the sensory tract was principally affected, yet there was slight paresis of extensors of all the toes and paralysis of the great toes. The upper and lower extremities were about equally affected, though the affection was most marked on the left side. With eyes closed, he could barely distinguish a knife from a piece of money in the right hand; but not one piece of money from another. With the left hand he could not even detect the contact of a knife or a piece of money or feel a lighted match until the skin was severely burned. He had slight ataxia, but, his patella reflexes were normal or slightly exaggerated. The first symptoms began last winter and consisted of pain, numbness and coldness of the extremities, difficulty of buttoning his clothes, liability of letting things fall from his hands, particularly from the left,

frequent stumbling and frequent attacks of insomnia and somnambulism. These symptoms increased until his sufferings were severe, and though he could walk about he had become quite helpless and could neither dress nor feed himself. His appetite remained good and his general appearance was fairly natural, though he was losing flesh rapidly—his weight having fallen in four months from 210 to 140 pounds.

Prior to this attack, his general health had been good, except that some three years ago he was troubled with dyspnea caused by aortic insufficiency, for which I prescribed iodid of potassium. In the course of a few months the cardiac murmur and the dyspnea nearly disappeared.

I now prescribed small doses of strychnia before meals, and small doses of codia for pain and restlessness; and administered a stable, galvanic current to hands and feet—10 ma. ten minutes daily, for a week, and since then three times a week. At each seance he was given ascending and descending currents, beginning with a downward current, reversing to upward, reversing to downward, reversing to upward, and reversing to downward. On two occasions, once experimentally and once by accident, the seance was finished with an upward current, and on the succeeding nights he was unusually nervous and restless. On every other occasion of treatment the seance was concluded, as indicated, with a descending current. The patient has steadily improved. There is now but little difference in the functions of the two hands, and with either he can detect by feeling different pieces of money, and can definitely locate a touch at any part of either foot, while formerly he could not detect a similar touch at either foot, and at dorsum of left foot could not even locate a pin prick. He rarely suffers now from pain or coldness, and has no abnormal sensations; can dress himself; sleeps better; walks much better, and is gaining strength and flesh, his weight having increased steadily at the rate of about two pounds per week.

Remarks—To further illustrate my view of the utility of galvanism in chronic forms of spinal disease, where the vessels of the cord in consequence of degeneration are becoming more and more incapable of performing their functions, I conceive that the electrical stimulus acting through the vasomotor nerves will, in the alternate use of the upward and downward current, not only fill and empty the vessels and thus materially influence the nutrition of the cord, but incidentally by dilatation and constriction restore the vessels themselves to their natural elasticity and use.

CONCLUDING REMARKS.

In closing I am constrained to say that the experience of the last year has confirmed my former opinion that electricity is as potent for evil as for good, and, like a toxic remedy for example, should always be used with discretion; or in other words, that it is never inert, even in small doses, and when not properly adapted to a case is necessarily injurious.

In presenting this paper, however, I wish to say, that I am open to conviction, and have studied the subject long enough to appreciate the remark ascribed to Edison, that "we do not yet know one-millionth of one per cent. about electricity."

THE HUMAN EPITRICHIIUM.

ITS PHYSIOLOGIC FUNCTIONS AND ITS RÔLE IN THE CAUSATION OF SKIN DISEASES.

Read in the Section on Dermatology and Syphilography at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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There is no doubt whatever that the subject of histology is far from being exhausted and more especially in connection with development. Pathologic investigations, more especially in connection with bacteriology have, in later years, occupied so much of the attention of investigators that they seem to

have made the latter lose sight of the fact that we are not as yet thoroughly conversant with the morphology and development of normal structures and, as a natural result, histology has not advanced with the same rapid strides as other branches of investigation connected with the art of medicine. And yet, it is difficult to imagine a more fascinating study especially when it is taken up in connection with teratology and pathology, for in it lies that of which we are always in search—an explanation for the peculiar conditions or abnormal processes observed.

It may not be inappropriate to introduce the subject proper by a short description of the epitrichium. This layer of the skin was discovered and first described by Welcker.¹ In his examinations of the embryos of the bradypus or sloth he found it to consist of a continuous membrane which overlies the hairs, hence the name epitrichium from *ἐπι* and *τρίχινον*. This led to further investigations on his part and he found it to exist in various mammals and in man. The presence of this curious membrane in reptiles was clearly shown by Kerbert,² while Jeffries³ and Gardiner showed its presence in birds. These authors are not the only ones who have written on the subject but it seems to have awakened but little interest among dermatologists if we are to judge from their works. So far as I know there is no systematic treatise on diseases of the skin which devotes any serious attention to this particular subject and yet it is one of more than ordinary importance in the consideration not only of the anatomy of the skin but in the pathogenesis, pathology and treatment as well as prognosis of some affections of the integument. Nearly all the work in connection with the epitrichium has been done by pathologists and embryologists. It is for this reason that I propose to devote some little time to the consideration of the anatomy of the epitrichium such as I have found it in my investigations. I also desire to say a few words in regard to the physiologic functions of the epitrichium as this is also a subject not touched upon in the works devoted to physiology.

The epitrichium may be described, in general terms, to be a temporary epithelial layer of the skin which disappears at birth, the time when its functional necessity has disappeared. It overlies the stratum corneum of the epidermis and is anatomically as well as physiologically distinct. From the investigations which have been made by competent observers and to whom allusion has been made above, it is a structure which is not limited to mammals but occurs in birds and reptiles as well, and doubtless it also occurs in amphibians and fishes. This constancy of occurrence is a circumstance which should constantly entitle this little-known structure to more consideration not only at the hands of anatomists and histologists but especially of dermatologists. In this paper I propose to describe this structure in the human being only as an attempt; to do more would require too much space at this time and is certainly deserving of separate consideration in a paper devoted to the comparative anatomy of the structure.

I do not intend to trace the development of the epidermal system in the human being as it is much the same as in all amniota. Those who are doing so can consult Bowen,⁴ Minot,⁵ Zander,⁶ Curtis,⁷ Unna⁸

and others. In the human embryo the epitrichium may already be distinguished at the age of two and one-half months and from this time on it is not difficult to demonstrate its existence. It will be found to consist of one layer of cells with well-marked nuclei overlying another layer of cells which are flatter and provided with smaller nuclei, the whole resting on Bowen's basal membrane. As the embryo grows older the cells of the epitrichium grow flatter and larger and their contained protoplasm shrinks toward the center of the cells.

I have had occasion to make a number of preparations of the skin of embryos of various ages and taken from portions of skin removed from the scalp, behind the ear and from the groin. I have observed that at all ages from two and one-half months up to eight months the epitrichium could be made out quite distinctly. The cells in the younger specimens are larger and fuller whereas in the older subject they flatten, becoming fusiform in cross-section, but showing distinct nuclei, which are highly refracting and suggesting the presence of eleidin. In cross-section the stratum corneum can be made out as well as the stratum mucosum. The primitive arrangement of the cells and their grouping for the formation of the hair buds as well as the budding of the sebaceous glands is very plain. In the specimens from the older embryos the formed hair and the epitrichial cells which have been pushed aside by the growth of the former are plainly discernible. A horizontal layer of the integument, separated by macerating shows very plainly the presence of the epitrichial layer overlying that of the stratum corneum. At first the cells of the former are distinguished from those of the latter with difficulty but as development progresses the epithelial cells assume a more distinctly polygonal shape, the nucleus is more indistinct and the protoplasm concentrates, as it were, at its center. A certain amount of shrinking also takes place so that the cell is actually flattened despite the fact that the protoplasm has all gathered about one point. It is by no means a difficult matter to demonstrate the difference between those cells in integument derived from a fetus from six to eight and one-half months old. One prominent feature is that the cells of the epitrichial layer are much larger than those of the underlying structure and this disparity increases with the progress of development.

An interesting question arises as to whether the epitrichium finally merges into the horny layer or not. This idea has been advanced by some very competent authorities, but it is open to serious objections. If it becomes a part of the horny layer it should certainly be so already at the time the hair emerges from the skin and yet it is not. It is raised up by the growing hair. Furthermore, the cells of the epitrichium never become perfectly flattened like those of the horny layer and are essentially of a different nature morphologically, histologically and chemically. Moreover, it can be separated from the horny layer at any period and this separation occurs at or about the time of birth, so that a consolidation of the two seems hardly probable.

To attempt an explanation of the physiologic func-

⁵ Minot, Charles Sedgwick. *Skin*. Am. Nat., 575-578; *Human Embryology*, 548-554, 1892.

⁶ Zander, R. *Nails*. *Mis. Arch.*, 103-143, 1884; *Nails*. *Mis. Arch.*, 273-306, 1886; *Cornification*. *Mis. Arch.*, 51-96, 1888.

⁷ Curtis, F. *Nail*. *Jour. de l'Anat. et Physiol.*, xxv, 125-186.

⁸ Unna, P. G. *Anatomy and Development of the Skin*. *Ziemssen's Cyclopaedia*. 1885.

¹ Haut von Bradypus. *Halle*, 1863.

² Kerbert, C. *Skin* a. f. m. A. xlii, 205-262, 1877.

³ Jeffries, T. A. *Proc. Boston Soc. Nat. Hist.*, xxii, 203-241, 1883.

⁴ Bowen, J. T. *Epitrichium*. A. A. xvii, 685-882.

tions of the epitrichium is by no means an easy task, and that it possesses such there can be no question or doubt. It may be argued that it is simply a persistence of a type, but this is simply an explanation which does not explain, for even if it be such in man it must have some function in animals. In the bradypus it is much more developed and is separated from the embryo, thus constituting another amnion it is claimed. But, it may be asked, of what utility would such another amnion be? From an examination of this peculiar membrane it would seem that it is impermeable to water—at least it does not take up aqueous stains very readily, and from this the conclusion might be drawn that its function is to protect the skin from maceration through the action of the liquor amnii. And if death of the embryo supervene maceration will take place, although more slowly than when denuded skin is placed in water. This prevention of maceration is aided by another condition, viz., the retention of sebum upon the surface of the skin, and this is effected by the limiting action of the epitrichium which overlies this sebum or vernix caseosa which has formed. If this fat be carefully removed from the skin of a new-born infant and its covering membrane be carefully mounted it will be found to consist of a single layer of cells having all the characteristics of the epitrichium, which naturally leads to the conclusion that a complementary function is to retain the sebum and thus act further in preventing maceration.

A question which naturally suggests itself in connection with the epitrichium is in regard to the length of time which it persists, and as to whether it is cast off, and if so, at what period of fetal life does this occur? As the embryo increases in age the cells of the epitrichium become flattened and in this process the outlines become polygonal and the edges closely adherent to one another. This change takes place at those parts and at the time that the hairs and sebaceous glands assume form and the cells composing their first buds group themselves in a definite manner. As is well known, the development of the hairs and fat glands is rapid, so that by the time the shafts of the former emerge and the secretion of the latter finds its way to the surface the epitrichium has become a single, continuous, definite membrane composed of one layer of flat epithelial pavement cells rather large but quite resistant. In the locality where the hair development is strongest, such as the scalp, the epitrichium is first raised and in those places where the secretion of fat is most active it is resisted to the greatest degree. Where neither hairs grow nor sebum is secreted there is apt to be no separation at all, and this is best exemplified in the case of the nails. The eponychium, from *ἐπί* and *ὄνυξ*, as Unna has demonstrated it, is analogous to the epitrichium and may be found in earlier fetal life. Later on it disappears having, in all probability, been cast off in the course of the growth of the nails. The fact that the epithelium is found over the entire integument in earlier fetal life and that it becomes gradually separated in the later life of the embryo, is evidence of the fact that it is finally cut off at that period when it is no longer physiologically necessary. Furthermore, the fact that even at birth it may be found overlying the accumulated secretion of sebum is further evidence that the final casting off is a comparatively late process.

From the fact that, in the early fetal life the epi-

trichium can be easily demonstrated in the embryo, and furthermore that it is a distinct structure composed of a different sort of cells from those which form the outermost layer of the stratum corneum. In early developmental life it is closely adherent to the underlying layer of cells, but later on it separates in the manner which has just been given. But, should there be an arrest of development of the hairs and sebaceous glands the rising up of the epitrichium does not occur and this membrane adheres to that overlying the stratum corneum and does not become separated from it for a period of time almost if not coincident with birth. In the meantime the developmental impulse which should have expended itself upon the hair and sebaceous glands is diverted to the horny layer, and it undergoes a rapid and marked multiplication of cells, making it thicker and assume a horny appearance. That the epitrichium does not become a component part of the stratum corneum may be easily demonstrated by means of selective stains which will decolorize in the cells of the epitrichium and will not in those of the stratum corneum. A question which suggests itself in this connection is as to whether the thickening of the horny layer is due to a persistent adherence of the overlying membrane of which we are speaking. It is evidently not, but depends rather upon the arrest in development of the hairs and sebaceous glands, and this arrest is possibly dependent upon pressure exercised from without, which condition would also act as an important factor in producing an adhesion between the epitrichium and the stratum corneum.

When the process is one which is generalized the thickening of the horny layer is so also, and in consequence we have the different varieties of ichthyosis known in xerosis, ichthyosis simplex, and ichthyosis congenita or so-called harlequin fetus. These are simply different varieties of the same process, whereas ichthyosis hystrix and ichthyosis sebacea are somewhat analogous but have superadded an exaggerated secretion of sebum. But it must certainly be true that the ichthyotic process owes its origin to the same causes that the other forms do, and there is added thereto a certain development of the sebaceous glands, whose functions not only continue but are exaggerated by the stimulation exerted by the pressure due to the thickening of the stratum corneum. In all of the former ichthyotic conditions there is evident lack of development of the sebaceous glands, and in all forms of ichthyosis there is a deficiency in the number as well as size of all the lanugo hairs. The skin is harsh and dry or rugous and spinous, and it persists in this condition despite the best directed treatment, which can only mitigate it at best.

Should the epitrichium be adherent in localized areas only, we have as a result a localized and limited ichthyosis which does not extend beyond its primary limits. A peculiarity observed in connection with localized ichthyosis is the fact that it partakes of the nature of the portion of integument which is affected. If it be in the palms and soles the thickening is much greater than if it occurs upon a flexor surface, and upon this latter it is never as well marked as upon the extensor portions of the integument, as is daily shown by observation. A peculiarity which has been noted in connection with both localized and generalized ichthyosis is the fact that it rarely if ever affects the face and axillæ. This is explainable by the further fact that in these localities the sebaceous glands

develop early and rapidly and attain a comparatively large size, as they also do in connection with the hair of the scalp, this latter being also singularly free from the ichthyotic process.

From an anatomic examination of the epitrichium in its different stages and from a critical examination of the various points involved in the question, it seems to me that there can be no doubt whatever that the epitrichium plays an important rôle in connection with the development of the human integument. It not only does this but it plays a by no means insignificant part in the production of some keratogenous skin diseases, and it is far from improbable that lichen pilaris is in some way indebted to the same structure for its origin. There are other processes of a similar pathologic nature which certainly should be investigated more closely. Like ichthyosis they are of frequent occurrence and much more common than is usually supposed, so that investigations of a thorough and convincing nature could be easily made. No attempt to include any considerations of this kind would be in order at this time in this paper, as it is the intention of the writer to deal only with general considerations, especial ones requiring more space than could be given at this time.

An explanation for the existence of the diseases of the skin which have been alluded to has been attempted by various authors, but it is one in which no satisfaction can be found. It is that ichthyosis is hereditary, and this assumption is based upon observations of one ichthyotic parent having one or more children similarly affected, or the condition being seen through several successive generations in members of the same family. It may be possible that an anatomic peculiarity is transmitted from parents to children, but that a pathologic process may be is a proposition repugnant to reason. If we assume that an anatomic peculiarity is transmissible from parent to child we can readily understand that an arrested or incomplete development or an exaggerated development may occur and, in connection with the subject under consideration, there could occur a transmission of the developmental peculiarity in the sebaceous glands whereby they would not attain their proper form, size and secretory functions, thereby permitting the epitrichium to adhere to the stratum corneum and this, in turn, act as the active cause of ichthyosis and allied conditions. This might be taken as a partial explanation, but the subject is so extensive that each portion of it, from its very nature, should be taken up separately and be thoroughly discussed.

THE THERAPEUTIC ABUSE OF OPIUM.

Read by Title in the Section on Materia Medica and Pharmacy at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY G. WALTER BARR, M.D.

PROFESSOR OF MATERIA MEDICA, THERAPEUTICS, ETC., IN THE COLLEGE OF PHYSICIANS AND SURGEONS.
KEOKUK, IOWA.

While the writer desires to be enrolled among the conservatives in the midst of the present enthusiasm regarding the newer materia medica; that is, among those who insist upon rational evidence and clinical proof to a critical degree before a verdict in favor of some new chemical compound is added to the certainties of our therapeutic knowledge; yet it seems to him that in one direction at least there is too much

leaning upon the old standards. While our knowledge of pathology and physiologic action has long since passed the point of the treatment of symptoms, yet we still cling to one drug which does most of its work in relieving symptoms only. Of course a drug which has the dynamic energy of opium must always be an equally potent power for therapeutic good; but it is not what can be legitimately done with opium, but what is actually done that is the subject of this paper. The present purpose has nothing to do with drug habits and the curse of morphinomania which to-day is probably doing more harm in the United States than alcoholic intemperance is to be properly charged with. The writer believes that the medical profession as a whole, and of course with shining exceptions, is still too prone to use opium as our grandfathers did and that the equipoise between pathology and the dynamic effects of the drug is as a matter of fact a thing to be sought after to-day rather than a thing which is.

Chemically and physiologically opium is perhaps the most complex drug in the pharmacopœia. It contains a large number of active principles which have been certainly isolated; a number more that are probably present in the crude drug, but claimed with some reason to be merely products of chemic manipulation; and also may contain some not yet identified as chemic entities by laboratory research. It seems a little strange that with the present tendency toward the use of drugs uncombined with others in one prescription, so many active principles should be so often prescribed at once under the title of opium. The retort that the drug opium has its own physiologic action which is well known from years of experiment, clinic and otherwise, will probably not be heard from one who has taken pains to ascertain definitely and exactly what we know of its dynamics to-day. That the combination of so many active principles has, by virtue of the correlation of physiologic forces, a dynamic action of its own goes without saying; that this action can not be prognosticated with much certainty is proven by the large number of cases of alleged idiosyncrasy in evidence. That opium is of great therapeutic value is claimed at the outset; that it is over-rated is also contended.

When the natural polypharmacy of opium itself is avoided, the resort is nearly always to its most active constituent, morphin. As a matter of observation, and one of those things which can hardly be proven, the number of physicians, East and West, who prescribe or leave a single dose of morphin as part of the first treatment for anything from acute alcoholism to typhoid fever is greater than should be told except under the rose. The patient soon feels better from the stimulant and perhaps rests quietly later from the after depression. The patient is fooled, the friends are fooled, and too often the physician is fooled, into believing that the net results of morphin were beneficial. It is not necessary to discuss the real value of this routine practice which generally retards recovery for several days or a week. The effects of morphin upon the secretions, metamorphosis and the disposal of waste products are exactly what is not desired in most cases of disease. Yet morphin is usually chosen to produce certain effects upon the nervous system without regard to its energetic action in other directions. For many of these effects some other drug which has not the disadvantage of morphin may be chosen. For pain, either

acetanilid, antipyrin, aconite, strychnin or codein will often be as efficient, if the drug be chosen to fit the pathology present, and none of these do as much damage while they are relieving the pain as does morphin. Codein is being substituted for morphin in these later days to a gratifying extent, but is not yet fully appreciated. The writer is thoroughly satisfied that it does not produce a habit even in highly sensitive neurotics, and that it acts with little energy upon the digestive tract and heart. As a somnifacient morphin has been nearly driven out of use by the products of the modern chemist, and in other fields also should be discarded. As a cardiac stimulant, morphin acts quickly and usually energetically it is true; but the after-depression which always comes after a dose of morphin may be avoided by using instead the invaluable strychnin, the swift glonoin, the energetic caffein, the powerful digitalis, or even the treacherous atropin in proper dosage. To use morphin or opium for a condition of nervous excitation and exalted reflexes is in many cases like stunning a refractory patient with a club. Valerian, the bromids and hyoscyamus will generally give better therapeutic results of greater permanence and with less risk.

It is in those diseases of the digestive tract which are most common in summer that opium is the medium of most harm. After all that has been written about washing out the intestines with solutions of various antiseptics, many practitioners have not relinquished the mental association of diarrhea and opium which was almost universal a half century ago. Whether one believes in rational medicine or in statistical empiricism, close observation must drive him to the conclusion that very rarely indeed is opium indicated in the treatment of diarrhea. The trouble is that here the symptom overbalances the pathology in psychic impression on both patient and physician, and symptomatic treatment still survives to a very considerable extent. Without going into detail as to pathology, it may be said that a diarrhea needs usually some drug which increases the excretory functions and thus drives out of the body something which by its presence is producing the flux from the bowel. Salol and other antiseptics by the mouth; various solutions injected to flush out the intestinal tract and make it bacteriologically clean; a saline cathartic; a cholagogue and especially one acting also on the other secretions of the digestive apparatus; camphor, aromatics, the bitters and the digestive ferments—these medicines, all of which exert a dynamic energy in exactly an opposite direction from opium, effect a cure in much less time than does the latter. Of course opium temporarily relieves the chief symptom at once; and when its influence has subsided and the disease still persists the condition is called a relapse or a new attack.

The writer knows that he is writing what to some are platitudes; he foresees that the criticism will be made that he is fighting an immaterial ghost. And yet, craving the indulgence of those who do not offend the genius of rational medicine in the ways mentioned, he has been driven to writing this paper by observations upon the practice of really excellent physicians and by noting the frequent recurrence of opium, laudanum, deodorized tincture of opium and morphin¹ in the prescriptions filed away by the phar-

macists. The farther the investigations were carried the greater became the divergence between the teaching of modern medical science in school and book and journal and the practice of the profession at large. While we are making such great additions to our armamentarium, it is not unimportant that we throw away some of the old weapons which have been rendered obsolete by modern ideas and which have become merely impedimenta.

It goes without saying that opium has a real value therapeutically in certain inflammations, great pain, rare forms of diarrhea, as a splint for the intestines and in some other directions. Abuse does not imply absence of use.

THE DANGERS OF SYPHILIS AND HOW TO AVOID THEM.

Read in the Section on Dermatology and Syphilography, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY ALGERNON S. GARNETT, A.M., M.D.

HOT SPRINGS, ARK.

I do not feel that an apology is necessary for briefly calling the attention of the profession to the necessity for greater care and honesty in dealing with syphilis and its dangers. No disease is so universally distributed and none which is so insidious in its invasions, even into the ranks of the most innocent. I do not believe that there is as much candor displayed in discussing this disease as its gravity demands, and that by our silence and easy acquiescence in the mistaken idea of its harmlessness, after a year or two of treatment, we are adding to the burdens of mankind. The dangers of syphilis are most frequently its remote effects, the immediate symptoms, such as chancre and the lesions of the skin and mucous membranes passing away quickly under appropriate remedies. We find the remotest effects in all the different forms of paralysis, locomotor ataxia and insanity. The insidious microorganisms have worked the destruction of the nervous system, while the surgeon was watching for an outbreak. The quick subsidence of the external or objective symptoms of this disease misleads the patient and the doctor, and has induced some of the most distinguished men in the profession to declare that it was benign and self-limiting, that it would expire by the statutes of limitation if let alone.

In the same catalogue should be placed those rhetoricians who believe or so state that a year or two of mild treatment will cure syphilis and enable the patient to marry without apprehension. These grave blunders are helping to reverse the conditions favorable to the higher development of the human race and handicap it with leprous diseases, which would not be allowed perpetuation in the lower animals under our control. False sentiment should have no standing in our profession, whose influence should be wielded for posterity, so defenseless against its cruel parents.

How can we measure the duration of diseases induced by microorganisms, which may sleep for years before wakening to a destroying activity? It is a well-known fact that the lower organizations will

¹ In the country the use of opium has not decreased; and in the city it has lessened *except* in diarrhea prescriptions; morphin has increased in both city and country in physicians' prescriptions and bedside use, especially hypodermically and by recent graduates. A great deal of certain proprietary "substitutes" for opium which are really the deodorized tincture is used in the West. In the paper "opium" means any preparation of the crude drug.

¹ Careful inquiry among pharmacists, druggists in towns, and small wholesalers selling to doctors direct, brings the universal response that

live in a state of inactivity for years. It is this phase of the subject that should make us hold every case of syphilis *sub judice* for years, at least seven. I do not advise active treatment for that period, but after the first three years of active treatment with mercury, a mixed treatment during a month twice a year for three years more, will serve to prevent any further destructive action in ordinary cases.

The purpose is to keep the disease and its manifestations subjected to remedies. The absurd belief entertained by many, that mercury produces paralysis and locomotor ataxia, has been so often controverted in my experience that I would not discuss this feature of the subject, were it not for the grave injury which it is doing. I am treating now patients with locomotor ataxia and in nearly every form of paralysis, to whom I am giving maximum doses of mercury with the best results. This has been my experience for a number of years. My observation has been that nearly all the cases of syphilitic paralysis have been due to treatment for too short a period, or that there never had been a full mercurial effect produced. I feel quite sure that I shall be sustained in this statement by every close observer of the phenomena of this disease. In my discussion of the proper treatment I assume that all other indications have been filled; that the patients have lived soberly and carried out intelligent hygienic rules for their guidance. Had the theory that mercury produced paralysis been verified, the syphilitic paralytics whom I have treated during the last twenty years would have succumbed to the mercury which I gave, as I am very generous in my prescriptions. It seems to me to be a logical conclusion that syphilis is due to a protozoon, a microörganism, a living entity. The whole theory of treatment is to kill this living germ without killing the man in whom it is existing. So far progress in medicine has not discovered anything better or so good as mercury with which to combat its injuries and to limit its existence.

As the objective of all treatment is to poison the specific germ, and at the same time render the patient unfit for its abode, it follows that the greater the quantity of mercury that can be introduced, without danger, the better the protection given. The action of mercury is directly as a poison and indirectly as a tonic, in other words, when the microörganisms are killed or weakened, the system will re-assert its normal vigor.

If syphilis is due, as is now believed by scientific men everywhere, to a protozoon, it would account for many cases of attenuated inoculations which do not give the characteristic symptoms and features of the disease that we are accustomed to recognize and which render our diagnosis difficult.

Many years since, Kassowitz, of Vienna, who had charge of the hospital for syphilitic women and children, stated that he frequently met with women married to men in the later stages of syphilis (and who had been previously healthy) cachectic and de-vitalized, without showing any other symptoms of a specific contagion, and yet who failed to improve under any other than specific treatment. He believed that in many cases a married life between a man with tertiary syphilis and a perfectly healthy woman would be followed by the loss of strength and vitality to the latter.

While my own experience does not confirm his in many particulars, I have seen so many suggestive

cases that I feel as if I were leaning to virtue's side when I discourage marriage in all syphilitics who had not been treated for many years and who were not leading a life conforming to the laws of hygiene.

There is an obligation on the medical profession to see to it that the progenitors of future generations do not hand down diseased bodies and minds. This responsibility should not be ignored, however great the temptation to popularize ourselves by pursuing a different course. Let us guard the race by establishing a quarantine against all contagious diseases. To prevent the crime of the marriage of syphilitics, *in the earlier stages*, would it not be commendable to have a law requiring a health certificate from a board of examiners accompany every marriage license?

Very candidly and frankly, I see no hope for the syphilitic at present except in mercury and the iodids, although I fully believe that the day is not far off when some virus will be used for inoculation, which will relieve mankind of the frightful results of this malady. Experiments with horse serum are in the right direction.

THE NEW SURGICAL SPLINTING.

Read in the Section on Surgery and Anatomy, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY EDWARD A. TRACY M.D.

MEMBER OF THE AMERICAN MEDICAL ASSOCIATION.
BOSTON, MASS.

Two years ago at the Milwaukee meeting of the Association, I had the honor to read a short paper entitled "A New Material for Surgical Splints and Spinal Jackets, with a Method for Applying It." A few months later I read before the Pan-American Medical Congress held in Washington, a paper entitled "A Brief Splint-Technology for Surgeons," in which has been outlined a scientific system of surgical splinting. As a small contribution to the filling in of this outline I shall present to-day four new splint forms and report cases illustrating their use. Before presenting them to your consideration, permit me to speak for a moment of the material used in their construction. It is composed of crushed wood-fiber, rolled in a rugose fashion, and in which a fabric is incorporated during the rolling process. The material is the result of original experimental work, having for its object the attainment of a moldable material that would comply with the requirements of a scientific method of surgical splinting. The experimentation was done by me for the most part in a pulp mill, the use of which was courteously placed at my disposal by my kind friend, Mr. Charles H. Fish, of Manchester, N. H. The material and method of splinting as presented to you, represents the practical solutions of the several problems met by me during the progress of my work, problems relating to the toughness, plasticity, rigidity and technical manipulation of a splint material having for its basis wood-fiber. None the less do I believe that the work presented to your consideration will seem admirable for its simplicity.

Having considered the splint material, allow me to describe briefly the ordinary manner by which I make from it a splint. The first thing to be done is to cut the splint blank from a sheet of the material. The outline for this blank can readily be gotten for the ordinary leg and arm splints, by simply placing a sheet of the material against the limb and pencil-

ing the outline directly on it. In other cases a pattern of the splint blank can be made by cutting a piece of paper the proper shape to enfold accurately the part it is desired to splint, and then laying this paper pattern on a sheet of the material and penciling the outline of the pattern on it. By following the outline, the splint blank can be cut from the material by means of a jack-knife or a pair of shears. A suitably shaped blank having been cut from the material, it should be moistened so as to become plastic or moldable. The moistening can be done with water, but it is better to moisten the blank with a solution of potassium silicate. The ordinary solution sold for surgeons' use and further diluted with half its bulk of water I find serves admirably. This solution adds considerably to the rigidity of the splint. It is also an antiseptic. The moistening is best done by painting the solution first on one side of the splint blank and then on the other side, and so on two or three times, using for the purpose an ordinary flat paste brush. The splint material will be seen to absorb the moisture, and after a minute or two will become quite plastic or moldable. The blank should then be applied directly to the limb and a roller bandage snugly applied over it so as to make it conform to the shape of the part we intend to splint. The blank should be carefully removed and dried over a kitchen fire, gas stove, gas jet or other sufficient source of heat. While it is drying the splint should be watched and helped, by holding it properly, to retain the right shape. Before it is completely dry, it should be applied to the limb for a moment and, if need be, corrections made, before complete drying permanently fixes its form. The drying of the ordinary splints averages from ten to fifteen minutes. A single layer of merino (to be had in most households from an old garment of underwear) or a few layers of gauze is all that should be placed between the splint and the skin when applying the splint to the case for which it has been made.

In many cases of simple joint fixation, if the proper thickness of the splint material be used, (it is manufactured in sheets of three different sizes by the American Wood Pulp Company, of Boston.) the splint blank can be molded over the parts and a bandage applied directly and the splint allowed to dry on the limb without removing it. The four splint forms which I shall here describe have been chosen because of their utility, simplicity, and to suggest to you the scope of the new splinting. I am sure that the practitioner who devotes a little attention to them, or even to the first splint form to be described, will be rewarded with the result. These forms can serve as an introduction to the use of my splint material and after familiarizing himself with its characteristics the practitioner will be enabled to work it into such forms as the indications met with in any given case may call for. This mastery of the material is readily attained by the careful practitioner. But should he not care to push his conquest of it further than these simple splint forms, I repeat, the time so spent will repay him, and he will be surprised at the readiness with which he can get an efficient fixation of the knee, elbow, ribs (as much as the anatomical conditions of the ribs permit) or hip. The esthetic feature of the new splinting, both of color and form, and its comfort to the wearer by reason of its lightness, I shall but mention; they are best appreciated by the patient.

A LATERO-POSTERIOR KNEE SPLINT, FOR FIXATION OF THE KNEE-JOINT.

The pattern for this splint should be cut so as to embrace the posterior and one of the lateral aspects (preferably the inner) of the thigh and leg, extending from well up the thigh to a few inches from the ankle. Following this pattern for a guide, the splint blank should be cut from a sheet of the splint material having a thickness of about 2mm. The splint blank should be moistened, molded and dried in the usual manner before described. This splint well illustrates the mechanical principle by which the breaking strain of any piece of flat material is greatly increased as it is made to assume the tubular form, or by having a flange in its form. A piece of the splint material of the thickness described, molded over the posterior aspect of the limb only, could not be expected to serve for the fixation of a joint con-



FIG. 1.—A Latero-posterior knee splint, left.

trolled by such powerful muscles as in the knee. But by simply widening the blank so that it can be molded over a lateral aspect of the limb as well as the posterior aspect, the needful element of tensile strength is increased in far greater proportion than to the extra amount of the material employed. Another advantage is that the splint so molded and applied to the limb can not move from side to side; its flange molded over the side of the limb prevents this; it therefore gives a fixation superior to any posterior or ham splint. This splint is illustrated in Fig. 1, which is taken from a photograph of one molded on a patient (J. W., aged 53) by me at the Boston City Hospital (by courtesy of Dr. Thorndike). The case was acute exacerbation of a chronic synovitis of the left knee. The splint was worn three weeks with satisfactory results. At the same hos-

pital I treated a young man with an acute synovitis of the right knee, of traumatic origin. There was considerable effusion into the joint. A similar splint was molded on the patient's limb and worn for eight days. The effusion and tenderness had then disappeared; the patient was ordered to use the limb carefully, and to return to his organ studies. He did so without any recurrence of the trouble.

AN ELBOW SPLINT (EXTERNAL) FOR FIXATION OF THE ELBOW JOINT.

This splint serves for fixation of elbow joint and as it does not impinge upon the internal aspect of the joint allows a ready inspection of the internal condyle without the necessity of removing the splint. It is of easy construction. A pattern of the splint blank is cut so as to embrace the flexed arm and forearm; the upper part from the fold of the axilla to that of the elbow, the lower part extending from the olecranon and fold of the elbow to the knuckles of the hands, the arm being semi-pronated. The pattern should be cut so as to fold over or embrace the ulnar side of the forearm and hand. Following this pattern for a guide, the splint blank should be cut from a sheet of the splint material having a thickness of about 2 mm. It should then be



FIG. 2.—An external angular elbow splint; left arm. View is of the outer aspect.

moistened, molded and dried in the ordinary manner before described. The slight redundancy of material found near the olecranon when molding the blank should be pinched up between the fingers and bent over so as to lie against the splint. This splint is illustrated in Fig. 2, taken from a photograph of a splint molded by me on the left arm of Willie M., a boy who was brought to my office with a backward dislocation of the elbow and a fracture of the internal epicondyle, caused by a fall from a height of about five feet. I reduced the dislocation and molded the splint in accordance with the technique given above, and bandaged it to the arm, leaving the internal condyle exposed to sight. I then placed a cloth compress over the internal epicondyle and bandaged it so as to retain the fragment in its proper position. After six days the splint was removed daily so as to exercise the joint with gentle passive motions, and after eleven days the splint was omitted entirely. On the twentieth day all motions of the joint were normal, except extension, which was slightly limited. The boy then disappeared for awhile, and when next examined, three months after, nothing abnormal

except a very slight obtundity of the internal epicondyle could be detected; all the motions were perfectly normal.

A similar splint was employed in the case of A. N., an old man treated by me at the Boston City Hospital (by courtesy of Dr. Thorndike). The case was a fracture of the right ulna at its middle third, caused by the kick of a horse. The fixation of the fragments was attained by this splint supplemented by a palmar splint extending from the elbow fold to the wrist. In seventeen days there was union; on the twenty-first day the angular splint was cut across below the angle of the elbow, so that it became a simple dorsal forearm splint, leaving the elbow joint free. For safety this splint was left on for eight days, and after twenty-nine days from the beginning of treatment the patient was discharged well, with normal mobility to the arm and forearm, and but a moderate callus. The indication in this case, complete immobilization of the ulna, was read-

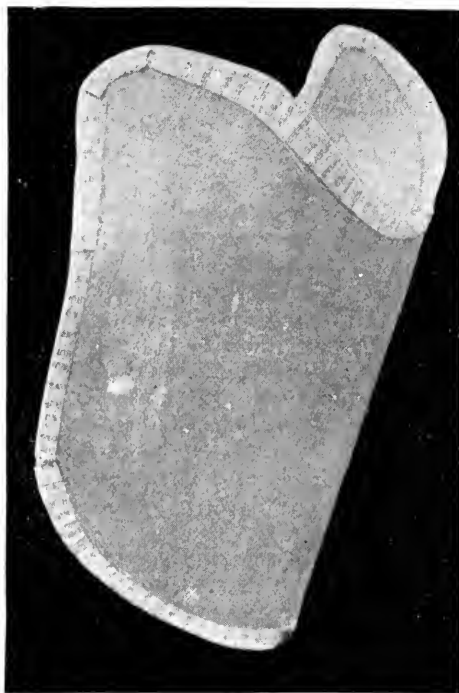


FIG. 3.—A splint used in a case of rib fracture; left. A front view of the splint.

ily met by fixation of the elbow joint and of the wrist joint by aid of the lateral angular splint and boxing in of the forearm by aid of the palmar piece from the elbow to the wrist. The result was considered excellent considering the age and condition of the patient (about 70 years, and with a double cataract and atheromatous arteries).

A SPLINT FOR RIB INJURIES.

This splint is a very simple one and readily constructed. It should be molded over the injured side of the chest, from an appropriately shaped splint blank. The blank varies in shape according to the situation of the injury and also to the fact of the chest being that of a male or female. These slight variations of shape need not be detailed, as they will readily suggest themselves for the case under treatment, when the principles governing the treatment are understood. Fig. 3 is from the photograph of a

splint molded over the chest of Mrs. C., aged 58 years, treated by me for fracture of the eighth and ninth left ribs. The splint was worn twenty-one days, being easily retained in position by a snugly applied swathe, to which was applied a shoulder strap consisting of a piece of cotton cloth held by safety pins, over the left shoulder. This method of treatment for the ordinary case of fractured ribs seems a rational one. I do not understand how adhesive plaster, or a simple swathe can protect the broken bones from external pressure that may occur at any time, and particularly when the patient sleeps. The rib splint, however, spanning the weakness in the chest wall and resting on the secure foundation of the sound ribs, prevents undue pressure from reaching the point of fracture. This, doubtless, explains the comfort with which the splint is worn. Moreover the indication to limit motion in the affected side is effectually met by a properly constructed splint molded so as to fit the half chest in the position it assumes on forced expiration. The splint thus made tends of itself to hold the half chest in that position, and its efficacy in this respect is perfected by the swathe with shoulder strap attached as described, which maintains it in position.

A HIP SPLINT.

This splint furnishes a ready method for obtaining an efficient fixation of the hip joint without the extraneous aid of blacksmithing or special tools. A pattern should be cut so as to extend from an inch or two below the axilla to about the same distance below the knee. The posterior border of the pattern commencing at the upper border should follow near to the spinal column, and over the buttock down the posterior and inner surface of the thigh to the inferior border of the pattern below the knee. The anterior border of the pattern commencing at the superior border below the level of the axilla, should pass over the chest and belly near to the middle line of the body, striking off below the umbilicus to cross the lower third of Poupart's ligament and down the inner surface of the thigh to end at the inferior border below the knee. Following the pattern for a guide the splint blank should be cut from a sheet of the material having a thickness of 2 mm. This splint blank should be moistened, molded and dried in the manner described above. Another blank should now be cut from a sheet of thinner material, and it should be moistened in like manner and molded over the other one so as to serve as a reinforcement. The two forms should be laid together as one, with a layer of liquid glue between them, and applied as one to the limb. While molding this splint the patient should be laid on his back with the limb extended in a line with the body. The moistened blank should be bent so as to embrace the affected thigh and side, and molded over the parts by means of a roller bandage. The splint should be finished by binding its border with strips of chamois skin fastened on with a cheap liquid glue. Immediately after binding the splint it can be applied to the patient, the glue setting as well with the splint in position. This splint should be properly bandaged to the body if we desire the maximum of hip fixation. This is done by taking a few tight turns around the hips with the roller bandage and then bringing the roller down so as to embrace, in figure 8 style, the upper portion of the affected thigh and the opposite hip. A bandage

should then be applied from the lowest portion of the splint, embracing first the knee and thigh, then the hips and finally the chest. The bandaging can be prevented from slipping by pinning together the layers of bandage where they overlap. The splint illustrated in Fig. 4 is taken from a photograph of a splint molded by me on Cornelius O'H., a boy aged 8, with hip joint disease of the left hip. Night cries and pain ceased shortly after its application. In three weeks the boy was enabled to be up and out by means of crutches and a raised shoe. After four months, tenderness on deep pressure over the capsule of the joint had somewhat diminished, but flexion and outward rotation were considerably impaired. The splint was worn for eleven months with no setback to the improvement of the patient. The parents of my patient then insisted on the withdrawal of all treatment, crutches, raised shoe, and splint. At that



FIG. 4.—A hip splint; left. View is of the posterior aspect.

time there was a slight limitation to flexion, the left gluteal fold was absent, and considerable atrophy of the left thigh present, though not as much as six months before. I warned the parents as to the probability of their being trouble in the joint, but their determination to have the boy use his limb remained unchanged. They promised me to watch for symptoms and on the first appearance of a limp or pain to resume treatment. There has been no recurrence and now (April 27), seven months since omission of treatment, upon examination I find his gait, walking and running, normal. No atrophy of thigh or leg. Gluteal fold present, no tenderness of hip joint. All motion except extreme flexion of the thigh normal. Upon extreme flexion the pelvis moves with the thigh bone, though no pain is felt. The boy has been attending school since January, and is as full of life on the streets as any of his comrades. [Jan. 14,

1896, over fifteen months since omission of treatment, the boy is as well as ever.]

It needs but a little consideration to understand the thorough fixation procured by this splint when correctly applied. A cursory examination will show that adduction, abduction, extension and flexion and their combination, circumduction, are out of the question with this splint in position. It is left only to consider the remaining motion of the hip joint—rotation. It is prevented by the grasp which the splint maintains on the knee, and also by its forward pressure on the great trochanter. The trochanter, it will be remembered, swings backward in an arc on outward rotation of the thigh.

In concluding my paper I will remark, that because of circumstances not controllable by me, the splint material has not been accessible to you all, and therefore you can not testify to the advantages of the new method of surgical splinting from personal experience with it. It gratifies me exceedingly, however, to be able to refer to Dr. George W. Gay, of the Boston City Hospital, who wrote in a note to me last November: "You may quote me as being favorably impressed with your surgical splinting after a considerable personal experience with it." The object of my work in surgical splinting is to emphasize the practicability of living up to the principle of surgical practice enunciated by Dr. H. O. Marcy: "The surgeon must make a splint to fit the limb and not the limb to the splint." I believe, now that the splint material is accessible to the general practitioner, that the method described, will result in the completion of a scientific system of surgical splinting that will do honor to our Association and our country.

NOTE.—Since reading the above paper I have done considerable splinting, including cases of hip, knee, and ankle joint fixation, Collis' fracture, using only water as a moistener, and allowing the splint to dry in position on the limb. In several cases absolutely nothing was placed between the limb and the splint, and though the splint was worn for several weeks no excoriation of the skin occurred. The object of this note is to emphasize the simplicity of the technique now employed—water alone being found essential, the drying of the splint off the limb, and the use of a silicate solution being unnecessary.

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SOME REMARKS ABOUT ASEPSIS IN MILITARY SERVICE.

Read at the Meeting of the National Association of Military Surgeons, Buffalo, May, 1895.

BY LIEUT.-COL. EDWARD BOECKMANN.

ASSISTANT SURGEON-GENERAL OF THE MINNESOTA NATIONAL GUARD.

It is with some hesitancy that I venture to bring such a worn-out topic as asepsis before this distinguished assembly, which is represented by our foremost bacteriologists, our best surgeons and by men who, perhaps, daily have opportunity to rejoice in the good fruits of their aseptic efforts. But when I at the same time consider that the last word on asepsis has not yet by any means been spoken, that our views are subject to change and our opinions vary, that there yet prevails considerable difference and even uncertainty with regard to the value of the different means and apparatus of disinfection, that daily, partly through ignorance and partly through negligence, violence is done to the simple but strict laws of asepsis, and that we military surgeons, because of the peculiar and difficult conditions under which we must exercise the aseptic art in service, particularly should be conversant with the principles of asepsis.

I certainly need no apology for presenting that which at first sight appears to be A, B, C to us all.

Our surgical enemies, which all of us know so well, either through our practice or through our books, and which are distinguished by their ubiquity and numbers, less by their tenacity of life, we endeavor to keep at a distance in different ways; we destroy them, we remove them or we render them innocuous. Could we simply destroy them all this would be the most ideal procedure, but since this, unfortunately, is impracticable, we must in every case avail ourselves not only of the chemic means of disinfection, which are the proper germicides, but also of mechanical and chemic measures whose usefulness consists in the removal and the inhibition of the growth of microorganisms.

MECHANICAL DISINFECTION.

Since we can not boil our hands or put our patients in a steam sterilizer and since the chemic disinfectants can not sterilize an infected skin in such concentration as can be used in practice and in such time as is at our disposal it is clear and universally conceded that the crucial point in the sterilizing process of the operator's hands and the patient's field of operation must lie in the mechanical removal of the present and innumerable microorganisms in these situations. This can also be essentially accomplished by razor, nail-cleaner, water, soap, brush and towel, but any absolute surgical operation is hardly within possibility, as the surgical microorganisms not only are met with in the deeper epidermic layers, but also in the different adnexa of the skin. That disinfection which results from a careful mechanical treatment of the skin, has been made fractional by different authors, some putting it at a half, others at two-thirds, while, as is well known, there are those who both on this and the other side of the Atlantic find in the mechanical operation the ideal in surgical sterilization of the epidermis. In my opinion we can not well express in definite fractions the aseptic value of mechanical disinfection, since in the first place individual differences obtain in high degree and since in the second place mechanical disinfection is an art exercised by different operators in extremely varying degrees of efficiency. It is unfortunately not to be denied that those operators who really understand how to wash themselves surgically still are in the minority, which is deplorable, as I am one of the many who have arrived at the conclusion that mechanical disinfection can nearly approach surgical asepsis, if practised intelligently. We should certainly be spared the painful spectacle of seeing a surgeon omit to remove his finger rings and at the same time it is only a reasonable demand that the shirt sleeves are rolled up beyond the elbow. It is unquestionably proper to use a razor on the field of operation, not so much for the sake of the hair as for the skin, whose disinfection is greatly facilitated. The surgeon himself by rights does not shave his arms or hands, which would be a necessity if this process showed a *sine qua non* for the disinfection of the hair. The washing itself must be performed in a routine manner; first a general soaping and scrubbing, thereupon a special ditto of each part. The extensor surface of the arms is reached by flexion and not by extended pronation or supination. Special attention is given the finger ends, the nails and the folds between the fingers. The more changes of

the water (preferably running and sterile), the higher temperature (up to 120 degrees F.), the cleaner the brush (best a stiff one), the purer the soap (boiled, green soap) and the longer time devoted the better is naturally the result. It is certainly proper that we afterward wipe the skin treated in this manner with a sterile towel and when this is done, we have in all essentials removed what practically is all-determining, and we can, as a rule, proceed to any operation whatever with a good conscience and with justified hope for an aseptically good result so far as the operator's hands and the patient's field of operation, treated similarly, is concerned. Yet it is necessary beyond being a good washerwoman to be both an able and experienced operator in order to attain aseptically good results from the mechanical disinfection alone, and as it falls to the lot of comparatively few to become at the same time able and experienced surgeons, it is advisable for those who are not specialists, that they do not only extend the traditional one minute, but that they add something more. It is customary to scrub the skin with strong alcohol, ether or turpentine after the thorough washing with soap. The method is certainly justified, as the above named articles are of recognized value in the removal of grease spots. To be sure, we advance a step further by our energetic scrubbing with one of these agents, followed by drying with a sterile towel. There are even those who consider alcohol omnipotent in the disinfection of the skin, and we can not very well refute such an assertion. However, these strongly fat-dissolving agents make the skin dry and brittle—an unpleasant occurrence for sensitive skin—for which reason many, among them the author, have discontinued the use of both alcohol and ether and preferred to make the remaining microorganisms innocuous by chemic agents, of which more below.

By the mechanical disinfection we aim to the greatest possible extent to dissolve and remove the oily skin covering, rich in bacteria. This fat plays an important rôle in the economy of the skin. It is to keep it pliable and elastic; it is to receive and arrest and thus prevent the innumerable bacteria, which come in contact with it, from causing local or universal trouble. Therefore it appears to me proper to restore to the skin that protective we have endeavored to deprive it of, in the form of a sterile fat, not only for the sake of the skin, but also to cover up and arrest the remaining bacteria and thereby prevent them from infecting the operation wound. The idea is not new, but is for the time being hardly realized beyond examinations and operations on the vagina and the rectum. I believe that this method has quite a future in surgery generally, if we employ a material of the same composition or quality as that which is found upon our skin. Lanolin is the fat which I have tried for this purpose during the past year, and provisionally I have every reason to be satisfied therewith. Lanolin is, as known, a product of sheep's wool; it does not saponify or become rancid, has a remarkable penetrating power and sticks excellently to the skin. Lanolin absorbs water greedily and the commercial article contains about 25 per cent. This is simply called lanolin and forms an almost white, salve-like mass, while the dehydrated lanolin—lanolinum anhydrium—looks like honey and is of the consistency of vaselin. Pure lanolin is without smell or taste. Dehydrated lanolin is simply sterilized by boiling. It boils at a temperature of above 400° F.

—a temperature which instantly destroys all bacterial life. The ordinary lanolin can not be sterilized in this manner, as the contained water will be separated and on boiling cause the lanolin to be thrown to all sides. It must first be dehydrated, which is fairly well accomplished by heating in a steam sterilizer for some time, after which it is set away to be cooled. The water will accumulate below while the dehydrated lanolin will solidify above. When this has taken place, a hole is made through the lanolin and the water is emptied, after which the lanolin is carefully heated up over a weak flame to boiling point; it is now surgically sterile. A convenient mode of keeping sterilized lanolin ready for use is to pour some into a sterilized glass-stoppered or patent-stoppered flask and add to it four or five times the volume of anhydrous ether, which keeps the lanolin dissolved. If a little of this solution is poured on the hands, a few moments suffice to rub it well into the skin; the ether evaporates quickly and the lanolin remains. Another method convenient in military service is to run the lanolin, when melted, into collapsible tubes, such as painters use, sterilized beforehand by boiling. A small amount is pressed out and well rubbed into the skin, after which the excess is removed by a sterile towel and pressing out from under the finger nails.

CHEMIC DISINFECTION.

After having softened up and removed the epidermic dirt mechanically, it is a standing rule to wash or scrub the skin with corrosive sublimate solution to destroy the bacteria which have not been or can not be removed. Theoretically no criticism can be made against this practice; practically I am strongly inclined to believe that the whole is a comedy of errors. It is not denied that corrosive sublimate is chemically the most powerful germicide at our disposal, but Geppert's well-known experiments, which have been corroborated by later investigators (Abbott and others), have long ago proven that it not only requires a 1:1000 solution a long time, even hours, to destroy surgical bacteria, but also that the latter must be exposed on pure culture, conditions which rarely obtain in practical life, not even after the most thorough mechanical disinfection. Corrosive sublimate must form a chemic combination with the protoplasm of the microorganisms in order to unfold its germicidal power, which does not occur when these are imbedded and hidden in fat, albuminous material and dirt. It is an every-day occurrence to see how a sublimate solution rolls off the skin like water on a duck's back, without the least impregnation; the result is in the main the same when the skin is washed beforehand with warm water, soap and brush, or even with alcohol. No name-worthy difference is to be remarked with the addition of tartaric acid to the sublimate. Even if, with an energetic brushing extending over minutes, we succeed in forcing some of it into the skin, this impregnation is always in the first place superficial, and in the second, the time is too short for any germicidal action; thereto is added the wiping or washing off of the excess of sublimate whereby we, for justified fear of toxic action, renounce the antiseptic rôle which these drops could play in the operation by inhibiting the growth of present germs. For these and other reasons I have entirely abandoned sublimate in the disinfection of my hands, while I still recognize its value on

the site of operation when, as is the rule in civil surgery, we can expose this to its continued action for a day or two in weak solution. That the skin in this manner can be impregnated and the bacteria killed or rendered innocuous, I see a proof of in the eczemas which arise and in the cases of poisoning which may be the result of these wet applications; cultures from scrapings of the epidermis are also negative, as a rule.

The English antiseptic, carbolic acid, is by far less germicidal than sublimate, for which reason this agent for the same purpose is used in per cents. where sublimate is used in per milles or fractions thereof. But carbolic acid has the undeniable and great advantage over sublimate, that it penetrates the skin without previous preparation of the latter. Thereupon depends its antiseptic power, and consequently also the danger of poisoning. Carbolic acid will not be able to kill anything in the short time and in the strength which is at our disposal; it has no justification as a germicide, an agent which annihilates the vitality of the microorganisms, but as an antiseptic, an agent which inhibits their growth without destroying their vitality. This last is sufficient for the purposes of the surgeon, since the phagocytes immediately begin their important scavenger work, and generally with decided success when the number of dormant bacteria is small and their virulence moderate. Although sublimate in a concentration of 1:300,000 inhibits the growth of microorganisms, while carbolic acid requires a strength of 1:850 to accomplish the same, the last antiseptic is preferable for the reasons above given.

In the meantime carbolic acid possesses important disadvantages. Many surgeons can not use it, because it causes annoying eczemas or in any event dry and chapped hands and anesthesia. Carbolic acid as an application on the skin, mucous membranes or on wounds is furthermore an exceedingly dangerous agent to the organism, and cases of poisoning have been both numerous and fatal, and often compromising. For these reasons I never could persuade myself to employ this chemical in disinfection of the skin, but have cast about for an agent which has the advantages but not the drawbacks of carbolic acid. Such an agent probably does not exist. I have provisionally availed myself of lysol, which possesses its good qualities in the same or higher degree and its disadvantages in less. Lysol is saponified phenol; it is derived from cresol, a coal tar product of superior antiseptic power to carbolic acid, by the action of nascent soap. It is a good antiseptic in the strength of 1 to 3 per cent. Lysol is viscid, brown and strongly alkaline. It dissolves very readily in water, which carbolic acid does not do; the solution foams like soap-water, penetrates the skin easier than carbolic acid, makes the skin soft and pliable, burns a little and causes after a short time a feeling of numbness. Its toxic properties are not as marked as carbolic acid. It is on the whole eminently qualified for washing the hands and site of operation, whether the skin is broken or not, while continued wet applications have to some extent the disadvantages of carbolic acid with regard to burning and the production of eczema, for which reason I still prefer weak solutions of sublimate for this purpose.

I believe that military surgeons should adopt this practical, inexpensive and good preparation, which is at the same time both a soap and an antiseptic, as the

disinfection of hands and field of operation according to Fürbringer's method (warm water, soap, brush, nail cleaner, alcohol, sublimate and sterile towel) always will be impracticable in actual service.

The disinfection, which I will take the liberty to recommend in military service as well as in civil, where circumstances admit of it, is as follows: Brush the hands intelligently with a clean, stiff brush in a quart of hot water, to which has been added by guess a tablespoonful of lysol; then cleanse the finger nails; cleanse anew the hands with a fresh solution of lysol and another clean brush, dry them with a sterile towel and rub thereafter the hands thoroughly with lanolin from the collapsible tub; remove the excess of lanolin. In the absence of hot water use cold water for a longer time; in the absence of any water simply rub the hands with lanolin, which, under all circumstances, is better than nothing. The field of operation is treated in the same way. It is within the possibility, that it might be of some value to render the lanolin antiseptic with lysol, where we are prevented from using both separately. As is well known the antiseptics certainly lose a good deal of their value by being mixed with fatty substances—considerably less, however, in lanolin. In the meantime I am not so far advanced in my experiments with antiseptic lanolin that I feel justified in expressing myself concerning this for the time being.

THERMIC DISINFECTION.

While cold is not able to destroy microorganisms, but simply inhibits their growth, heat on the contrary is the best germicide. Practical application in surgery finds heat in the form of hot air, boiling water and steam. Hot air is a much more powerful disinfectant than chemicals, but it is considerably inferior to boiling water and steam. Koch and Wolfhügel have found that non-sporebearing bacteria are destroyed in the course of one hour and a half in hot air at a temperature of 212 degrees F., while spores require a temperature of at least 284 degrees F. for three hours for their destruction. To this disproportionately long time dry heat possessed but little penetrative power. It takes a very variable and at any rate a very long time to bring the temperature up to the desired height in the articles to be sterilized, while as a matter of experience it is very difficult, not to say impossible, to obtain a uniform temperature in dry heat sterilizers, for which reason the thermometer is not a safe guide. When to this is added, that the dressings suffer considerably in continued and high temperature, that the instruments rust and lose in temperature and edge, and that these sterilizers are both cumbersome and expensive, it is no exaggeration to maintain that sterilizers for hot air alone only should be of historic interest in surgery. However, there is one important material which seems to be most properly adapted for sterilization by hot air, viz., catgut, which as is known neither stands boiling water nor steam, and whose sterilization by chemical means so often has proved to be unsatisfactory, not to mention the long time required. As catgut, because of its absorbability more and more gains ground *pari passu* with the perfection of its sterilization, both as a suturing and ligating material, and as I have long been of the decided opinion that the surgeon himself shall undertake or in any case control his asepsis, I have devised the sterilizer, which I later will demonstrate, to include also hot air.

so that it can be utilized for catgut, which, so far as I can see, ought to have quite a future in military surgery for the reason that it can be at hand in a very convenient form. Benckisser deserves the credit of having conceived the happy idea of sterilizing catgut by dry heat in double, hermetically sealed envelopes—one within the other. Since microorganisms can not penetrate dry paper, the catgut will remain sterile indefinitely, if the envelopes are kept dry. This is indeed convenient. In this way we can carry sterile catgut in our pockets; when it is to be used, an assistant tears the outer envelope, which is infected on its outer side, while the surgeon himself or his first assistant removes and tears the inner, sterile envelope, which contains the catgut. Benckisser's idea has impressed me so favorably that I long ago adopted it for all the catgut I employ in my surgical practice, but with such modifications that I shall take the liberty to describe my procedure *in extenso*.

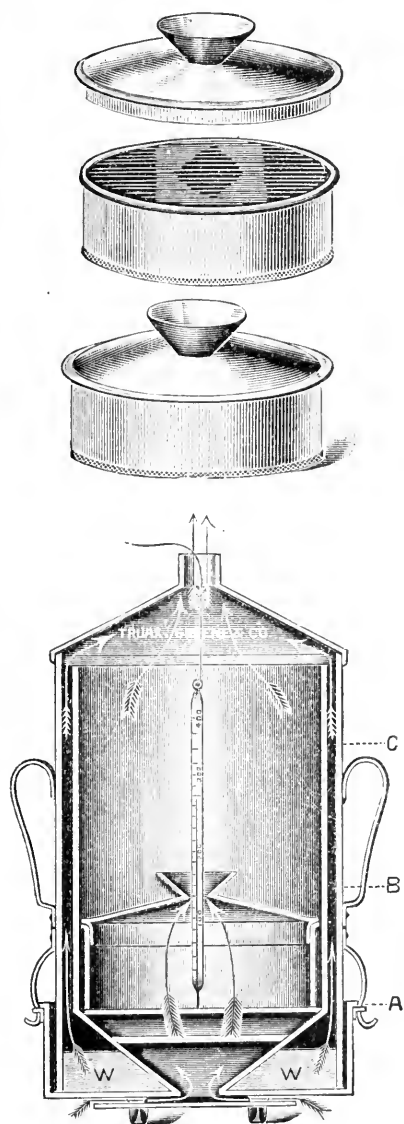
The raw catgut, which must be of prime quality in order to retain the necessary strength after the exposure to a prolonged and high temperature, is simply cut without special preparation of the hands into suitable lengths. The original bundle is divided so many times that each individual string measures respectively twenty or forty inches—two convenient lengths for practical use. Each of these strings is wound around two fingers in a coil, which then is wrapped up in wax paper, and since the mercantile article is very thin and easily perforated by the free ends of the coil, the wax paper is doubled, whereupon the whole is placed in a small envelope, which can be hermetically sealed and upon which is marked the length and size. The catgut is placed as nearly as possible in the middle of the envelope, which is now ready for sterilization. When the required amount of envelopes is made up they are arranged in a specially constructed metal box whose bottom is perforated and whose cover is provided with a small funnel to easily admit the thermometer to the interior of the box (see illustration). The envelopes are set up edgewise and must not be packed more tightly than will admit of free space between each one to allow the free circulation of the hot air. According to the thickness of the envelope, which depends upon the size and length of the gut, the box will receive from 150 to 200. The catgut box is now placed in the sterilizer; the pan is filled with cold water; the hood is applied without the cork; a thermometer, which registers up to 400 degrees F., and short enough to be completely hidden inside the apparatus, is slipped in so that the bulb rests upon the upper edge of the envelopes. The sterilizer is now put over the burner. For the sterilization of catgut it is important to employ a burner which can be regulated and which will not soot, since the last interferes with the raising of the temperature. We must use either a good gasolin or a gas burner, preferably with two regulating cocks. We begin with a very small flame, increasing it hour by hour, until the temperature at the end of three or four hours is at the required point (about 284 degrees F.). When this temperature is reached it is continued for at least three consecutive hours, after which the flame is turned off and the catgut box removed after cooling. The whole procedure requires at least six hours, of which three are consumed in the gradual heating up. As the original quantity of water—about one gallon—does not suffice for so many hours' boiling, water must be added time

after time. This takes place without interruption of the sterilization or name-worthy reduction of the temperature, as it is indifferent whether the water poured into the lip be warm or cold.

I have already mentioned that the thermometer must not extend beyond the apparatus. If it does some of the vapor will be condensed on its projecting end and run down along the thermometer to the bulb, which will be to some extent cooled and register falsely. A loop is to be fastened to the upper end of the thermometer to allow of, from time to time, its rising sufficient to read off and control the temperature. It is not difficult at all to keep the proper temperature, so much the more as it is not necessary, not even possible to retain the temperature at exactly 284 degrees F. It suffices that the temperature does not descend below 280 and preferably not above 300, as higher degrees will burn the catgut; still it can stand a short exposure to 320 without being destroyed. It is to be remembered that it takes time for dry heat to communicate its temperature to the envelopes and their contents and that this communication does not keep pace with the gradual rise in the temperature of the hot air. We must bear in mind the little penetrating power of hot air and that paper is a poor conductor of heat, consequently it is wise to continue the sterilization for fully four hours after the thermometer registers 284 degrees, to be sure that the envelopes have had the benefit of this temperature for at least three hours, the time required for the complete destruction of spores of anthrax. When the envelopes are removed after complete sterilization, we will observe that they have changed in color from white to yellow; that they are oily—especially pronounced immediately over the coil—and very slippery. The yellow color is most marked at the lower border of the envelopes; evidently the temperature has been greater at this location. This has also been the case, as is evidenced by a glance at the illustration below. In this apparatus the hot air enters from below; at the wire diaphragm, upon which the catgut box rests, the temperature is, with good flame, 300 to 320 degrees F.; the temperature sinks gradually higher up, so that it is only about 240 degrees in the upper part of the sterilizing chamber, because this is surrounded on all sides by steam at 212 degrees, which consequently lowers the much higher temperature of the hot air. It is only in the lower two or three inches of the sterilizing chamber, that the temperature can be raised to at least 284 degrees; this part is alone suitable for the scientific sterilization of catgut, for which reason the catgut box is made but two inches high and the envelopes a little less to allow for the flange of the cover. The bottom of the box is perforated to admit of the entrance of the hot air. The temperature is taken at the upper border of the envelopes to make sure that the whole envelope is exposed to a temperature of not less than 284 degrees. There is as a rule about 20 degrees difference between the superior and inferior border of the envelopes; therefore, the color is more brown below, and for this reason I take the simple precaution to place the coil in the middle of the envelope to insure against burning and to secure the most possibly uniform temperature. After a few trials of the apparatus and a little experience in packing the envelopes uniformly, it is hardly necessary to observe the thermometer, because we know how wide open to leave the regulating cocks to obtain the desired tempera-

ture; patent gas regulators are superfluous. In order to provide for free circulation of hot air between the individual envelopes, especially at the location of the coils, arrange according to the illustration.

Cultures from catgut sterilized as above have without exception been found surgically sterile. Even the virulent spores of anthrax are destroyed, as is evidenced by the tubes here exhibited, while the pyogenic bacteria have succumbed long before—212 degrees F. for one hour and a half being sufficient, as stated above and verified by numerous cultures of my own. However, bacteriologically sterile catgut is not always achieved. At times colonies of hay bacilli and their spores are encountered. Happily these microorganisms are non-pathogenic and their destruction entails



generally also the destruction of the catgut. If you will kindly open some of these envelopes, which I sterilized a few days ago, you will be surprised to find that the individual strands apparently have lost nothing in strength from the high and continued temperature. Reverdin, who claims the honor of having been the first to suggest dry heat as the safest disinfectant for catgut, is of the opinion that the reason why it so often became brittle in dry heat was owing to its being burnt in its own fat. This is not my experience. At times I do find, it is true, notable

variation in strength, not in the same, but in different boxes of catgut, but this can impossibly be ascribed to the fat, since the temperature has been the same in all. I believe that which Benckisser to my knowledge first called attention to and which Reverdin also in his last book admits is important, that it is the water contained in the catgut which is the determining factor. If the catgut is heated too quickly it will literally be boiled in its own water, and catgut does not stand boiling in water. The heating must be slow and gradual, so that the catgut will be absolutely dried long before the boiling point is reached. This is undoubtedly the secret, and if this is strictly complied with we will invariably find as a result the catgut in prime condition as regards strength. If the catgut in spite of this proves brittle we must not seek the cause in the fat contained, but in the quality of the catgut. I use with great satisfaction imported German catgut, marked 00, 0, 1, 2, 3, etc., and I spare to the poor kangaroo his costly tendon.

Benckisser removes the fat from the catgut with ether; Reverdin employs catgut delivered fat-free from the factory; I, on the contrary, retain the fat and even envelope the catgut in wax-paper in order to add more to it. A part of the grease goes out into the envelope, but a good deal remains in the catgut itself. I do not remove the fat of the gut, because I have found, what any ordinary sound mind could have predicted: 1, that pure fat, heated to a temperature of 284 degrees Fahr., could not diminish the strength of the catgut either more or less than hot air of the same temperature. 2, the most important, that fat containing catgut is a much less favorable culture medium for all pathogenic microorganisms than fat-free; and 3, that fat containing catgut does not soften and become absorbed as quickly as the fat-free. Even surgically sterile catgut is not exempt from occasionally causing sepsis; this sounds paradoxical, but can occur, when sterile catgut is used, under circumstances which do not or can not insure perfect asepsis. An aseptic result demands not only sterile catgut but also, that everything brought in contact therewith be likewise sterile; hands, instruments, solutions, towels and last, but not least, the field of operation. Provided that catgut has not been infected in handling, but that the site of operation, where the catgut is to be used either as suture, ligature or both, is not aseptic, the catgut will form a good culture soil for the bacteria present, upon whose number and virulence the successive resistance of the fat, contained within the catgut, depends, leaving out of consideration the more or less effective phagocytosis, which is equivalent to the degree of vascularity of the tissues and of their integrity, together with the general condition of the patient. In the skin, which as already stated, only with great difficulty, if at all, can be rendered aseptic, sterile catgut therefore will likely produce stitch-abscesses. This applies especially where the skin is poor in blood vessels and under tension. We certainly can evade this complication by adopting Halsted's painless subcutaneous method of suturing, which commends itself as a timely procedure and whereby the bacteria of the skin and its adnexa are avoided. Those surgeons, who do not feel inclined to adopt this mode of suturing and who dread stitch-abscesses must consequently renounce the use of catgut as a skin-suture and reserve this ideal material for buried sutures and for ligatures, provided they, like myself any many others, are fully

convinced of its complete security for both purposes.

Were catgut rendered not only aseptic, but antiseptic, what would then be the result? Should we not expect, that such catgut would be a proper material for skin sutures? The answer has practically been given long ago. Catgut which has been sterilized by means of antiseptics—which is admitted can occur—will become in spite of this a favorable soil for bacteria present as soon as the chemical is absorbed and then sepsis will occur—an old experience! Chemicals have not up to date solved the question of the applicability of catgut in skin sutures.

(To be continued.)

TOXICITY IN HYSTERIA, EPILEPSY AND NEURASTHENIA—RELATIONS AND TREATMENT.

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Of the many causes of hysteria, epilepsy and neurasthenia one of the most frequent and important seems to me to be toxicity in some form. Yet it has heretofore received little attention as an etiologic factor in the induction of these affections, all of which may be regarded as diatheses of more or less profound nature. To the toxic element in these diseases I wish especially to draw your notice. The term toxicity should, however, be used in its broadest sense, namely, functional cellular perversion, causing or being caused by abnormal chemic reactions.

The ordinary forms of hysteria are certainly functional. I do not believe we shall ever discover pathologic alterations in the central nervous system, even of minute degree, upon which we may base those manifestations which we call hysteric. By this, however, we do not mean to assert that hysteria may not depend directly upon an organic lesion situated outside of the nervous system. It is the expression in many instances of perverted chemic action or of abnormal cellular activity within the nervous system itself. In other cases the disturbed function of other organs exerts an immediate, yet secondary influence upon the nerve cells, and induces very severe forms of hysteria. So, for instance, we find those suffering from intestinal, biliary and renal troubles, and from thyroid enlargements, presenting grave cases of this disease. We have in these instances, and they form a large proportion of the entire number, a state of veritable cellular intoxication. It matters not what the nature of the active poison may be, the ultimate change is similar and is probably always cellular and, moreover, temporarily toxic. It is not necessary to suppose that the change must be structural; it suffices to consider it chemic. How else can we explain the physiologic action of certain drugs upon the nervous system? And many drugs bring about a condition closely allied to the hysteric. That we do not know the exact manner of this action is due rather to our deficient knowledge of nerve chemistry, than to any undiscovered structural pathologic alterations. Other cases originate from a third cause, shock, in a variety of forms. Here, again, we may assume that cellular perversion, dependent upon shock or injury, lies at the bottom of the hysteric state.

There are undoubtedly other causes of true hys-

teria, spurious forms simulating the real, which are born wholly of a morbid desire for sympathy and condolence. If we seek far enough we usually detect conditions in nearly all cases which point to some form of cellular malnutrition and abnormal nerve-cell activity. It is this point which I especially wish to emphasize, for only too often the physician fails in his treatment of these cases because he contents himself with the meager diagnosis of hysteria—and never attempts to discover any basis for his diagnosis.

In one direction this search for the causation of hysteria has led to extremes. I refer particularly to those who have taught that the genital organs of women are the main causes of hysteria and have performed grave operations to relieve the reflex affection, with very little benefit to their patients. Where uterus or ovaries are diseased they should, if necessary, be removed and doubtless when these pathologic organs have been taken from the system an improvement in the general nervous state often results. But the operation should be done because the organs are diseased, not because the sufferer may have concomitant hysteria. When these or any other organs are sound I doubt if their removal is ever justifiable.

It must not be inferred that there is not a reflex origin of certain nervous conditions. On the contrary, we meet with such an etiology very often, though perhaps not so frequently as some enthusiasts declare. Any diseased organ may become a source of reflex nerve irritation. But the genital organs are probably no more to be blamed than other organs, for instance, the stomach. We must not lose sight of the fact that the vast majority of women have some more or less severe genital trouble. This they may owe to their husbands or to the alleged advantages of civilization. It should, therefore, not be surprising to find that most of those afflicted with hysteria should be similarly affected. Men often suffer from the disease in its severest form. In fact, the masculine hysteric is usually more intractable than the feminine. Some of the worst cases I have seen have occurred in men. These facts are important and a recollection of them will sometimes materially alter seemingly grave situations. I have seen cases of absolute paralysis and mutism in male hysterics, where a diagnosis of organic lesion had been made. Hysteria is wont to be more stable in nature in masculine than in feminine subjects: it is one of the most characteristic features of the affection. The symptoms in women and girls often vary with considerable rapidity, whereas the opposite is common in men and boys. This peculiarity goes far to explain the symptomatology of the traumatic neuroses, so much more frequently met with in a stable form in men than in women.

Of the ordinary symptoms convulsions alone deserve special mention, and these we shall discuss in connection with those occurring in epilepsy. There is an intermediate state—hystero-epilepsy—which shows features of both affections, but this state also we may pass over without dwelling upon it particularly.

Epilepsy, like hysteria, may be regarded as a diathesis, but of a more profound nature. Here, again, I should make distinctions of etiology similar to those of hysteria, but with this distinction, that in true epilepsy we find pathologic changes in the structure of the central nervous system. Aside from cases of so-

called Jacksonian epilepsy, where we have gross cortical, subcortical or extra-cerebral lesions, the changes ordinarily found are of a vascular nature. Heretofore no constant histologic cellular alterations have been found. Numerous minute hemorrhages scattered throughout the brain substance, notably in the cortical gray matter, have been almost invariably seen, but these should, I think, be regarded as the result of the changes in the walls of the blood-vessels. As I have recently pointed out¹ the walls of these structures are usually thickened and therefore less elastic than normal and very liable to rupture. The minute apoplexies should not be looked upon as the cause of the epileptic attacks. The changes in the vascular walls are produced by the action of some toxic agent which at the same time acts chemically upon the ganglionic cells of the cortex and causes the malady we term epilepsy. In many instances, perhaps in the majority of cases, we certainly have to deal with the effects of auto-intoxication. The periodic character of the disease is to me no insignificant proof of this view. Over a year ago I stated that I regarded many diseases of the nervous system, among them epilepsy, as of toxic origin. Recent researches support this opinion. The action of xanthin and paraxanthin, leucomaines of the uric acid group, when these substances are present in the blood in abnormal, though very minute quantities, lends distinct worth to the toxic theory of the etiology of true epilepsy. (Rachford, *New York Medical Record*.) The sequence of symptoms in the disease differs materially in various cases, though it occurs with peculiar constancy in individual instances. The seizures of any one given person are very much alike, from the aura or prodroma to the end of the entire attack. The intensity of the different paroxysms may vary considerably, from the mildest epileptiform warning to fatal coma. The attacks themselves may sometimes closely resemble severe hysteric seizures. There is, however, one fundamental difference between the convulsions of hysteria and epilepsy. The former are probably never dangerous and the patients seldom pass into an unconscious state; the latter may be very dangerous and even fatal, and loss of consciousness usually occurs. An hysteric patient never hurts herself and ordinarily falls in some convenient place. An epileptic, on the other hand, readily comes to grief.

The character of the muscular spasms deserves a concise consideration. As a rule those occurring in essential epilepsy follow in certain order in the different attacks of a given individual. This is especially true in cases of Jacksonian or cortical epilepsy, notably where the lesion is situated over or in the vicinity of the fissure of Rolando. The centers for the various muscular movements lie in this region in known positions, those for the leg being uppermost near the vortex. Next to these are the centers for the arm, the face and the tongue in the order named. If, therefore, convulsions occur they must follow in exact physiologic sequence. If the muscular twitchings begin in the leg, those of the arms must take place before the lower half of the face on the same side is affected. The spasms can not under such circumstances spare the arm or extend from the leg immediately to the face. The contractions of the tongue, if they be present, can not usually be seen, as the mouth is nearly always tightly closed. Such

an exact sequence of the convulsive movements in hysteria seldom occurs. It will be noticed, therefore, that though the two diseases have some striking resemblances they really differ materially, and it will not usually prove difficult to separate the one from the other.

Fortunately neurasthenia is not often complicated by concurrent epilepsy or even by hysteria. This class of cases was long included among the hysteric affections. From these, however, they differ considerably, notably in that the latter are very much more frequent in the female sex, whereas neurasthenia is preëminently a disease of the male. Men who have led active business lives, who have consumed their stock of nervous and vital force rapidly, are commonly candidates for this trouble. Again others who have unceasingly applied themselves to mental overwork are attacked. Others again who have been long exposed to the influence of certain drugs, for example lead, mercury and nicotin, become afflicted. It is an important fact, however, that the majority of these patients are at the same time suffering from such chronic organic lesions as notoriously cause the formation of noxious metabolic substances, namely stomach, intestinal, liver and kidney troubles. In this affection once more we find ultimately cellular functional perversion brought on by a variety of factors. Yet the condition differs much from hysteria and epilepsy. In neurasthenia we have essentially a state of perverted cellular vitality, not only of the nervous system, but frequently also of the entire body. Energies long misapplied have finally induced a condition in which the vital forces themselves become misapplied. Neurasthenia resembles in many ways hypochondria, but the two are distinct. The latter is a functionally perverted state due to individual inherent characteristics; the former is a like condition of physiologic over-exertion in certain directions. The ultimate result may, however, be very similar.

I distinguish three degrees of neurasthenia, namely, 1, light grades or nervous weakness, 2, middle grades or nervous prostration, and 3, severe grades or nervous exhaustion. This distinction is purely arbitrary, but very convenient both for prognostic and therapeutic purposes. Under all three classes I again distinguish *a*, simple sexual neurasthenia, and *b*, spinal, respectively cerebro-spinal neurasthenia, of which the sexual weakness may be an essential part. Sexual neurasthenia is virtually an affection among men, and commonly of young men. Yet it is not necessarily the result of a vicious life. Under this class I do not include those cases which might be termed organic, inasmuch as they depend upon some peripheral lesion, usually of gonorrheal origin. Simple sexual neurasthenia is a purely psychic condition of functional inability to perform certain relations. It is usually the result of a failure or repeated failures in attempting to fulfill these relations. Upon this experience conviction of this inability to properly play the rôle of man becomes so firmly established that ultimately an actual, yet purely psychic, weakness in this respect develops. This condition may and often does remain stationary, but it may become intensified and lead to the severer form of spinal neurasthenia. On the other hand, sexual weakness usually forms an essential characteristic of all severer forms of spinal and cerebral neurasthenia. These severer forms often appeal to us as extremely serious conditions and, though lacking a fundamental nervous basis, they are

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in reality grave, and necessitate the utmost care and skill in their management. As in hysteria and epilepsy, so here also, we need not speak of the manifestations of the various forms of neurasthenia, but rather proceed to discuss the treatment of these three conditions in a concise manner.

Of epilepsy I need say very little. In every case a possible toxic origin should be kept in mind and sought for. If found and successfully counteracted rapid amelioration in the patient's condition should and does result. My best experiences have certainly been in this direction. Otherwise the old routine treatment with the bromids, eventually combined with the iodids, or with borax, offers the surest means of rendering the attacks less frequent and severe. Complete cures under this therapy are certainly rare. Wherever a positive diagnosis of local cerebral trouble can be made, or even where reasonable suspicion of an organic focal lesion can be entertained, surgical methods are justifiable and should be practiced. It should be remembered that epilepsy is not infrequently of reflex nature, either from the eyes, nose or other organs, and abnormalities of these parts should be corrected. Scars or an adherent prepuce also sometimes induce epileptiform paroxysms, and where this is the case surgical methods are again in place. Unfortunately enthusiasts have brought the reflexes into disfavor.

The exact lines to be pursued in treating hysteria and neurasthenia depend largely upon individual cases and the conditions of life under which these cases exist. It is probably safe to adhere, if possible, to the rule, that change of scene and environment are beneficial to these two conditions. The complete loss of vital forces in many cases renders it often impossible to follow out this precept, until a considerable improvement has been attained. Whenever it can be done, however, an abrupt change in the habits of existence, a journey and especially a sea voyage for neurasthenics should be advised. By surrounding those afflicted by other persons and things and thereby diverting the remaining energies into other channels of thought and action much good may result. High mountain altitudes are beneficial in some cases, in others directly injurious. Ordinarily the sea coast is preferable as a place of sojourn.

Special attention should be given to the conservation of the vital forces still surviving, and the general state of mind and body tonus raised. By suggestive therapy excellent results may be achieved. If properly conducted and patiently carried out this method will often bring about an ultimate cure. It may be well to warn that this suggestive therapy is by no means identical with hypnotism. As a diagnostic aid hypnotism is often useful and may be conscientiously employed. As a therapeutic agent it may, and I think, usually does prove injurious. It has been of great value to me in individual cases, but my own experience, and that of many others, has not been of a character to warrant its continual and irrespective use in the treatment of any class of diseases. Suggestion in the waking state is equally efficacious, always possible and never harmful. It has been contended that it is difficult to hypnotize hysteric and nervous persons, but this is an error. As long as the attention can be concentrated these persons pass into the hypnotic state readily enough, with the ultimate result of further weakening an already shattered nervous vitality. It is therefore not untimely to pro-

test against an indiscriminate use of this certainly powerful influence.

Naturally, whenever we suspect any etiologic factor as a cause of the nervous derangement we should seek to eradicate this factor. By so doing we strike at the root of the evil. In this connection it may be well to draw your notice once again to that which I have said concerning the possibility of auto-intoxication as productive of hysteria, epilepsy and neurasthenia. I have frequently found that persons, notably girls and young women, suffering from severe hysteric manifestations, were afflicted with chronic intestinal and renal disorders; they were essentially chlorotic and jaundiced, and very often were subjects of deranged thyroidal activity. By counteracting the malignant influence alone we may sometimes effect a cure. In addition to the above, and a proper use of medicinal remedies, a judicious bathing and open-air regimen ought to be carried out. My rule in regard to baths, both sponge and full, is to reduce gradually their temperature, but always to avoid the slightest degree of shock. A rational understanding of the effect of cold water is absolutely essential to the physician. Otherwise only poor results will attend his best efforts.

Only two other methods of treatment or, better said, parts of the general treatment need be mentioned, *i.e.*, electricity and the so-called rest cure. The electricity can be used in all of its forms. In my hands general faradization and the static current have been productive of the best results. Too strong currents should never be employed. In the severer forms of hysteria and neurasthenia, the rigid "rest cure" brings the speediest and surest relief. To be successful this should be absolutely carried out in all details, and should be extended over several weeks, and never attempted at the home of the patient. By isolating these cases completely from the other members of the family, by calling to our aid general faradic massage, by husbanding every atom of vital energy and by judicious feeding, even desperate cases improve rapidly and finally recover entirely. But, to repeat, it is absolutely essential that not one iota of nerve force be misspent nor a single portion of the remaining bodily strength be wasted.

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CRITICISM OF THE ANTITOXIN TREATMENT FROM A DIFFERENT STANDPOINT.

BY CARL STRUEH, M.D.

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The enthusiasm for the antitoxin treatment has at the present time become so common that one can hardly dare to give a pessimistic opinion if he does not want to run the risk of being called heretic or unscientific. Still I would like to explain in a few words the standpoint which I take as to the antitoxin treatment.

The statistics show the undeniable fact that since the introduction of the serum-therapy the mortality in diphtheria has decreased to about one-half of its former figure. Yet I think it wrong to ascribe this decrease in the mortality exclusively to the antitoxin treatment, but I take it for a very important causal factor that the serum-therapy, though absolutely not harmless, is less harmful than the drug treatment formerly used. The proof for this assertion is given us by those cases in which we apply antitoxin for

mere prophylactic purposes in healthy persons. The less severe disturbances which the antitoxin causes in our system escape our perception. Still we can say that visible changes in the subjective and objective condition of the person in the majority of cases do not set in; that, in other words, the condition of health of the person concerned is about the same after as before the injection of antitoxin.

Now we may give to a healthy child such drugs as calomel, potass. chlorate, etc., which we used under the old treatment, also a part of those drugs, as chlorid of iron, sublimate and the like, which we used for local application and which are also partly swallowed and absorbed into the child's system, and see if these drugs will produce as little constitutional disturbance as the antitoxin does. If this is not the case, if they are able to make the healthy child sick, is it not plausible then that they must have a more harmful effect on a child that is already diseased and who needs all its vital power to overcome the disease? Can we doubt that many a case that might have been cured otherwise must succumb to the twofold demand made by the overcoming of the disease and the elimination of the drugs the antibacillary and antitoxic effects of which are merely illusory; that, in other words, the mortality must be greater under the use of these drugs than without them?

I call attention to typhoid fever. At the time when we treated this disease with chemic antipyretics and internal antiseptics the mortality was 15 to 20 per cent. Had we been able to exchange this treatment for a serum-therapy, I am sure the mortality would have decreased to one-half also. By Brandt's method of hydiatic treatment it has decreased to less than 5 per cent, and this percentage will never be beaten by any other treatment, by no serum-therapy either. For typhoid the antitoxin treatment comes too late, and it would also have come too late for diphtheria, if we had exchanged the drug treatment directly for a hydiatic one.

What do we intend to do with hydrotherapy in typhoid? We do not expect it to have any influence on the process in the intestines, but we use it as a natural antipyretic and a tonic for the *vis medicatrix naturee*, which alone can cure any pathologic disturbance in our body. Whether we have to deal with the typhoid bacillus, the diphtheria bacillus, or as the case may be, the pneumococcus; whether the lesion exists in the colon, the pharynx, or as the case may be, the lungs, is in my opinion entirely equal. Typhoid is so far the only disease in which we apply a physiologic treatment almost universally and with the best results. And it is inexplicable why the favorable therapeutic experience which we have gained in typhoid is so slowly extended to other diseases. Lately we have commenced to treat pneumonia with hydrotherapy, but why do we not use this treatment in every acute disease whatever, as in diphtheria? If I defend the hydiatic treatment of diphtheria, it is not only for theoretical reasons, but for practical experience and I do not doubt that a controlling treatment of diphtheria by hydropathy on the one, and by antitoxin on the other side, would certainly be in favor of the former. By the way, I want to call to mind the better convalescence, the *restitutio ad integrum* which we almost always find after the hydiatic treatment.

I need not say, that as long as the majority of the physicians neglect the use of hydro-therapy, the

antitoxin treatment will hold the field for a long time, and as to the practical results we can be satisfied for the present, for we have made a good change anyhow, if we remember the old drug treatment (drug poisoning). Still we can be sure that the antitoxin treatment will some time disappear, and the physiologic treatment, the therapy of the future, will be applied by all physicians. Then we will treat diphtheria in a natural way, as we do typhoid now, and the mortality will be nearly as low as that we now have in typhoid; that means it will be considerably lower than it is under the antitoxin treatment.

The followers of serum-therapy maintain that on the application of antitoxin the whole course of the disease changes, that the temperature decreases, the general condition improves, the appetite gets better, the swelling of the glands diminishes, the membranes disappear in a comparatively short time, etc. Why, to decide this point, we have to wait for some more impartial opinions. In the first enthusiasm for a new treatment we are apt to see everything in a more brilliant light than we do after a thorough investigation. We have had this experience a thousand times with new drugs.

There is nothing so injurious to an impartial opinion as the fact that we are always apt to take the *post hoc* for the *propter hoc*. Every physician knows that there are a great many of cases which change for the better quite unexpectedly, and I am sure that this fact has a great deal to do with many a brilliant result of antitoxin treatment. An illustration of this opinion I lately received from a brother physician, an enthusiastic believer in serum-therapy. His 6-year-old boy became sick suddenly with high fever, swelling of the maxillary glands, difficulty in swallowing and thick coating of the tonsils. The doctor obtained some antitoxin late in the evening, but postponed the injection of it until the next morning, when it was no longer necessary, the boy being entirely well. The fever was gone, the maxillary glands were painless and had greatly decreased, and the membranes were almost gone. This case would have been taken as a convincing proof of the efficiency of the antitoxin, if it had been injected. Similar cases certainly are in the mind of every physician.

A fact that we also must not overlook, is that, as the antitoxin is said to manifest its main power in the beginning of the disease, there is many a simple inflammation of the pharynx taken for diphtheria and supposed to have been cut short as such. It is absolutely necessary that we form our opinion of the value of the antitoxin only from such cases as are diagnosed as diphtheria from a bacteriologic examination, which has not been the general custom so far. I do not know among the physicians I am acquainted with and who are enthusiastic followers of the serum-therapy, a single one who makes a bacteriologic examination in every case and with whom such an examination is not an exception. And I am certain almost every physician must admit the same of himself and his friends. So we can say that the great majority of those cases to which the present fame of antitoxin treatment is due, are such in which a bacteriologic examination has not been made.

But how can we swear to the efficiency of a remedy for diphtheria, if we do not know in every single case whether we have to deal with a case of diphtheria or with a simple catarrhal inflammation? We can not rely merely upon the clinical diagnosis, for

it is, for instance, almost impossible to diagnose a case of diphtheria in its beginning, at a time when the antitoxin is said to be especially efficient. That even advanced cases do not necessarily furnish the clinical symptoms, we see in membranous croup and in those cases in which a diphtheritic paralysis (for instance, of accommodation) occurs, and in which the patient hardly showed any symptoms indicating diphtheria.

The followers of the antitoxin treatment further say that since the introduction of this therapy, the mortality in children who were operated upon for croup has decreased. Even by this fact we must not be filled with enthusiasm too quickly. We know that most of the children affected with croup do not offer severe, but mild diphtheria, and that the dangerous character of croup merely consists of the localization of the membrane, the mechanical occlusion of the glottis. Most of these children are cheerful, have a good appetite, very little fever, only slightly swollen glands, almost no symptoms from the throat, and hardly offer the appearance of a sick child until the mechanical occlusion of the glottis and suffocation set in. If in such a case we provide the child with sufficient air, as we do by tracheotomy, and beside treat the child by a comparatively harmless method, as we do by the antitoxin treatment, it is not surprising that the results will be better than they were at the time when we used to injure the vital power of the child by drugs and when we exposed the child to vapor saturated with chemicals that, though not powerful enough to kill the bacillus, yet were strong enough to have a poisonous effect on the system and which prevented a sufficient supply of oxygen, so immensely important to the almost suffocated child.

As to those injections of antitoxin which are made for prophylactic purposes, we must admit that it is not the rule that from a child being sick with diphtheria the majority of the family becomes infected, at least this is not my experience. If we, therefore, apply antitoxin to every member of a family in which there is a case of diphtheria, we can wager ten to one, of course, that the result will be in favor of the antitoxin.

Whether my opinion which I have given in the foregoing treatise is wrong, or that of the followers of the serum-therapy is right, can not be decided upon, unless we use a little more logic in the investigation of the subject. The followers of the antitoxin treatment declare that it is necessary, in order to get those good results, not to combine any drug treatment, at least not to the extent as formerly used, with the application of antitoxin, and right there, it seems to me, is the root of the whole matter. I do not call it logical to ascribe the decrease in the mortality exclusively to the antitoxin treatment and not pay any attention to the possibility that the exclusion of the drug treatment might have something to do with it. This point ought to be investigated first, for we can not deny the fact that the animal serum is more related to us and less harmful to our system than the chemicals are, and it is logical that the exclusion of the greater evil must have a favorable effect on the mortality.

We know or assume that under the drug treatment also antitoxin was formed in the blood serum of the sick child. If we now would continue this drug treatment and increase the amount of antitoxin in the child's blood, by injecting animal antitoxin, and the mortality would decrease, then we could say that

this decrease is merely due to the antitoxin injected, and nobody could deny this fact. If, however, the drugs interfere with the antitoxin, then we ought to find out first, by excluding the drugs, what mortality there would be if the system, in its fight against the diphtheria poison, had to rely exclusively upon the antitoxin that is formed in the diseased body. Only if we know this percentage of mortality, we can form a correct opinion of the animal antitoxin which we inject into the child. But as we might not like to treat a case of diphtheria by an indifferent treatment, we could easily follow the former way of investigation, and ascertain the mortality which we would have under a combined drug and antitoxin treatment. To exclude the more harmful drugs and substitute the less harmful antitoxin and to ascribe the favorable change in the mortality exclusively to the latter, is a logic that would not be admitted in any other science.

WHITHER ARE WE DRIFTING? INDICATIONS OF A DEGENERATE MATERIA MEDICA.

Read at the forty-fifth Annual Meeting of the Medical Society of the State of Pennsylvania, at Chambersburg, Pa., May 23, 1895.

BY H. A. ARNOLD, M.D.

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Medieval and ancient history tell us that in those periods of the world's history the practitioner of medicine covered up a vast amount of ignorance under the veil of secrecy and mysticism, in order that he might awe the superstitious and satisfy the incredulous. In those ages the alchemist sought the hidden things of nature, either from love of science or a desire to enrich himself by discovering a means of producing the precious metal. Those ages were followed by one of enlightenment, when rational medicine supplanted mysticism and the nobility of scientific attainment was wedded to philanthropic purposes. Physician, surgeon and chemist worked hand in hand, and surgery, *materia medica* and pharmacopoeia teemed with the products of advanced thought, freely and voluntarily disseminated with no motive save the good of mankind in general, and the advancement of medical science in particular.

In these days practitioners of medicine were for the most part dignified, courteous gentlemen, whose intellectual attainments and excellent judgment awarded them a high place in the esteem of the community, seldom equaled by the clergy, and never by the legal profession. There are living illustrations of the truthfulness of this statement in the persons of some who are still identified with this society though past the three score and ten, or four score years allotted to man; and have we not been impressed with the accuracy of the statement when brought in contact with them?

Time effects many changes, and chemist and medical man have shared in the process of transformation. The product of the laboratory now receives an euphonious designation, is turned over to a number of experimenters, endorsed to order by them with undue haste, whereupon the "Chemical Company," burning with desire to confer manifold blessings upon suffering humanity, issues a very attractive pamphlet which glows with candor on one page and ambiguously obscure upon another, parades the names and string of titles of its stock list of product endorsers, and generously offers, post or express prepaid, samples as a bid for further endorsement. At

the same time they carefully refrain from revealing either the exact composition or method of production.

Take up almost any of the numerous "regular" medical journals and page after page is given up to the conspicuous notice of "antis" and "ines," until one turns away in disgust and wonders where the end will be. I have just opened a copy of a new claimant for a place in the field of medical literature on the ostensible grounds that it is "a condensed summary of the medical literature of the world," only to find that this four page paper has given up one entire page to a most brazen fraud.

The wholesale production of "favorite formulæ," "coal tar derivatives," "animal extracts," etc., has not resulted from honest beneficent motives, but rather in every instance are they the articles of commerce which are expected to enrich their producers, if only they can be extensively advertised with the proper endorsements.

There is one other very objectionable feature about this system of medicine making and advertising, and that is the means made use of to insure the success of the business venture. Short-sighted men are lured, weak men are cajoled and seekers after notoriety need no coaxing to endorse statements, verify results, praise merits and prognosticate a glorious future for the latest wonderful product, all of which is speedily brought to the notice of professional men, who are supposed to ever stand in an expectant attitude, waiting for a new Moses to lead them out of the wilderness of difficulty.

After due notice in the public press, with wise statements as to its mysterious nature, a curious public soon makes its acquaintance, and once in the possession of druggist and public, the manufacturer boldly advertises in street cars, pseudo-medical journals, daily papers, etc., taking care to state that it has received the endorsement of all eminent physicians and is used by the profession in general. I sometimes wonder how an honest physician must feel when he sees his name used to further the business of the A. B., X. Y. Z., or some other "Chemical Company," who having used the profession to introduce their wares to the public, have the unmitigated gall to continue to solicit medical recognition for their most ethical (?) product.

We used to speak of the "gullible public," and comment on the avidity with which they seized hold of much lauded proprietary medicines. Are we not in danger of falling into the same pit, and will not the shoe pinch when the world opens its eyes and sees the *gullible practitioner*, who has fallen from his high estate, and is only a salesman and distributor of proprietary articles and compounds made after formulæ either only partially revealed, or if followed would result in an entirely different product? Faith is commendable; yet, "Oh, ye of little faith" certainly does not apply to the medical profession of to-day. When we follow after strange gods we merit and receive disapproval and rebuke.

Realizing the fact that the study of *materia medica* has been made entirely unnecessary by reason of the enterprising spirit of the unselfish medicine makers, as well as by their profuse distribution of reliable information for the benefit of a profession which apparently is no longer capable of doing its own thinking, I feel almost inclined, in the interest of overworked medical students, to offer an expression of opinion something like the following:

Resolved, That it is the sentiment of this body that, inasmuch as the various manufacturers of medicine and medical compounds have assumed the role of experimentalists, and do generously supply the entire profession with literature voluminously describing each advance, as well as free samples for trial:

We do now suggest to the various medical colleges within this commonwealth that the time now occupied by students in acquiring a knowledge of drugs so soon to become obsolete by reason of the rapid progress in drug making, could be better employed in considering matters of etiquette, society manners and other means of enabling them to earn a genteel living by introducing to the public the valuable compounds brought to their notice by mail and through the columns of the medical journals.

Time does not admit of the elaboration of this subject in a paper limited to ten minutes, hence many phases of the matter can not even receive mention, nor is this the first time the subject has been presented to the State Society, and I hope it will continue to engage your attention until radical measures are resorted to, and this noble profession is wrested from the gigantic octopus that is rapidly enveloping it in its deadly grasp.

I well know that the way of the reformer is hard, and that he is cannonaded during his lifetime, even though he be canonized after death; yet in my obscurity I have no fear of the one, nor will my feeble efforts lead to the other.

Martin Martens, the author of that most enjoyable book, "God's Fool," says, "there was a man once, a satirist and he died. His friends gathered around him and they said indignantly, 'This man treated the whole round world as a football, and he kicked it at every opportunity.' The dead man opened one eye, 'But always toward the goal,' he said."

I sincerely hope sarcasm so imperfectly concealed and so defectively worded, may be forgiven when you fully understand the spirit of charity that prompts it, and the desire for advancement of all professional interests which actuates its author.

COMPLICATIONS IN CATARACT ARISING FROM DIABETES, ALBUMINURIA, LITHEMIA, ETC.

Read before the Mississippi Valley Medical Association, at Detroit, Mich., Sept. 5, 1895.

BY J. O. STILLSON, A.M., M.D.

INDIANAPOLIS, IND.

Whether there exists a positive relation between the development of senile cataract, and the presence of nephritic diseases such as albuminuria, diabetes, etc., seems to have as yet never been wholly proved to the general satisfaction of the profession at large. And yet, that there is at present, and, in fact, always has been an inclination to the belief that there is some such relation, if not positively of an etiologic character, at least of sufficient importance to seriously modify and complicate our therapeutics, there is probably remaining at present very little doubt. The well-known experiment of injecting sugar into the circulation of the frog, thereby causing the opacity of the crystalline lens which clears up again, slowly, when the animal is left immersed in water, may now be classed as one of the old-time experiments in physiology. This interesting phenomenon simply proved that when there was an excess of sugar in the frog's circulation, cataract developed; and inasmuch as the functional power of the frog's kidneys, compared with that of the skin is almost, one might say, trifling, we readily see why that, when the emunctories of the

skin are brought into active exercise by the immersing of the animal in water, the elimination from its skin is great enough, comparatively speaking, to produce a thousand-fold effect in liberating any deleterious substance from the circulation. However, this does not prove why the lens becomes opaque and how it clears itself, again resuming its former transparency. Our knowledge of the whole subject is yet so meager we are forced to admit that many factors in the problem remain yet to be worked out before a definite conclusion can be arrived at in reference to this important question.

Analogous to the phenomenon in the frog, we have the well-known condition in the human species called diabetic cataract. The writer well remembers among the earlier lessons which he received in ophthalmology, how he was taught to regard with suspicion, the presence of a cataract in a person of middle age, or early adult life, who showed the presence of sugar in the urine, and where no traumatic history could be made out to explain the development of cataract. These cases were always to be handled with gloves. The prognosis was never flattering; in fact, they were regarded as unfavorable cases to treat, because as a rule they are liable to have retinitis present, which is unfavorable to an operation, or choroiditis for the same reason, and consequently the risk of post-operative iritis becomes greatly increased; added to the fact that such a lens is far removed from the physiologic condition of simple opacity, if senility can be called physiologic, and it has taken upon itself the metamorphosis of catalytic degenerescence, not far from putrescence; so that the sepsis after such operations from auto-infection is not an impossibility by any means.

If man were plunged into the ocean, or if the eliminating power of his kidneys were augmented a thousand fold, still his diabetic cataract would never clear up, like the sugar cataract of the frog. Why? Because his condition is certainly now no longer a physiologic one. He has long since passed into the domain of pathologic degeneration. All the fibers and cells of his lens have virtually become broken down and separated from each other and the general circulation of the eye, and there encapsulated as it were, they remain as a foreign material, wholly offensive to the circulation.

It is not the purpose of this paper to prove or to disprove anything. It is easy to set up a theory of straw to be riddled with the bullets of adverse criticism; nor can we always depend upon statistics to come to our relief, when a proposition in medicine needs to be proved. There are always, however, certain fundamental facts, which crop out in the clinical study of every case which we can not ignore, however poorly we may explain. Whether arterio-sclerosis and atheroma start out as purely physiologic conditions, to be afterward changed into pathologic states, or whether the prior degeneration of some vital organ like the kidney or liver is necessary to bring about atheroma as a result, is probably easier answered than the query which underlies this paper. This, however, we do know, that whenever atheroma does exist in conjunction with such diseases, as nephritis, diabetes, albuminuria, etc., the senile changes which indicate the general breaking down of the system follow each other in more rapid succession than where organic diseases of the kidney or liver do not exist. Hence it is that a delicate and sensitive

organ like the eye, would be less likely to escape. We therefore are not surprised at the appearance of an albuminous or serous retinitis, as one of the earlier, and sometimes even prodromatic indications of Bright's disease. It does not seem to the writer that we ought to be surprised when find as we do in many cases of cataract, not specially diabetic, the unmistakable evidences of renal disturbance; the presence of a certain quantity of albumin, and oftentimes, in specially nervous individuals, an increase in urea and more or less evidence of sugar in the urine.

L. Webster Fox (*Vide Ophthalmic Record*, June, 1894) says: "Whether an albuminuria causes cataract may be a matter of doubt, but one is struck with the frequent coincidence of albuminuria in cataractous patients. In order to explain this fact in cases of senile cataract, Michel says that it is essential to consider that cataract and albuminuria are the results of alterations produced simultaneously in the eyes and in the kidneys from the same general cause, arterio-sclerosis. This theory recalls, to a certain point, that of Sutton who considered that interstitial nephritis and hypertrophy of the left ventricle are both caused by an alteration of the vascular walls, arterio-fibrosis. Berger, Becker and the greater number of those who have made a special study of this question do not believe in the relation claimed by Deutschmann between cataract and nephritis."

Quoting from Risley, in his admirable remarks before the State Society of Pennsylvania, May, 1895: "The great liability of gouty and rheumatic persons to transient vaso-motor derangements, to persistent and recurring inflammation of the mucous membranes and fibrous tissues, and to changes in the vascular walls is too well known to need comment in this presence. When it is remembered that these structures are so uniformly represented, in most highly organized forms, in the eye and its appendages, it is not to be supposed that this important organ would escape the influence of the uric acid diathesis. Indeed clinical experience furnishes ample demonstration of its extreme liability to participation in this class of affections dependent upon this malady of nutrition. By way of illustration it is needful only to mention the fact that in the etiology of iritis, this diathesis stands second only to syphilis in its number of victims, while in stubbornness to treatment and tendency to recur it stands first." And again: "The high arterial tension, the hypertrophied left ventricle, the chronic nephritis, and contracted kidney, the rigid arterial wall becoming atheromatous, apoplexies, angina, etc., present a picture of serious diseases which unfortunately we are only too frequently called upon to witness. It can not be supposed that the ocular blood vessels would escape the disaster which has fallen so heavily upon the general blood vessel system. Indeed, when we are reminded that the nutrient coat of the eye—the choroid—is a meshwork of blood vessels ramifying through a loose connective tissue stroma, we are prepared to expect the clinical picture which is so frequently presented for study. Since the dioptric system of the eye enables the surgeon to study the intra-ocular tissues under an enlargement of about fourteen diameters, it affords a unique and favorable opportunity to study the pathologic changes going on in living structures. It is under these conditions he is permitted to observe the innumerable small apoplexies in hemorrhagic

retinitis, and in the latter stages of nephritis (*morbus Brightii*); in perivasculitis and hemorrhagic glaucoma; and the choroidal disease which so uniformly precedes incipient cataract and upon which the cataract depends. In all of these cases, the blood vessel change which has so seriously disturbed the nutrition of the eye, has for months or years been steadily progressing, *pari passu* with that going on in the general system. In the serious ocular disease we witness the final outcome under peculiar anatomic conditions, but at the same time are furnished a rational explanation of their fatal character, and the disappointing results of all forms of treatment in their later stages. It is not reasonable to expect brilliant results from surgical procedures in an organ where the source of repair is cut off by narrowed and diseased blood vessels. Some forms of corneal disease, acute glaucoma, especially hemorrhagic glaucoma, hemorrhagic retinitis, vitreous opacities, complicated cataracts, albuminuric retinitis, with chronic nephritis and perivasculitis, are forms of ocular diseases that should always lead to a careful analysis of general conditions and will usually be found to prove but one of many other groups of symptoms pointing to the general impairment of the vital functions."

Difference in belief by able investigators would seem to throw a cloud upon the title to the claim of those who follow Deutschmann, were it not for the fact that we have again as able authors as those mentioned, who have written forcibly upon the subject of "Non-Albuminuric Bright's Disease," so that the presence, and amount of albumin always in any given case, it would seem, does not really bear a constant ratio to the gravity of the symptoms or the stage of the disease by any means. We are all of us familiar with the fact that a wide variation in this regard is noticeable from day to day, even in the same patient. The writer is acquainted with the case of an estimable professional gentleman whose urine varies in the amount of albumin which it contains almost with his daily walk and conversation. He has had periodical attacks of phlyctena for years, at which times his urine is always bad and his temper and nervous system worse. Relaxation, relief from business, a trip and cessation from worry clears everything up, except his smoky lens, which, while they are not cataractous, bespeak that peculiar opaline tinge of beginning sclerosis which comes on so many years before the appearances of the "cataract nigra." The decrease in the aggregated amount of albumin present, as compared with former years, is, it seems to the writer, only a pathognomonic sign of the "small constricted kidney," and not any indication at all of his physical betterment. One might faithfully say to him that it is only a race between life and sight as to which will go first.

Dr. Jas. Wallace, Assistant Ophthalmic Surgeon to the Hospital of the University of Pennsylvania has, by means of photographic enlargements of the microscopic appearances of thin sections of crystalline lens, near the region of the attachment of the suspensory ligament, brought out the fact that with an amplification of three hundred diameters he has been able to demonstrate the existence of minute fibers, in every respect answering to nerve fibers, running somewhat like a spiral figure 8 in and around the peripheral lens fibers, inclosing the cortical cells and other similar bodies, which sometimes

appear to be wandering cells, in a sort of embrace, which as it changes from time to time, assumes the appearance of peristalsis, thereby forcing along in the interfibrillar spaces these bodies, and keeping up a variable relation between the elements of the cortex and the fibers of the lens itself. These nerve fibers he is inclined to believe are directly in relation to the nerve fibers from the retina through the suspensory ligaments, and the zonula of Zinn. In this way he accounts for the rapid development of cataract, after the rupture of the zonula of Zinn without any injury to the lens. If these are nerve fibers, then they not only have to do with the physiologic action of the lens in its relaxation to light and accommodation, but they superintend and control the nourishment of the lens as well. The Doctor quoting from Richter's Organic Chemistry goes on to say that: "In the death of these, and other similar nerves, we have the development of a substance resembling *cholin* to which the name *neurin* has been given and which is very poisonous, having a very unstable formula, rapidly changing through a series of tri, tetra, penta and subsequent forms of methylamin, identical with *cadaverin*, *putrescin*, *saprin* and *mydatoxin*." A very pertinent remark closes this able article thus: "We notice cataract as a concomitant of diabetes, a disease in which gangrene of any part of the body is easily produced by a slight injury."

The most important point therefore, when it comes to the management of a case of cataract is the diagnosis. It is not enough to be able to recognize a grayish or pearly whiteness to the pupil, with a movable iris, and then come to the conclusion that the case is simply a senile cataract. Nor is it hardly justice to the patient or fair to the operator that none of the ophthalmoscopic details be made out during the earlier and incipient stages of cataract formation; the very time when all the important choroidal changes are liable to occur, and when they can with the greatest certainty be made out. Subjective evidence after maturity of the cataract, is of course in no case to be overlooked. The phosphenes, the qualitative and quantitative perception, the projection, etc., all these are important elements in the examination prior to the operation. But how much better it is when the operator has had several months or even a few years acquaintance with the case. So many little points which may be overlooked by the general practitioner, will have been from time to time made out; the condition of the inner tunics of the eye, the normal or abnormal condition of the vitreous, the sluggish or active condition of the iris, the susceptibility of the patient to atropin, or other drugs, the idiosyncrasies, whims, notions and temperament of the aged individual will have been learned, and all of those little peculiarities which go so far to make or mar our success, will have been taken into account, when the time comes to subject the patient to the trying ordeal of an operation. In those cases where a bladder derangement, a mild or a serious form of Bright's disease, a transient albuminuria from stasis in the general circulation, or some diabetic complication may exist, experience teaches us that some cases may so yield to proper treatment, diet, and regulation of the habits of life, as to make all the difference in the world in the final outcome of such an important and valuable operation as the removal of senile cataract.

CAN ANTITOXIN STATISTICS BE RELIED UPON?

BY GUSTAVUS BLECH, A.B., M.D.
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The many fiascoes in modern medicine have taught me a lesson, viz: Never to be the first and never to be the last one, to adopt a new remedy. Liberality is one of the first conditions for progress and success in medicine; conservatism, the preventative for poetic illusions and errors, undiscovered on account of the blinding effect of enthusiasm.

I have quietly watched the reports of cures of diphtheria with antitoxin, and have wondered how easy it is to catch the masses, even if one knows next to nothing about the *modus operandi* of a remedy. Beside, its origin and composition is mystery as yet, its preparation being controlled entirely by a few enterprising chemists. But neither this nor the fact that its introduction into the human system is apt cause a good many dangers like leucocythemia, shall be brought as an argument against its value; even the fact, that a good many eminent and thoroughly reliable physicians have reported their experiments with it as failures shall not be mentioned, and only one modest question shall be asked: Can antitoxin statistics be relied upon? I dare answer no, not always. I do not doubt for one moment the honesty of the reporters and their noble intentions; for the sake of the honor of profession, I will say that "figures will not lie," but I can not help assert that "figures will." The fact is, that every case reported as diphtheria, is indeed, not always true diphtheria. In some cases the microscopic examination alone was sufficient for a diagnosis, and that was false. In other cases the physical signs, the clinical picture was the medium, and that was false also. Both together, microscope and thermometer, eye and hand, must be employed to obtain a correct diagnosis.

Diphtheria, true diphtheria in spite of horse, jack-ass or any other quadruped's serum, is a grave, constitutional disease, the prognosis of which is always doubtful. It is exaggerated when one of my friends asserts, that he makes a diagnosis of true diphtheria post-mortem only; but there is some truth in that intended joke. There are plenty of poor children running around the streets with sore throats, follicular tonsillitis, rhinitis fibrinosa and never take a drop of medicine and get well. And in some of these a physician is called in, and a few hours later, the health inspector is placarding the house. If, by chance, the parents are smart enough to call in a more experienced physician, off goes the red sign. I had quite a number of such cases in my practice, but in one of my last ones, I had an encounter with our local board of health, which ended in my victory. The case I refer to is that of a little boy R. S., aged 4 years. He was taken sick with sore throat and nose, the latter bleeding on touch, membranes being expelled on sneezing. A reputable physician was called who pronounced it diphtheria. He sent a culture to the local board of health where Klebs-Loeffler bacilli were found. For some unknown reason to me, the parents discharged the physician and called me in to attend the case. I made a careful examination of the nose and throat found a somewhat accelerated pulse and a temperature below 100 degrees F. The boy ran from one room to another, and would not agree to

be confined to bed. While the mucous membrane appeared to be, on the first look, diphtheria, a closer examination revealed the double malady of follicular tonsillitis and rhinitis fibrinosa. Both affections simulate diphtheria almost to delusion. The clinical picture of a grave constitutional disease, high fever, etc., which symptoms are a *conditio sine qua non* for a diagnosis of true diphtheria, were absent. On the other hand some authors have lately classified rhinitis fibrinosa with diphtheria, but the best authorities in the old and the new world strongly object to such classification. The argument, that if the Klebs-Loeffler bacillus be found, the case must necessarily be one of true diphtheria, does not always hold good, as Baginsky and others have found the same bacillus in different forms of rhinitis and pharyngitis. While I must admit, that not every case of diphtheria is associated with a high temperature, constitutional depression, etc., such is the rule without any exception in nasal diphtheria. After nose and throat have been sprayed with hydrozone there could be found no microbe in the culture taken the other day.

The number of cases of this kind which I have successfully treated approaches closely to one hundred. If, according to the Board of Health of New York, Chicago and other institutions, they ought to be styled diphtheria, well then, what is the use of injecting blood serum taken from some animal? We have in hydrozone (30 volumes aqueous solution of anhydrous peroxid of hydrogen) a remedy which not only kills instantaneously the Loeffler bacilli, but also changes chemically the nature of the soil in which their spores can develop. Its deadly action is limited to vegetable cells (pathogenic germs) and it is the most powerful stimulant to healthy granulations, having no injurious action upon healthy animal cells. In fact, my experiment taught me that hydrozone is a safe and most reliable remedy to use in the treatment of diphtheria. On the contrary, I will say; How can we rely upon antitoxin?

203 E. Columbia Street.

A CASE OF STONE IN THE KIDNEY—NEPHROLITHOTOMY—RECOVERY.

BY W. D. HAMILTON, M.D.
COLUMBUS, OHIO.

Since Dr. Morris, of Middlesex Hospital, elaborated the operation for the removal of a stone from the kidney, the procedure has been frequently and successfully employed. The diagnosis of that condition is often difficult. In a sweeping way it might be stated that the inconstancy of the symptoms has prevented precision in the recognition and location of the disease. Again, other pathologic renal affections have shown symptoms suggestive of stone in that organ. Repeated attacks of renal colic, blood and pus in the urine, with the occasional passage of sabulous matter per urethram are strongly suggestive of it. Jordan Lloyd's valuable test led the writer to the diagnosis of stone in the kidney in the case about to be narrated. The hypothesis of renal calculus was offered, however, with mental reservations; for one surgeon, Dr. Jacobson, of Guy's, has reported not less than twenty-five exploratory lumbar incisions, where the symptoms of stone having been present some other condition was found. Early tuberculosis of the kidney, malignant disease involving the renal substance,

and the uric acid diathesis were the chief sources of error.

The inadequacy of puncturing the organ, and even its thorough palpation as final tests of the presence or absence of stone may be shown by the experience of Morris. The coterie of so-called stone symptoms was typical in a case in charge of this capable surgeon. Exploration through a lumbar cut, needling and renal incision brought negative results! The patient survived the operation. The symptoms recurred and we are compelled to admire the courage of Dr. Morris who removed the suspected kidney by the lumbar route. He could feel with the fingers no induration in its substance, when after nephrectomy the specimen lay before him. After incising it at several points he finally found, however, a stone of some size embedded in the renal tissue. The patient got well. Dr. Howard Kelley's recent article in the *News* will probably teach us much by the use of instruments of precision; for catheterization of the ureters, perfected as he states, will show us at least the kind of work done by either kidney. The patient, Mr. A., æt. 49, a merchant from Newark, Ohio, was brought to the writer by Dr. Notring, of that place. He had been an invalid for three years. His appearance was that of a man accustomed to great suffering; he walked in such a way as to favor the left side; he was badly stooped, and the concavity of the bend of his body was to the front and left. His side having been exposed, he was given a sharp punch in the lame loin, the thumb being forced in the direction of the kidney. He complained that he felt as if a sword had been stuck into him. Jordan Lloyd looks upon a statement of this kind by the patient, after receiving such a thrust, as being strongly suggestive of the presence of renal calculus. A uranalysis at the time elicited the following facts: Sp. gr., 1012; reaction acid; phosphates present; no casts.

About forty attacks of renal colic had occurred within the three years of invalidism preceding his visit. Each meant a week's illness in bed. Pain began commonly in the night, starting in the left loin. A so-called swelling showed itself in that region during these seizures and disappeared after them. More or less complete anuria accompanied this intumescence, and was followed by a copious discharge of urine each time. Increasing intensity of this loin-ache with frequent and painful dribbling acts of urination, were invariable accompaniments of these paroxysms. The free administration of morphia was necessary during them. Neither pus nor blood nor sabulous matter in the urine was ever observed by the patient or the attending physician. To make things more obscure, in a violent lifting effort, made about the time that his illness began, a left inguinal hernia was produced. He naturally attributed much of his discomfort to this fact. He was told that he had a stone in the left kidney. An operation was performed at his home on Aug. 4, 1895. The usual preparation was employed. Strychnia was given beforehand in thirtieth grain doses for a few days, for its stimulant and tonic effect; while the parts were cleansed and suitably prepared to minimize the risk of sepsis; ether narcosis; right lateral position; a hard pillow was placed beneath the right loin, so that the left costo-iliac space was thus put on the stretch and increased. A four-inch oblique incision was made, avoiding the pleura above and

peritoneum to the ventral side. The kidney was readily exposed; the finger was passed about the organ to separate the fatty capsule. On palpating its posterior surface toward the hilum a hard mass could be felt in the pelvis, which it well-nigh filled. Invaluable aid was rendered by the careful management of the anesthetic by Dr. Notring and by the strong upward traction of the ribs by Dr. Spear, so that the kidney could be brought well into the parietal opening. A probe was carried into the more accessible lower segment of the cortex, radially toward the pelvis, while the organ was steadied by the thumb and fingers. A stone was felt. The instrument in place served as a guide to the guarded bistoury with which the wound was enlarged; while a pair of angular Wells' forceps facilitated extraction of the stone. A drain was inserted into the loin; no vessels were ligated. Some shock supervened, but disappeared, however, within three hours. A few silk stitches were inserted. Some small sabulous fragments were discharged through the natural passages in the next few days. For a fortnight, urine was somewhat bloody, and afterward became cloudy.

Profiting by a previous experience in which after crushing a vesical calculus of the uric acid variety, the frequent voiding of cloudy urine had been a source of anxiety to the patient, the very free drinking of lithia water was advised and the urine became clear. He had quite recovered within a month so as to be able to pursue his occupation. The stone, a uric acid concretion, weighed 73.5 grs. It occupied the pelvis of the kidney which it almost filled, while the upper part of it lay embedded in the renal tissue. It might be well in closing to allude to the striking and misleading facts of the case, viz.: the absence of pus and blood and calcareous matter in the urine. He was at times, no doubt, a sufferer from acute hydro-nephrosis, as his history indicated.

CLINICAL LECTURE.

Extract from of a Clinical Lecture Delivered before the Senior Students at the Wisconsin College of Physicians and Surgeons.

BY JAMES A. BACH, M.D.,

PROFESSOR OF OPHTHALMOLOGY AND OTOLGY.
MILWAUKEE, WIS.

GENTLEMEN:—Our first patient to-day is one of unusual interest. This young lady, as she tells us, about three years ago had the misfortune to receive a slight injury of her right eye, which injury was followed by deep infection, producing a plastic iridocyclitis. In due course of time the fellow eye became affected with a sympathetic inflammation, which practically amounted to an extension of the infection through the optic nerve sheaths, leading to similar results, i.e., a plastic inflammation of the uveal tract with extensive adhesions. The inflammatory process in both eyes has now come to a standstill, with the result that the girl has simply a perception of light left.

Covering one eye and moving this light across different parts of the visual field you will notice that she readily locates the light correctly; in other words, her light projection is good, showing that the perceptive organs are, to say the least, partially intact in every portion of the field. The readiness with which she locates this light, although only a very small amount can pass into the interior of her eye, owing to these dense plastic exudates in the pupillary field, gives us a reasonable assurance that if we can suc-

cessfully remove these dense obstructions to the light we may gain some very serviceable vision for this young lady. She has everything to gain and practically nothing to lose.

Before attempting to do this operation I should like to call your attention to some instructive features in this case. In the first place, by looking closely at the eyes with the assistance of oblique illumination you will observe that the anterior chamber is perfectly absent; the iris lying immediately behind the cornea conforming itself perfectly to the curvature of the cornea. A condition similar to this is often found after a neglected iritis with complete posterior synechiae, only that in these cases the iris does not adapt itself to the cornea, but bulges forward in the middle and is held down at the pupillary margins by adhesions, producing what is known as iris bombé. This bulging is produced by the filling in of aqueous humor in the posterior chamber, where it is chiefly secreted, which, however, can not find its way forward into the anterior chamber owing to the pupillary adhesions cutting off the communication between the chambers. In this case before you there is no bulging present, because there is no aqueous humor in the posterior chamber, the organs for its production having evidently been destroyed during the process of this deep and severe inflammation and adhesions, which is not the case when the inflammation is confined, or chiefly so, to the iris alone. These eyes evidently have lost their aqueous humor and with it the power to reproduce the same. As a rule, eyes of this kind experience a decided fluctuation in their tension. At about the time of the inflammation, owing to insufficiency of elimination of the internal fluids, the tension may rise very materially and may become $T = + 2$. The use of atropin in this stage is often not permissible, owing to this tendency. After the subsidence of this inflammation, the insufficiency of internal secretion of fluid, together with a gradual degeneration and shrinking of the contents of the globe, produced by the cutting off of the proper nutrition to these non-vascular structures, will gradually allow a decline in tension which often goes so far as to result in atrophy of the eyeball, known as phthisis bulbi. The tension of these eyes is as yet but very slightly reduced. If you will again look at the eyes under illumination you will observe the pupillary field to be very small, and instead of black as it ordinarily is, it is a yellowish white. This is a dense plastic exudate that has been thrown out during the process of inflammation and has become organized. But very little light can penetrate it. The iris looks slightly stretched and thinned; it has, however, not lost as much of its luster as one often finds in these cases.

We will now thoroughly cocaineize this eye and proceed to make a large iridectomy. We will, no doubt, find that the whole of the iris has become adherent to the lens so that after the iridectomy the endothelial pigment layer of the iris will remain adherent to the anterior capsule of the lens, necessitating the removal of the lens as well. These lenses, owing to the insufficient nutrition are cataractous, as a rule. As I now enter my knife at the limbus and penetrate the cornea, if you will watch closely, you will observe that it at once impinges upon the iris, but by careful manipulation I succeed, as you see, to make my corneal section, although too small for our purpose. I will now take these delicate scissors and on either

side enlarge my incision to sufficiency. As I grasp the iris with my forceps, I can feel distinctly its adherence to the lens capsule, and drawing a portion of it out it is snipped off. As anticipated, the pigment layer still rests on the lens. I now pass the cystotome into the anterior chamber and tear the capsule of the lens, which being completed the lens presents itself and is delivered without any difficulty. As you see, the patient is overjoyed at the fact of again receiving sufficient light to perceive objects. A similar case was operated at this clinic last year with a very satisfactory result. A fact that makes this case of special interest is that she has been refused operative interference from a number of oculists and she will indeed have occasion to feel grateful should the results prove such as we now have every reason to believe that they will be. It is very important in this class of cases not to operate while there are still active inflammatory symptoms present, because you are very liable to again lose through further plastic exudates the pupillary freedom gained by the operation.

Case 2.—This old gentleman, while a soldier in our late war, contracted trachoma, and has ever since been troubled with this unpleasant disease, not having received any special treatment for the same. Not only are his lids deeply infiltrated with the products of this disease, but it seems, on close examination, that the iris and other internal structures of the eye ball have suffered in consequence. He now comes to us with double senile cataract, which are mature. Under these conditions it always is a grave undertaking to open the eye ball, especially where the interference of the internal delicate structures is as great as becomes necessary during the removal of a cataract. The chances for infection become a serious consideration. Although he has been under treatment for his granulations for some time now, yet the conjunctival sac is still not in a sufficiently healthy condition to justify subjecting this man to the operation of extraction. In these cases it is a good plan and one that I always pursue, to divide the operation into two parts and in that manner lessen very materially the chances for infection. By making a preliminary iridectomy to-day only, the chances for infection are not great and in the course of a few weeks, having received more treatment for the trachoma, we can with reasonable safety remove the lens. Any unhealthy condition of the conjunctival sac where this can be done ought to always be remedied before making the operation for cataract, otherwise we may expect from time to time to lose eyes from infections. I believe it is chiefly owing to the great care I take in preparing my cataract patients that I have not sustained a single loss of an eye through infection after cataract extraction; my success has been uniform.

Privilege not Waived. In the case of *Barker v. Cunard Steamship Co.*, decided by the general term of the supreme court of New York, Dec. 18, 1895, the court holds that it was not error to refuse to permit the defendant to prove by a certain physician the condition of the plaintiff when he entered a hospital, and the statements made by him in respect to the previous condition of his health. The knowledge of this witness was acquired from an inspection of and conversation with the plaintiff while the relation of physician and patient existed between them, and was privileged. This privilege, the court declares, was not waived by the plaintiff's having called other physicians to testify to his condition anterior and subsequent to the time he was in the hospital.

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SATURDAY, JANUARY 25, 1896.

MEDICAL EDUCATION IN THE UNITED STATES
IN 1893.

The advance sheets of the report of Bureau of Education for 1893, just at hand, are full of most valuable information. This is an unusually bulky report. It contains all of the educational work presented at the world's congresses at Chicago. The discussion of these papers must be left to educational and literary journals and the present notice confined to the statistic material relating to medical schools. It is impossible to overlook the fact that this report is unusually incomplete in its treatment of medical education. The fact that nearly all medical schools are private schools may account for the reluctance of the Bureau in making full financial and other statistic reports of their condition and progress. The schools of theology are also private and yet they are much more fully reported. Taken as a whole, this report prepared by A. ERSKIN MILLER, will be found very useful and encouraging. The strong and certain drift to the four-year course is manifest. There is a gradual improvement in the material equipment in nearly all medical schools and a tendency toward enlarged, even bulky faculties. The clinical and laboratory facilities seem to be improving; and better than all, the requirements for admission are steadily advancing. The report should give great credit to the various State examining boards and to the Association of American Medical Colleges for these improvements. The number of medical students enrolled has gradually increased from 12,238 in 1888-89 to 16,130 in 1892-93, while at the same time the percentage of the enrollment graduating has fallen from 27.1 to 24.9. Very few schools require study with a preceptor. Study of medicine in the

United States has become study at the college and in the hospital. It means perhaps too exclusive study in the classroom, in the laboratory, at the clinic and in the post-mortem chamber. It can not be doubted that this too exclusive scholastic trend of medical education will produce more scholarly but perhaps less successful practitioners.

It is hard to understand the gradual and uniform decline in the number of college graduates who study medicine. It would be natural to expect an increase of college men in medicine with every improvement in medical teaching. But at Harvard, for example, where there has been a steady advance in all that can be called better medical education, the ratio of college graduates to the total enrollment has fallen from 54 per cent. in 1884 to 23 per cent. in 1893. It may be that the reputation which Harvard attained through the influence of the large ratio of college men led to an inundation of students without literary degrees, and a real or apparent falling off of the better educated men.

There were 132 medical schools in the United States in 1893. Of these 2 were preparatory, 94 regular, 16 "homeopathic," 10 "eclectic," 2 "physio-medical" and 8 graduate schools. The total enrollment of these colleges was 28,900 in the school year 1892-93, 16,130 were in the regular and 1,445 in the homeopathic schools. There were 827 women enrolled in the 36 regular schools admitting women, out of an enrollment of 1,302 in all schools of medicine. For comparison it is well to notice the fact that there were at this time 142 theological schools with 7,856 enrolled and 1,502 graduating students, a gradual increase of 1,000 students in five years. And again, there were 63 law schools with 6,776 enrolled and 2,400 graduating students, an increase of almost exactly 3,388 students in five years.

It is interesting to study the grouping of the enrollment in the regular schools. Of these 16,130 students, the north Atlantic States claim 5,182; the north central States 5,229; the south central States 3,048; the south Atlantic States 2,192; and the Pacific States 479. The schools of New York, Pennsylvania, Missouri, Illinois, Kentucky, Maryland and Tennessee claim respectively 2,287, 1,867, 1,394, 1,386, 1,342, 1,111 and 1,060.

During the year 1892-93 one school, the University of Pennsylvania, had more than 800 students; three schools, Jefferson, Bellevue and Rush, had more than 600 and less than 700 students; two schools had more than 500 and less than 600 students; four schools had more than 400 and less than 500 students; four schools had more than 300 and less than 400 students; twelve schools had more than 200 and less than 300 students; twenty-three schools had more than 100 and less than 200 students; and thirty-nine schools had less than 100 students.

The annual fees varied between \$200 and \$28, and the graduating or examining fee from \$30 to \$0. All the schools except a few in the South were three-year schools; a few in the North required four years. The value of the buildings and equipment varied in the several schools between \$320,000 and \$12,000. The number of full professors was never less than seven and sometimes as many as twenty-eight. While one school had two assistants, one had sixty-five such teachers.

There is no discussion in this report of the course of study in the various medical schools in the country, nor is there any adequate presentation of the work of the various examining bodies. No more valuable work could be done for medical education than the presentation of the courses of study and the methods of such schools as excel in the teaching of particular branches or in particular directions.

THE DIAGNOSIS AND TREATMENT OF PERFORATION OF ULCER OF THE STOMACH AND DUODENUM.

Among the more dangerous symptoms of gastric ulcer, perforation has attracted special attention. The diagnosis and the treatment of this condition are made the subject of a special study by BLUME,¹ the results of which merit the interest of medical men in general. Of late years surgeons have busied themselves with perforation-peritonitis and occasional successful operations for perforation of the stomach have been reported. It is consequently an opportune time to review the results of the methods of treatment hitherto in vogue and to make clear the diagnosis and prognosis of perforation of the stomach in order to estimate the probable chances of the success of the new treatment.

There are recorded cases of recovery after perforation of the stomach into the free abdominal cavity without operation. FENWICK² and LIEBERMEISTER³ both describe such cases in some of which the correctness of the diagnosis was confirmed by post-mortem examination. The idea that extensive or diffuse perforative peritonitis need not always be a fatal disease has received support in some of the cases treated by operation. Diffuse purulent peritonitis has been cured by means of incision with, as well as without, efforts at disinfection of the peritoneum and even after complete suture of the incision without drainage.⁴

BLUME briefly reports sixteen instances of acute and subacute cases of perforation of the stomach treated without operation. These cases were from PROFESSOR TRIER's division in the Kommune Hospital in Copenhagen. All the cases were examined after death. The seat of the perforation was in the ante-

rior wall of the stomach in fourteen cases, in the anterior wall of the duodenum in two, and twice in the posterior wall of the stomach. In fourteen of the cases the post-mortem showed a diffuse peritonitis. In eight cases distinct evidences of an effort to close the perforation by means of adhesions were demonstrated. The length of time between the occurrence of the perforation and death varied from less than twenty-four hours to ten days, showing that in many cases there would have been time enough to consider the treatment and eventually operate.

BLUME then details four cases in which the symptoms after the perforation ran a more chronic course because peritoneal adhesions limited the peritonitis to the vicinity of the perforation. In none of these cases could a correct diagnosis have been made during life.

In a third series are reported seven cases of recovery from the perforation without operation. In all these cases the clinical data include observations that verify the diagnosis of gastric ulcer and records of the objective signs of the peritonitis whether it was diffuse or circumscribed; the latter was the case in four of the seven cases. Three of the patients entered the hospital forty-eight hours after the perforation, one thirty-six hours, one eighteen hours, and two less than twenty-four hours. The medicinal treatment consisted exclusively of opium and morphin. The feeding consisted in giving one teaspoonful of iced milk every fifteen minutes or one-half hour when the patient was awake, which quantity was gradually increased after a few days. Rectal feeding was not employed. The rationale for this somewhat unusual procedure was the fact that it is so important to keep up the normal functions of the stomach in order to hinder the regurgitation of intestinal contents into the stomach from which they would run out into the peritoneal cavity. BLUME lays great stress on this mode of feeding and the results seem to warrant his criticism of the remark of MIKULICZ⁵ that "in perforative peritonitis the physician stands as an idle observer." The importance of reliable, trained nurses and of the suitable position of the patient is also emphasized.

BLUME then reviews seventeen cases from the literature, especially the English, in which operation was performed. The cases are arranged topographically into four groups: *a*, perforation in the region of the pylorus and duodenum, three cases with two deaths; *b*, perforations in the posterior wall, one case, recovery; *c*, perforations in the anterior wall, four cases with three deaths; *d*, perforations near the cardiac orifice, nine cases with six deaths. Some of the conclusions drawn from the histories of these cases are the following: The authors believe the operation should be made as soon as possible after

¹ Nordiskt Medicinskt Arkiv, 1896.

² The morbid states of the stomach and duodenum, London, 1868.

³ Ueber das einfache Magengeschwür, Volkmann's Samml. No. 61, 1892.

⁴ Chir. Bd. 33, S. 507.

⁵ Volkmann's Sammlung, No. 262, 1885.

the perforation. Chloroform narcosis is said to be tolerated with astonishing ease. The incision is made in the median line between the xiphoid appendix and the umbilicus; transverse incisions may become necessary in order to reach the point of perforation. The treatment of the perforation itself is the essential act of the operation. The accessibility to the opening varies greatly in the four groups of cases; in group *a* the perforation is readily found; in group *b* access to the perforation is to be gained by cutting through the ligamentum gastro-colicum, when the stomach may be turned upward and the point of perforation brought into view. The perforation is easiest to find when situated on the anterior surface of the stomach (group *c*), but the acuteness of the angle formed by the costal arches may encroach seriously upon the room necessary to suture the opening; in the last group, *d*, the perforation is situated high up behind the chest wall and inasmuch as the stomach can not be pulled down the treatment of the opening in this group is very difficult and in three cases suturing of the perforation had to be abandoned as impossible, while in two cases the perforation was shut off from the rest of the peritoneal cavity by fastening the stomach to the abdominal wall, and in one a cure was obtained. The treatment of the peritonitis consists of flushing with a warm, sterile, indifferent fluid or dry sponging with sterile gauze. Drainage of the peritoneal cavity was employed in nine of sixteen cases in which this point is referred to, three of the nine recovered; seven cases were treated without drainage and of these three got well.

Comparing the cases treated medically with those treated by surgical means, BLUME states that the results of the medical treatment as shown in the series of cases described by him are quite respectable, and that the possibility of a cure without operation has been definitely established, but nevertheless, the secure closure of the perforation by suture would hold out more definite hopes for recovery. In order to limit the operative interference to a minimum the diagnosis should be as certain as possible in order that the correct incision might be made at first and not, as has happened, between the umbilicus and the pubes, followed by exploration of the genitals, the cecum and the ileum before the attention was directed to the stomach where the opening was situated. And then BLUME advocates strongly the method of nourishment described in the operated cases as well. The idea that the stomach must be placed at absolute rest and remain empty is illusory. Unless the normal secretory functions are kept at work regurgitation of intestinal contents may follow.

THE Berlin Association for Int. Medicine has been devoting much time lately to the study of phenacetin poisoning.

PHYSICIANS AS LEGISLATORS.

The Cincinnati *Lancet and Clinic* announces, perhaps a little prematurely, that the grand old Commonwealth of Kentucky has honored itself by the selection of DR. GODFREY HUNTER to represent the State in the United States Senate for the next six years. Whether or not this is yet actually the fact, it is a truth that as physicians we may all feel a legitimate interest in seeing our profession represented in the highest legislative body of our nation. There seems to be an impression abroad in this country that physicians like clergymen are debarred from political honors and that there is no need of their advice in legislation. On the part of the profession itself there is perhaps too much of a notion that politics is a dirty business, unworthy of the attention of professional men, a sort of pitchy mess that can not be touched without defilement. That this is true to any extent is due to the fact that decent men keep clear of it and the condition will never be improved by keeping up and acting upon the prejudice. There is no class of men better qualified to purify politics than honorable physicians, who preserve the high ethical standards of their profession. To say that they will be injured by the associations or that the profession will be degraded by its members taking interest in public affairs, is to state what is not at all a necessary truth; the fact is that those who can be thus hurt are already past the danger point, and the profession is already sufficiently degraded by those who have aided in making too many of our public charities to a large extent mere political machines. What is needed is the entrance of high grade medical men into our legislatures and Congress, and their aid and advice in the framing of our laws. The public welfare is the aim of all legislation, and among its first essentials if indeed if it is not the first, is the public health. Legislators more than any other public functionaries need enlightenment on sanitation and beside these there are a thousand questions that may and continually do arise in constructing and amending the laws where medical knowledge is of the highest value and where the lack of it may be disastrous in its effects. There is need, moreover, of the medical element in our halls of legislation; no class of men are closer to the people and better know their needs than do physicians, and a high professional training and education is no bad preparation for public service. The record of a RUSH, a MITCHILL, a VIRCHOW and a VERGA is an evidence of this fact, and there is actual need of the employment of this special class of talent in this country at the present time. A sprinkling of first-class medical men in Congress would be a most desirable addition.

To have it so, would be in accordance with the best precedents and traditions of our country. In the days of the Revolution when educated doctors were

few and far between, and there was not a single medical school in the land, five out of the fifty-six signers of the Declaration of Independence, DRs. RUSH, WOLCOTT, THORNTON, BARTLETT and HALL, were members of our profession, thus making over 9 per cent. of the members of the first Continental Congress: a proportion that well showed the rank of our profession in popular estimation in those times that tried men's souls.

NAVAL APOTHECARIES.

Not every vessel in the navy carries a medical officer: yet every vessel, however insignificant, has both captain and apothecary, representing opposite ends of the pole in the matter of personal and official consequence. The naval apothecary has come down to us from the time of BENBOW. He was only a "man before the mast" then, and he is only a "man before the mast" now, though his qualifications have risen with the times and the attempt is now made to secure graduates in pharmacy for those positions. It is not surprising, therefore, that association with the coarse, illiterate denizens of the berth-deck, which befitted the mere manipulator of an enema syringe or the dresser of a suppurating bubo, should be repulsive to young men who are able to pass the examinations of the modern schools of pharmacy, nor that they should demand, at least, an equality of position with the paymaster's clerk, who needs only know how to read, write and cipher.

The apothecary on board ship is the right-hand man of the medical officer. He compounds and administers the remedies prescribed, and beside his work as surgical and clinical aid, he performs such clerical duty as may be required, and in these days of complicated forms of returns of property, inventories, requisitions, vouchers, explanatory letters and other official communications, this is no inconsiderable labor, especially on board a flagship at sea or at a hospital on shore. If the ensign who prepares or copies the commanding officer's letters, or the pay clerk who adds up columns of figures and witnesses the payment of money to the crew, are fit to wear the uniform of an officer and have quarters in what used to be known as the steerage, there can certainly be no impropriety in the man who is required to know and to perform the complex operations of the pharmacopœia living under the same conditions.

In nearly other civilized country in the world than the United States, the pharmacist is held in high esteem, and the elaborate report of the special committee on legislation of the American Pharmaceutical Association appointed in 1894, consisting of a member from each State and Territory and of which Dr. GEORGE F. PAYNE, State Chemist, Atlanta, Ga., is chairman, exhibits in detail the status of pharmacists in the armies and navies of European States, much of the information having been translated from

the *Pharmaceutische Zeitung* by OTTO HOFFMAN, A. B. In some of these countries pharmacists are officers with definite high rank. In France the Inspecteur Général is a major-general. In Russia, Counselor of State is the highest title obtained by the pharmacist by virtue of his rank. In Belgium, the chief pharmacist has the rank of lieutenant-colonel, two that of major, with others in grades down to that of second lieutenant. In Italy, one chemico-pharmaceutical inspector has the rank of lieutenant-colonel, one director and six head pharmacists that of major, twenty-seven are captains, thirty are first lieutenants and forty are second lieutenants. In Holland and the Dutch colonies, the military pharmaceutical service is performed by military pharmacists, who rank as officers and belong to the corps of sanitary officers. The directing pharmacist is a lieutenant-colonel with a salary of 9,000 guilders, about \$3,600. The directing pharmacist of the second class receives 7,800 guilders (\$3,120); pharmacists of the first class 4,800 guilders (\$1,920) and of the second class 2,700 guilders (\$1,080). "To this is added a free dwelling or a compensation for such, which ranges between 500 and 2,000 guilders (\$200 to \$800) according to rank and station." In Switzerland, the staff pharmacist has the rank of a major and in Germany and Austria a colonel's grade is the blue ribbon to which the military pharmacist aspires.

In the United States navy he is an *enlisted man*. In the army he is known as the Hospital Steward. His pay begins at \$45 a month, and never exceeds \$50. In the navy his designation is Apothecary, and he rates as an enlisted petty officer, sandwiched between the yeoman and the bandmaster; but inferior in pay and position to machinists, chief carpenter's, gunner's and boatswain's mates, chief quartermasters and masters-at-arms. Nevertheless, the candidate for enlistment as an apothecary in the navy

"Must pass the usual physical examination, and must present testimonials or certificates as to character, good habits and sobriety. They are also required to pass a satisfactory examination in the following subjects, viz.: 1. *General education*. Arithmetic, orthography, writing (legible and grammatical), geography and history of the United States. 2. *Professional*. Materia medica a knowledge of the botanic name, origin, habitat, preparations and doses of the drugs recognized by the Pharmacopœia; pharmacy a knowledge of the various pharmaceutical processes employed in the manufacture of the various officinal and official preparations, and the relative proportions of the more important drugs entering into the composition of these preparations; chemistry a knowledge of chemie symbols, the formulas of the more important official chemicals and of the reactions produced by the combination of chemicals; toxicology a knowledge of the symptoms of toxic doses and antidotes of poisons. The recognition of crude drugs, the making of ordinary pharmaceutical preparations, the compounding of prescriptions and the criticising of prescriptions incorrect by reason of pharmaceutical or chemie incompatibility or from dangerous doses. A practical knowledge of bandaging, *minor surgery*, application of dry and wet cups is desirable for which the applicant will be given due credit."

He may be both an A.B. or B.S. and a G.Ph., but he must live on the berth-deck, an enlisted "man before the mast," with the pay of a boilermaker, \$60 a month, and less than to that of the master-at-arms (\$65) and machinist (\$70). Boatswains, gunners, carpenters and sailmakers are warrant officers with special mess and quarters and pay ranging from \$700 to \$1,800, and all that the apothecaries themselves are asking in a bill before Congress is that they shall be raised to the level of these warrant officers, with equivalent rank, pay and privileges. Many old officers of the navy, however, are of opinion that the grade of warrant officer should be abolished, the duties of the boatswain, carpenter and sailmaker being performed by their mates, who are mechanics, and as such properly are of the rank of machinists, boilermakers, blacksmiths, plumbers, painters and the like, while the gunner should give place to the ordnance lieutenant, to which promotion from the ranks should be provided. The pharmacist should become a "steerage" officer, along with the pay clerk, as befitting his general culture and professional education. If this be done, the old-time apothecary, who was shipped for a cruise, the "Doc" of the berth-deck and fore-castle, who could never be intrusted with the key of the medical storeroom lest he drink the wines and liquors provided for the sick, who was suspected, with good reason, of having a considerable surreptitious practice among syphilitic and gonorrheal sailors and marines seeking in this way to escape restriction of their liberty, who on shore paraded himself as one of the doctors of the vessel, whom it was never safe to permit to dally with metric subdivisions of strychnin, morphin or arsenious acid, and who, indeed, usually managed to clandestinely possess himself of a set of apothecary's weights to avoid shipwreck on the shoals of grams and cubic centimeters, will have disappeared from the service, and his place be filled by a gentlemanly, intelligent, educated young man, whose pride in his G.Ph. will be creditable to the navy and an assurance that he will not attempt to usurp the functions and wear the borrowed clothes of his medical superior.

MEDICO-MILITARY TITLES.

We have now neither medical directors nor post surgeons in the medical department of our army. The revision of the Army Regulations issued a few weeks ago, abolished the one, and the first circular of the present year, published from Headquarters of the Army January 2, has done away with the other. The medical officer on the staff of a general commanding a department, an army or an army corps, known during the greater part of the past century as a medical director, has now become the chief surgeon of the command, to give uniformity to the titles of the staff

functionaries, who are the chief quartermaster, chief commissary, chief paymaster, etc. The recent circular brings the staff of a post commander into uniformity with this system of nomenclature, by directing that hereafter the senior medical officer of a military post will be known officially as the surgeon, and the other officers as the adjutant, the quartermaster, the signal officer, etc.

These changes by the present energetic Secretary of War must meet with general approval as indicating, with business-like directness and brevity, the office held by each staff officer. So well do they commend themselves to us, that we are inclined to inquire why a series of complex titles are retained to express the position of individual officers in addition to the now simplified title of the office which they fill. The chief surgeon, chief quartermaster, or chief commissary of a department may be an officer with the rank of colonel, and the designation of assistant surgeon general, assistant quartermaster general, or assistant commissary general, according to his corps; or one with the rank of lieutenant-colonel, and the personal status of a deputy surgeon general, deputy quartermaster general, etc., or he may be merely a surgeon, quartermaster, or commissary, with the rank of major. There seems to be no need of the special designations of deputies and assistants to the chiefs of military bureaux, as the responsibilities and duties undertaken and performed by officers having these titles may be performed as well by an officer with the rank of major. These special designations are high-sounding titles which mean nothing, puny survivals in modern life of the grand, mighty, illustrious and supreme so and so's of the dark and middle ages. The rank, pay and status of officers senior to majors are defined sufficiently by the rank of lieutenant-colonel and colonel, without the appended titular embellishments.

This leads us to realize that there is as little need for special designations for surgeons below the rank of major as for those above this rank, as little need to detract from the dignity of a surgeon below the rank of major by calling him an assistant surgeon as there is to attempt to add to the dignity of an officer with the rank of lieutenant-colonel or colonel by calling him a deputy or an assistant surgeon general.

Before entering the army a candidate for position in the medical staff must have fulfilled all the legal requirements, to authorize him to practice medicine and surgery. In civil life he is a physician and surgeon; but when he enters the army he ceases officially to be what he legally is, and becomes an assistant surgeon. His pay, emoluments and official status are defined sufficiently by the junior rank of lieutenant or captain; and no object is effected by prefixing assistant to his professional title. The position we assume is, that the Secretary of War could, with ad-

vantage, go further than he has gone in the direction of business-like brevity and uniformity in the titles of our professional brethren in the military service. Graded official titles outside of those defining rank are an encumbrance also among the quartermasters, and members of the other staff corps, but we have no particular concern about them.

THE INSIGNIA OF THE ARMY MEDICAL DEPARTMENT.

The selection of insignia for the medical department of the army has been before the officers of that department in an unofficial way for many months. It is now before them officially, and the question will no doubt be settled promptly. The Surgeon General has appointed a board to consider the subject, and has requested officers who have suggestions to make to communicate them to COL. CHARLES H. ALDEN, Assistant Surgeon General, the president of the board.

At the present time the medical department is practically without any distinctive insignia. From early times the letters M. D. were embroidered in silver on the black ground of the epaulettes or shoulder knots, but this lettering was always as distasteful to medical officers as the P. D. and Q. D. of the pay department and quartermaster's department were to the officers who had to wear them. Three or four years ago, when some changes were made in the uniform, the national shield in gold was proposed and approved as a substitute for the lettering of the medical department. The shield, however, has never given general satisfaction, inasmuch as although emblematic of defense, it has no association with defense by medical men against disease or death; and, moreover, a shield in silver with thirteen stars has already been assigned as the insignia of the adjutant general's department. These objections led to the agitation which has been going on for some time and no doubt to the recent appointment of a board to settle the question.

So far as we can ascertain, the majority of the corps is in favor of the red cross of the Geneva Convention in an artistic setting of embroidered gold; and this seems to be the most appropriate and distinctive emblem that could be adopted. All civilized nations have signed the Treaty of Geneva, and adopted the red cross as their military hospital flag, so that the association of this emblem with an army medical department is widely known. The seventh article of the convention requires that all hospitals and ambulances shall carry, in addition to the flag of their nation, a distinctive and uniform flag having a red cross on a white ground. Moreover, in time of war all the members of the staff of the hospitals and ambulances must wear an arm badge or brassard having this emblem on it to insure them the neutrality guaranteed by the treaty. Our own hospital corps wears the cross on the bras-

sart. What more appropriate, therefore, than that the red cross should constitute the insignia of the medical department? Some officers have objected to it as being the emblem of the American Branch of the Red Cross International Society; but it is the emblem of this society only because it is the regulation hospital flag of the army. The members and employes of the Aid Society, if they are to constitute any part of the staff of a military hospital in time of war, must wear the cross in accordance with the terms of the treaty. They become, in fact, a part of the army medical department.

NEW INSTRUMENTS.

COVER-GLASS FORCEPS.

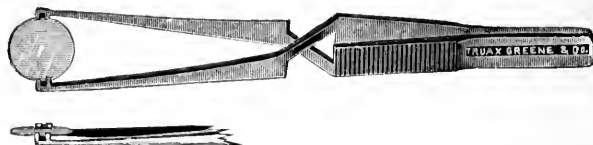
BY O. E. LINJER, M.D.

STARBUCK, MINN.

To those who are familiar with microscopic technique the following illustrations of a cover-glass forceps devised by me are self-explanatory. Clinical microscopy demands the simplest as well as most rapid methods consistent with accuracy. None of the many cover-glass forceps now in use are adapted to modern microscopic work. For staining sputum, pus, blood, etc., the complete process, from fixing to placing of cover-glass on slide, may be carried out while cover-glass is held in forceps.



The following advantages are claimed for these forceps: 1. The cover-glass while on its flat side can be rapidly picked up from any surface whether glass, marble, wood or paper. 2. The cover-glass is held level, firmly and anatomically. 3. No possibility of cover-glass slipping out of or breaking while held in forceps. 4. Hands of operators are kept free from stains and acids. 5. The edge only of cover-glass being grasped and held by forceps, admits of the whole surface of the cover-glass being stained. 6. Cover-glass can be drained by placing forceps on the side.



These cover-glass forceps are manufactured and sold by Chas. Truax, Greene & Co., of Chicago. Every pair of forceps, if properly made, possesses the above mentioned advantages over the clumsy forceps formerly used.

CORRESPONDENCE.

Treatment of Typhoid Fever.

LEBANON, IND., Jan. 21, 1896.

To the Editor: From time to time we read in this most excellent journal articles extolling the Woodbridge treatment for the most dreaded of fevers in our country. In the JOURNAL of January 11, this year, there is a well-worded article on this subject in which the writer rids the patient of danger and jests at the alarm of the family in this most dreadful disease. I will never forget what Prof. J. M. Da Costa said in the beginning of his lectures on fevers: "Gentlemen, this is the fever of this country; *uay*, it is the fever of the world," and surely Prof. Mitchell's adage of piloting the ship

clear of breakers is as true to-day as the day it was spoken. No doubt Dr. Woodbridge has added some enthusiasm to our modern principles of typhoid fever treatment. But let us not lose our power of reasoning and accurate observation until we see more of this treatment. I read with interest his paper at the Baltimore meeting, and with more interest the discussion by Drs. Pepper and Osler, in which the former stated that each time we had discovered a panacea in medicine or plan of treatment for this disease, we were disappointed in the next epidemic by a frightful mortality.

Typhoid fever, in all probability, has existed for ages past, but it was left for an American physician about sixty years ago to catalogue it as a distinct disease. Now from one decade to another we are learning to treat it better, each enthusiast on the subject adding his mite. Dr. Graves, of Dublin, wanted it engraved on his tombstone how he fed fevers. And now let me ask Dr. Woodbridge and his followers if we take from a typhoid fever patient proper hygienic surroundings, proper feeding and good nursing, what good will his or any other treatment do? My partner, Dr. C. J. Lidi-kay, and I bought of Parke Davis & Co. the Woodbridge medicines and commenced the use of them last year in good faith. Our first patient was a most favorable one for the treatment, a formerly healthy girl 12 years old, in a family with two other cases of typhoid fever. We followed the plan in minute detail, and the fever went through its regular stages, lasted four weeks, and we could not see that the treatment did any more good than any other sensible plan of management. We tried it faithfully on fourteen cases in two families on the same farm who used the water out of a polluted well. It never modified nor shortened the duration of a single case, for they all went through the regular stages. They all got well but one, who took double parotitis while convalescing. Five other children out of one other family who visited this farm took the fever and two died, one from hemorrhage and one from the severity of the lesions after four weeks' sickness. We treated over forty cases of all grades of intensity with only the loss of these three cases. And at last treated my only child last October through a typhoid fever. I tried the Woodbridge treatment up to the second week, when her stomach rebelled against the soft capsules and emulsion of the same. We then nursed her with just enough medicine to control symptoms. The fever reached 100 degrees four successive days the latter part of the third week, and we have nursed her three months since to tide her over the effect of this awful fever, encountering several dangerous breakers along the line.

Dr. Osler said the best thing he could see about this treatment was that the medicine was harmless. Woodbridge has emphasized one principle that will last, and that is that the bowel will stand more cleaning out with less danger than was formerly thought. Typhoid fever still holds sway over patients. We are between *Scylla* and *Charybdis* in its treatment, and it is a plague to any family or community. W. F. BATMAN.

The Royal Colleges and the Women.

To the Editor:—The recent action of the Royal Colleges of Physicians and Surgeons, England, in declining, by a narrow vote, to grant women their diplomas, is indicative both of the remaining prejudice against women doctors and the progress of their efforts for complete recognition by the profession.

The two chief arguments against them, aside from natural unfitness, were that they commonly entered the profession from improper motives, and that they had contributed nothing toward its advance. It is thus quite evident that some of our professional brethren across the water, have been expecting too much from the "gentler sex," for the very same arguments will apply equally well to not a few of the masculine denomination. Also the fact seems to have been overlooked

that the "new" woman is still comparatively new and has hardly had time to evolve that increase of brain and the de-sexing process which are finally to fit her with that keen, cool, deliberative mind requisite to rule the earth on scientific principles. The "new" woman may not possess the charms of a Cleopatra, but she craves her power and if she cannot attain it the one way, why should she not try another? There can be but little objection to giving her every privilege within the bounds of propriety, for in so doing her superiority in some department of medicine will the sooner be demonstrated, or her mania the sooner ended.

Doubtless some enter the profession from the loftiest motives, and do credit to it, and whether or not, after all is considered, they have mistaken their calling, is for them individually to judge. It is to be hoped that ere long they will have no occasion to complain of unequal privileges in such an enlightened city as London. J. S. C.

A Knotted Umbilical Cord.

BERWYN, ILL., Jan. 16, 1896.

To the Editor:—A rather unique case occurred in my obstetric practice at this place last week. Mrs. S., who was under my care and expected to be confined late in February, sent for me early the morning of January 10. Upon arriving at the house I found my patient in the midst of labor, regular pains, very frequent and severe. Examination revealed dilated os, breech presentation, no evidence of fetus being alive. A short time later delivery was accomplished. The fetus was dead. Stage of development was that of a seven-months' fetus. It weighed about three pounds, and gave evidence of having been dead some little time, as it was considerably macerated. Upon examination of the cord I found a tight knot about midway between fetus and placenta. This undoubtedly had caused fetal death, which precipitated labor. The mother had not felt life for several days previously. Possibly this case may be of interest as evidence that the fetus does enjoy considerable latitude of motion in utero.

Very respectfully yours, ARTHUR MACNEAL, M.D.

Suspensio Uteri or Ventro-Fixation of the Uterus Its Influence upon Pregnancy and Labor.

To the Editor:—Having recently had some unfortunate experience concerning suspensio uteri upon parturition, I feel that it is highly important that this question be settled in an authoritative way as soon as possible. The only way to determine the question is by studying the actual results as seen in the practice of all operators. I will be much indebted to any one having had a case of pregnancy following suspension of the uterus, if he will communicate the details of the case or cases to me.

Very truly yours, CHARLES P. NOBLE.

1637 N. Broad St., Philadelphia.

Sexual Perversion.

WASHINGTON, D. C., Jan. 20, 1896.

To the Editor:—Having noticed in two of your late issues that correspondents ask for the definition of the word *tribadism*, I will call attention to the very full and comprehensive article by Dr. Irving C. Rosse, of Washington, D. C., on "Unnatural Crimes," in vol. II, p. 493, of Witthaus and Becker's "Medical Jurisprudence." In this valuable and instructive paper, your correspondents will find detailed information as to the various forms of sexual perversion as observed by neurologists and as treated from the view point of medico-legal knowledge. Trusting the reference, as already given above, may be of service to your correspondents. I remain, yours respectfully,

EDWIN L. MORGAN, M.D.

2315 Pennsylvania Avenue, N. W.

Transactions of XI International Medical Congress.

CAMBRIDGE, MASS., Jan. 20, 1896.

To the Editor: In the Miscellany of the JOURNAL of January 18, page 142, inquiry is made as to what time the volumes of the XIth International Medical Congress at Rome, Italy, will be ready for distribution.

In answer, I would say that I received some months ago direct from Messrs. Rosenberg & Sellier, Libreria Internazionale, Via Bogino 3, Torino, Italy, volume II, and on January 18, through the Bureau of International Exchanges, Smithsonian Institution, Washington, D. C., volumes III and IV.

For members to receive their volumes promptly it will be necessary to make remittance of 7.50 francs to the house of Rosenberg & Sellier, Libreria Internazionale, Via Bogino 3, Torino, Italy, to meet the expenses of the distribution.

Sincerely yours, AUGUSTUS P. CLARKE.

A New Medical Society.

KANSAS CITY, MO., Jan. 16, 1896.

To the Editor: On April 7, 10 A.M., at the Midland Hotel in Kansas City, Mo., a meeting will be held for the purpose of forming a society of laryngologists, rhinologists and otologists. All Western physicians engaged in the above specialties are cordially and earnestly invited to be present and aid in the work. Kindly give this a notice in your JOURNAL.

HAL FOSTER, M.D.

BOOK NOTICES.

Diet in Sickness and in Health. By MRS. ERNEST HART, with an introduction by SIR HENRY THOMPSON, F.R.C.S. 8vo, pp. 219. London: The Scientific Press; Philadelphia: W. B. Saunders. 1895.

"No man," says Sir Henry Thompson in the introduction, "is a really accomplished physician or surgeon who has not made dietetic principles and practice an important part of his professional education." Those who had the pleasure of meeting the accomplished authoress in the "Irish Village" at the World's Fair in Chicago, will not be surprised to learn that she has managed to sandwich many an interesting sketch from the scenes of her travels, which add piquancy to the pages of a scientific book, without in the least detracting from its high professional standard. In speaking of tea, she says, pp. 34 and 35:

"Every Japanese household, however poor, possesses a large metal teakettle, and a small porcelain or pottery teapot. Into the tiny teapot is placed a small amount of fine green tea. On this is poured water not quite boiling. Without allowing the water to stand on the leaves more than a moment or two, the tea is poured into small porcelain cups and drunk pure without any admixture. Tea taken in this way is extraordinarily refreshing. When in Japan, I have sometimes, after being engaged in the fatiguing, incessant but fascinating occupation of shopping, turned to the saleswoman serving me and said, *Ocha dozo oka san*, which means, 'Please give me a cup of your honorable tea, good lady,' at which request the tiny teapot has been immediately produced with many smiles and bows, and has yielded an astonishing number of small cups, water being continually added from the pretty chased iron kettle. After this 'restoration' shopping again became fascinating."

The tea ceremony in Japan is thus described:

"There is another kind of tea which is also drunk in Japan on the occasion of the unique and solemn Tea Ceremony. This ceremony, which has become a national and tenaciously held custom, was invented by a great chieftain called Hideyoshi, in the early part of the sixteenth century, with the object of teaching his turbulent barons to be courteous, self controlled and silent. At the Tea Ceremony, the details of which are long, elaborate and definitely arranged, a fine green tea which has been ground into powder is brewed in a regular and ceremonious manner by an officer of the household, called the Cha-nou. The tea powder is stirred with a whisk in hot water in an antique bowl. This bowl of tea is handed round to the

guests seated on their heels on the matting, and is drunk, tea-dust and all, in solemn silence, the bowl being returned to the Cha-nou with forehead bowed to the ground."

But the book must be read to be best appreciated. It is well illustrated and neatly printed.

The American Year-Book of Medicine and Surgery; being a yearly digest of Scientific Progress and Authoritative Opinion in all branches of Medicine and Surgery, drawn from Journals, Monographs and Text-books, of the leading American and Foreign Authors and Investigators. Collected and arranged with critical comments by J. M. Baldy, M.D., C. H. Burnett, M.D., Archibald Church, M.D., C. F. Clarke, M.D., J. Chalmers Da Costa, M.D., W. A. N. Dorland, M.D., V. P. Gibney, M.D., Homer W. Gibney, M.D., Henry A. Griffin, M.D., John Guitéras, M.D., C. A. Hamann, M.D., H. F. Hansell, M.D., W. A. Hardaway, M.D., T. M. Hardie, B.A., M.B., C. F. Hersman, M.D., B. C. Hirst, M.D., E. Fletcher Ingals, M.D., W. W. Keen, M.D., H. Leffman, M.D., V. H. Norrie, M.D., H. J. Patrick, M.D., Wm. Pepper, M.D., D. Riesman, M.D., Louis Starr, M.D., Alfred Stengel, M.D., G. N. Stewart, M.D., Thompson S. Westcott, M.D.; under the general editorial charge of GEORGE M. GOULD, M.D. Illustrated with numerous woodcuts in text and thirty-three half tone and colored plates. 8vo, cl., pp. 1183. Philadelphia: W. B. Saunders. 1896. [From W. T. Keener, Chicago.]

This work is one of the most elaborate digests, and while it does not assume to constitute a digest of the entire volume of medical literature of the year, it yet seeks to give a summary of what is new and valuable in the progress of the art during the period covered by it. "It is confidently believed," says the editor in his preface, "that no very significant fact has escaped review in the present pages: the material used has been not only the periodicals of the year, but also the more important monographs, text-books, etc. It has been an onerous task to all concerned to condense this enormous mass of matter so that we could offer the product in a single volume. The making of medical books has been so prolific that both the expense and the library space of the physician have become highly important considerations which we have kept steadily in view."

The editors have done their work well, and the book as finished is beyond praise. The publisher has spared no pains to produce a book with faultless typography and superb illustrations.

The Diseases of Children, Medical and Surgical. By HENRY ASHBY, M.D., F.R.C.P., and A. WRIGHT, B.A., M.B., F.R.C.S. Third edition, edited for American students by WILLIAM PERRY NORTHRUP, A.M., M.D. 8vo, cl., pp. 840. New York: Longmans, Greene & Co. 1896.

This is an elaborate book covering the entire field of pediatrics, both in medicine and surgery. The use of small type has enabled the authors to put a vast amount of material into the work without making it unduly bulky. There are twenty-seven chapters and 200 illustrations: these illustrations mostly from photographs of cases under the care of the authors. Little change has been made by the American editor, who thought best to leave the body of the book intact and insert his own views in the appendix. The formulæ were rewritten, except the old system of weights and measures, which are unchanged. This is one of the most useful books on the medical and surgical diseases of children that have recently appeared, and our readers will find it very satisfactory for reference. The teachings are sound and conservative.

Therapeutics of Infancy and Childhood. By A. JACOBI, M.D. Philadelphia: J. B. Lippincott Company. 8vo, cl., pp. 518. 1896.

Dr. Jacobi has succeeded in so impressing his personality upon the profession in this country, since he established the first American course of clinical instruction in pediatrics, thirty-five years ago, that his book will be welcomed with something like enthusiasm.

There are sixteen chapters, viz.: 1. Feeding of Sick Children. 2. Treatment of the Newly Born. 3. General Thera-

peutics. 4. Constitutional Diseases. 5. Infectious Diseases. 6. Diseases of the Digestive Organs. 7. Diseases of the Genito-urinary Organs. 8. Diseases of the Respiratory Organs. 9. Diseases of the Organs of Circulation. 10. Diseases of the Nervous System. 11. Diseases of the Skin. 12. Diseases of the Ear. 13. Diseases of the Eye. 14. Diseases of the Muscles. 15. Diseases of the Bones and Joints. 16. Addenda.

In the last chapter the topics discussed are Laborde's method of treating asphyxia, pernicious anemia, infantile scurvy, thyroid feeding, antitoxin and milk sterilization. The author's recommendations are wise and conservative, and will have that weight and authority which his long and useful life so well entitles him to expect.

A History of the Chronic Degenerative Diseases of the Central Nervous System. By THOMAS KIRKPATRICK MONRO, M.A., M.D. 8vo Cl. Glasgow: Alex. Macdougall, 1895.

This work is a republication of a series of papers first published in the *Glasgow Medical Journal* of last year. They consist of historical studies of a number of the chronic disorders that "depend upon primary degenerative changes in the structure of the central nervous system," including tabes, primary spastic paralysis, ataxic paraplegia, Friedrich's disease, progressive muscular atrophy, bulbar paralysis, ophthalmoplegia, the peroneal type of muscular atrophy, and multiple sclerosis. The author omits paresis and primary optic atrophy which he admits might also be included in this class considered from some points of view.

The historical study seems to have been quite well and thoroughly done and the discussion of the different questions that have arisen in regard to the various authors who have written on these disorders is fair and judicious. While the scope of the work might have been extended, even beyond what is indicated by the author, to fully include the class of affections considered, it is, as far as it attempts to give, a very creditable contribution to medical literature.

The Retrospect of Medicine. A Half-Yearly Journal containing a Retrospective View of every Discovery and Practical Improvement in the Medical Sciences. Edited by JAMES BRAITHWAITE, M.D., etc., assisted by E. F. TREVELYAN, M.D., etc. Volume cxii, July to December, 1895. Issued January, 1896. London: Simpkin, Marshall, Hamilton, Kent & Co.

The current volume of "Braithwaite" is an interesting one. In whatever department of medical literature one may be interested, he will here find much to instruct and entertain him. The selections are judicious and drawn from a wide field. American medical literature seems fully represented.

Chemically Pure Hypophosphites and Syrup of Hydriodic Acid. By R. W. GARDNER. New York, 1895. Mailed on application.

This book is a complete dissertation on the uses of these drugs, and contains matter of considerable importance to the general practitioner.

PUBLIC HEALTH.

Municipal Cold Storage.—The municipality of Genoa, Italy, has constructed a cold storage plant at an expense of 60,000 lire, which nets 10,000 lire to the city every year. It is principally for meat which is received from America direct, according to Prof. Perroucito's report on the subject to the Society of Hygiene at Turin.

Tubercle Bacilli in Milk. Obermüller (*Hygien. Rundschau*, 1895, No. 19) undertook to examine milk purchased from dealers, for the presence of tubercle bacilli, because it seemed probable that, in view of the large number of tuberculous cows, bacilli would often be present in milk. He therefore injected into the peritoneal cavity of forty guinea pigs 2 to 2½ c.c. of milk. Of these forty, three died from extensive tuberculosis of the peritoneum. In a second series of experiments the

author used the sediment of centrifugalized milk mixed with the cream of the same milk, because it was learned from control experiments, that bacilli in centrifugalized milk not only reach the sediment, but also the layer of cream. With this mixture he injected intraperitoneally twenty-six guinea pigs, giving each 1 to 1.5 c.c. and of these ten, or 38 per cent., died from tuberculosis. Inasmuch as boiling as well as pasteurization of milk in reality are only palliative measures, he advocates strongly the weeding out of tuberculous animals after testing with tuberculin.

Sanitary Homes for the Working Classes.—The *Revista de Higiene*, of Santiago, Chile, brings us an important article on the subject of sanitary homes for the working classes. The author, after a masterly historic summary, concludes that it is a matter in which neither the government nor the municipality should take the initiative, as that is sure to lead to abuses, but they should encourage and foster private enterprise by legislation, remitting taxes, etc. This would make the enterprise a safe and profitable investment for associations, which, experience shows, accomplish more than individuals. He draws a terrible picture of the present homes of this class in Santiago, where hygiene is only just beginning to receive attention among the well-to-do, and the poor are crowded together in small, low, damp huts, on unpaved streets, without a single opening except the entrance from the street, and with the sewage in open ditches, often stagnant. The floor is frequently below the level of the street, which means constant infiltration of dampness. The huts called *ranchos* are still worse, as the green materials of which they are composed are always moist and decaying. A slight improvement are the *courventillos*, which are the usual round houses without windows or doors except the one entrance from the street, but they open on a private street which serves as a common court where all the cooking and washing are done outside of the house. Nearly every hut contains, besides the family, one or more domestic animals. The author ascribes the unusual amount of drunkenness in Santiago to these uninviting homes. There were 24,034 arrests for this cause alone in 1893, while in all London there were only 30,000, and in Valparaiso 12,828. He admits that Santiago is behind other cities in the country in sanitary living, although location and climate are exceptionally favorable. If it were not for the latter, with its cool nights all the year around, epidemics would certainly prevail all the time, instead of being limited to August, September and October.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Arizona: Nogales, January 13, 1 case.
Arkansas: Mayflower, Faulkner County, January 4 to 13, 2 cases; (near) Conway, Faulkner County, January 4 to 13, 6 cases; Widener, January 4 to 13, 1 case; Crittenden County, January 19, 24 cases, 5 deaths.
Illinois: Chicago, December 1 to 31, 2 deaths; Cairo, January 14, 2 deaths.
Indiana: Michigan City, year 1895, 1 death.
Louisiana: New Orleans, January 4 to 11, 7 cases, 1 death.
Michigan: Detroit, January 4 to 18, 2 cases.
Missouri: Birds Point, January 14, smallpox reported present.
Tennessee: Memphis, January 1 to 18, 6 cases.

SMALLPOX—FOREIGN.

Cairo, December 7 to 16, 1 death.
Corunna, December 1 to 31, 5 deaths.
Dublin, December 28 to January 4, 1 case.
Havana, January 2 to 9, 2 deaths.
Madrid, December 24 to 31, 11 deaths.
Montevideo, December 7 to 14, 2 cases.
Moscow, December 14 to 21, 1 case.
Odessa, December 21 to 28, 8 cases.
Prague, December 7 to 14, 26 cases; December 24 to 28, 6 cases.
Rio de Janeiro, December 7 to 21, 72 deaths.

St. Petersburg, December 21 to 28, 7 cases, 2 deaths.
Trieste, December 7 to 28, 2 cases, 1 death.
Warsaw, December 7 to 21, 4 deaths.

CHOLERA—FOREIGN.

Austria-Hungary, December 17 to 22, 5 cases, 2 deaths.
Egypt: Cairo, December 9 to 16, 1 death; Borachia, December 15 to 16, 2 cases; Damietta, December 12, 1 death; Faras-kour, December 11 to 12, 2 cases, 2 deaths; Hehya, December 13, 1 death; Kafr-el-Battikh, December 12 to 17, 28 cases, 15 deaths; Mansurah, December 17, 1 case, 1 death; Zagazig, December 15 to 18, 5 cases, 2 deaths.

Russia: Kiev (government), November 17 to December 7, 219 cases, 85 deaths; Orlov (government), November 3 to December 7, 17 cases, 6 deaths; St. Petersburg (city), November 30 to December 7, 73 cases, 46 deaths; December 21 to 28, 56 cases, 48 deaths; St. Petersburg (government), November 17 to December 7, 21 cases, 2 deaths; Volhynia (government), November 17 to 30, 442 cases, 184 deaths.

India: Bombay, December 10 to 17, 2 deaths; Calcutta, December 1 to 7, 59 deaths.

YELLOW FEVER—FOREIGN.

Cuba: Cienfuegos, December 29 to January 5, 3 deaths; Sagua la Grande, December 28 to January 4, 12 cases, 5 deaths; Santiago de Cuba, December 28 to January 4, 15 deaths.
Brazil: Rio de Janeiro, December 7 to 21, 55 deaths.

NECROLOGY.

DR. L. CH. BOISLINIERE died January 13, aged 80. His death takes away one of the most honored of the medical profession of St. Louis, where he lived and worked for almost fifty years. He was born in the West Indies in 1816. He went to France to continue his education and graduated in law at the University of Paris. He soon began to show a preference for medicine, and became a member of the Anthropological Society of Paris. His connection with the society was maintained until his death. On returning to America in 1846, for some time he made his home in Louisville, Ky., then came to St. Louis and graduated from the St. Louis Medical College in the class of 1848. In 1870 he succeeded Dr. M. M. Pallen as Professor of Obstetrics in his Alma Mater; at the time of his death he was Professor Emeritus. Dr. Boisliniere will be remembered for his unflinching kindness, his wide learning and his enduring influence on the profession. Among his earlier achievements was his success in bringing the Sisters of St. Anne to St. Louis, who established here the first lying-in hospital west of the Alleghany mountains. At a called meeting of physicians held at the Missouri Medical College, Dr. W. G. Moore, president of the St. Louis Medical Society, presented resolutions which embodied an eloquent tribute to the memory of Dr. Boisliniere. Addresses in eulogy of the departed physician were made by Drs. J. K. Bauduy, I. N. Love, E. F. Smith, W. A. Hardaway, P. S. O'Reilly, J. P. Bryson, P. G. Robinson, W. B. Dorsett and others. Dr. Hardaway spoke in favor of erecting some suitable memorial in honor of the deceased, and Dr. Moore appointed Drs. Hardaway, Dorsett, Bauduy and Bryson a committee to report upon this project.

JOHN FORD BARBOUR, M.D., of Louisville, Ky., died January 15. The news of the death of Dr. Barbour came as a great shock to his many friends, as his illness was unknown except to a few. Several weeks ago he contracted a pleurisy, but was not thought to be seriously ill until a day or so before his death. Dr. Barbour was born in Lexington, Mo., May 25, 1861, and was the son of Prof. Louis G. Barbour, D.D., LL.D., who is professor of mathematics at Central University, at Richmond, Ky. Dr. Barbour was a graduate of Central University and afterward studied medicine at the Hospital College of Medicine, this city, graduating at University of New York, Medical Department, in 1881. He returned to Louisville and began the practice of his profession in 1884, and soon worked his way up to a large practice. Dr. Barbour paid special attention to diseases of the nervous system and of the stomach, and

some of his most valuable contributions to medical literature were upon these subjects, among which may be mentioned "The Present Status of Craniectomy," a paper read before the Louisville Academy of Medicine; "Neurasthenia," a paper presented at a recent meeting of the Louisville Medico-Chirurgical Society, and "The Modern Treatment of Diseases of the Stomach," read before the Louisville Clinical Society. Had he turned his attention to music instead of medicine he would have made a great reputation as a composer and performer. Some of his compositions have been commended very highly by critics, and he was an excellent pianist. He was the editor of the *New Albany Medical Herald*; a member of the Kentucky State Medical Society; Louisville Academy of Medicine; Louisville Medico-Chirurgical and Louisville Clinical Societies, and also a valued member of the Bluestocking Club, a prominent local literary society. After his return from New York he became attached to the staff of the Louisville Hospital College of medicine as lecturer on diseases of the nervous system, soon working up a large clinic; he was afterward assistant to the chair of practice, and from 1889 to 1892, professor of clinical medicine in the same school. Dr. Barbour was a brother of Dr. Philip F. Barbour, Professor of Chemistry in the Hospital College of Medicine; and cousin of Dr. P. C. S. Barbour, Superintendent of the Louisville City Hospital. He was also a member of the visiting staff of this institution. His remains were interred at Danville, Ky.

STEPHEN VAN RENSSELAER BOGERT, M.D., of Sailors' Snug Harbor, Staten Island, N. Y., died January 10, in the ninety-second year of his age. He was a native of Albany, N. Y., and graduated in 1825, from the College of Physicians and Surgeons at Fairfield, Western New York. He was about forty years the resident physician at the Sailors' Snug Harbor, and was consulting physician to the St. Nicholas Society of New York. About twelve years ago he retired from active practice. His interment took place in the Moravian Cemetery of Staten Island. His son, Edward S. Bogert, is a medical director of the United States Navy.

PLO RENGIFO, M.D., formerly editor of the *Revista Medica*, of Bogota, died at Panama, Colombia, January 14, from a cerebral hemorrhage. He was a graduate in medicine from the University of St. Andrews, Scotland, and studied in medical clinics of Berlin, Paris and Vienna. He practiced his profession in New York City for ten or more years and afterward was for a time located at Lima in Peru. He was a scholarly man, of fine attainments and of great force of character. His brother, Gen. Julio Rengifo, is well known in diplomatic circles at Washington.

C. V. BEEBE, M.D., of Superior, Wis., January 8, aged 54.
— Abraham Losier, M.D., of New York, January 14.
— Sarah J. Fearing, M.D., of Denver, Colo., January 11.
— Orin Goodrich, M.D., of Troy, N. Y., December 23, aged 88 years.
— E. P. Austin, M.D., of Noblesville, Ind., December 22, aged 89.

MISCELLANY.

Two Insane Asylums for Colored People. Laws were in 1895 passed in Tennessee providing for the erection of two insane asylums for the insane colored people of West and East Tennessee respectively. One is to be on the grounds of the West Tennessee Insane Asylum near Bolivar, in Hardeman County; the other to be located upon the grounds of the Hospital for the Insane at Lyon's View, Knox County, Tennessee. Admission to each is to be apportioned to the counties within its part of the State according to population as shown by the latest federal census. The county physician, county judge or chairman of the county court has authority to send to the former institution. Pay patients shall be admitted to the latter, which is under control of the trustees of the institution on the grounds on which it is located.

Disposition of Criminals Recovering Reason.—Chapter 103 of the Laws of Wyoming enacted in 1895 provides for the custody and treatment, at such place or places as the board of charities and reform shall provide or prescribe, of persons of unsound mind who have been accused or convicted of criminal offenses. But section 5 thereof provides that if any such person or patient so confined in any hospital or asylum or place designated by said board shall recover his or her reason, he or she shall be returned to the penitentiary, county jail or other place of confinement or imprisonment where such person was confined at the time of the inquiry, trial or proceeding had to determine his or her sanity, or insanity, there to be tried or to serve out or undergo his or her term of imprisonment if any part thereof remains, as the nature of the case shall require.

A Philanthropic Physician Rewarded.—The following item from a religious weekly refers to a medical man of London who has long been engaged in caring for orphans and city waifs, his work in that direction running up into the thousands of boys and girls rescued and provided with homes. Dr. T. J. Barnardo has recently recovered from a severe illness, and his friends took the occasion of his return to duty to give him an evidence of their estimation of his work. An evidence of the extent of this work will be seen in the fact that he has to raise over \$700 per day. The item reads as follows: "The work of Dr. Barnardo in caring for the destitute children of London has received public acknowledgment. At a reception at Exeter Hall he was presented with an illuminated address and a check worth \$17,085. This was a personal gift apart from the children's support. Dr. Barnardo now has eighty-four homes in which 5,000 destitute children are clothed, fed and educated. The expenses are over \$700 per day."

Albany Medical Alumni Dine. The first annual dinner of the newly-formed Albany Medical College Alumni Association of Greater New York was given January 16. The association was organized December last, and has a membership of nearly seventy-five. The dinner was served in the octagonal banquet hall of the Hotel Savoy, and about fifty members assembled at the first festive meeting of the association. The President, Dr. John W. Warner, occupied the central seat of the table of honor. In company with him were the Rev. Dr. John E. Bushnell, Prof. Albert Van der Veer and Prof. Samuel B. Ward, of the faculty of the college; the Rev. Dr. Andrew V. Raymond, President of Union College, and Dr. Edward Hall. Among the guests were Assistant District-Attorney John F. McIntyre, John P. Faure, Commissioner of the Public Charities; Prof. William H. Thompson, ex-Congressman John S. Wise, of Virginia; Dr. Maurice J. Lewis, Secretary of the State Board of Medical Examiners, and St. Clair McKelway. There were also present the following officers of the alumni: Dr. Horace Macy Hanks, Vice-President; Dr. Warren C. Spalding, Secretary; Dr. Robert F. Macfarlane, Assistant Secretary; Dr. Allen Fitch, Treasurer; Dr. John A. Cutter, Dr. Robert E. Fivey, Dr. L. N. Lanehart, of Hempstead, N. Y., and Dr. Henry F. Muller, of Brooklyn, Governors.

Sale of Intoxicating Medicine.—A Mississippi judge not long since decided that if a certain duly licensed druggist sold essence of ginger, which, when diluted with water and drank to excess, would produce intoxication, he must be convicted of selling intoxicating liquors, without regard to his motive, its being a medicine, or the fact that as sold it could not be used as a beverage. As a consequence, apparently, the druggist was convicted of this violation of the law. But, Nov. 4, 1895, the supreme court of Mississippi reversed the judgment of the lower court. (Bertrand vs. State.) It says the test question in the case was whether the essence of tincture of ginger referred to was a medicine, sold as such in good faith, and not as a beverage, or whether it was a sham preparation, disguised as medicine, really an intoxicating liquor sold as a beverage. Evi-

dence on this line, offered by the druggist, tending to show the character of the preparation and his good faith, it is held, should have been admitted. Likewise, he is declared to have had the right to have had the jury instructed that if they believed from the evidence that he, the accused, sold tincture of Jamaica ginger as a medicine, in good faith, and believed further from the evidence that the same was prepared by the directions of the United States dispensatory, and that the same was recognized by the medical profession of the United States, they should acquit.

Tennessee Restricts Holders of Inquests. The laws of Tennessee were amended in 1895 to the effect that no inquest shall be held by the coroner or any justice of the peace over the dead body of any person or persons, until an affidavit in writing is made and signed by two or more reliable persons, averring the death of said person or persons, and that there is good reason to believe that such person or persons came to his, her or their death by unlawful violence at the hands of some other person or persons; and without such affidavit in writing, such coroner or justice shall have no jurisdiction to hold an inquest over the dead body of any person or persons whomsoever; and all proceedings without such affidavit shall be utterly void and useless unless these provisions are literally, rigidly and strictly complied with, and the affidavit filed with the papers, and the coroner or justice of the peace shall receive no fees or compensation for holding the inquest. If any person or persons shall falsely, willfully and corruptly swear out such affidavit as above provided for, such person or persons so swearing shall be deemed guilty of perjury, and punished as now provided for by law for said offense; and in addition to the penalty now provided by law for perjury, they shall be taxed with all the costs incidental to said inquisition, based upon said false and corrupt affidavit.

A Collective Inquiry Regarding Schlatter's "Cures." The editor of *Voice* has been in correspondence with the medical men and others of Denver for the purpose of getting statements as to the alleged cures of Michael Schlatter. Three physicians reply that there were no cures known to them. Another replies that no organic disease was cured, such as affections of the eyes and ears, but one woman received benefit. This patient appeared to be on the point of losing her mind from melancholic tendencies. She was extremely nervous, morose and could not sleep, but after being treated by the Healer she recovered entirely, slept well and became quite rational. He admits that Schlatter did for her what he could not do, and adds: "The majority of humanity wants something or some one to lean upon. Schlatter's strong mind furnished that something and many were greatly benefited in mind. He did good, and I am glad he came." One of the letters was from Dr. Charles N. Hart, president of the State Medical Society. He says he knows of several cures for which he is willing to give Schlatter credit. One was that of an aged woman who could not sleep and could get no relief from her physician. After she saw Schlatter she slept well and has slept well ever since. All the cases of cure Dr. Hart knows of were cases of nervousness, and it is his opinion that Schlatter helped about 1 per cent. of all those that came to him. That would be, as he estimates it, fifteen to twenty daily. In Dr. Hart's opinion he did no harm, but considerable good in helping a class of cases which the average physician can not help; and he does not doubt that an explanation can be found on natural grounds for all the cures of which Schlatter was the agent.

Weight to be Given Expert Testimony. The trial judge instructed the jury in the case of *People vs. Seaman*, that: "Some expert testimony has been given in this case, but its value depends upon the circumstances, and of these circumstances the jury must be the judge. The jury must determine the weight to be credited to it, but in all cases the testimony of experts is

to be received and weighed with great caution. The evidence of a witness who is brought upon the stand to support a theory by his opinion is testimony exposed to a reasonable degree of suspicion, which there is great reason to believe is in many instances the result of employment and his bias arising out of it. In many cases, it is to be feared, by giving too much weight to testimony of experts, juries have been induced to render unwarrantable verdicts, discreditable to the administration of justice, as well as exceedingly detrimental to public interests." This instruction, the supreme court of Michigan holds, Dec. 10, 1895, was clearly erroneous. An expert witness, it says, is to be judged from the same standpoint as any other witness. It was for the jury, and not for the court, to determine the weight to be given to the testimony. Expert testimony is not always the most reliable, but it is often indispensable. Its infirmity arises largely from its character. Comparatively, it has been held to have little value. It does not follow, because experts differ, that the testimony should be said to be suspicious. Lay witnesses differ materially in their testimony as to conversations and occurrences. Judges, lawyers and juries differ in their conclusions from a given state of facts. It can not be assumed as a matter of law that this testimony is open to suspicion for the reason that experts are employed, and are necessarily biased by such employment. In this case, for example, the evidence as to cause of death was circumstantial. And it must be conceded, continues the court, that the experts who held an autopsy for the very purpose of determining the cause were better qualified to determine what symptoms usually precede a miscarriage, and what are the ordinary causes which produce it, and what the condition of the body indicated upon examination made, than is the ordinary layman. The other circumstances of the case bearing upon the death cause and the defendant's guilt were for the jury, and it was their province to determine those questions from all the facts and circumstances, and to disregard the opinion evidence as to the cause of death, if, in their judgment, the other testimony warranted that conclusion.

Minnesota Changes in Regulation of Practice of Medicine.—The Minnesota legislature in 1895 amended the law of that State relating to the practice of medicine and the licensing of physicians and surgeons in several important respects. First, it provided that three, instead of two, of the nine members of the State Board of Medical Examiners shall be "homoeopathic" physicians. Then it changed the time for the summer meeting of the board for holding examinations from the first Tuesday in July to June. In the third place, it declared that it shall be unlawful for any person to practice medicine in that State without a license from said board, or without having filed with the secretary of said board an affidavit setting forth the times and places in which he or she has practiced medicine within the State prior to the passage of this law (the act 1887, here amended). Any person in continuous practice in the State since June 1, 1887, not licensed under the provisions of chapter 125 of general laws of 1883, may become a licensed practitioner by submitting to the board of medical examiners a diploma from a recognized college of medicine, or by undergoing an individual examination at a regular examination prescribed by the act now in force. The fee for such license shall be \$10. The previous requirement that candidates for examination present evidence of having attended three courses of lectures of at least six months each, is changed to "three full courses of lectures at a medical college, recognized by the State Board of Medical Examiners, of at least twenty-six weeks each; no two courses being within the same year." After January 1, 1899, it shall be necessary for all persons commencing the practice of medicine and surgery to submit to an examination and present evidence of having attended four full courses of lectures at a medical college, recognized by the

State Board of Medical Examiners, of at least twenty-six weeks each; no two courses being in the same year. All examination papers on subjects requiring treatment peculiar to any school of medicine shall be examined and their sufficiency passed upon by the members of said board belonging to such school, if such there be, and their recommendation as to the proficiency of such candidate in those particular subjects shall be deemed final by said board.

The Leidy Memorial Fellowship in Anatomy.—The following circular has been issued:

It has seemed unjust to many that there is no suitable memorial to perpetuate the name of Joseph Leidy, the great scientist and teacher. A committee has therefore been organized from among his old students to raise whatever money may be made for the accomplishment of this object.

There is no idea more suitable, no testimonial more practical, none which would appeal more to the judgment of the great investigator himself, than the establishment of a Fellowship in Anatomy, the great division of medicine which he loved so well. As the University of Pennsylvania was the scene of the greater part of his labors, the committee has thought it best to establish the Fellowship in that Institution.

The creation of the Fellowship will not only perpetuate the name of Leidy, but will enable some practical working Anatomist to carry on original work in the University, and to utilize the vast collection of material which is deposited in the Wistar Museum.

Thirty thousand dollars will put such a Fellowship on a permanent working basis, it being intended that the income from this sum should be paid to the Fellow, thus enabling him to pursue his studies with the assurance that his daily wants will be provided for. We appeal to you, therefore, as lovers and admirers of the gentle, humane scientist whose achievements have made his name familiar on two continents, to aid us by subscribing to this Fund.

The movement is a general one, and if you desire further information in regard to the purposes of this memorial, and the regulations which will govern it, we will be glad to communicate with you.

Communications and remittances should be addressed to the secretary and treasurer.

Committee: Dr. Wm. Campbell Posey, Chairman, Dr. Joseph Leidy, Dr. Joseph P. Tunis, Dr. Charles H. Frazier, Dr. J. Howe Adams, Secretary and Treasurer, 1523 Locust Street. Advisory Committee: Dr. S. Wier Mitchell, Dr. J. M. DaCosta, Dr. John Ashlurst, Jr., Dr. George A. Piersol, Gen. Isaac J. Wistar, Mr. C. C. Harrison, Provost of the U. of Pa. Philadelphia, Dec. 26, 1895.

Practical Notes.

Hidrosis At a recent meeting of the Berlin Dermatological Association formalin was recommended in the treatment of hidrosis, in a 0.10 to 0.20 per cent. solution; as also a mixture of formalin and tannin which has proved very successful in severe cases of hidrosis and bromhidrosis.

Lip Reading for Deaf Mutes by Aid of Photographs.—Deaf mutes are taught to understand spoken language by watching the movements of the lips and facial muscles. Dr. Gutzmann has recently secured a series of photographs showing these movements and mounted them in a gyroscope, when the words spoken were immediately recognized by the mutes. The *Deutsche med. Woch.* devotes considerable space to Gutzmann's success, which is sure to prove of the greatest assistance in teaching the deaf to understand spoken words.

Typhoid Bacilli not Transmitted from Mother to Fetus.—A case was described at a recent meeting of the Medical Association at Pavia, Italy, where a woman suffering from a severe case of typhoid fever was delivered of a five-months fetus, which was absolutely free from typhoid bacilli as deter-

mined by the most exhaustive tests. The transmission of disease from mother to fetus is not therefore inevitable, and may depend on special contingencies, such as placental hemorrhage. —*Gaz. degli Osp. e delle Clin.*

Stenosis of Pylorus.—The *Gaz. degli Osp. e Clin.* reports an operation of gastro-enterostomy for severe cicatricial stenosis of the pylorus at Vetralla, last March. The case required a large opening. Catgut and silk were both used. In fifteen days after operation, patient (a laboring man, age 45) was eating the richest diet the hospital afforded without inconvenience, and when he left, sixty days after operation, he was entirely restored to his normal health and had gained many pounds in weight. He resumed his ordinary work and has remained since in robust health. De Mattoli was the surgeon in charge of the case.

Sterilization of Catgut. The old problem of sterilizing catgut came up again at a recent meeting of the Berlin Medical Association and the importance of sterilizing it insisted upon, as it is in the highest degree infective. Boiling water and sublimate are of course out of the question; but De Saul announced that he had succeeded in thoroughly disinfecting the catgut with boiling alcohol (ethyl alcohol), without injury to it. Carbolic acid mixed with it did not assist the sterilizing process until water was added, when the sterilizing strength was very much enhanced. Dr. Saul showed a small contrivance by which the process was most simply and effectively done. He announces the exact formula as 85 parts alcohol, 5 parts carbolic acid and 10 parts water. In the discussion that followed the objection was made that ethyl alcohol will not mix with water. —*Deutsch. med. Woch.*

Society Notes.

THE CLINTON COUNTY (IOWA) MEDICAL SOCIETY, January 7, appointed the following delegates to attend the Atlanta meeting of the AMERICAN MEDICAL ASSOCIATION: Drs. D. Langan, P. J. Farnsworth, H. F. Farnsworth and G. Hofstetter.

THE MEDICAL COUNCIL, of Syracuse N. Y., had its regular monthly meeting January 7. Dr. Alfred Mercer, the retiring president, read an able paper on "The Decline of Blood Letting and its Use in Pneumonia." After the reading a general discussion on the subject was participated in by Drs. Henry D. Didama, A. J. Dallas, E. R. Maxson, E. Vandewarker, J. L. Heffron and others. The subject proved to be an interesting one and the practice of bleeding was approved by most of the speakers in dealing with many cases of pneumonia under certain conditions.

Hospital Notes.

A HOSPITAL UNDER LAY REGIME: THIRTY YEARS' WORK GOES FOR NOUGHT.—At the Manhattan Hospital and Dispensary, New York City, thirty members of the Board of Directors have resigned because of the withdrawal from the institution of Dr. Rodenstein, its founder, and the Chief of its Medical Board. The trouble is said to be the result of an attempt by the matron to obtain and keep the upper hand. According to the *New York Herald*, Dr. Rodenstein, at a recent meeting of the Board of Managers, was deprived of the honorary title he had held for thirty years of Chief of the Medical Board. "It was decided that a member of the Medical Board was not eligible for membership in the Board of Managers, which was another rap at the doctor. This so incensed Dr. Rodenstein that he forwarded his resignation to the Board. Thirty of the members of the Board of Managers and Ladies' Association, on learning of the doctor's resignation, tendered theirs also. The hospital was started thirty-four years ago as a dispensary by Dr. Rodenstein, who has contributed \$12,000 to its support and presented it with the lots on which the hospital stands. J. Hood Wright helped build a large building. The name of the hospital was changed last October to the J. Hood Wright Memorial Hospital, at the request of Mrs. Wright, who pays \$6,000 a year of the \$25,000 that it takes to support the institution."

THE DIRECTORS OF THE NEW BRITAIN GENERAL HOSPITAL have purchased a site for that institution at a cost of \$20,000. —Theodore Sargent, M.D., of Garrett, Ind., has been appointed surgeon of the La Fayette, Ind., Soldier's Home.

Detroit Notes.

THE DETROIT MEDICAL and Library Association at its regular meeting Monday, January 13, was entertained by Dr. W. R. Chittick who read a paper entitled, "The Effects of Heart Strain on the Tricuspid Valves."

AT THE REGULAR MEETING of the Wayne County Medical Society held January 16, Dr. Arthur Bennett read a paper on "Permanent Permeability of the Foramen Ovale," and exhibited a patient.

HEALTH OFFICE REPORT for week ending Jan. 18, 1896. Deaths, under five years 41, total 91. Births, male 42, female 51, total 93. Contagious diseases: Diphtheria, last report 28, new cases 17, recovered 16, died 2, now sick 27. Scarlet fever, last report 18, new cases 9, recovered 8, died none, now sick 19. Smallpox, last report 2, new cases 2, recovered 1, died none, now sick 3. Measles, last report 1, new cases none, recovered 1, died none, now sick none.

THE BOARD OF TRUSTEES of Harper Hospital at their annual meeting appointed the following Medical Board for 1896: J. H. Carstens, Chief of Staff. Consulting surgeons: Theo. A. McGraw, Donald Maclean. Attending surgeons: Daniel LaFerte, H. O. Walker, J. K. Gailey, E. T. Tappey. Consulting physicians: C. A. Devendorf, Chas. Douglass. Attending physicians: Geo. Duffield, J. J. Mulheron, W. R. Chittick, D. S. Campbell. Consulting oculists: L. Connor, Geo. E. Frothingham. Attending oculists: Geo. E. Frothingham, Jr., Don. M. Campbell. Consulting neurologist: David Inglis. Attending neurologists: J. E. Emerson, C. W. Hitchcock. Dermatologist: A. E. Carrier. Laryngologist: E. L. Shurly. Gynecologists: H. W. Longyear, J. H. Carstens, W. P. Manton, Helen F. Warner. Microscopist: E. H. Sargent. Consulting pathologist: Henneage Gibbs. Assistant surgeons: W. G. Henry, F. B. Tibbals. Pathologist and curator: P. M. Hickey. Junior surgeon: Angus McLean. House physicians: C. W. Barrett, B. R. Shurly, A. D. McLean, Henry H. Kuhn. Polyclinic staff: Director—H. R. Varney: General medicine—Hedley Williamson, E. G. Knill: Surgical diseases—L. E. Schell, R. T. Farrand: Nose and throat—W. S. Anderson, H. A. McEachren: Eye and ear—G. L. Renaud, George Suttie: Diseases of women—Emma D. Cook, Anna J. Clapperton, John N. Bell: Nervous diseases—W. J. Senkler: Skin diseases—H. R. Varney.

Louisville Notes.

ERUPTIVE HOSPITAL. In accordance with a resolution passed at a recent meeting of the general council, the resignation of the Roman Catholic Sisters in charge of the Eruptive Hospital has been requested and received. The Sisters have been in charge of the hospital for five years. The Board of Public Safety has appointed Dr. C. T. Pope as superintendent, with a salary of \$75 a month. The superintendent is empowered to hire competent nurses when any cases of contagious disease are admitted.

CITY PHYSICIAN.—Dr. Hugh McCullough, the late coroner of Jefferson County, has just been appointed by the Board of Public Safety as City Physician to the eastern district, vice Dr. Forst resigned. The position pays about \$75 a month.

CENTRAL KENTUCKY MEDICAL SOCIETY. This Society held its annual meeting in Danville, Ky., on January 15 and 16. The following officers were elected: President, Dr. James B. Kinnaird, of Lancaster; Vice-president, Dr. G. E. Davis, of Salvisa; Treasurer, Dr. W. D. Powell, of Harrodsburg; Secretary, Dr. Steele Bailey, of Stanford. The next meeting will be held in Stanford the first week in April. Dr. T. C. Evans, of Louisville, was in attendance and read a paper on "Cancer of the Tonsils."

GWYNN.—"Doctor" Gwynn has been arrested in Bardstown, Ky., upon the instigation of Drs. Hill and Blincoe, for practicing without a license or diploma. He has been arrested before on the same charge, and was practicing under the name of Guyann. He was committed to jail in default of bail of \$100.

DR. RAMSEY.—Dr. M. C. Ramsey, formerly of this city, died

at his home in Lexington, Ky. He was born near Madison, Ind. seventy-two years ago. In early life he was a practicing physician, but deciding to adopt a commercial career, he came to this city in 1853, and was for twenty-six years one of the leading jewelers. Later he moved to Lexington, Ky. where he resided until his death. His remains were brought here for burial.

DR. JESSEE. Dr. John Jessee has been elected Professor of Physiology in the Central Normal College at Waddy, Ky. The appointment is a well-merited one.

DEATH REPORT. The condensed statement of mortality prepared by Health Officer White, for the past week, shows a total of 50 deaths, being 10 less than the previous week. Pneumonia caused 8 deaths.

CONTAGIOUS DISEASES. The ordinance looking to the prevention of contagious diseases having been passed by the general council and approved by the late mayor, Henry S. Tyler, is now in effect, but as yet all physicians of the city are not cognizant of it. The law requires that the notice should be sent to the health officer, over the signature of the physician attending. The health officer complains that physicians notify him over the telephone which is contrary to the law.

BARBOUR. Dr. John Ford Barbour died at his residence in this city on January 16, of acute pneumonia, after an illness of four days.

Cincinnati Notes.

THE MORTALITY report for the past week gives: Croup 2, diphtheria 5, measles 7, typhoid fever 4, other zymotic diseases 8, cancer 2, phthisis 9, other constitutional diseases 2, apoplexy 2, Bright's disease 2, bronchitis 6, convulsions 3, meningitis 7, peritonitis 2, pneumonia 17, other local diseases 28, violence 4, under 1 year 15; all causes 117; annual rate per 1,000 18.10. Corresponding week 1894, 125; 1893, 134.

FOUR CASES of measles in adults presented themselves at the Cincinnati Hospital last week.

THE PRESBYTERIAN HOSPITAL for Women and Children has had a donation of \$20,000, from Mrs. Alexander McDonald to wipe out the existing debt.

DR. LINCOLN MUSSEY was married on the 7th to Miss Judith Culvert of Cincinnati.

FRANK AUZERNE has been appointed steward of the First Regiment O. N. G., to succeed Dr. Otto Reum, who has located in Los Angeles, Cal., on account of poor health. Mr. Auzerne has served two enlistments in the U. S. Army as Hospital Steward.

DR. JOHN C. OLIVER has been appointed a member of the Board of Examining Surgeons of the police department vice Dr. N. P. Dandridge resigned.

JAMES SHERLOCK has been appointed superintendent of the Branch Hospital or "Pest House."

DR. MARSHALL H. KEY has located in the Nean building, and also announces the opening of the Highland Sanitarium.

DR. FERD. H. HUELSMANN met with a serious accident last week by falling through an open trap door leading to a drug store cellar. He sustained a broken nose, several severe bruises of the head and internal injuries.

THE REPORT of the Cincinnati Hospital shows that the recent smallpox epidemic necessitated the expense of \$449.49 in improvements and \$3,938.37 for the care of patients, cleansing and disinfecting the buildings of the Branch Hospital. There were 143 cases cared for. The expenses of the hospital for the year were \$109,359.96.

THE APPROPRIATIONS of the State for the past year were as follows: Board of Health, \$8,000. Dairy and Food Commission \$25,100. State Hospitals: Athens, \$142,585.78, Cleveland \$157,350. Columbus \$181,100. Dayton \$128,200. Longview \$35,000. Massillon \$50,000. Toledo \$174,650. Epileptic hospital at Gallipolis \$138,100.

A CURIOUS CASE was discovered at the morgue last week by

the coroner, who being called there to investigate a case of an infant which had died under somewhat peculiar circumstances within twenty-four hours after birth, found that the upper jaw contained a completely developed set of teeth.

THE STATE BOARD of Health are endeavoring to obtain a better system of vital statistics, and their annual report says: "No one knows the number of deaths or the number of births that occurred in Ohio during the past or any other year. Thousands die and thousands are born of whom no official record is made or can be obtained. Crime is made easy, the settlement of estates and legacies difficult, and a study of the causes of death and means for their removal impossible from the lack of such records."

Regarding smallpox it says: During the year there appeared, at Cincinnati, 143 cases; Cleveland, 17 cases; Bridgeport, 16 cases. It was also present at Toledo, Columbus, Mansfield, Lima, Martin's Ferry, Peace Township, Belmont County; Gallipolis Township, Gallia County; Deerfield, Wellington, Addyston, Westwood, Williamsport and Ridley."

SALEM, OHIO, has just had a smallpox scare.

THE CASES of smallpox at Martin's Ferry are all doing well and the quarantine has been raised.

DR. J. A. CULVER, the gold-medal graduate of the Ohio Medical College class of 1874 died December 20, from the excessive of morphin.

AT THE MEETING of the Academy of Medicine January 6, Dr. Julia W. Carpenter read a paper on the open-air treatment of pulmonary consumption. The amendments to the constitution were also brought up for final reading and were passed. The principle change being that, in the future, amendments to the constitution can be voted upon after the proposed change has been read three times with an interval between of not longer than two weeks instead of the requisite three months between the first reading and the voting as heretofore.

St. Louis Notes.

WEEKLY REPORT OF HEALTH OFFICE.—Total number of deaths for the week ending January 18, 187, compared with 189 for the preceding week, and 158 for the corresponding period of 1895. Births reported, 208.

CONTAGIOUS DISEASES.—Reported during the week ending January 18, diphtheria, 58 cases, 13 deaths; croup, 8 cases, 4 deaths; typhoid fever, 6 cases, 2 deaths; measles, 36 cases, 1 death; whooping cough, 3 cases, 1 death; scarlatina, 9 cases.

ST. LOUIS MEDICAL SOCIETY. At the regular meeting January 18, the announced scientific program consisted of a paper on "Infiltration Anesthesia" by Dr. Bransford Lewis.

BURT G. WILDER, of Cornell University, gave a lecture Wednesday evening, January 15, at the St. Louis Medical College on the occipito-parietal fissure: on Thursday he addressed the students of the Marion-Sims College of Medicine on the utility of dissection of the lower animals as an introduction to the study of human anatomy.

THE STATE BOARD OF PHARMACY held its examination on January 13 and 14. Ninety-one candidates presented themselves and thirty seven passed.

THE STATE BOARD OF HEALTH and the medical colleges have furnished the most fruitful source of medical gossip during the week. At the meeting of the Board on the 6th inst., the matriculates of all the medical schools of the State were passed upon and measured by the rule of the Board requiring an increased standard of preliminary education. The reports that have since become current have caused in some instances freely expressed indignation, and charges of jealousy and favoritism have been openly reported. In all instances where students were found deficient under the sworn statement of the faculty the students, as well as the faculty, were notified that they had failed to come up to the requirements of the Board, but that they could present reasons to the Board why their names should be continued on the college list. The following gives a

list, approximately correct, of all the matriculates submitted to the Board, with number of those rejected;

Colleges.	Matricu- lates.	Notifica- tions.
Barnes Medical College	139	101
Marion Sims College of Medicine	273	7
Ensworth Medical College	23	2
American Medical College, Eclectic	47	0
Medical Department State University	48	0
Missouri Medical College	98	13
Central Medical College	19	1
St. Louis Medical College	30	7
Kansas City Medical College	45	13
Homeopathic Medical College	8	0
St. Louis College Physicians and Surgeons	86	13
Beaumont Hospital Medical College	38	5
Woman's Medical College and Hospital Asso- ciation	1	0
Total	855	162

These figures do not show the entire attendance, but they give an approximate idea of the relative attendance at the various schools. The most disturbing factor in the matter is the necessity of the Board to reject certain matriculates found in some schools that had been already rejected at other schools for lack of qualification. The Board is worthy of all support in its effort to elevate the standard of students, and it is to be hoped that no combination of influence will prove effectual in opposing it in its good work. Such a step as this will go far to overcome the prejudice that has been fostered against St. Louis as a center of medical teaching.

Philadelphia Notes.

THE TWENTY-SIXTH ANNUAL MEETING of the Jefferson Medical College Alumni Association was held on the 18th inst., Dr. E. E. Montgomery, President, in the chair. He congratulated the members upon the fact that through their efforts "the college had been reorganized, the faculty salaried, the institution made partaker in the profits of its success and relieved from the stigma of being a coöperative institution for the benefit alone of its faculty." Since the last meeting of the Alumni Association the chair of ophthalmology had been established in just recognition of the long and arduous services of Professor Thomson in the clinical work. The chair of pathology has been established with a salary equal to that received by any other professor in the school. This chair has been filled by the trustees by the election of Dr. George Dock, now Professor of Practice of Medicine in the University of Michigan. "After careful consideration the board of trustees and the faculty have decided that it would be unwise to remove from the central portion of the city, and consequently the large six-story building to the south of the college has been procured for additional laboratory and clinical purposes. The determination to remain at the present location and the increased needs to meet the requirements of a four years' graded course, demand increased expenditure. Both college and hospital buildings should be remodeled in order to meet modern requirements." The establishment of the new chair of pathology affords the Alumni Association an opportunity to demonstrate its ability to be of service to the institution. "To properly equip this department will require the expenditure of at least \$10,000. The production of this sum of money the Alumni Association should accept as their work."

After the conclusion of the address, a motion was adopted pledging the association to raise \$10,000 for the pathologic laboratory, and a committee was appointed consisting of twenty-five members to solicit subscriptions. The first subscription was made from the treasury of the association, \$100 being appropriated on motion of the treasurer, Dr. E. L. Vansant. The executive committee are authorized to prepare a medal to be awarded as the alumni prize for scholarship at the final examination, on commencement day. The officers for the ensuing year are as follows:

President: Dr. A. K. Minich, of Philadelphia.
Vice-Presidents: Drs. A. P. Brubaker, J. M. Barton, Orville Horwitz, G. A. Horn, of Philadelphia; W. D. Foster, Pittsburgh; H. H. Drake, Norristown; H. G. McCormick, Williams-

port; W. H. Hartzell, Allentown; J. K. Lineaweaver, Columbia; W. B. Lowman, Johnstown; Thomas Addis Emmett, New York; P. S. Conner, Cincinnati, Ohio; R. Beverly Cole, San Francisco, Cal.; Daniel Shock, Camden, N. J.; Jos. H. Chandler, Centreville, Del.; Thos. B. Camden, Parkersburg, W. Va.; Jas. P. Duckett, Anderson C. H., N. C.; Frank S. Love, San Antonio, Texas; Geo. C. Barton, Minneapolis, Minn.; J. T. Eskridge, Denver, Colo.; George C. Savage, Nashville, Tenn.

Chairman of Executive Committee: Dr. Hobart A. Hare.

Corresponding Secretary: Dr. R. J. Dunglison.

Recording Secretary: Dr. Frank Woodbury.

Treasurer: Dr. E. L. Vansant.

PERSONAL.—The friends of Prof. Horatio C. Wood will regret to hear of a serious accident which occurred on the 16th inst., while he was riding his bicycle on his way to his afternoon lecture at the University of Pennsylvania. In turning out from the track to avoid a car, he fell heavily and was run over by a carriage. It was found that he had received a scalp wound and contusions of the body, but apparently no bones were broken. He soon regained consciousness and was taken home. It is hoped that he will be out again in a few days.

ETHER ADMINISTRATION.—In order to avoid irritation of the nasal passages during ether inhalation (for which Dr. Gerster, of New York, has suggested the preliminary application of cocaine to the mucous membrane of the nose), Dr. Thomas G. Morton has adopted the original method of occluding the nostrils with cotton, thus obliging patients to inhale through the mouth. This method has been in use for a couple of weeks at the Pennsylvania Hospital and has been found to work well. It has the advantage that if it becomes necessary to promptly resuscitate a patient, the plugs can be taken from the nose and free ingress of air permitted. The comparative absence of struggling on the part of the patient is quite noticeable, and the anesthesia is accomplished with a minimum of ether. The combined method of administration of oxygen with ether was abandoned after considerable experience as being slow in causing anesthesia and wasteful of the anesthetic.

ACADEMY OF SURGERY.—At the January meeting of the Academy of Surgery the oration was delivered by Dr. J. M. Barton, who devoted his time principally to the consideration of some medico-legal relations of fractures. The subject proved so interesting that it was decided to devote the February meeting to a general discussion of it.

IMPURE AND ADULTERATED FOODS.—The report of the Department of Agriculture for the last nine months, which has just been completed, contains the results of the work of Secretary Edge in the analysis of food-stuffs. Some of the discoveries of the department are of general interest. Salicylic acid is largely used in the preparation of jams, jellies, catsup, etc. This has been forbidden by the French government to be used for such purpose, as it is considered to be dangerous to the public health. Table mustard is practically never pure; of powdered mustard, two-thirds of the samples were found to be adulterated. Ground spices are seldom pure. Many fruit jams, strawberry, raspberry, etc., consist principally of starch paste, flavored with a small amount of fruit. French peas contain an injurious amount of metallic salts. An aggressive campaign has been conducted against imitation butter, but the recent conviction of vendors of oleomargarine proves that it is still in the market, and the same is to be said of cider vinegar. The work of the department in enforcing the pure food laws has been followed by excellent results and proves its establishment to be in the interest of true economy, since the annual loss in adulteration in the State of Pennsylvania is not less than \$20,000,000 at a conservative estimate.

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer for the week ended January 11 is as follows: Number of deaths (stillbirths not included): White, 86; colored, 60; total, 146. Death rate per 1,000 per annum; White, 23.8; colored, 34.7; total, 27.6. Death rate per annum corresponding week last year, 21.3. The death rate for the District of Columbia took a sudden upward turn last week. There were 27 fatal cases of pneumonia and 22 died of consumption. Four deaths from typhoid fever were reported, and

2 from gripe. Infant mortality ran up to 37 of those under five years old, of which 26 were under one year of age. The hospitals reported 23 deaths during the week, and the coroner certified to 14 deaths. The births reported were 112, and 39 certificates of marriage were received by the Health Department.

HEARING ON MEDICAL BILLS. There was a hearing before the Senate committee on the District of Columbia at 2 o'clock on Monday afternoon on medical bills relating to the District of Columbia. There are four of these bills before the committee, two by Mr. Harris, to regulate the practice of medicine and surgery, to license physicians and surgeons and to punish persons violating the provisions thereof in the District of Columbia, and to provide for the incorporation and regulation of medical colleges in the District, and a third bill by Mr. Morrill relating to the testimony of physicians in the courts here. The hearing had special reference to Mr. Harris's bill to regulate the practice of medicine and surgery in the District.

TO PROVIDE FOR INEBRIATES. Mr. Roach has introduced in the Senate a bill to provide for the care of inebriates in the District of Columbia. It is similar to a measure introduced in the House of Representatives by Mr. Meredith on December 9.

TO PREVENT CRUELTY TO ANIMALS. A bill for the prevention of cruelty to animals in the District of Columbia has been introduced in the Senate by Mr. McMillan. It provides that no person shall perform any experiments on a living animal calculated to give pain to such animal, except subject to certain restrictions. Experiments by licensed medical practitioners may be performed, but the animals experimented on are to be placed under the influence of anesthetics until before they are revived. A first offense in the violation of this law renders the offender liable to a fine of \$150, and a second offense to a fine of \$200 or six months' imprisonment.

WANT MONEY FOR HOSPITALS. The representatives from the Hospital Boards of the Eastern Dispensary, Home for Incurables and the Central Dispensary and Emergency Hospital were given a hearing by the Sub-committee on Appropriations on the 18th inst. The claims of each were listened to with great interest and it is hoped that the institutions will receive what they asked for. They are all doing good and necessary work, and without doubt head the list of properly conducted medical institutions.

THE POST-GRADUATE MEDICAL SCHOOL. The Board of Trustees of the Post-Graduate School of Medicine held a special meeting on the 13th inst., to receive an important recommendation from the curriculum committee.

WASHINGTON MICROSCOPICAL SOCIETY. At the meeting of the Microscopical Society held on the 14th inst., Dr. V. A. Moore read a very interesting paper entitled "Morphology of Bacteria," and accompanied the paper with lantern slides.

MEDICAL SOCIETY. At the meeting of the Medical Society held on the 15th inst., Dr. Wm B. French read a paper entitled "The Malarial Organism with report of Cases." Dr. Gray exhibited by lantern slide some photo micrographs. The paper was discussed by Drs. Walter Reed, Kinyoun and others. This paper is second to none read before the Society and showed the practical work done by Dr. French at the laboratory and clinic at the Central Dispensary and Emergency Hospital. One of the cases was one of coma from acute malarial poisoning and it is believed to be the first case ever reported of the kind. Dr. J. E. Thompson presented the specimen of an extra uterine pregnancy at term, which he successfully removed from a woman about fifty years of age. The pregnancy was supposed to have taken place four years ago. The fetus and placenta were almost absorbed. Dr. Robt. Fletcher, U. S. A., formerly of the Columbia Medical School, has been elected an honorary member of the Society.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY. The 250th meeting of the Society was held on the 17th inst. Almost the entire evening was taken up with the discussion on Dr. Kelley's paper on "Fibroid Uterus and Pregnancy." Dr. Stanley, of the Garfield Hospital was an invited guest at the meeting. Dr. Van Rensselaer presented a disorganized appen-

dix with concretions which he had successfully removed. Dr. T. C. Smith presented a proscribed hollow mass which he removed from the uterus of a woman. It was referred to the microscopic committee for report. Dr. J. T. Johnson presented a uterus which he had removed per vaginam for cancer far advanced. Dr. Fry presented a uterus which had been performed as a result of abortion. The operation was followed by total suppression of urine for five days. He had reopened the abdomen to be sure the ureters were not included in the ligature. Sepsis was probably the cause of the suppression.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from January 11, 1896, to January 18, 1896.

Major Curtis E. Munn, Surgeon (Benicia Bks., Cal.), is granted leave of absence for two months, to take effect on or about Jan. 21, 1896, with permission to go beyond sea.

First Lieut. James M. Kennedy, Asst. Surgeon, is relieved from duty at Camp Merritt, Mont., to take effect upon the expiration of his present leave of absence, and ordered to Ft. Missoula, Mont., for duty.

Capt. James D. Glennan, Asst. Surgeon, leave of absence granted is extended one month.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the fifteen days ended January 15, 1896.

Surgeon G. W. Stoner, granted leave of absence for thirty days with pay, and not to exceed sixty days without pay, Jan. 15, 1896.

P. A. Surgeon W. J. Pettus, granted leave of absence for thirty days, Jan. 2, 1896.

P. A. Surgeon G. M. Magruder, leave of absence extended nine days, Jan. 2, 1896.

P. A. Surgeon H. T. Goodwin, granted leave of absence for sixty days, Jan. 4, 1896.

P. A. Surgeon A. C. Smith, directed to investigate relative to smallpox in Mississippi and Crittenden Counties in Arkansas, Jan. 14, 1896.

Asst. Surgeon C. H. Gardner, ordered to examination for promotion, Jan. 4, 1896. Granted leave of absence for thirty days, Jan. 15, 1896.

Asst. Surgeon J. A. Nydegger, ordered to examination for promotion, Jan. 8, 1896.

Asst. Surgeon H. W. Wickes, to proceed from New Orleans, La., to Memphis, Tenn., for temporary duty, Jan. 14, 1896.

RESIGNATION.

P. A. Surgeon H. T. Goodwin, resignation accepted, to take effect March 5, 1896.

Change of Address.

Akins, W. T., from 3433 Wabash Avenue to 180 Wilmot Avenue, Chicago, Ill.

Kerrigan, J. K., from 687 West Twenty-first Street to 1367 West North Avenue, Chicago, Ill.

Liliencrantz, A., from 819 Market Street, to 803 Sutter Street (corner Jones Street), San Francisco, Cal.

Von Rehm, E., from Chicago, Ill., to 59 West One Hundredth and Fifth Street, New York, N. Y.

LETTERS RECEIVED.

Armour & Co., Chicago, Ill.; Atchison, C. R., Nashville, Tenn. (2); Adams, J. Howe, Philadelphia, Pa.; Allen, William L., Davenport, Iowa.

Brinton, J. H., Philadelphia, Pa.; Blake, C. E. & Co., Chicago, Ill.; Battle & Co., St. Louis, Mo.; Bailey, Steele, Stanford, Ky.; Blech, Gustavus, Detroit, Mich.; Bartholow, Paul, Philadelphia, Pa.; Barker, D. H., Reedy Ripple, W. Va.

Clarke, The Robert Co., Cincinnati, Ohio; Castle, Wilmot & Co., Rochester, N. Y.; Carrick, John, New York, N. Y.; Cochran, Jerome, Montgomery, Ala.; Christison, J. Sanderson, Chicago, Ill.

Douglas, Richard, Nashville, Tenn.; Duclarme, George A., Detroit, Mich.

Engelmann, Rosa, Chicago, Ill.

Finley, G. W., Harmony, Ind.; Fest, T. T. B., Plank Road, Mich.; Fowler, W. S., Chicago, Ill.

Gibson, Albert L., New York, N. Y.; Garnett, A. S., Hot Springs, Ark.; Guild, William H. & Co., Boston, Mass.; Gardner, Thomas, Minneapolis, Minn.

Holmes, W. D., Belleville, N. J.; Hummel, A. L., Advertising Agency, New York, N. Y. (3); Hallopeter, J. S., Houston, Ohio; Horlick's Food Co., Racine, Wis.; Harvey, The G. F. Co., Saratoga Springs, N. Y.

Kelly, Howard A., Baltimore, Md.

Lemcke & Buechner, New York, N. Y.; Lee, J. Elwood Co., Conshohocken, Pa.; Lyford, W. H., Port Byron, Ill.

McFall, D. M., Mattoon, Ill.; McSwain, J. A., Paris, Tenn.; Morse, F. P., New York, N. Y.; Marchand, Charles, New York, N. Y.; Maltine Mfg Co., New York, N. Y.; Morse, Lyman D., Advertising Agency, New York N. Y.

Noble, Charles P., Philadelphia, Pa.; Nicoll, D. T., Kilbourn City Wis.; Neyman, E. H., Milwaukee, Wis.

O'Gorman, J., Baltimore, Md.

Parsons, H. J., Mansfield, La.; Pollock, R. M., Princeton, Ill. (2).

Rosenthal, J. M., Ft. Wayne, Ind.; Reynolds, F. R., Eau Claire, Wis.

Rueckensfeldt & Co., St. Louis, Mo.; Raeder, J. W., Wilkes Barre, Pa.

Robinson, J. R., Colorado Springs, Colo. (2); Robeson, T. J., Chicago, Ill.

Sklmer, D. M., Belleville, N. J.; Struch, Carl, Chicago, Ill.; Spalding Warren C., New York, N. Y.; Selbert, W. H., Steelton, Pa.; Subscription News Co., Chicago, Ill.; Seaman, Gilbert E., Milwaukee, Wis.

Throwbridge, J. B., Hayward, Wis.; Thorner, Max, Cincinnati, Ohio

Taylor, H. L., St. Paul, Minn.

Von Rehm, E., New York, N. Y.

Ward Brothers, Jacksonville, Ill.; Weber, A. H., Des Moines, Iowa

Whitford, William, Chicago, Ill.; Woman's Medical College, New York N. Y.; Whelpley, H. M., St. Louis, Mo.; Weidman, W. Murray, Reading Pa.

Yolton, J. L., Bloomington, Ill.

The Journal of the American Medical Association

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CHICAGO, ILL., FEBRUARY 1, 1896.

No. 5.

ORIGINAL ARTICLES.

A CASE OF GASTROTOMY FOR THE REMOVAL OF HAIR-BALL—RECOVERY.

Read at the Quarterly Meeting of the Iowa and Illinois Central District
Medical Society, Jan. 9, 1896.

BY WM. L. ALLEN, M.D.

DAVENPORT, IOWA.

The case I report is not only unique as regards the character of the foreign body found, but instructive from a physiologic standpoint, showing as it does the remarkable ability of the stomach to digest food in sufficient amount to maintain a fair degree of health, even under the most trying conditions.

Case.—Maggie Heinz, aged 16, was brought to me in November last by Dr. De Armand. She stated that she had felt a tumor in the region of the stomach for the past six months; felt more or less pain after eating, vomited frequently, lost weight during the last twelve months and had frequent attacks of diarrhea followed by constipation.

Further questioning elicited very little history that would throw light upon the case. Examination revealed a tumor in the epigastric region, oval in form and movable several inches to the right or left; it was as hard as bone at the right extremity, apparently, but painless on moderate pressure.

Vaginal examination revealed normal condition of pelvic organs; her age, condition and the trivial symptoms manifested, precluded the thought of a malignant tumor of such size and rapidity of growth. The extreme hardness at the right border precluded the diagnosis of a floating kidney or spleen, consequently I advised that an exploratory laparotomy be made to determine the character of the tumor and the removal of same if found feasible. She consented to this and was admitted to St. Luke's Hospital on November 23.

On November 25, assisted by Drs. Crawford, Hageboeck and De Armand, I made an incision in the median line between the ensiform cartilage and the umbilicus, and after opening the abdominal cavity found the stomach presenting directly beneath the incision, the entire viscus being compromised by the tumor. On grasping the stomach it was at once seen that it contained a foreign body which completely filled the cavity, and which appeared to be nine or ten inches in length and very hard at the pyloric end. The abdominal incision was then extended below the umbilicus in order to give ample room, and the stomach with the contents drawn through the incision.

An opening in the stomach was then made parallel to the greater curvature and passing nearly to the cardiac extremity. The muscular wall was found to be about three times the normal thickness and the mucous layer was likewise thickened greatly. On opening the latter the tumor was found to be a mass of hair completely filling and distending the stomach, and it was necessary to carry the incision still farther toward each extremity, about five inches in all, and the mass was with difficulty brought through the gastric incision. A very little mucus escaped through the wound. The mucous membrane was united with a continuous silk suture and the serous coat with sixteen Lembert sutures, also of silk.

The patient vomited once while the mucous layer was being sutured. The stomach was found free and very clean. After removing the hair-ball there was no escape of any contents into the abdominal cavity. The abdominal wound was united with silk and the operation completed in one and one-half hours.

There was no shock following the operation: on the contrary the patient recovered from the effects of the ether almost the moment she was in bed. She vomited and was given a hypodermic injection of one-half grain of codein at noon, and again at night. Temperature two hours previous to operation was 99 4-5; at 6 P.M. it was 101; at 9 P.M. it was 100 1-5; pulse 116.

November 26 she slept well. Temperature at 6 A.M. was 98. Later it rose to 99 4-5 and then dropped in the evening to 98 3-5; pulse 103. At 6 P.M. she was given six oz. pep. milk per rectum: nothing by the mouth.

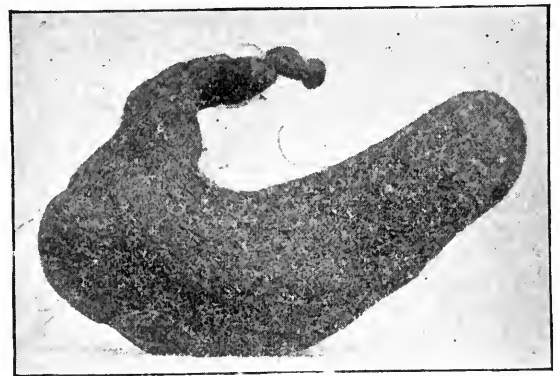
November 27, temperature at 6 A.M. was 98; pulse 98. At 6 P.M. temperature 100; pulse 79. She was given rectal injections of liquid peptonoids, which she retained, while the milk was expelled.

November 28 she slept well: retained liquid peptonoids per rectum given every eight hours. Pulse 70: temperature ranging from 98 to 99.

November 29 she slept well. Pulse 70: temperature 98. From this time on temperature remained at or below normal: pulse slow. Bowels moved every second day by enema.

December 1 she was given pep. milk by the mouth and complained of hunger. December 2, stitches were removed, union being perfect. December 9 she sat up. December 10 she was given solid food: no discomfort, but still hungry. December 20 she was discharged cured.

On questioning her after the operation as regards the hair-ball, she admitted that she had been in the habit of eating her hair ever since she was three years old, and up to two years ago. Had either bitten off, pinched or pulled out long ones, which she

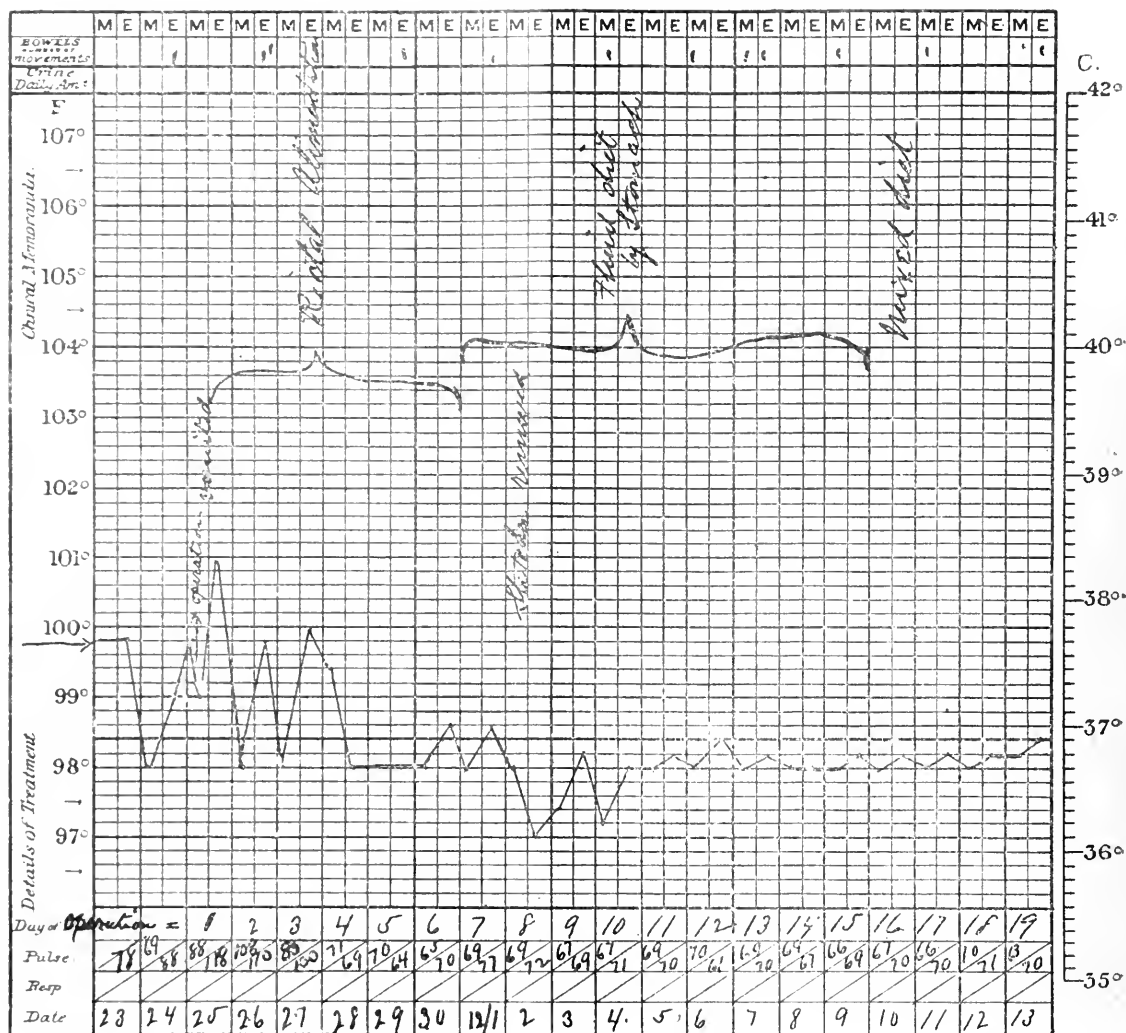


HAIR-BALL REMOVED FROM STOMACH.

rolled around her finger into a ball or loop and then swallowed; for the last five or six years she remembers to have felt the tumor which seemed to remain about same size as when it was first noticed. The appearance of the foreign body is shown by the photograph herewith.

Its dimensions are as follow: Diameter, cardiac to pyloric extremity, 9½ inches; entire length including duodenal part, 17 inches; circumference at pyloric extremity, 8½ inches; circumference at greater curvature, 8½ inches; circumference at cardiac extremity, 5½ inches.

The first authentic case of gastrotomy was done successfully 1602, by Florian Matthis of Prague removing a knife from the stomach of a juggler and since that time, so far as I can find from the records, there have been thirty-eight cases, with thirty recovered, six deaths, and two uncertain. There have undoubtedly been other cases and very likely more unfavorable ones are missing. There are also several



cases recently of gastrotomy as a means of entering the esophagus, with two very interesting cases reported by Richardson and Bull.

HISTORICAL.

1. 1602, Mathis, Prague, knife, recovery.
2. 1635, Schwabe, Königsberg, knife, recovery.
3. 1692, Wesener, Halle, knife, recovery.
4. 1720, Hubner, Rustenburg, knife, recovery.
5. 1786, Frizac, Toulouse, knife, recovery.
6. 1819, Cayroche, knife, recovery.
7. 1822, Reynaud, Grenoble, knife, recovery.
8. 1823, Bertherand, spoon, recovery.
9. 1826, Fidei, Riva, fork, recovery.
10. 1848, Tilanus, Leiden, fork, death.
11. 1855, Bell, Davenport, bar of lead, recovery.
12. 1856, Gluck, laryngeal probang, death.
13. 1856, unknown, fork, recovery.
14. 1857, Bouchet, Lyons, fork, result unknown.
15. 1858, Hohlbeck, Wodkinsk, fork, death.
16. 1875, Labbe, fork, recovery.
17. 1880, Fleury, S. America, fork, recovery.
18. 1880, Bille, sponge and wire, death.
19. 1880, Felizet, spoon, recovery.
20. 1882, Hashimoto, Japan, tooth brush, recovery.
21. 1882, Schönborn, Königsberg, hair ball, recovery.
22. 1883, Kocher, Berne, probang, recovery.
23. 1883, Giessenbauer, Prague, sword blade, death.
24. 1883, Thornton, London, hair ball, recovery.
25. 1883, Gerard, Bourguell, a piece of wood, recovery.
26. 1885, Billroth, Vienna, set of teeth, recovery.
27. 1885, Credi, Dresden, set of teeth, recovery.
28. 1886, Bernays, St. Louis, knife, recovery.
29. 1886, Polakoff, Paris, fork, recovery.
30. 1886, Richardson, Boston, set of teeth in esophagus, recovery.

31. 1887, Bull, New York, stone in esophagus, recovery.
32. 1887, Loretta, Bologna, needle, recovery.
33. 1888, Berg, Stockholm, hair-ball, recovery.
34. 1889, Witte, Mt. Pleasant, fork, recovery.
35. 1889, Lowson, Bath, skewer, result unknown.
36. 1891, Richardson, Boston, safety-pin, recovery.
37. 1893, Cant, Lincoln, razor, death.
38. 1885, Allen, Davenport, hair-ball, recovery.

Total 38 cases; recoveries 30; deaths 6; unknown 2. The foreign bodies were found to be as follows: Forks 11 cases; knives 6 cases; hair-balls 4 cases; set of teeth 3 cases; spoons 2 cases; probangs 2 cases; needles or pins 2 cases; peach-stone 1 case; tooth-brush 1 case; piece sword blade 1 case; sponge and wire 1 case; skewer 1 case; piece of wood 1 case; bar of lead 1 case; razor 1 case.

Instances of hair-ball I find recorded as follow: In 1882, Schönborn, Königsberg, reported to congress of German surgeons at Berlin a case of gastrotomy for the removal of hair-ball from a young girl. She had been in the habit of biting off her hair. A tumor was found in the left side of the abdomen and was supposed to be either spleen or floating kidney.

In 1883 Knowsley Thornton, London, reported a similar case in a girl of 17 who was in the habit of swallowing the combings of her hair, from whom he removed a mass nine inches long.

In 1888 John Berg reported having removed a hair tumor from a patient in Stockholm. An exploratory operation was made and the mass found in the

stomach, which was opened and the hair removed in pieces. The patient denied having swallowed any hair since childhood. All of these cases recovered.

In 1891 Von Bollinger reports the case of a girl of 16 years who complained for three or four years of pain and vomiting, which so increased that she died. Before death, however, the tumor was discovered and a malignant growth of stomach was diagnosed. The autopsy revealed the stomach and duodenum very much enlarged, being about twenty inches in length, packed with hair, which extended down to the duodenum, resembling in shape the specimen now before you which also extended some three inches into the duodenum and is nine and one-half inches in its longest diameter and weighs one pound, seven and one-half ounces.

Poulet (*Foreign bodies in Surgery*, N.Y., 1880) gives the following cases not enumerated above: 1602, Crollins, knife; 1613, Guenther, penknife; 1635, Shoal, knife, 6½ inches long.

A surgeon-major at Nîmes, Fr., spoon. Duplay and Reclus (*Traité de chirurgie*, 7, vi., Paris, 1892) give the following additional cases: 1889, Terrier, fork; 1889, Périer, teaspoon; 1891, Heydenreich, spoon.

BIBLIOGRAPHY:

Richardson, *Boston Medical and Surgical Journal*, 1886. Sajous, *Annual of Universal Medical Sciences*, 1888-1894. Ashurst Inter. *Encyclopedia of Surgery*, Vol. V. Von Bollinger, *Deutsche med. Zeitung* September 1891.

HIGHER EDUCATION FOR PHARMACISTS.

Read in the Section on Materia Medica and Pharmacy, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY PROF. JOSEPH P. REMINGTON.

PHILADELPHIA, PA.

The AMERICAN MEDICAL ASSOCIATION has a deep interest in the education of the pharmacist; with improved methods and extended courses in the great medical schools, with the practices of medicine and pharmacy ever widening and developing, it must follow that better education for the pharmacist and more of it is imperatively demanded.

The first organized effort in America to instruct those who had entered the drug business resulted in the establishment of the Philadelphia College of Pharmacy in 1821; since then colleges have been established in New York, Baltimore, Boston, Brooklyn, Buffalo, San Francisco, Chicago, Cincinnati, Cleveland, Kansas City, Louisville, Toronto, Montreal, Washington, Pittsburg, St. Louis, Iowa City, St. Paul, Lawrence (Kan.), Ann Arbor (Mich.), Madison (Wis.), Atlanta, Albany, Newark, Columbus, Ada (Ohio), Lebanon (Ohio), Lafayette (Ind.), Richmond, Scio (Ohio), New Orleans, Nashville and Detroit. The first years of all of these institutions were struggles for existence; the difficulties which were encountered were serious, and if it had not been for a little band of faithful self-sacrificing friends of education, the efforts would have died from lack of appreciation. In looking back to these early days and in considering the educational work of the present, one remarkable fact stands out so prominently that it can not be overlooked—the elevation of pharmacy has been due almost entirely to the unaided efforts of pharmacists themselves, for the desire for self-improvement has been the motive which gave life in the early struggles and which to-day successfully supports the work.

Seventy-five years ago, all that was deemed necessary to qualify one to practice pharmacy was a cer-

tain number of years apprenticeship to the owner of a shop who had acquired his knowledge as he best could, by picking it up from an older person and from the few books which were then accessible. It is a surprising fact that not a single college has ever been endowed, and up to the present time practically nothing in the way of bequests from philanthropic friends of education has been received for these colleges. They are supported almost entirely by the fees of the students, and none of these students are compelled to enter the colleges to acquire an education, but attend solely because they realize the value of systematic technical knowledge in aiding them in the practice of their profession. Millions of dollars have been poured into the coffers of the great universities and medical schools to carry on their work, by public spirited citizens, and State aid is often secured for them, but while every one must recognize that general education is of the highest importance in developing our race, it is an astounding fact that pharmacy, which every one admits demands education of a special character and of a high order, has been left without any material assistance from public-spirited citizens outside of the profession itself; and this in the face of the evident proposition that this special education is primarily for the security of the public and the saving of human life.

The public mind is filled with horror and the editorial ink of the newspapers of the land is lavishly spent, when an unfortunate error in compounding a prescription sacrifices a life. But in the writer's knowledge never once has the editor of a public paper advocated the endowment of institutions of learning for the education of those members of the community into whose hands the safety of the lives of the public is committed. At the present time the buildings, property and equipment of the forty educational institutions for teaching pharmacy amount to several million dollars, and the credit for establishing and carrying forward this work must be given to whom it belongs, "the pharmacists themselves."

Of late years, pharmacy laws have been passed in nearly every State in the Union, but these laws differ in one essential particular from those which guard the practice of medicine. In the latter case the State board of medicine compels the candidate to show evidence that he has been systematically educated in a medical college, by requiring him to produce a diploma and then forcing him to pass an examination before a State board, but no pharmacy law has ever been passed in this country which compels a pharmacist to be a graduate of a college of pharmacy, before passing an examination. The pharmacist is permitted to practice and conduct a drug-store, if he passes successfully a State board examination. In some of the States these examinations are of a most trivial and imperfect character, and this condition of affairs has resulted in giving a legal standing to a large majority of those practicing pharmacy to-day, who have never been systematically educated at a college or university, and many of those who once secure their license to practice from the State board, stop there and never take the time, nor undergo the expense of obtaining a college diploma; in other words "they get as little as the law allows." But notwithstanding these adverse circumstances, the colleges of pharmacy are crowded and the facilities of many taxed to the utmost to give their students as thorough an education as is possible, thus proving

that the better class acquire knowledge solely for its recognized value. When the colleges in their early days were hampered by lack of means and by the struggle for existence, many of the apprentices were encouraged by their preceptors to stay away from the colleges, because of the argument that the preceptor could teach them more pharmacy behind the counter, than the college professor could from the lecture table; but this idea, although still prevalent in some localities, has largely given way since the colleges have proved their "reason for being" through the results which have been accomplished, and the student himself now feels that he can acquire a better knowledge of the underlying principles of his profession by availing himself of systematic instruction in the colleges, and moreover by supplementing this by drug-store experience. The immense additions to the materia medica and the enormous exploiting of new remedies have largely added to this condition, and we thus have an explanation of the general prosperity of these institutions. But there has also come with this, a deeper sense of responsibility on the part of the colleges and a sure determination to broaden and strengthen the foundation and to add to the superstructure, while at the same time demolishing that which has become superannuated or has outlived its usefulness.

In the demand for higher education it must ever be recognized that thoroughness in the essentials must never be sacrificed, and hence better methods for grounding the student in the underlying principles of every day practice have the first care. Renewed attention is continually directed toward preliminary education. The key to this subject is unquestionably found at the very beginning. The practice of pharmacy fortunately permits the acquiring of pharmaceutic knowledge during the novitiate of the student; the student of pharmacy has a great advantage in being able to labor at his profession, not only between the college courses, but while in actual attendance upon the lectures, and much instruction can be obtained from an intelligent and willing preceptor; and although the college may afford all of the facilities at its disposal, the daily and hourly contact with the preceptor exercises an influence for life upon the plastic mind of the tyro. The importance of only engaging such assistants, as have already shown that they possess a good English education, is of the utmost value. While it is true that we may have embryo Elihu Burritts still in existence, they must ever prove the exception and the preceptor who stamps his own individuality upon his assistants must see to it that the material which he is to mold and fashion should be suitably prepared to receive the instruction. If this be not done, the student entering college and mingling with his fellows is seriously handicapped, if not absolutely discouraged, by the difficulty of beginning a work late in life which should have been completed before entering a pharmacy.

The pharmacist must ever be the intelligent coadjutor of the physician, and yet it is recognized that preliminary education is the burning question in our medical schools, and is even of greater importance in this connection. In the higher education of the colleges of pharmacy laboratory instruction plays an important part, and it is in this direction that the future looks most promising. It is not intended by this to convey the impression that didactic instruc-

tion should be superseded, for there are a multitude of facts in pharmacy which can be impressed upon the minds of a hundred students at one time in the hearing of all, just as easily as upon one personally in the laboratory, but when didactic instruction is supplemented by the practical and personal performance of technical work in the laboratory, the significance of facts is vastly enhanced, and a familiarity in the actual handling of apparatus is secured.

The extension of college work to three full courses extending over three years has now become necessary to adequately embrace the consideration of all the greatly extended subjects of the lectures, and laboratory courses.

The physician who looks upon the druggist merely as a purveyor of drugs and considers that his duty is fulfilled when he can simply supply patients with the medicine that he has prescribed, will doubtless in the future awake to the fact that he can call upon an intelligent pharmacist to originate a special preparation in order to combat a certain disease; to analyze various products which have given unsatisfactory results, to accurately perform urine analysis, or to make a microscopic investigation which will lead to important results. Thousands of pharmacists to-day possess the necessary qualifications to thus aid the physician, and with the hearty assistance of the medical profession in the true scientific spirit of recognizing truth wherever it is found and in that broad liberality which casts aside prejudice and preconceived notions, the higher education of the pharmacist must be eagerly welcomed by the lovers of real progress in the medical profession.

INTRODUCTION OF LEPROSY INTO NOVA SCOTIA AND THE PROVINCE OF NEW BRUNSWICK. MICMACS IMMUNE.

BY ALBERT S. ASHMEAD, M.D.

LATE FOREIGN MEDICAL DIRECTOR TOKYO HOSPITAL, JAPAN.
NEW YORK.

Mr. Stansbury Hager, in an article entitled "Micmac Customs and Traditions," in the *American Anthropologist*, January, 1895, suggests the possibility of some connections between the Micmac tribes of Nova Scotia and the Mayas; these are the pre-Columbian game of Woltstömikwon, and the peculiar signification for the division of time of certain numbers in the same game, with both nations. There is also the signification of the arrow in this same game, among the Tiahuanacos of Bolivia and in the myth of the Navajo story of the Apaches. Similar mystic resemblances are found in the serpent dances and the Pleiades of these different nations, in Yucatan, Peru, Mexico, etc.

In a note to my article "Pre-Columbian Leprosy" (*JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, April, May, June, 1895), I suggested the possibility of an Indian migration from the Southwest, and intimated that if leprosy was pre-Columbian in Mexico and Peru, the leprosy of the Northeast might have its origin by immigrations from the Southwest of North America.

Speaking of this note, Mr. R. G. Haliburton, the well-known authority on the Micmacs, and founder of the Nova Scotia Institute of Science, says:

There is no connection between the Mayas and the Micmacs. What may have been regarded as some evidence was even more applicable to three-fourths, or rather nine-tenths of the North-

ern tribes. . . . I never heard that there was leprosy among the Micmacs. Still, that does not in the least prove it does not exist. But it does among the Acadians who live on or near the Bay de Chaleur at the mouth of the river St. Lawrence. You of course know the lazaretto at Tracadie, New Brunswick.

Strange to say, there are more lepers among the Acadians in Louisiana than any other race of their numbers. There are also a certain number of idiots, which may indicate a racial degeneracy. You have perhaps seen my paper on "Survivals of Dwarf Races in America." I suggest that idiocy among the Mexican dwarfs and those of the Pyrenees is the result of a race dying out, a race of hunters no longer able to get flesh food.¹

I also find among the Louisiana Acadians, that in Old French (perhaps it is so in modern French) the word cretin has no significance connected with goitre. It is a contemptuous word meaning merely a dwarf in mind and body—a stupid little man.

I may add that the Acadians are smaller than the people of Quebec, many of them not exceeding five feet in height. I have never heard that leprosy has been found in the Province of Quebec. But my ignorance on that point argues nothing, as I have never specially looked into the point, a *sine qua non* for an opinion worth anything.

Negative evidence in such matters is almost worthless. I do not think there is leprosy among the cretins of the Alps or Pyrenees.²

But cretinism and leprosy seem to belong to diseases caused by degeneracy.

He says in another letter:

I doubt the existence of leprosy among the Micmacs, and fancy they and the French Acadians have been mixed up together by some inquirer on whom you depend.

Dr. A. C. Smith, superintendent of the Leper Asylum, Tracadie, Province of New Brunswick, writes me:

Leprosy exists in Nova Scotia only in the descendants of highland Scotchmen who emigrated in the early part of this century. There is no leprosy in the Acadian families, and none in the Micmacs.

There is no cretinism, no goitre, etc., in the province, so far as I have been able to learn. None in the families of the Acadian lepers of New Brunswick. The lepers of New Brunswick are degenerated French.

I have addressed the following letter to Dr. D. McN. Parker, a leading physician, and one of fifty years' experience, and to the Rev. George Patterson, D.D., who has written largely on local history, and has given considerable attention to the study of local archæology, both of Nova Scotia:

NEW YORK, Aug. 24, 1895.

Dear Sir:—Dr. J. G. MacGregor, Secretary of the Nova Scotian Institute of Science, Halifax, refers me to you for information on the subject of the origin of leprosy in Nova Scotia. I am interested in the subject of pre-Columbian leprosy, and take the liberty to inclose in another envelope a reprint of an article of mine on that subject. The final note in that article refers to an opinion of Mr. Stansbury Hager, that the Micmacs came from the southwest of America, and therefore must have been in relation with the oldest leprous races on this continent. Mr. R. G. Haliburton entertains opposite views, and contends that the Micmacs neither came from the southwest nor were ever lepers. Leprosy came with the French Acadians. Dr. Smith, of Tracadie, contradicts Mr. Haliburton. According to this author, the Micmacs were not lepers, neither is there any leprosy in the Acadian families: that leprosy in Nova Scotia is found only among the descendants of Scotch highlanders. Haliburton has published a very entertaining paper on the survivals of dwarf races in the New World. He believes that cretinism and leprosy belong to diseases caused by degeneracy. "There is," he says, "a certain

amount of idiocy among the French Acadians of Louisiana: moreover the Acadians are smaller than the people of Quebec, many not exceeding five feet." Among Mexican dwarfs and those of the Pyrenees, according to the same authority, idiocy is evidently the symptom of the decay of a race.

Dr. Smith, the leprologist of Tracadie, says: "There is no cretinism and no goitre in the Province of New Brunswick. None in the families of Acadian lepers in New Brunswick. The lepers in New Brunswick are degenerated French."

I myself have ascertained that among the lepers of Colombia (25,000) goitre is exceedingly prevalent.

You will see, by the enumeration of these facts, the drift of my research. Did leprosy exist in Nova Scotia among the Micmacs and was the country affected before the arrival of either Acadians or Scotchmen? Is leprosy an indication of decadence, as the goitre or cretinism seem to indicate?

I shall be very much beholden to you, if you will dispose in my favor of such experience and knowledge as you have acquired in this matter. Yours truly,

ALBERT S. ASHMEAD.

Reply of Dr. Parker:

DARTMOUTH, N. S., Sept. 5, 1895.

DR. ALBERT S. ASHMEAD, Dear Sir:—I beg to acknowledge the receipt of yours of the 24th ult., and to say in reply, that I have never met in my practice, as a medical man during the past fifty years, a single case of leprosy; and, while Halifax has been the center of my work, I have traveled all over Nova Scotia to visit cases of sickness, in consultation with other medical men.

I have never heard of a case of leprosy in the Micmac tribe of Indians—the only tribe we have in our Province. I think the Scotch, a very large portion of our population, are free from it, except in one locality—Lake Ainsley on the Island of Cape Breton, where it is said to exist.

I have written to Dr. Gunn, a practitioner in that locality, to inform me as fully as possible concerning the matter; I have also communicated with Dr. McDonald, the leading practitioner in Antigonish County which is almost entirely settled by Scotchmen, from the Highlands of old Scotland, and with Dr. Perrin of Yarmouth, in which county there is a comparatively large number of French inhabitants.

I have also requested the authorities of the Provincial Secretary's office to furnish me with all reports, if any, that may be on file in that department, bearing on the subject. As soon as I get replies from my medical friends, and a report from the Provincial government, I will communicate the information to you. In the meantime I remain,

Yours truly,

D. MCN. PARKER.

Reply of Rev. Dr. Patterson:

NEW GLASGOW, N. S., Sept. 4, 1895.

Dear Sir:—I received your note of the 24th ult., and also your pamphlet on pre-Columbian leprosy, for which I am much obliged. I have been interested in what you have written, but was somewhat surprised by the assertion in the note at the close, that leprosy was endemic in Nova Scotia. It will be news to most, and even to many of our doctors, that it exists at all for it is only recently that it has been discovered, and then only in one remote and small settlement in the island of Cape Breton. There it was introduced by a man named Macarthy, an Irishman, and it has spread through his family connection. Occasionally a case appears in a neighboring settlement, but always of one who has been connected in some way with the family. I am not sure whether there are any cases where the disease has been contracted by mere contact, or whether there has been some relationship, but generally it is by the latter. It is almost entirely confined to that family or to those intermarried with them. But the people around have an idea of the nature of the disease, and now avoid contact with them. So connected is it with that family that the people call it "the Macarthy." I have not seen an official report of the case, but you may be assured that this is the only case where it has been known to exist in Nova Scotia, and it is only recently that it has been brought to light. I should have said that the Macarthys are a very poor family.

As to the question of its being among the Micmacs, I have to say that there is all the evidence that can be got to establish a negative to show that it never has existed among them. The early French explorers who came in contact with them, and have written of their condition and customs. Cartier, Champ-lain, Lescarhot, Denys, etc., make no mention of anything of the kind. From the time of the English coming into possession, the government had official dealings with them, relieving their wants so and in such a way that if there had been anything of the kind, it must have come under the notice of the officials. But all the researches of myself and others,

¹ I wrote Mr. Haliburton as follows: As far as I have studied the matter, dwarfs appear to me pathologic subjects. Dr. J. P. West, of Bel-laire, Ohio, in the October number of the University Medical Magazine, mentions eight rachitic dwarfs in the Ohio valley: one a mulatto, three children of wealthy Scotch people. Dr. Morrow tells me that in his visit to Switzerland, he met over a hundred dwarfs in the San Martino Valley, along the road to the St. Bernard Hospice. Goitre was so common that a woman without it was looked upon as a freak. Dr. Taylor, of Princeton, Ontario, writes me he has treated 217 cases of goitre; among them were three dwarfs. Two of the latter had non-goitrous mothers at birth. Goitre developed subsequently in the mother of one, and a sister of the other dwarf. He claims that the majority born of goitrous parents have not the same mental caliber as those whose mothers are free from goitre.

—A. S. ASHMEAD.

² Mr. Haliburton evidently does not know of Bretagne, France, and the Gogots of the Pyrenees.—A. S. ASHMEAD.

among our records have found nothing of the kind. I have had a good deal of intercourse with old settlers, whose recollections or traditions went back to the early English colonization, and though they had much to say about the Indians, they never speak of any such disease among them. I was on intimate terms with Dr. Rand, the missionary to the Micmacs, and often conversed with him on matters connected with them. Not only did he never mention such a thing as leprosy, as existing among them, but I find that in his translation of the New Testament into Micmac, he merely transfers the word where it occurs, showing that they knew nothing of its existence, or they would have originally had or would have framed a word to denote it. Besides they never were very numerous, probably never numbering more than five or six thousand. If this disease existed among them 300 years ago, they must have become extinct by this time or it would have become generally prevalent among them. You may therefore consider it as well established as any proposition of a negative character can be that there ever has been leprosy among the Micmacs.

From what I have said as to the only manifestation of it ever known in Nova Scotia, it will be seen also that both the Acadians and the Highland settlers are free of it. Perhaps however you may have heard of it in New Brunswick and confounded that Province with Nova Scotia.³

There is one district of that Province, in which it has existed for a good many years. That is in some poor French fishing settlements to the north of the Miramichi River.⁴

Tradition if not history traces it to a French vessel which had been trading to the Levant (her name is preserved as *L'Indienne*) and which was wrecked at the mouth of the Miramichi river in the year 1758. It is said that infected clothing was distributed among the fishermen, that she had Lascars or some Orientals among her crew, who were under the disease. The wreck took place late in the fall, and the crew associated with the fishermen all winter. There are no authentic accounts so far as I know of the progress of the disease for some time. But in 1844, the disease had made such progress that the New Brunswick government erected a lazaretto, and took measures to compel all infected parties to be placed in it, and prevented from having any contact with persons outside. This has been continued to the present time, the institution being now under the control and management of the Dominion government. By the last report there had been, during the past year, received six, and died two, leaving twenty-two under the care of the institution. This has been about the average number for a number of years, and it includes all the known cases of leprosy existing in the Province. Measures were taken a year or two ago to place in the same institution the diseased parties in Cape Breton. The medical superintendent went down there for that purpose, but found only one diseased party. But it is believed that others were concealed. The Lazaretto is situated at Tracadie, in Gloucester County, New Brunswick, and I should think that any further information you desire might be obtained by applying to Dr. Smith, the medical superintendent.

Sincerely yours, GEORGE PATTERSON.

Under date September 16, Dr. Parker writes me further as follows:

I enclose you the documents referred to in the letter addressed to you a few days since, obtained from the Provincial Secretary's office. Also a letter from Dr. Gunn, of Cape Breton, and another from Dr. Perrin, of Yarmouth, all relating to the subject of leprosy in Nova Scotia.

It is evident to me that the Micmac tribe of Indians have never been afflicted with this disease. They are diminishing in number, and degenerating in character, as well as physically, but the *rites of civilization* have effected these results. Pulmonary phthisis and rum are the principal causes, aided to some extent, doubtless, by syphilis. My belief is that leprosy had no existence in Nova Scotia prior to the advent of the French and Scotch.

Cretinism can hardly be said to exist in our Province, but goitre is not unfrequently met with.

I may add that having traveled a good deal in the Province of Quebec, and being quite familiar with the physical development of the Acadians resident in certain localities in Nova Scotia, I have never been struck with the disparity in size and height said by Haliburton to exist between the French here, and those resident in Quebec.

I think I stated in my brief note of the other day, that I had no practical experience with the subject in question, although

³ New Brunswick continued with Nova Scotia to form part of Acadia or New France till it fell into the hands of the British after the conquest of Quebec. In 1784, New Brunswick was separated from Nova Scotia, and formed into a distinct province.—A. S. A.

⁴ The first British settlers came to Miramichi from Scotland in 1761. The French had settled there in 1639.—A. S. A.

I have been practicing my profession in Halifax for fifty years.

I very much wish I could furnish you with more material connected with the matter as the result of personal observation or with more extended and reliable data, derived from the observations of others, but such as I have I herewith submit to you."

The following is what Dr. Gunn, of Strathtown, Cape Breton, writes to Dr. Parker on this same subject:

There have been several so called cases of leprosy at and near Lake Ainslie, among Scotch and Irish settlers. So far as I have heard there have been no cases among the native Indians or among the French Acadians. It has confined itself chiefly if not wholly, to Highland Scotch and Irish families. As far as my memory can decide there were cases of a disease that somewhat simulated leprosy, at Lake Ainslie and southwest Margerie near by: and there are a few families in these localities still afflicted by the malady.

For myself I never regarded the disease as leprosy for the following and perhaps other reasons: The disease does not evidently spread by contagion, or the whole community would be afflicted by it, as there has been no attempt made to isolate the sufferers, till quite recently, when one or two patients were removed to a lazaretto in New Brunswick. If it were leprosy, surely it would have overspread the whole country before now. Nor is the disease so fatal nor so loathsome as leprosy is represented to be. Many of its subjects have worked for years on their farms while suffering from the disease. It seems to be strictly an hereditary disease. Another circumstance seemed to me to strengthen the opinion that the disease was not leprosy. In a case treated by me, there seemed to be quite an improvement for some time, under the treatment usually prescribed for constitutional syphilis, namely, mercury and iodid of potassium. I do not intend to speak dogmatically on the subject. It would ill become a person of experience. I merely state the facts and my own observations. One thing you can depend on, the disease is not contagious. One of the men removed to the Lazaretto, lived for many years with a family, man, wife and children on the most intimate terms, ate and drank, and I think, slept with the children. Yet the disease never broke out in that family: you would expect otherwise, if it were leprosy.

The following is an abstract of a letter of Dr. A. M. Perrin, of Yarmouth, to Dr. Parker:

About leprosy in Nova Scotia: It is said that it exists in Cape Breton, among those who dwell up the river, and also at the eastern end of the county of Antigonish. But I do not think the report is authentic. As to the Indians of Nova Scotia, I think the disease has never been found among them. There is a legend among the French of New Brunswick as to the origin of leprosy among them, viz., a wreck was found on the coast near Tracadie, and the Shore-dwellers took the bedding and clothing home and used them, and a short time after the disease broke out. This story may not be true, but it is the one told. As to the French of Yarmouth and Digby Counties, I have talked with Dr. J. E. Farish, Dr. Harley, and Dr. Smith, all of whom have treated the French in every part of the countries named, and from my own knowledge, I am positive that the disease does not exist with us. The Indians of Yarmouth and Digby, suffer from all the different grades of syphilis. I do not know an Indian child or man that is not syphilitic. I was born in Pictou County, and I read with old Dr. Donnelly, of Albion Mines: he was an expert in diseases of the skin, and I am certain, if he had met it among the Scotch of Pictou, he would have mentioned it. The Scotch of Cape Breton are descendants of the Western Islanders and Barra men.⁵ I have looked up the different habitats of leprosy and the western part of Scotland is not mentioned.⁶

⁵ Dr. Prince A. Morrow writes me: "It is a well known fact that leprosy persisted in the Scottish Islands long after its disappearance from England and Scotland."—A. S. ASHMEAD.

⁶ The first leper house was in Scotland 1170; in Norway in 1266. Leprosy was widely prevalent in Denmark, and in England and Scotland in the sixteenth century, from which last we have a notice of numerous cases of leprosy in Kilmear (County of Fife) in the year 1693. In 1693, a complaint was lodged by the procurator-fiscal, against the intruding of the lepers of Kilmear upon the privileges only proper to the burgess and freemen of Prestwick, by their resorting to the shoar and taking of certain timber and other wreck, and casting greater quantities of peats and turf off the common and moss, etc., they ordained that none of the said lepers of Kilmear do so under the penalty of an hundredth pund, *toties quoties*, to be paid by *ilk* and (each one) of them in case of fullyle (failure)—Records of Prestwick. The disease appears to have continued in the northern Islands of Scotland, long after it had disappeared from the mainland of Scotland and, indeed, all other parts of Great Britain. In Shetland it has been known for centuries. I have already made a quotation from Brand to show that it was at Lerwick as late as the latter part of the seventeenth century. In some districts of

I think Dr. Smith is wrong in the idea that Scotch brought it to Nova Scotia, and I am certain that Dr. Ashmead will not succeed in finding it among the Micmac Indians. I sent an article to the *Venerical and Skin Journal* of New York, on the treatment of leprosy in the Sandwich Islands by native doctors and on the use of *Ara Ara* by the natives themselves: by its use they can hide it for years. I will hunt it up and send it to you. My knowledge was derived from a man who had spent his life among the natives on the Samoan and Sandwich group.

Here are some official reports which Dr. Parker has been kind enough to communicate to me.

PORT HOOD, C. B., May 4, 1888. *Hon. W. S. Fielding, Provincial Secretary, Halifax, N. S.*:—In reply to your communication of the 17th ult. requesting me to forward you a supplementary report on the existence of leprosy in this county, and asking me to suggest steps, with a view to the prevention of the spreading of the disease, and the preservation of the public health, I beg to submit the following:

This appears to me a most important question and, under all the circumstances, a both delicate and difficult undertaking. Within this range are two classes, viz., 1. Those already suffering from the disease, as exhibiting symptoms of leprosy or a skin disease allied to it. 2. The other class, where the disease is latent, not exhibiting any of the symptoms indicating the existence of any skin disease allied to leprosy.

This disease should be treated by thorough segregation in every case and interdiction of marriage.

The only hope of exterminating leprosy lies in the adoption of hygienic measures tending to improve the general condition, physical and moral, of the leprosy poor.

Medicinal treatment is of no avail unless combined with the regular use of suitable diet and clothing, protection against the vicissitudes of American climate, personal cleanliness, and ample exercise in the open air.

Many in the immediate neighborhood of these leprosy cases believe that the disease is contagious. I see no reason why, under some circumstances, the disease might be contagious, on the same principle as inoculation with smallpox or syphilis.

Shetland it continued still later. Apparently most of those there affected either belonged to or were sent to the Island of Papa. I have in my possession a manuscript extract from the session books of Walls, showing the expenses incurred in keeping the lepers at Papa, 1736 to 1740. Four of them appear to have died during these years, and two of these entries are for "tobacco" (probably used as a disinfectant as was usual at Scotch funerals). In 1742 there is a long entry in the Session Records of Walls, earnestly enjoining a day of public thanksgiving for the supposed total deliverance of the country from the effects of leprosy. The disease was not, however, eradicated entirely. Mr. Jack, the resident clergyman who wrote the account of the Parish of Northmaven, for the Statistical Account of Scotland, published in 1798, seems to have seen "several miserable cases" of the disease, and adds, that in many instances, there is reason to suspect a hereditary taint. Dr. Thompson urged his pupil Dr. Edmundston, of Lerwick, to trace out the history of the disease in the North, and that gentleman has made the following observation upon it in his work on the Zetland Isles (Ancient and Present State of the Zetland Isles. Vol. II, p. 102): "Elephantiasis known by the name of leprosy, was very frequent in Zetland about sixty years ago, but its occurrence since that time has only been occasional, and at present scarcely an instance of it is to be met with." He saw a true case of elephantiasis a few years ago, "face bloated, skin scaly and rough, and voice slightly hoarse." The termination was not fatal, and it did not communicate itself to others. The last instance he saw was a boy. There was no reason for the outbreak, and friends said it came on spontaneously and proceeded gradually. He says that "leprosy has long continued to linger in the neighborhood of the Farøe Islands, and in Iceland, that it was very common in the Middle Ages." He quotes Debes (*Færoæ et Færon Reserata*, etc., pp. 101 and 311, and *Acta Medica*, etc. Hafniensia, Tom. I, p. 98, London, 1659) that true tubercular leprosy continued to prevail in the Farøe Islands (the nearest land north of Shetland), in the middle of the seventeenth century. Still later, viz., in 1768 Petersen found 280 lepers in the hospitals in Iceland. It still prevails in Norway and Sweden. "As far as I am acquainted with the subject," he says, "it appears to me that under the name of radesyge (Scandinavian) two, if not more distinct species of disease were by Holst and the other authors who first wrote upon it, confounded and described together. One of these, the radesyge, properly so-called, is probably nearly allied to, if not identical with the sibbens of Scotland. Another of the supposed varieties of the disease, the spedalskhd, or Spetilska seems, on the other hand, to be a different nosologic species, hereditary, non-contagious, chronic, incurable, and identical in many of, if not in all its characters, with true tubercular leprosy." (J. Y. Simpson, Antiquarian notes of leprosy and leper houses in Scotland and England, Edinburgh Med. and Surg. Jour., 1841, 1842.) Papa lepers and Farøe Island lepers had all the characteristics of tubercular leprosy.

"One of the last, if not the very last Scotch leper," says Simpson, "was in the hospital wards of the Edinburgh Infirmary in 1798. John Bernis was his name, his age 28." Bergen, Norway, is the part of the continent of Europe nearest Shetland. In the thirteenth century, leprosy had reached "far north" in Scotland. There was a leper hospital in Elgin (a parish 118 miles north of Edinburgh) in 1226, that is before that of Bergen, Norway, 1266. The Hebrides islands, off the west coast of Scotland, belonged formerly to the kings of Norway, and in 1264 were annexed to the crown of Scotland. Everybody knows that the ancient Kings of Scotland themselves had been lepers for centuries.

Barra men, from the Hebrides went to Nova Scotia. The Farøe islands, 170 miles northwest of the Shetland islands, were originally peopled by Norwegians. In the Shetland islands leprosy had almost disappeared in 1742. In the Farøe islands, leprosy disappeared in the middle of the eighteenth century.

Ulcers and all open wounds, with their accompanied secretions, should be regarded as possible sources of infection by attendants and members of the patient's household.

All the neighbors are alarmed at the proximity of the disease to their house. I beg to state one case in illustration, that of John Gillis, residing in Egypt: the family consisting of himself, his wife and several children, are in very poor circumstances: no outsider will approach his house, mingle with them or assist them in putting the crop, down, etc., while he resides in the house, but if removed the neighbors I believe would attend to the wants of the family.

In class 2, I beg to recommend care and attention to cleanliness, avoid partaking of food likely to generate the disease. To watch families where the disease is hereditary, among whom may occur a constitution debilitated from some unknown cause. The disease usually shows itself from 15 to 25 years of age.

Your obedient servant, JOHN CAMERON, M.D.

NEWCASTLE, N. B., Dec. 17, 1895. *Hon. W. S. Fielding, Provincial Secretary, Halifax, N. S.*:—By direction of the Honorable the Minister of Agriculture I made a personal and professional examination, last summer, of alleged cases of leprosy on Cape Breton. Obtaining lists of supposed infected persons and families from clergymen, physicians, and other leading men, and following closely in the wake of the medical gentleman who, by direction of your Government, had, the year before, made an inspection of the district, I spared no pains to make my visit as fruitful of results as possible. For many days, from sunrise to dark, I was in motion climbing hills and visiting out-of-the-way places: and, while not disposed to make light of a serious matter, I have no hesitation in saying that many of the newspaper reports concerning leprosy in that section are exaggerated and sensational. Though a limited number of cases had existed on the island, I reported to the Minister but three living, all of whom have been, or shortly will be segregated. The Minister is thoroughly alive to the great necessity of stamping out this focus of leprosy, and is maturing his plans to that effect. Certain diseases resembling leprosy are also found there; the distinction, however, is to be made by an expert, not by a newspaper correspondent. Among these can be mentioned sibbens, one of the most horrible and contagious forms of skin disease, which has been the cause of many repulsive deaths there. As this malady can be diagnosed from some of the stages of leprosy only by an expert, it would seem to be wise for me to deal with it, and also to advise with local physicians and boards of health respecting its dangerous nature and treatment. Such a course would effectually silence those who for years have troubled the world with alarming reports of the prevalence of leprosy on the island.

Beyond the possibility of natives of Cape Breton meeting with difficulty, when abroad, in securing employment, because of supposed recent contact with persons suffering from leprosy, or kindred diseases—a matter referred to with some show of reason by a correspondent—it would be hard to adduce any motive of general reason apart from purely Provincial interests for dealing with diseases resembling leprosy from a Dominion standpoint. In view of the above considerations and within the limits referred to, I beg leave to suggest that I have conferred on me the powers usually given to boards of health, all my services to be rendered gratuitously, and no step involving any expenditure of money to be taken without first having obtained the assent thereto of the Honorable the Provincial Secretary.

I have the honor to be, Sir, Your most obedient servant.

ALFRED C. SMITH, M.D., C.M., etc.,

Inspecting Physician to the Hospital for Lepers, Tracadie, N. B.

PORT HOOD, C. B., March 19, 1888. At the request of the Provincial Secretary, on the 1st inst., to investigate the existence of leprosy or a disease akin thereto in this county, I beg to state that I visited and examined carefully several cases

The first observations belonging to this group of phenomenal occurrences comes from Scotland in the middle of the 17th century at the time of Cromwell's invasion of the southwestern districts of that country, a disease appeared under the name of sibbens (or sivvens), which was afterwards (1694) carried by the troops to the Highlands. (See Freer, Diss. de Syphilide nec nom de morbo Sivvens dicto, Edinburgh, 1707, and various other authors). Its greatest prevalence was about the middle of the 18th century in the southwestern counties of Dumfries, Kirkcubright, Wigton, Galloway, and Ayr; as late as 1825-1840, there were 60 cases of it, from Highland districts admitted into the Glasgow Infirmary, but since that time the name of the malady has disappeared from Scottish medical writings. Descriptions of the sibbens tend to show that we have to do here with severe forms of syphilis, with frambesia-like exanthems, and probably also with syphilis complicated with other diseases, especially of the skin (scalp). It appears that the malady was endemic mostly among the poor, filthy and neglected inhabitants of certain districts, and that it was spread not only by sexual intercourse, but also by contagion in other ways (wearing clothes in common, sleeping in the same bed, eating and drinking out of the same dish), as well as by heredity. (Hirsch.)

reported to me in the following districts, viz.: Lake Ainslie, Egypt, Lake of Law in North East Margaree and the Little Narrows. The parties affected with this disease, and their relations, appeared unwilling to give full particulars of this malady. I found their neighbors and others very willing to help me with the history of each case and apparently very anxious that the Government should take some steps to remedy the present evil.

First, I visited a family of the name of MacArty, at Lake Law, notorious for the existence of leprosy in the family. In the house at my visit were only the old man MacArty and a widow, his daughter-in-law. Old MacArty said that he was 97 years of age, a native of Ireland; considering his age in unusual good health. His wife, Betsy Hardy, came from Yorkshire, England; married her in Prince Edward Island. She is dead; was aged 64; was ill with leprosy for about five years, which caused her death. She had five sons and three daughters. Some of his family died with the same complaint, viz.: Richard died from leprosy, aged 50; John died from leprosy, aged 30; William died from leprosy, aged 24; Mary died from leprosy, aged 40. Married to John Doyle, family left for the States. It is supposed that John Doyle contracted this disease from his wife, as he also died from leprosy.

Living Henry MacArty, aged 49, in good health; Catherine, married to John Conner, aged 44; she is in good health; has six of a family; all reported in good health. John Conner died from leprosy, said to have contracted it from his wife, Susy, married to James Cameron, the latter said to have died from leprosy at Cheticamp about five years ago. The widow reported to be in good health. Two of this family are away in Boston.

Case 1.—Visited the house of James Harris. In the house I found his wife, a sick boy, and a young woman too much disfigured to be seen. Twice the mother tried to allow me to see her in her room, but she positively declined to see me. The mother allowed to be examined as to the present state of her daughter's health. She says that she is twenty-nine years of age and ill for about ten years. Supposed she took ill from a bad cold. She never attended a leprosy case or lived with any of those affected with it. She suffers from acute headaches; throat complaint; there is a fetid discharge from her nostrils; the nose swollen and ulcerated; her eyes inflamed and sunk in her head; some of her hair falling off; she is occasionally attacked with shiverings; her hands feel cold, not contracted, but of a dark color; the lower extremities somewhat anæsthetic, but toes not contracted; the skin over her face is rough and thick, with tubercles interspersed here and there. Diet: Lived a good deal on sour milk, bad quality of cheese, salt fish, such as cod and herrings, tea, bread and butter. I was told that Dr. Carmichael attended upon her, and that he would supply me with more information. I had called upon Dr. Carmichael and he said that he never attended upon her, but occasionally they sent to his office for medicine for her. Examined a near neighbor of the above case. Says he knows Mary Rachel Harris. Last time I saw her was, I think, in the fall; her eyes appeared sunk and inflamed; face swollen, tubercular and ulcerated. Nose destroyed by ulceration and exposing the bones of the nose. It is believed that she contracted her illness from Joseph Brown, an uncle who had died from leprosy. Brown was blind and deaf (sic) and she was constantly at his bedside reading to him. I am of opinion that the above case is an advanced stage of leprosy (tubercular form). The sick boy, William, 19 years of age, confined to his room since January; examined him and found no symptoms indicating leprosy, but an unhealthy looking subject, favoring the development of this dreaded disease. There are two other boys in the family, one in the house apparently well, and the other at sea. James Harris and wife are well, but his wife's brother, Joseph Brown, died from leprosy.

Case 2. John Gillis, residing in Egypt, aged 50; ill since about eighteen years of age; can not leave his house, but will move freely enough inside the house. Appearance: Face tubercular, irregular and shining, particularly over the cheek bones; the nose broad and flattened, caused by ulceration and the parts healed, afterward leaving cicatrices; the eyelashes are destroyed, with a cluster of tubercles over the upper eyelids and forehead. The ears peculiarly thickened and elongated; the voice very husky and hoarse. Throat examined, fauces of a pale appearance, uvula almost disappeared. The pharyngeal region appeared as if minute ulceration existed in the mucous membrane. Both hands are of a blue color, rough

and tubercular, all the nails disappearing and in a diseased state. Examination of the lower extremities, somewhat atrophied and wasted. Cicatrices of old sores from the knee to the foot; all the toes in a state of ulceration and will likely slough off; both legs are somewhat anæsthetic. Has cold shiverings and can not sleep well. Has no proper food. For several years could not work and no one comes to see him. He is very destitute. He has ten of a family, ages from 8 to 21. Some of them are not allowed to come near him, two of them are working at the C. B. Railway and send him any relief they can afford. The wife and children at home are apparently well. He had a brother, Donald Gillis, who died of leprosy at South-west Margaree; he was ill with it for about ten or fifteen years. His face and body were in a horrible state. He lost his sight by it. John Gillis' neighbors report to me that he wore some of his brother's clothes, that he was seen going to his place and was recognized while he was wearing them. John Gillis denies this; says he never took any of his clothes. Another brother, Angus Gillis, residing at Cheticamp, and married to one of the MacArty's, of Lake Law, is reported to me as suffering from leprosy. He went there from S. W. Margaree about a year ago.

Cases 3 and 4. Maggie McLean, aged 40, residing at East Lake Ainslie; illness began when about eighteen years of age. Her face apparently free of tubercles. Throat examined; the fauces of a peculiar pale color; nothing abnormal to be seen. Her hands and feet were found tubercular, with a few ulcers, swollen and contracted. She has difficulty in walking; attacked with cold shiverings sometimes; the legs and hands are benumbed as if want of feeling; her voice is clear; diet very poor: lives on salt fish, potatoes, tea and bread.

Christy McLean, aged 49, lives with her sister, Maggie McLean, the above case. Illness began when about twenty years of age. The same train of symptoms as in her sister's case.

Archy McLean, aged 40, a brother, died from leprosy nineteen years ago. He was ill for more than twenty years with it. There is a brother living, aged over fifty years, married and has six of a family. He is reported to be in good health.

Case 5. Duncan MacKinnon, residing near the outlet of Lake Ainslie, aged 42, appears to be upward of fifty years of age. He is a shoemaker by trade; unmarried. Examination: His face is much swollen and tubercular; nose enlarged and inflamed; there is a discharge of blood and matter from it; eyelashes destroyed; eyes sunk but not red; sight is good; hair falling off; ears tubercular and elongated like Gillis'. Examination of throat: Has peculiar red streaks running from above downward toward the uvula. The mucous membrane in the pharynx slightly ulcerated; spitting thick matter occasionally. Sometimes he is attacked with severe shiverings. He is very hoarse. His hands and feet are tubercular; both have less feeling in them than in health.

Case 6. Flora MacKinnon, wife of Malcolm Matheson, aged 33, residing at the Little Narrows. Her illness began about eight years ago; is of a much milder character than any of the rest. There are a few tubercles on her face and the marks of cicatrices are seen on her arm where sores existed at one time. She is able to attend to her household duties; is very active and useful. Attends to her health by medicines she receives from her doctor, which she says is of benefit to her. I could detect no constitutional disturbance. Has no attack of shiverings. She has six of a family, all are apparently in good health. The youngest is only a few months old and fed by the nursing bottle.

I had visited and examined several other families reported to me at Lake Ainslie, but were to all appearances free of any symptoms indicative of leprosy or any other disease akin to it. I shall be glad to give further information on some points which I may have omitted. I have the honor to remain,

Your obedient servant, JOHN CAMERON, M.D.

In answer to my inquiries as to the date of the outbreak of leprosy in the McArthy family, also as to where McArthy was exposed to the disease before he inoculated the country with it, and as to that other question whether he brought it from New Brunswick, Dr. R. G. Gunn, of Strathtown, Nova Scotia, writes to me:

I regret that at present I am unable to give you the desired information, but I shall endeavor to state a few facts bearing on the disease in question which may be of some interest to you, and shall try to get the dates asked for, or an approximation thereto, and write you again.

Whether McArthy's was the first case of the disease in this place, I am unable to say, but I am inclined to think there were other cases as early or earlier. That he had been in New Brunswick I doubt, but I will make inquiries. I am satisfied, how-

* Dr. Smith, of Truro, writes me: Betsy MacArty, the first of the family to show symptoms of the disease, came from Prince Edward Island; she was born in Lincolnshire, England, and married in 1826. In 1852 she became afflicted with leprosy. Several of her sons died of the same disease.—*Ashmun.*

ever, that the McKinnons at Lake Ainslie had no direct communication with McArthy. With them it seemed to be a family disease, rather than the result of contagion. There are two cases at Lake Ainslie now in the McLean family, which are said to be leprosy, and for whom county funds are annually paid on the assumption that they are real cases of leprosy. These are not, so far as I know, connected with the McKinnons or McArthys. Near by is a young man connected with the McKinnons, who is supposed to be in the incipient stage of the disease. The most marked symptom in his case is loss of the eyelashes and eyebrows. Would these be suspicious symptoms?

A marked symptom in the only case that came under my supervision was huskiness and weakness of the voice, showing that the larynx was involved, and arousing suspicion of syphilis. This symptom is, I am told, always present in the cases of so-called leprosy in this place. There was also much swelling of the face with many nodular tumors, and a dusky purplish hue of the skin. There was also swelling of the hands and feet with nodes or small tumors around the elbow joints. The swelling of the face latterly became extreme, the eyes being almost hid. The hands also were much swollen and somewhat distorted, rendering any kind of manual labor extremely difficult. So far as I remember there were no ulcers. The skin was unbroken. The skin, however, looked quite scaly and unhealthy. Such is a brief and very unsatisfactory sketch from memory of a case seen by me several years ago.

I have received the following letter (dated Oct. 23, 1895) from Dr. John Cameron, Port Hastings, C. B.

Your queries are the following:

1. If leprosy existed in Nova Scotia among the Micmacs before the arrival of Acadians or Scotch? 2. Is it a disease affecting only degenerates in Nova Scotia, families with goitre, cretins or idiots? 3. What is the date of the first case in the McArthy family of Cape Breton? 4. Did McArthy bring lep-



CAPE BRETON LEPER.

rosy from New Brunswick, or another leper country? 5. Do you think the disease originated in Nova Scotia from infected fish diet, water or soil?

Answers: 1. I think not. 2. It appears so to me. 3. Date not exactly known, but supposed to be about 1845. 4. From New Brunswick. 5. No, but such diet would very probably bring the disease latent in a constitution to full development of the disease.

At Lake Ainslie, a Scotch settlement, there is a strong opinion still prevalent among them that the disease originated first from one or more parties who served as soldiers in the plains of Egypt, and had carried the disease into this country, about the year 1825. A number died from this disease at Lake Ainslie, not mentioned in my report. Since my report I had a case of elephantoid enlargement of scrotum in that locality, a disease evidently hereditary and probably taken by the same party from the east, where it abounds.

I addressed the following letter to Dr. Gunn, of Strathtown, N. S.:

May I trouble you again to obtain for me a photograph of a Nova Scotian leper, and one of a Nova Scotian sibbens. Now, as to the question you ask me, Would the loss of eyelashes and eyebrows be a suspicious symptom?

In Japan, however, many symptoms of approaching leprosy may occur, it is only when the lashes and brows fall, that the common people recognize the disease.

Dr. Smith sends me two photographs, one that of a Cape Breton leper, the other of a Tracadie leper. He remarks: The Cape Breton leper is one of two sisters afflicted in exactly the same manner. The feet are affected in a similar manner in both cases.

The disease, which has some resemblance to rheumatoid arthritis, is without doubt lepra mutilans. I have to make my diagnosis of the Nova Scotian cases, between that hydra-headed monster syphilis and sibbens and leprosy. That leprosy exists in Nova Scotia there is no manner of doubt. In addition to the general symptoms, the march of the disease, etc., the microscope shows the sections filled with leprosy bacilli, and there is the histologic structure of the disease.

"I did not use the word 'degenerate' in the meaning you used it. Our French are not undergoing evolution to a better life. Theirs is a clear case of reversion toward their tertiary ancestors."

Dr. Parker, in answer to my request for photographs, says: "I am about 250 miles from the place, and have no means of procuring photographic representations of their features, or anything that would illustrate the physical condition of other portions of their bodies. I have understood that they and their friends dislike their being brought in contact with persons outside of their immediate families, and if this is the case, the matter would hardly be accomplished by open measures."



TRACADIE LEPER.

Dr. Gunn appreciates the difficulty, and says at the close of his letter to me, "I will, however, make inquiries and communicate with Dr. Ashmead on the subject if the difficulties in question can be overcome."

Dr. Gunn "fears that it will not be easy to get the desired photographs. All the subjects of the disease in question that I know of live in remote country districts far removed from a photo-saloon. Beside, they would probably raise serious objections to the proposal of having their pictures taken. Possibly these, by no means unnatural objections, can be removed. I will make inquiries as soon as convenient and will let you know the result of my inquiries."

Regarding a relationship between the Mayas of Mexico, and the Micmacs of Nova Scotia which is claimed by Mr. Stansbury Hager, and a possible connection between the Mayas and ancient India, which is believed in by Le Plongeon I give here a letter I wrote to Edward H. Thompson, F.R.G.S., Merida, Yucatan. The letter which follows my own is the answer of Mr. Thompson.

9 Of this case Dr. Smith writes: "That poor fellow—one of several who lived close to leprosy families—is now dead and I regret not having any photograph of him to send you. But if you will examine plate 8 of Leloir's 'La Lèpre' you will find so close a resemblance to his face that no photograph could come much nearer."

MERIDA, YUCATAN.

MR. EDWARD H. THOMPSON, F.R.G.S. *Dear Sir:* Mr. Mercer (Henry C. Mercer, Curator Section of American and Prehistoric Archaeology, University of Pennsylvania) tells me to write to you for information about the question of pre-Columbian leprosy in Yucatan. Le Plongeon claims to have found representation of negroes, Mongolians, Burmese, which show at any rate, a relation with India, that is with a leprosy country. He says that there was among the Mayas of Yucatan, a name *naycan* meaning to rot, which he supposes to stand for leprosy; in that case it would have been before the Spaniards. Dr. Muniz, of Peru, believes that leprosy existed among the Incas, before the Spaniards. His proofs are the loss of nose and upper lip, visible on huacos pottery. But as these same samples of huacos pottery, show no deformation of fingers and toes, which is the most frequent and absolutely necessary symptom of mutilating leprosy, it is reasonable to suppose that such deformations are intended to represent not leprosy, but lupus or syphilis.

Will you please tell me whether in your extensive explorations, you ever found any representations or ordinary monuments, or any pottery, or any pathologic evidence in bones (pre-Columbian), which make you believe that leprosy in this country was pre-Columbian.

Yours truly,

ALBERT S. ASHMEAD.

QUINTA ACADIA, MERIDA, YUCATAN, Oct. 10, 1895.

DR. ALBERT S. ASHMEAD, *My Dear Sir:* . . . Don't build too much on Le Plongeon's theories and claims. Not a single point of contact between the old and new worlds before the Columbian era can be proved by monuments or facts so far found in Yucatan, or adjoining provinces. The Maya word you quote may have in the olden times referred to leprosy. *Nay-can-Kanay* is used to-day as the term for a leper. Yet my opinion is that in the old times it was used more for consumption, phthisis. *Nagal* is used when one is fainting from extreme debility. I have found many skeletons, but have never observed the evidences of leprosy.

Sincerely yours,

EDWARD H. THOMPSON, F.R.G.S.

It seems to me then that we must conclude: 1. That there is no leprosy among the Micmacs, and never was. 2. That in Nova Scotia leprosy exists in one Irish family, in the Island of Cape Breton, and only among the descendants of Scotch Highlanders in other parts of the Province. The original MacArthy leper came from New Brunswick, date of his leprosy supposed to be 1845. It may have come from Egypt; it was, according to tradition, brought by soldiers in 1825. 3. That in the Province of New Brunswick leprosy was introduced by a French vessel from the Levant, in the year 1758, and the disease is there still among the "degenerated" French."

¹⁰ The first French case of leprosy in Vermillion Parish, Louisiana (Mme. Ourlance) came from the south of France, 1866. Several of the family were afterward afflicted; also a nurse who waited on her, and a young man who had slept on the same bed. (Leprosy in Louisiana, from Annual Report of the Board of Health for the year 1880.) From general results of the investigation of leprosy in the Bayou La Fourche, Louisiana, I quote the following: "The entire region of country traversed by the Bayou La Fourche is low, level, alluvial land, which slopes back from the river to the cypress swamps and marshes. This region is adapted by soil and climate to the cultivation of rice, sugar cane and orange. Below Hurang's canal along both banks of the bayou, toward the Gulf of Mexico, the narrow strips of land are thickly populated by small farmers, and in many instances the habitations arranged behind the levees are surrounded by rice fields. It is evident, therefore, that the inhabitants of the lower La Fourche are subject to the constant action of a low, moist, malarial atmosphere. Another point of interest in this inquiry is that the diet of these people consists largely of rice, fish and wild birds and animals, as the different variety of duck, crane, snipe, woodcock, raccoon, opossum, squirrels and rabbits. It is said that a fish-eating people are ill-nourished, and in eastern countries are particularly liable to become leprosy. If this be so, it must be associated with such poverty as prevents the inhabitants from obtaining a proper variety of fresh food and vegetables. Certain districts of the Mediterranean coast of Spain are cited in illustration of these facts, where there is a fish-eating and a poverty-stricken population; and if we turn to another fish-eating community—that of part of the west coast of Norway—we find the disease, although some of the people are characterized by robustness of health and great physical strength.

It is possible that the prolongation of the leprosy in this and similar regions, while it appears to have gradually become extinct in the more elevated and healthier portions of Louisiana, may in a measure be due to the effects of climate, soil and food; but from the result of our investigation we are convinced that in its first origin the disease must be traced beyond the confines of this State, to the southern states of Europe, and to the coast of Africa. In other words, the disease on the lower La Fourche has been propagated by hereditary influences, and by personal contact rather than engendered by climate, soil or food. The

Some say that there is an etiologic relation between the fish diet and leprosy.¹¹ Witness Norway, Japan, China, Coasts of Spain, etc. Leprosy in Nova Scotia and New Brunswick might be also quoted to corroborate such views. There is, as is well known, an immense fish trade going on in those provinces. Nothing is more conceivable than that the bacillus, through an intermediary, finds in the fish a suitable soil for spontaneous culture or preparation for a further development in the human body. Climatic factors, producing certain nervous conditions in the human organism, like, for instance, syringomyelia, mal de San Antonio, scleroderma, Raynaud's disease, etc., a prebacillary stage, may allow the bacillus to be inoculated, and pursue its development in a higher organization. Racial degeneracy also¹² may operate in a similar manner to climatic factors mentioned above.

latter causes may form important factors in the prolongation of the disease through several generations.

It is possible that the seed of the disease imported originally from the south of Europe, and from the French settlements of Canada, would have perished in more elevated and healthy regions. The habits of the Creoles of the Lower La Fourche, appeared to be temperate and simple; the education of many of the citizens appeared to be limited from the nature of the country, and the necessity of maintaining large families on small areas of land. It is evident, therefore, that under these circumstances, the contiguous settlements were often closely related by ties of friendship and blood. (Louisiana Board of Health Report, 1880.)

¹¹ Dr. Smith, of Tracadie, writes: "I have no reason to suppose that leprosy originated spontaneously in Nova Scotia from infected fish."

¹² The chief centers of goitre in Scotland were in the interior, Perthshire and east coast of Fife, the Kingcase lepers were in Fife. There are also centers of it in the southern counties (Mitchell, British Medical Chir. Rev., 1862), in the east of Wigtownshire and Kirkcubrightshire, in Dumfriesshire and Roxburyshire, in the west of Berwickshire, in the northern districts of the counties of Selkirk, Peebles and Lanark and adjoining parts of Ayr, and in the Isle of Arran (Blackie Reid). Wigtown, Kirkcubright, Dumfries and Ayr were centers of the disease sibbens. Arran is in the Hebrides.

Sibbens and goitre among the Scotch, and goitre and cretinism in the inhabitants of our Cordilleras, are evidences of racial degeneracy. Dwarfism and the cagots of the Pyrenees are merely stages in the dying out of a race. Leprosy is a disease of degeneracy.—A. S. A.

[NOTE.—Sibbens: See also E. Gilchrist, "An Account of a Very Infectious Distemper Prevailing in Many Places." Essays and Obs. Phil., Soc., Edinb., 1771, iii, 154-177. J. Rollet, Sibbens d'Ecosse. Dict. Encycl. d. Sc. Méd., Par., 1881, 3, s. ix, 522-526. Willemoes. Af handling om den i Skotland herskende Sibbens v. Syphilis insomium. Med. Hensyn til den Norske Radesyge. (Comparison of Sibbens with Radesyge.) Biblioth. J. Laeger. Kjøbenhavn, 1810, ii, 25-42. D. Wills, Remarks on Sibbens. Monthly J. M. Sc., Edinb., 1844, iv, 282-289. Also: Dublin Q. J. M. Sc., 1844, xxv, 346-354. W. Wright, Syphilis in Canada, as denoted by Sibbens. Med. Chron., Montreal, 1855, ii, 290-309. Wills refers to an article by Dr. J. J. H. (Edinb. Jour. Med. Sc. for 1826), where he attempts to prove that sibbens of Scotland and West Indian yaws are the same disease. "This disease" (sibbens), he says, "is analogous to frambesia of the fifteenth century." He thinks that the outbreak from 1483 to 1493 corroborates this opinion. "Sibbens and yaws of the West Indies are alike in whitish ulceration of tonsils, fungoid character of sores, a first attack probably giving immunity from a second, and their appearing to run a somewhat similar course in point of time. Mercury has a specific effect in sibbens."

Benjamin Bell's work on Venereal (1793) has a section on "Some peculiarities of form under which lues venerea has appeared in Scotland and Canada (called sibbens in the Highlands and yaws in Dumfries and Galloway). A soft, spongy excrescence, in size and color resembling a common rasp, which is apt to appear on all such parts as either become ulcerative or that are attacked with any kind of eruption; hence the name sibbens or wild rasp. This spongy substance may rise to a considerable height, nor can it be kept down by any of the common escharotics; if entirely removed it soon returns, unless the virus be removed by mercury." Wright thinks that button scurvy as observed in Ireland, and frambesia in the West Indies and Africa, are analogous affections. He thinks there is nothing national in the affection sibbens as it appears in the Scotch.

[NOTE.—Mr. E. Foster, of the *Daily Picayune*, New Orleans, La., has written me as follows: "There is little doubt that leprosy existed in this State before the arrival of the Acadians in 1765 (ten years after the so-called expulsion), but whether Elephantiasis Græcorum or Arabum there is some doubt. It is probable that during the twenty years which elapsed between their advent and the establishment of a leper hospital by Miro in 1785, the disease had spread to such an extent amongst the immigrants that such establishment became imperative? This is negative evidence to my mind. There is a belief that the disease was introduced amongst the Acadians of Lafourche by their compatriots who came from the West Indies, but of this I can find no confirmation. It is interesting to note, however, that Sloane mentions a case of 'Græcorum' in Jamaica at the end of the 17th century. That the disease should exist amongst the Acadians in New Brunswick and in Louisiana is a positive argument of weight, but at this late date it will be impossible to prove whether the statement of Dr. Pratz (1718) referred to the Yaws, Arabum or Græcorum. The Acadians of Louisiana, at least, are not an effete race by any means, and personally I do not think that leprosy is a sign of degeneracy. Goitre, cretinism and idiocy are different, but I can not find that there is any sign of either amongst the Acadians of Louisiana. As a class they are larger in stature than the Creoles, and while a large number of them may seem to be dull of intellect this can be put down to what I call it—hereditary business induced by the richness of the soil, of which you have merely to scratch the surface, scatter a few seeds and nature supplies the rest with a bountiful hand."—A. S. ASHMEAD.

A SUGGESTION THAT NATIONAL LEGISLATION PROVIDE FOR A MEDICAL EXAMINING BOARD TO CONFER A SPECIAL DEGREE IN MEDICINE AND SURGERY

AND THAT THEREAFTER THE STATES, THROUGH THEIR MEDICAL LICENSING BOARDS, SHALL LICENSE ONLY UPON THIS DEGREE.¹

Read before the San Francisco County Medical Society, Nov. 12, 1895. [Published in the JOURNAL of the AMERICAN MEDICAL ASSOCIATION by official request of the Society.]

BY C. E. FARNUM M.D.

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That there is a plethora of medical colleges and of medical students and practitioners in the United States, is so well-known that it is unnecessary to make the assertion in this paper. That this condition does not exist in countries in which governmental restriction is exercised over the examining and licensing of physicians and surgeons is clearly shown by statistics giving the relative number of medical colleges, students and practitioners in proportion to population in the several countries of the world.

From an editorial published in the JOURNAL of the AMERICAN MEDICAL ASSOCIATION, dated March 24, 1894, it is said of the number of students attending the 136 medical colleges in the United States (109 regular medical colleges, 19 "homeopathic" and 8 "eclectic"): "At the sessions of 1885 the total attendance was 10,891 of which 9,245 were regular, 1,032 homeopathic, 614 eclectic. During the sessions of 1893, the attendance was 18,910, of which 16,759 were regular, 1,410 homeopathic and 741 eclectic. These figures show gains in eight years of 73.6 per cent. in the total attendance, 81.2 per cent. for the regular students, 30.6 per cent. for the homeopathic, 20.6 per cent. for the eclectics, an average of 9.2 per annum during the period. The average increase of population during the same period was less than 2.5 per cent. So that instead of being a diminution of students of medicine in relation to population, there is a relative increase nearly four times greater than that of population. As a matter of practical interest to the profession it may be noted that there is an average increment of nearly 6,000 new home-made physicians every year, and that while the population increased 24.8 per cent. during the decade 1881 to 1890, the number of newly graduated physicians increased 50 per cent. during the same period; last year, 1893, the increase was a trifle over 8 per cent." From statistics collected by F. W. Reilly, M.D., making interesting comparisons of the number of students attending medical colleges in the United Kingdom, France, Germany and the United States and Canada, and published in the same journal in the issue of Jan. 12, 1895, I quote the following:

"United Kingdom (Great Britain and Ireland), 8,696 total registered students between 1889 and 1893; for the year 1893, based on yearly accretions, 7,000; population, 37,000,000.

"France, total number medical students inscribed on the books of the Paris Faculty of Medicine for 1894, 5,144; population, 40,000,000.

"Germany, total number medical students registered for 1894, 8,684; population 50,000,000.

"United States and Canada, total number medical students in attendance sessions of 1894, 20,800; population, 70,000,000,

"Proportions: In the United Kingdom, 1 medical student to 5,286 of population; in France, 1 to 7,776 of population; in Germany, 1 to 5,757 of population; in the United States and Canada, 1 to 3,365 of population."

After reading these statistics we doubtless agree with the editor of that journal when in an issue of Dec. 29, 1894 he says concerning the increasing student classes, "Congress may put tariffs up or down, or abolish them entirely, may threaten currency legislation or railroad-pooling bills, or any other device for or against the prosperity of the nation, but here is one American infant industry that thrives apace and asks for no protection. What the struggling practitioner in the already overcrowded ranks thinks of it belongs to another category."

A government medical board upon whose examination alone can licenses to practice be granted, is perhaps the only means by which in the United States this increasing plethora of medical colleges and graduates can be relieved. It is only through national legislation that the medical colleges in the United States, or in fact in any other country, can be forced to adopt a uniformly high standard of medical education. Such a standard will certainly not be attained by the ununited and non-coöperative methods now pursued by the several medical schools of this country.

It can not be expected that Congress will ever take from the several States of the Union the right or power to regulate the licensing of physicians and surgeons; but national legislation can provide for a government medical and surgical examining board that could examine all applicants and to those who pass the examination confer a special degree with some proper title, such as "Fellow in Medicine and Surgery, United States of America." In order to maintain a high standard of requirements for passing this examination and keep this examining body free from political influences, a controlling majority of the members of this board should be selected from the medical staff of the United States Army and Navy. A degree from this board should be accepted as sufficient evidence of qualification or fitness for admission to medical positions in the Army or Navy. For the convenience of applicants in the several States, this examining board could periodically hold meetings in each State or district of the Union.

This government board having been formed for the purpose of examining applicants as to their qualification to practice medicine and surgery and for the purpose of conferring a degree or giving a governmental recognition of that qualification, the several States of the Union would then have a uniform standard upon which they could license physicians to practice, and each State could through its legislature provide that any person not already licensed to practice medicine and surgery in that State must first present a degree from the national board of examiners before he can obtain a license, the applicant's license then to be granted regardless of what medical college he has ever attended or whether he has or has not ever attended a medical college. By this plan the granting and the revocation of licenses to prac-

¹ This Board to be principally composed of and under control of the superior officers of the medical staff of the United States Army and Navy.

tice would still be reserved to each State, the government standard of qualification being the only one upon which licenses would be granted. With such a national examining board in existence, but a short period of time would elapse before all States and territories would license only upon certificates of qualification issued by this board or else permit to practice only those who could register a degree from this board.

In examining the last report of the Secretary of the Illinois State Board of Health, I ascertain that in only sixteen of the forty-nine States and territories in the United States is an examination for a license required of all applicants. The examining boards in these States are appointed by the governor or a local board of health or elected by a county or State medical society; in one State, Texas, they are appointed by judges of district courts. These sixteen States represent but a small proportion of the population of the United States. They are Alabama, Arkansas, Florida, Indian Territory (Cherokee Nation), Maryland, Minnesota, Mississippi, New Jersey, North Carolina, North Dakota, Pennsylvania, South Dakota, Texas, Utah, New York, Virginia and Washington. In the remaining thirty-three States, including the District of Columbia as one, the legal requirements for practice are either none whatever or a license granted upon some diploma, a registration of some diploma, or, in a few States, an examination in the absence of a diploma. At the present time, any licentiate in one State in the Union moving to one of sixteen States that now license only upon examination, would be put to the inconvenience of passing an examination in each one of these States in which he may locate, an experience which could be avoided should all States license upon a degree or certificate issued by a national examining board.

No "pathy" should be recognized in the personnel of this board. Since all who practice medicine and surgery, homeopaths and eclectics included, proclaim that they have studied and are familiar with regular medicine and use it in their practice, a degree from this examining board would be simply verification of their claims. If they want a special degree as evidence of knowledge in their preferred "pathy," their own college can furnish them with that. This board should recognize neither "pathies" nor diplomas nor any medical schools or teaching bodies. Homeopaths and eclectics, familiarizing themselves in therapeutics sufficiently to pass the examination before this board, certainly should be able to well understand what they term "comparative therapeutics" and perhaps make such use of their own therapeutic methods as would be in better conformity to their theory and more satisfactory to themselves.

This national board of examiners should be permitted to make its own rules and standard of requirements and exercise its own judgment as to how many and what subjects all the candidates shall be examined upon, the only restriction being that a degree or certificate of qualification shall be issued only upon examination. This would prevent interference through court processes with the proper and satisfactory performance of its duties.

What is suggested in the foregoing may be briefly stated as follows: 1, that national legislation provide that a national board, principally composed and under control of the superior officers of the medical staff of the United States Army and Navy, shall examine all

applicants as to their qualifications to practice medicine and surgery, and, to any one who successfully passes the examination, shall issue a certificate or degree as evidence of such qualification; 2, that thereafter each State legislature, at its option, may provide that its medical licensing board shall accept as evidence of proper medical qualification upon which to issue license only the degrees or certificates of qualification issued by the national examining board.

The national examining board and the State licensing boards would be entirely independent of one another, it being optional with any candidate to undergo an examination by the national board and optional with each State to adopt or accept as evidence of proper qualification to practice medicine and surgery, and upon which to issue a license to practice, the degree or certificate of the national board of examiners or, as at present, a degree from a local or foreign college or a certificate from a State examining board. However, should any State or States or all the States adopt the national standard of qualification for practice and issue licenses only upon certificates or degrees from this national examining board instead of it being optional with the candidate to appear before the national examining board, it will by the State be made necessary that he do this in order to obtain a license. In other words, the States would still reserve to themselves the licensing function and the right of revocation, but would adopt and accept only the national standard of qualification upon which to grant licenses.

The principal results that would follow from licensing physicians and surgeons upon no other evidence or certificate of qualification than a degree conferred by a national examining board under control of the superior officers of the medical staff of the United States Army and Navy, would be as follows:

1. The examining body will not be under the control of politics or of medical colleges, or of medical societies in which members of college faculties have a controlling influence.

2. A better and more uniform standard of qualification would be required. The granting of licenses upon diplomas from all kinds of colleges, both local and foreign, or upon examinations by boards of examiners elected by State and county medical societies or appointed by governors, as is done at present, certainly does not give as good assurance of proper qualifications as would a certificate based upon examination by the superior officers of medical staff of the United States Army and Navy. Who does not know that a college diploma, whether American or foreign, is not infrequently issued to those who are much more poorly qualified than is the average practitioner and to those whose qualifications would be inferior to one who had successfully passed examination by the medical staff of the United States Army and Navy? To the medical profession in foreign countries it certainly must seem peculiar that those who have degrees from European colleges can in this country be licensed upon degrees or diplomas that in the countries in which they are issued would have no legal recognition or would not be recognized by a licensing board or accepted as evidence of proper qualification for practice. It is a well-known fact that in many of the best foreign medical colleges, especially in Germany, attendance upon lectures or college curriculum is not obligatory, and that in applying for a degree of

Doctor of Medicine simply the passing of the examination is required, no other evidence whatever of previous study or attendance upon college curriculum being required. In other words, any person passing the examination in one of these universities can, without ever having studied or attended upon a college curriculum, get the degree of Doctor of Medicine, a foreign diploma, upon which most of the licensing boards in this country will now grant him a license to practice medicine and surgery, while in all American colleges an attendance upon the full college curriculum, extending over a period of four years in the best colleges, is required before a student can present himself for a degree upon which a license will be granted. So great is the American demand for a foreign degree or diploma rather than for a medical education obtained in a foreign college that it is very doubtful whether this custom of issuing degrees or diplomas upon examination alone will soon be corrected in the foreign universities which, while maintaining a high standard of actual college work, are equally as anxious to supply the American demand. If a degree in medicine, even from the best universities, is with good reason discredited by the German government and licensing boards, and also by some other foreign governments and licensing boards, there certainly should be the same reason for discrediting in this country that degree to the extent of also refusing to accept it as sufficient evidence of qualification upon which to issue a license.

3. The standard of requirements for graduation from medical colleges in this country, and perhaps also in European countries, would be increased as a consequence of provisions for a government examining board. In order to acquire such qualifications as would be required by this examining board and avoid the publicity of failure before a government board, students would attend only such medical colleges as give the best instruction and opportunities for study and have the highest standard of requirements for graduation.

4. The number of medical schools in the United States would greatly decrease, since students expecting to appear before this national examining board will not attend the colleges that do not give superior instruction and superior facilities for study.

5. Merited aid will be given to worthy medical schools that now require a high standard of education and desire to still higher advance the standard, since competition from low standard colleges will be eliminated. For this reason legislation favoring such a national board of examiners as is here suggested will doubtless be opposed by the low-standard college men.

6. The number of students beginning the study of medicine and of graduates engaging in its practice after a short period of study and without proper qualifications, would be greatly reduced, a higher and more uniform standard having in this an immediate effect.

7. This national standard of qualification would effect in many cities the consolidation of several medical schools now existing independently and endeavoring to outbid one another through a low standard of requirements for graduation, "not lived up to," but represented ostensibly to the public as a high standard.

8. It would make the practice of medicine and surgery more remunerative by lessening the number

engaging in its study and practice, consequently the number of medical colleges and the number of free clinics that have the medical colleges as an accepted excuse for their existence.

9. General recognition of the necessity for a high standard of medical education and an enforcement of such requirements would doubtless induce some of the best medical schools to be changed to post-graduate colleges, fortunately emphasizing the fact that what we now need are more post-graduate schools and a smaller number of medical schools for undergraduates.

For the benefit of colleges desiring to give proof of the claim that their professors are qualified as teachers, and, furthermore, that the graduates of all sorts of American colleges (regular, homeopathic and eclectic) should not, as at present, have the same standing or recognition when they enter European colleges, it might be well for national legislation to further provide that, any candidate having first passed the general examination or possessing a license from any State, may at any time, upon passing a special examination in any subject or department in medicine or surgery or in sciences cognate thereto (as anatomy, physiology, chemistry, bacteriology, pathology, general surgery, etc.) obtain another degree or certificate of proficiency showing that he is qualified to teach or become a professor in that subject or department of science. The students who enter college to study medicine and surgery and the public who employ them as graduates and practitioners educated in these colleges are certainly entitled to that much assurance or proof of proper qualification on the part of medical instructors, and the faculty of any medical college that actually desires to advance the standard of medical education and the standing of the college itself should certainly hail with delight any plan by which to separate among medical colleges the chaff from the wheat, by which to prove that what is proclaimed in college catalogues and at commencements from the rostrum about thorough instruction is not mere bombast and advertisement.

661 Market Street.

THOUGHTS ON VITAL RESISTANCE TO DISEASE—IMMUNITY, NATURAL AND ACQUIRED.

Read in the Section on Physiology and Dietetics at the Forty-sixth
Annual Meeting of the American Medical Association,
at Baltimore, Md., May 7-10, 1895.

BY G. W. FINLEY, M.D.

HARMONY, IND.

We occasionally observe individuals whose state of health, physically and mentally, seems so thoroughly perfect that they can and do pass through epidemics of virulently infectious disease unscathed. We observe a far larger number who prove themselves, for the time being at least, impregnable to exposure or even inoculation with germs of certain contagious diseases, and who yet fall easy prey to other diseases on slight exposure. The latter class are protected only as to certain germs, either by the fact of having previously experienced an attack of the given malady, or by some inherent quality in their own organization. In this consideration, the possible protection afforded by some extraneous circumstance, such as approximately perfect sanitary surroundings or the influence of chemic disinfectants, is supposed to be excluded.

This difference in susceptibility to infection, shown by different races of people, by different individual subjects under what is apparently the same environment, and by the same person at different times of life, must be accounted for on some physiologic principle. If that peculiar physiologic state constituting immunity to disease can be accurately determined, may it not be cultivated and induced for universal prophylaxis of disease in the twentieth century, as well as to suggest the most effective treatment of unavoidable cases, in the very practical present? We find that the various normal secretions and excretions of the body are essentially antiseptic in their nature and functions; that is, that while they carry off the waste products of the animal economy, they prevent the decomposition of the same until it is well out of the way, and they at the same time stand guard against the introduction of foreign or deleterious agencies. Not that these excretory fluids in their normal state are free from microorganisms, for, as a rule, they abound in the evidences of such life, but always of a fixed type. Interference with these secretions, either by mechanical violence, by internal drugging or even by the substitution of artificial sterilized fluids, is found to favor the reception of disease germs.

Through defective elimination of effete materials by the various excretory organs of the body, as the emunctories of the integument, the uriniferous tubules of the kidneys and the imperfect oxygenation of venous blood in the lungs, the circulatory system is heavily loaded with dead freight. All the elements necessary for the development of a greater or less degree of septic auto-infection are thus present, and the fire will rage unless it be effectually quenched by some vital resource ready at hand. If the powers of natural self-preservation prove at all equal to their task, however, we find that decomposition and absorption of resulting poisonous ptomaines will be delayed until elimination can at last be completed without harm. If one channel of elimination be effectually blocked, other channels will be called upon to do double duty, temporarily, and the work be accomplished before organic necrosis can occur as a result of the presence of foreign or poisonous substances.

We can aid the natural processes of elimination by many well-known remedies of internal, external and eternal application. Unfortunately, however, many of these empirical remedies leave the delicate organism thus stimulated weaker in action than before, thus finally tending to destroy one of nature's means of defense against the inroads of disease. In attempting by therapeutic measures to assist nature in the restoration of healthful functions, we must exercise particular care to avoid that extreme stimulation which is rather irritation and which, on reaction, paralyzes natural functions. We should also strive to add, if possible, to the natural antiseptic virtues of the excretory fluids to be manifested as the excretions clear the outlets of the body.

But whether it be dead material of the body's own waste, or toxic ptomaines produced by disease germs, natural resources, chief among which appears to be the multinuclear white blood-cell, at once make the attempt to neutralize the ill effects and to clear it away as quickly as possible. Unless suddenly overpowered by force of numbers of the invading foe, these natural resources of defense in the normal blood current will render inert, or expel from the

system, whatever pathogenic germs may be introduced into its circulation. In this conflict between life and death, when life is gaining the victory and convalescence is established, the microscope reveals the fact of an enormous increase in the comparative number of white blood-corpuscles or leucocytes. This peculiar state of the blood is observed to be a constant and well-marked feature of all convalescence from acute disease. The question has occurred to the thoughtful physician that if leucocytosis could be artificially induced in an acute attack of disease, would not complete convalescence also occur early and before the patient had become debilitated by the ravages of the disease? Nay, might not the infection be prevented from developing at all, if nature's own means of defense in the leucocytes or phagocytes could be reinforced at the very beginning of the attack, or, still better, before the exposure to the deadly infection.

The ancient operation of transfusion of blood and other saline fluids, was a step in the dark, but a rational one, and in the direction of light. When applied to cases of marasmus and anemia, and where the care taken by the surgeon amounted to practical asepsis, the results were often very gratifying. The remarkable growth of the distinctly modern idea of sero-therapy may have owed its origin in some remote degree to the records of observations on transfusion. It is found that the immunity inherent to certain species of animal life may be borrowed and transmitted at will to other warm-blooded animals by means of injection of blood serum. Then, if natural immunity can be so readily and surely transferred to another, an easy and logical step leads us to the consideration of the cultivation and universalization of acquired immunity. Concerning a limited number of the best known and most dreaded infectious diseases, this beautiful dream of the bacteriologist now seems to be practically realizing. Behring, Roux and Aronson have identified their names with the work of producing artificial immunity to diphtheria by the use of a specially prepared blood-serum taken from an animal almost immune to the disease and rendered totally so by a process of cultivation of attenuated germs in the animal's system. These men, as also, in other parts of the world, Tait, Ehrlich, Pasteur, Koch and Kitasato, sought to place in tangible and practical form what had existed as a vague, but gradually clearing, theory among scientists during the last two decades.

Granting that pure blood serum contains the toxalbumin so effective in the animal economy during life, the question arises, Can its essential principle be isolated and preserved in a form less bulky than the serum and yet safe and effective for the physician's use in combatting, mitigating and even preventing the ravages of deadly infection? Our own original investigators, Vaughan, McClintock, Sternberg and others have demonstrated that it can be. Proceeding on the line of thought peculiar to the theory of cellular pathology, these earnest scientific philanthropists have sought and found a nuclein acting as the foundation of all Nature's defensive and offensive operations against the toxic ptomaines generated by pathogenic life. If a specific modification of the natural nuclein results from the experience of the body in undergoing disease it must be either by a gradual process of education of the individual cells to the end of more effective resistance to the germ of that

disease, or the multiplication on a grand scale of similar immunizing cells, the protecting influence of which may last for a term of years, if not for the remainder of the subject's lifetime.

We quote Professor Vaughan, of Michigan University: "A virus being introduced by any means into the living organism, the spleen is stimulated to action, and secretes a nuclein which is carried, partly in solution, partly in the form of multinuclear cells to the invaded part of the body, and the poison is converted into the nuclein coming into contact with it, or is otherwise rendered inert. Later, a larger quantity of the identical virus may be introduced, and now the spleen will act more promptly and energetically than before. This promptness and energy of action are increased by exercise until finally, an amount of virus sufficient to kill an animal, whose spleen has not been subjected to this training, may be taken without the slightest ill effect."

Not only is it proven that nuclein from blood serum possesses antitoxic and germicidal powers, but also that a nuclein isolated from pure cultures of the yeast plant has the same decided germicidal and antitoxic powers when brought in contact with germs of diphtheria. So, in the peculiar cells characterizing the normal tissues and glandular structures of the animal economy, as well as in those of the protean forms of vegetable growth, may we not find the various nucleins requisite for reinforcing the inadequate natural powers for defense of human life against the powers of death?

Dr. Bleyer of New York, Dr. Aulde, of Philadelphia, and others have found in practice that "nuclein possesses, in addition to its specific action, a dynamogenetic power, increasing the vigor of the central nervous system." It seems to produce and hold the beneficial effect of a pleasantly stimulating electric current. Indeed, it is a very probable explanation of physiologic action of all remedies, including the assimilation of all food and drink, that the well-known selective affinity of living cells, is in fact an electrical attraction, the one for the other, due to opposite polarity of the cell elements. The condition of ideal health is one of the most nearly perfect electro-equipoise, the happy subject of this condition being so well balanced that he is, Diogenes-like, composed in mind and physically fearless. The poor old philosopher in his tub, prizing the sun-bath above all royal favor, was right, though cynical, in declining the king's offer of the luxuries of wealth and asking simply that earthly royalty stand aside that the great source of all electric life-force might shine upon the bather.

Natural immunity may perhaps be most expected in the midst of ideal sanitary surroundings, and in those of reasonably regular habits, temperate in all things, yet of that sanguine temperament knowing no such words as discouragement or shrinking from duty. Trained nurses and busy physicians are familiar examples of immunity and longevity in this class. But, alas! the rank and file of modern population with inherited weaknesses, unsanitary homes, careless and vicious habits of life, are found sadly in need of artificial help in order to begin to help themselves on these lines. When we can offer them a protecting proteid nuclein, in addition to prophylactic sunlight and fresh air, cheerful and pure surroundings, judicious exercise of body and mind, together with sterilized food taken in moderation, may we not

confidently hope to see the insurance actuaries' table of the expectation of human life raised to the level of at least a round hundred years?

The writer has, during the past few months used, with much gratification, a nuclein preparation in the treatment of cases of pernicious anemia, septicemia and general marasmus. It has seemed to offer most excellent assistance in the abortive treatment of incipient tuberculosis, but time, and multiplied cases must decide as to the sure or uncertain foundation of this hope.

SOME RECENT DISCOVERIES IN REGARD TO THE MODE OF ACTION AND CHEMISTRY OF COD LIVER OIL.

Read in the Section on Materia Medica and Pharmacy at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY F. E. STEWART, M.D., Ph.G.

DIRECTOR OF THE SCIENTIFIC DEPARTMENT OF FREDERICK STEARNS & CO.

The mode of action and chemistry of cod liver oil has long been a subject of controversy, one side contending that the oil from the liver of the cod is "merely a nutritive agent having the advantage over other fats of a readier entrance into the system, and a more ready assimilation," and the other side contending that, "on account of some peculiar principle or principles it contains, cod liver oil exercises a stimulant and alterative influence on the processes of assimilation and nutrition, thereby aiding in the production of healthy tissue." It is a well-known fact that fat itself, when taken as a food, does not necessarily fatten, and that the fat of our bodies is derived from a conversion of proteids and carbohydrates, fat itself playing a very insubordinate part in the process. This is strikingly illustrated by the various diets recommended for the treatment of obesity. Ebstein considers that the formation of fat is chiefly dependent on the simultaneous free use of carbohydrates, but that the consumption of fats has little or no effect in the storing of fat in the body. He believes that the presence of fat in the food prevents the storing of fat in the body because it produces a feeling of satiety or satisfaction, and so leads to the consumption of less food; and also, by diminishing thirst, lessens the desire for fluids, the ingestion of the latter favoring the laying on of fat. Dujardin-Beaumetz points out the fact that Hypocrates anticipated Ebstein, and quotes his advice to the obese that they should eat fat on account of its satisfying effect and its virtues of lessening the consumption of food. Oertel advocates the use of fat for the treatment of corpulency, although he allows more albumin and less fat than Ebstein. Foster and other physiologists teach that the part played by fat in nutrition is that of furnishing fuel to the system for the production of energy, and that the fat stored in the body is manufactured by the body itself, principally from the proteids and carbohydrates, the fat playing an insubordinate part.

When cod-liver oil is taken, however, a rapid increase in the weight of the patient is often noticed, owing to the stimulating effect it has upon the process of metabolism. This is not a simple storing of fat but an increase in the muscular tissue as well. Some patients, however, gain rapidly in strength, without adding to their weight, especially when their body weight is not much below the normal. All these arguments are in favor of the view that the oil con-

tains some peculiar principle or principles which augment the appetite and stimulate the formation of tissues. Since 1822 chemists have endeavored to ascertain what principles exist in cod liver oil to account for its alterative effect. They have succeeded in isolating, from time to time, some fifty different substances from the oil, several of them being well-known alteratives. According to the United States Dispensatory, "From an analysis of the oil by De Jongh, it appeared to contain a peculiar substance named *gaduïn*: oleic, physetoleic, palmitic, stearic and myristic acids, with glycerin; butyric and acetic acids; various biliary principles: iodine and traces of bromine. The formula of *gaduïn*, according to De Jongh, is $C_{35}H_{70}O_6$. Dr. Luck has found a peculiar fatty acid in turbid oil, which he names *gadic acid*, and the same is obtained from clear oil by saponification. (*Neues Jahrb. für Pharm.*, vi, 249.) As, however, about 70 per cent of cod liver oil is olein, and about 25 per cent. is palmitin with some stearin, *gaduïn* and *gadic acid* do not constitute a very important factor. Indeed, Flückiger considers their very existence doubtful. M. Chapoteau¹ claims to have discovered in cod liver oil a crystalline substance, *morrhuel*, containing phosphorus, iodine and bromine. He states that the brown oil yields from 4.5 to 6 parts in 100, the straw-colored from 2.5 to 3 parts, and the bleached oil from 1.5 to 2 parts. (*A. J. P.*, 1886, p. 19.) According to Dr. Lafarge (*Progrès Méd.*, Feb. 20, 1886; also process for preparing), this substance represents the peculiar medicinal properties of cod liver oil, and in tuberculosis and allied diseases may be given in capsules containing from three to five drops as about equivalent to one drachm of cod liver oil. By reaction with ammonia in distillation the oil yields a volatile alkaloid, *propylamin*, C_3H_7N , which has a strong pungent odor, recalling that of herring pickle, of which the same alkaloid is an ingredient. No other official fatty oils yields a similar product. (See *A. J. P.*, xxiv, 343.) Messrs. Gautier and Mourgues have obtained from cod liver oil the leucomaines butylamin, amylamin, hexylamin and hydrodimethylpyridin, and two fixed bases, *asellin* ($C_{25}H_{52}N_4$) and *morrhuin* ($C_{19}H_{37}N_3$). *Asellin* was found by its discoverer to be relatively feeble physiologically; *morrhuin*, of which about two milligrammes are believed to exist in a tablespoonful of ordinary cod liver oil, is affirmed to have the properties of exciting the appetite and acting as a powerful diuretic and diaphoretic. Some have been disposed to ascribe the virtues of cod liver oil to its iodine and bromine; but these are in too small proportion for much effect, and the oil has produced results which have never been obtained from iodine and bromine themselves. The presence of iodine can not be detected by the usual tests. It is necessary to convert the oil into a soap, and to carbonize this, before it will give evidence of iodine. The proportion never exceeds .05 per cent., or 1 part in 2,000, and it is by no means certain that iodine is always, if ever, present in pure oil. The proportion of iodine present has been recently investigated by E. C. Stanford (*Pharm. Jour.*, xiv, 353), who found it to be extremely minute, ranging from .000138 to .000433 per cent., with an average of .000322 per cent. The oil is capable of dissolving a larger proportion of

iodine; and, if any specimen contains more than .05 per cent., there is reason to suspect that iodine has been fraudulently added.

According to Gautier² and Mourgues³ different factors unite in producing the undeniable reconstructive activity of cod liver oil. They state that "In the actual state of our knowledge upon the constitution of this celebrated medicament and upon the properties of the definite principles which enter into its complex composition it appears to owe its therapeutic efficacy and its powerful reconstructive action to the following group of agents:

1. "Cod liver oil acts by the fatty bodies, which are easily assimilated because of the slight acidity and partial saponification which can be attributed to the hepatic ferments; also because of the presence of biliary principles in solution, which render emulsification extremely easy, especially in the digestive tract, where it aids the action of the pancreatic trypsin. These easily digestible fats (namely, the fatty bodies already referred to) are ready for immediate assimilation, their ingestion resulting in storing the body with protective agents or reserve material to be utilized as needed by the economy to supply fuel for producing heat, etc."

2. "These oils act as energetic builders of tissue by their richness in phosphates, phosphoglyceric acid, lecithin and phosphorus in other organic states. It is known that under the last three forms the economy assimilates phosphorus most easily. This element is indispensable to the production of the nuclein of the cell and therefore to the proliferation of the cells. It is also known that these same forms of phosphorus preside more particularly over the activity of the highest cells in the scale of life; cells of brain, egg and embryo."

3. "The basic principles, already referred to, stimulate the nerve system, augment the appetite, accelerate intro-organic oxidation, and increase the secretion of urine and sweat. *Morrhuin* is the most important of the matters found in the extract. It is a powerful stimulant of the functions of nutrition and assimilation promoting metabolic changes. It produces a rapid circulation of the extractive residues of cell life toward the excretory organs, where they are eliminated, provoking in this way, indirectly, a powerful movement of assimilation (anabolism) correlative of the losses consequent upon the inverse movements of de-assimilation (katabolism). This is considered as proven by the super-excitation of the appetite of animals brought under its influence."

Under the caption, "Cod Liver Oil and Chemistry," a book has recently (1895) appeared, written by F. Peckel Möller and published by the firm of Peter Möller, the latter being the title of a well-known cod liver oil manufacturing establishment, whose office

² Armand Gautier, born 1837, Doctorat à Montpellier 1862, Professeur à la Faculté de Paris 1871, was, on the death of Chevreul, elected a member of the Section of Chemistry of the French Academy of Sciences to fill the vacancy thus created. This celebrated savant is distinguished for his work on the leucomaines. The first attempt at the systematic study and generalization of the basic substances found in living tissues was made by Gautier, who applied to them the name of leucomaines, a term derived from the Greek, signifying white of egg. Under this name he included all those basic substances which are found in animal tissue during normal life in contradistinction to the ptomaines, which are products of putrefaction. Gautier is of the belief that leucomaines are being formed continually and incessantly in the animal tissues side by side with the formation of urea and carbonic acid; and at the expense of the nitrogenous elements.

³ Les Alcaloïdes de L'Huile de Foie de Morue par Armand Gautier, membre de l'Institut, Professeur à la Faculté de Médecine de Paris, et L. Mourgues, Préparateur particulier au laboratoire de M. A. Gautier, Paris, G. Masson, Editeur. C. Braire de L'Académie de Médecine, 120 Boulevard Saint Germain, 1890.

¹ M. Chapoteau describes *morrhuel* in the following language: "An amber brown, bitter, aromatic liquid partially crystallizing at a low temperature, consisting of the free oleic acid of the oil, alkaloid- and subtle combinations of sulphur, iodine, bromine and phosphorus."

is located at 43 Snow Hill, London, E. C., and at Christiana, Norway. This book is for the purpose of exploiting cod liver oil manufactured by a new process which has been patented by Peckel Möller. This authority claims that, "The therapeutic action of cod liver oil is one entirely its own." The "real value of the remedy lies in the fatty acids which it contains, in the form of glycerids." According to the researches of his chemist, Mr. Heyerdahl, cod liver oil contains no olein or stearin, but consists of several glycerids, 40 per cent. of the oil being made up of therapin and jecolein, the list of glycerids consisting of one or more unsaturated acids belonging to the same series, but hitherto unknown to chemists. Möller's patent process consists of preparing the oil in an atmosphere of carbon dioxide to prevent the glycerids from being acted upon by the oxygen of the air and forming hydroxy-acids. He claims that the eructating of cod liver oil is due to the presence of these hydroxy-acids, and that their formation is the real cause of the rancidity of the oil. For the purpose of diminishing the demand which has recently greatly increased for extracts made from cod liver oil, and containing the principles to which its alterative effect has been ascribed, Möller attacks in a savage manner those who are interested in advocating the various extracts referred to, claiming that all the substances found in the oil by eminent chemists, except the fatty matter, are the essence of rotten livers and are due to putrefaction. Several other houses who are exploiting the plain oil and preparations of the same, such as emulsions, etc., have joined forces with Möller for the purpose of driving out the extracts such as morrhual, jecorol, etc., made from cod liver oil or from the cod livers themselves.

A field in which there is so much controversy is surely an inviting one for original investigation. The following pages are devoted to a report of investigations in this field under my own direction. We⁴ commenced with a careful inspection of the methods of preparing the oil, both in this country and in Norway. Preliminary to this, however, we corresponded with the leading manufacturers of cod liver oil in the world,⁵ and accumulated as much information as possible on the subject. Guided by the information thus acquired we commenced operations by going out with the fishermen on the fishing boats, off the coast of Massachusetts, and inspected their methods of catching the cod, collecting the livers and preparing the oil. After watching these operations we concluded to try some experiments in cod liver oil manufacture ourselves. Accordingly we rented a room and fitted up a laboratory for the purpose. After finishing our experiments at the fisheries

we collected some fresh livers, preserved them in alcohol, and shipped them to our laboratory in Detroit for further experiments. The results of these experiments were surprising and are so different, in some respects, from the information furnished us by the standard text-books, and so completely disprove the position of those who traduce the extracts made from cod liver oils and from the livers, that we consider them of sufficient importance to bring before the ASSOCIATION.

The principal cod fisheries of the world are seen at the Islands of Lofoten, off the coast of Norway. A great many cod are also caught off the coast of Iceland. In North America we have the Newfoundland and New England fisheries. Codfish are also taken on the banks of the British Islands, but not in commercial quantities. Russia sends more or less into the market, and a fine quality of cod liver oil is now made in Japan and marketed by Cocking & Co., of Yokohama. The Lofoten Islands form part of an extensive group of islands stretching down the Norwegian coast, numbering probably several thousand. The name Lofoten Islands is applied to the four islands forming the apex of the entire group, although officially only their southeasterly shores, facing Vestfjorden and the mainland, bear that name. The Lofoten Islands lie in the Arctic circle between latitudes 67 and 69, and are separated by narrow sounds, the islands themselves being covered with great snow-clad mountains, and giving some of the grandest scenery of the world. The supply of fish in these regions is something perfectly enormous. To illustrate this a story is told of how a shoal entered one of the fjords of East Vaago early in January, 1887. The fishing boats numbering 2,500 soon congregated at the spot and were successful in catching over thirteen millions of fish, this number, however, being a mere nothing as compared to the total in the shoal. The number of fish in this shoal was estimated to be about ten thousand million, and when it is considered that this shoal was only one out of possibly hundreds of shoals on the banks, the number of fish are beyond computation. The female codfish produces every year about one hundred thousand eggs for each pound of its weight; so that on an average each fish is responsible for a family of one million two hundred thousand fish every season. Only for inroads made upon the young fry by the whale and other denizens of the deep, the entire ocean beds would be completely choked with codfish in a few years. The output of the Norwegian fisheries, all told, is between forty and fifty millions of fish annually, yielding between fifty and sixty thousand barrels of oil.⁶ When to this is added the output of all the other cod fisheries of the world, the amount of cod liver oil manufactured in a year is simply enormous. Much of the oil, however, is used in the arts, being extensively employed by the tanners, etc., and only part of it is used medicinally. The methods of preparing the cod liver oil are the same in principle in all parts of the world. The pale yellow oil is prepared by submitting the livers to a jet of steam let into a conical vat, that has been filled with the fresh livers, for half an hour. The oil is filtered warm from the melting vat. The stearin is then separated by refiltration at a temperature somewhat below the freezing point. The various varieties of brown oils are prepared by exposing the livers to the heat of the sun, which expands and

⁴ I do not use "we" editorially, but in reference to our Scientific Department, which consists of F. E. Stewart, M.D., Ph.G., director; chemistry, C. C. Sherrard, Ph.C.; materia medica, L. H. Gardner, Ph.C.; pharmacognosy, F. H. Frazee, Ph.C.; therapy, F. E. Stewart, M.D., Ph.G.; botany, W. G. Rankin, Ph.C.; pharmaceutical assaying, J. L. TeGarden, Ph.C. Much of the chemie work has been done by Professor Sherrard, who had also associated with him Prof. J. O. Schlotterbeck, in charge of the department of pharmacognosy and materia medica of the University of Michigan. Sherrard and Schlotterbeck have worked together part of the time, and at other times have worked separately for the purpose of verifying each other's work. We have also to thank Prof. A. B. Prescott, Dr. C. D. Morris, assistant to Dr. Novy, and other members of the faculty of the University who have aided us in verifying our observations. The credit for the work, therefore, should be given to the Scientific Department of Frederick Stearns & Co., aided, as aforesaid, by members of the staff of the University of Michigan.

⁵ The manufacturers with whom we corresponded relative to the method of preparing cod liver oil included Isdahl & Co., Bergen, Peder Devold, Aalesund, Norway; Joh. Rye Holmboe, Tromsø; Foh. V. Borthen, Trondhjem. Cocking & Co., Yokohama, Japan; and the leading manufacturers of cod liver oil in Newfoundland and New England.

⁶ Cod Liver Oil and Chemistry. F. Peckel Möller, Ph.D., London, 1895.

bursts the oil cells. The first oil that floats to the top of the cask is quite pale and is known as raw medicinal oil. The second skimming is rather yellow and with a strong taste and smell, and is the light yellow oil employed for industrial purposes. The third or last skimming is a dark brown oil with a very strong smell and disagreeable taste, and is used exclusively for tanning purposes. It is generally supposed that the brown color of the darker varieties of oil is due to the products of putrefaction. This, however, we find not to be the case. It has also been charged that many of the substances found in the oil, to which its therapeutic efficacy has been ascribed, are also the products of putrefaction. This has been applied particularly to the leucomaines discovered by Gautier and Mourgues in the oil, the opponents of these scientists contending that the organic bases referred to, instead of being formed during the life of the fish, are ptomaines or cadaveric alkaloids resulting from putrefying livers. While it is true that several of the substances found in the oil are undoubtedly ptomaines, such for example as propylamin, to which the marvelous virtues of the oil have been ascribed by some of the best writers, yet we find that the bases discovered by Gautier and Mourgues occur in the fresh liver taken from the live fish. This fact has been noted by Bouillot as well as ourselves, and is true without question, as will be more apparent when our experiments are described in detail. The largest manufacturers of cod liver oil in the world is the firm of Isdahl & Co., Bergen, Norway. Their integrity is beyond question, and their well-known Midnight Sun brand of pale straw-colored oil commands the highest price of any of the cod liver oils on the market. In response to our letter making inquiry in regard to the manufacture of cod liver oil they state, under the date of Sept. 5, 1894, as follows:

In reply to your favor of the 8th ult. in relation to our light brown cod liver oil, we beg to inform you that for more than thirty years our firm has made a specialty in the way we prepare it of a sweet-tasting, light brown medicinal oil. It is quite a natural oil, which obtains its dark color from the length of time it remains on the livers, as we use only selected livers in its preparation. The ordinary brown cod liver oils to be got in our markets are prepared from the remainders of the livers after the natural yellow-colored oil has been skimmed off, and are only fit for tanning purposes. After this explanation you will understand that the light brown cod liver oil which we prepare has the same active medicinal principles as any other cod liver oil, and it may be still richer than any of them in alkaloids. We believe that its taste is more pleasant than the flat and insipid taste of the straw-colored oil, and we know from experience that a great many people for this reason give it the preference. This variety of oil may be sold under the title of Isdahl's Light Brown Lofoten Cod Liver Oil. Of course no American house has more right to the title of 'Lofoten Oil' than anybody else, although it is right to lay stress on the title Lofoten Oil, as the best oil produced in Norway comes from that district. We prepare our special brand of light brown cod liver oil from selected Lofoten cod livers only.

EXPERIMENTS ON COD LIVERS AND COD LIVER OIL.

The following experiments were undertaken for the purpose of proving that the color of cod liver oil is not due to a putrefactive process occurring in the livers from which it is derived and also for the purpose of proving that the 5 per cent. of extractive matter found in the oil is not putrefactive in its origin.

Experiment 1.—The fresh liver of a cod was taken and a section of it examined under the microscope to see whether there were any bacteria present. It being determined that bacteria were not present, incisions were now made in the liver and the oil

was allowed to exude spontaneously. The oil thus derived from the fresh liver was of a pale straw color.

Experiment 2.—The liver of a cod was exposed to the air until, under the microscope, the presence of bacteria was determined. Incisions were then made in the liver and the oil that exuded was of a pale straw color as before.

Experiment 3.—A batch of fresh livers was taken and examined by the microscope to prove the absence of bacteria. This batch of livers was now placed over the water bath at a temperature of 50 to 60 degrees C. for seventy-two hours. Every twenty-four hours examinations were made of the liver with a microscope to see whether or not bacteria were present. During this time the following changes were observed to occur in the liver substance: The parenchyma commenced to disintegrate and became a pul-taceous mass. During this process of disintegration the color of the liver parenchyma changed gradually through the various shades of brown until it became almost black. The oil remaining on the livers little by little took up this coloring matter and were darkened in proportion. By this means we were enabled to obtain cod liver oils from the same batch of livers of every shade of color on the market, simply drawing it off from time to time when the desired shade of color had been reached. While conducting experiment 3 the liver was examined from time to time to ascertain whether any bacteria were present, and during the entire time, from the beginning to the end of the experiment, no evidence of bacterial action was observed. For the purpose of having our observations verified, we sent specimens of the livers we were working on to the University of Michigan, and there had them examined with a thirteen hundred power oil immersion, and also had cultures made, the results being entirely in accordance with our observations in Detroit.

It is evident from Experiments 1 and 2 that the presence of bacteria does not determine the color of the oil, as a pale straw colored oil can be made from livers containing bacteria, as well as from those free from germs. Professor Sherrard mentions that he has seen at the New England fisheries light colored oil exuding from livers far gone in decomposition. Experiment 3 shows that oils of all the different varieties of color found on the market may be manufactured from fresh livers without the intervention of bacteria.

The next series of experiments were for the purpose of determining the presence of the leucomaines⁷ of Gautier and Mourgues in the various samples of the oil just manufactured. Their presence was easily demonstrated in the samples. The pale straw-colored oil contained but a small amount. The light brown oil contained a larger proportion than the darker oils. From this and other experiments which we have carried on with samples of oil made by different manufacturing houses and by close study of our own processes, we infer that in the preparation of the light brown oils a larger proportion of the leucomaines is found than in the pale oils or the darker varieties, for the reason that in the former case the liver parenchyma containing them is not disintegrated while in the latter instance the long continued

⁷ The process for determining the presence of the basic substances discovered in cod liver oil by Gautier and Mourgues is published in their monograph entitled, "Les Alcaloides de l'Huile de Foie de Morue."

action of heat has resulted in the decomposition of these organic bases. In our investigations many hundreds of samples of cod liver oil from every known commercial source have been analyzed. With the possible exception of cod liver oil prepared by Peckel Möller's new patented process, which we have not examined, we find that all the cod liver oils on the market contain more or less extractives, including the organic bases of Gautier and Mourgues, and that, while the dark brown oils contain more extractive matters than the light brown oils, yet the former are richer in the leucomaines than the latter. The probable reasons for this have just been stated.

The question naturally arises, What is the reason for the change in the color of the livers when exposed to the action of light and air. This subject is one requiring further investigation. Prof. A. B. Prescott, of the University of Michigan, with whom I talked on the subject, suggested that it might be a process of oxidation. That it is not due to action of bacteria is evident from what has already been said. The change in the color of the livers may be due to the same process that darkens the surface of freshly cut meat or gives to dried beef its rich brown color. A freshly cut apple darkens on exposure to the air. The dark brown color of opium is in strong contrast to the milky color of the fresh juice of *papaver somniferum*. Prof. Dolbear (as quoted in *Food*) says that the tanning of the skin, the darkening of newly laid shingles, and the coloring of apples and other fruits, is all a "photographic process."

That cod livers readily putrefy is not true. Even when exposed to the atmosphere for some time no bacteria appears in them. Just how long they can be thus exposed we have not yet determined. It is well known that bile processes some antiseptic qualities. As Foster says, "Out of the body its presence hinders various putrefactive processes; and when it is prevented from flowing from the alimentary canal, the contents of the intestines undergo changes different from those which take place under normal conditions, leading to the appearance of a variety of products, especially of ill-smelling gases." The antiseptic power of the bile is said to be due to the presence of glycocholic and taurocholic acids. It is evidently due to the presence of bile acids that the livers are not readily decomposed when they are exposed to the air. Carvalho and Pachon (*Archives de Physiologie*) have recently reported the results of their experiments on a dog deprived of his stomach. Among other things it was found that the dog thoroughly digested rotten meat, the same as a healthy dog. This is accounted for by them by the great antiseptic value of either the bile, or the intestinal fluids, or that the liver, spleen and perhaps other organs, are capable of destroying large amounts of ptomaines.

It is evident from the above experiments that the information in regard to the chemistry and manufacture of cod liver oil in our text books is, to a certain extent, erroneous and should be revised. It is also evident that all of the substances found in cod liver oil are not the products of putrefaction, as has been claimed by those interested in exploiting the plain oil and its preparations. It has been demonstrated that cod liver oil contains certain leucomaines and organic bases which, upon physiologic examination by their discoverers, Gautier and Mourgues, proved to be powerful stimulants to tissue metabol-

ism. It has been shown that fat itself has no such stimulating properties, and it is therefore reasonable to infer that this effect is due in a greater or less degree to the presence of the organic bases referred to. Other leucomaines exist which possess very similar properties. The leucomaines creatin and creatinin for example, found in lean meat, extract of beef, etc., are stimulants to the processes of tissue metabolism, and are now considered by Foster, and other physiologists, necessary ingredients of the diet, their office being to assist in the assimilation of proteids. The mistake has been in supposing these extractive matters to be nutrients. When it was proved that they were stimulants only, a reaction against them occurred, and the profession made a serious blunder in dropping the use of bouillon, beef tea, extract of meat, etc. When employed with a proper diet, consisting of the requisite quantities of proteids, carbohydrates and fats, they are powerful aids to the appropriation of food in tissue building. Further experiments in connection with the work on cod liver oil should be undertaken to demonstrate whether we are not making another mistake by employing oils from which the extracts referred to are left out. We have demonstrated that they are not necessarily the products of any putrefaction and that oils can be made, rich in extractive matters, from cod livers in which bacteria take no part. If it is proved that Isdahl, De Jongh, and other manufacturers of the light brown oil, are correct, and that their virtues are superior to the pale straw-colored varieties on account of the presence of the leucomaines of Gautier and Mourgues, and other active principles not found in the pale varieties, then methods for standardizing cod liver oils should be adopted for the purpose of securing a proper proportion of these substances therein. Further experiments should be made with the extracts, upon tissue building, in connection with the various classes of food. There are good reasons to suppose that in a large number of cases other fats may be substituted for the disgusting fat of the *gadus morrhua*, the same to be taken in conjunction with these extracts. Butter, cream and the fats of meats, etc., are much more agreeable than the fat of the cod liver, and, when combined with the powerfully stimulating extractive matters derived from the fresh liver of the cod, may prove valuable substitutes for cod liver oil. Morrhuol, one of the extracts made from the oil, has already acquired quite a reputation, and, if properly employed in connection with the right kind of diet, might prove still more efficacious. We manufactured some of the extract from the oil, by the process recommended by Gautier and Mourgues, and placed it in the hands of Dr. E. L. Shurly, of Detroit, to experiment with in the Harper Hospital. The results of his experiments have been published in the Harper Hospital Bulletin for April, 1893, and are as follows:

"The favorable reputation of cod liver oil, as well as other animal oils (such as cream, eulachon oil, etc.), as a means of treatment of phthisis pulmonalis is too old and widely known to need comment. It is equally notorious that very many phthisical patients, suffering with even a moderate degree of anorexia can not take these oils, either pure or in the form of emulsion. Therefore the medical profession has been ready to hail with delight any preparation or combination which might be presented that would enable patients suffering from phthisis pulmonalis to

receive cod liver oil without untoward effects. Whether the real value of cod liver oil and eulacohn oil rests with the extractives or the oily portion, is a question; but many have believed all along that the extractives contained iodine, etc., were the constituent of particular value. Hence, when so-called morrhual or other extracts were first put upon the market several years ago, they soon found a favorable reception, especially from those practitioners who relied so exclusively upon cod liver oil as a medicine and nutrient for wasting diseases." Dr. Shurly goes on to say that: "There is no doubt, from our experience, that the cod liver oil extracts are fully as efficacious in the majority of cases, and far superior in all cases marked by feeble or fitful digestion." Then follows a description of cases in which Dr. Shurly employed our alcoholic extract of cod liver oil containing the combined active principles extracted from the oil. This extract was given with excellent results. The Doctor then sums up the cases by saying: "It seems apparent that these preparations are of considerable value, especially in those cases of phthisis pulmonalis which exhibit marked and persistent disturbance of the stomach and small intestines. Whether their effects depend solely upon their nutritive value or upon some selective action upon the peripheral nerves or capillaries can not now be determined."

Various other experiments were conducted with this extract in combination with wine and peptonate of iron by Drs. Chittick, Manton, LeSeure and Duffield, connected with the Detroit hospitals. The limits of this paper, however, will not permit us to consider the matter at greater length. We hope, however, in a subsequent paper to give further information on this interesting subject.

In this connection it may be well to state that associated with me in this work on cod livers and cod liver oil have been Prof. C. C. Sherrard, of the Detroit Medical College, the chemist of the scientific department of Frederick Stearns & Co., and Prof. J. O. Schlotterbeck, of the University of Michigan, who has done a good deal of work for us on the subject.

PHARMACY IN MEDICAL SCHOOLS.

Read in the Section on Materia Medica and Pharmacy, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

HENRY PARR HYNSON, PH.C.

BALTIMORE, MD.

I am led to present a paper upon the teaching of pharmacy in medical colleges for somewhat selfish reasons. This selfishness is not, however, that of the individual but is the kind which seems laudable in a loyal member of the pharmaceutical brotherhood. From the standpoint of the pharmacist, I believe a better knowledge of pharmacy, its truths, laws and practices would be greatly advantageous to medical men. This seems but a logical conclusion, arrived at through and by the acknowledged principle which makes the best and most thorough knowledge of a person, a thing or a theory, the only proper quality for justly and fully estimating the value of any of these. Does this not bring to a number of my honest hearers on "the other side of the house" the question, Am I in a position to do justice to this profession? Or, as I would rather have you style it, this branch of your profession, which has so thoroughly established itself in our midst during the last fifty years as evidenced by its separate colleges, its special schools

connected with our larger universities; by its current literature, which has grown from a small beginning in 1857 to very large proportions, devoted to pharmaceutical advancement and reports of scientific research and investigation; by its great mass of permanent literature; by its model text-books, all resulting in the preparation of men who practically edit your pharmacopœias and dispensaries, composing a large proportion of the actual workers in pharmacologic research, which looks so strictly toward a thoroughly scientific and rational materia medica. But while we make these seemingly boastful claims, we at once make due acknowledgment to medicine proper, our mother, if she will allow it, and freely admit we are entirely dependent upon her encouragement, her help and especially her just appreciation to give us the force, the confidence, the stimulus to push still further on, finally winning a creditable position among the special branches of your profession or, if not so much as this, establish a separate one whose ethics, practices and accomplishments will give it a fair standing among its sisters. We are contending that nothing will be so helpful to us as a stronger encouragement and better recognition by the medical profession and we are sure these will come to us in no more certain way than through a broader acquaintance with our claims. How this greater familiarity with the scientific and practical elements of pharmacy can be secured seems a matter easy of solution; simply give it a place, a regular full-fledged place in the curriculum of your now extended course of medicine. In making this suggestion or appeal, as you like, I do not overlook abuses, wrongs, inconsistencies, perversions or almost any charge that may be brought. You must not forget that the "black sheep" are the conspicuous members of the flock, they are black spots, and again, it is only he who is without sin who can cast the stone. No class of men know better than yourselves the effect of good strong healthy growth brought about by changed environment. How it will push aside, absorb or eliminate irregularities and malformations, which found life and place where surroundings were bad and food poor. This much we would gain by a thorough teaching of pharmacy in medical schools—strength, encouragement, a fair appreciation, a more certain and healthier growth from improved environments.

Now, what would be *your* gain? Could I get into words the advantage a physician who has a thorough knowledge feels he has in this particular line over his brother who can make no such claim, I would need write no more. Pharmacy must of necessity be practical to be valuable. Its practices are largely made up of the intelligent and skillful application of many of the facts and theories of established sciences. It is truly said, it is not so much the accumulation of knowledge as its application that makes a man great, a truth, indeed, regarding pharmaceutical attainments, which compass a broad scientific training and includes much we find in mineralogy, botany, zoölogy, together with a number of branches already included in the studies of the medical student, particularly practical chemistry, comprehensive materia medica, applied physics, some anatomy, physiology and microscopy. The study of pharmacy will help the medical student by bringing about a direct application of his knowledge through the varying reactions and combinations which occur during pharmaceutical manipulations. Surely it gives him a

more thorough knowledge of *materia medica*, since it comprehends the source, collection, preservation and preparation of drugs. It helps him in therapeutics, since he must become familiar with the exact composition of compounds, and by a more accurate understanding of the peculiar characteristics of medicinal substances generally. With this knowledge and by it he may arrive at conclusions regarding the peculiar effect of drugs, which would be perfectly impossible without it. For instance, the marked difference between the action of potassium or sodium oxalate as compared with iron or cerium oxalate. Quite clear to one knowing the pharmaceutical characteristics of these salts, and yet the application of these truths and principles gained through following other avenues is not all one finds in pharmacy. To be a good chemist, an enthusiastic botanist or one thoroughly familiar with the ordinary *materia medica* does not by any means constitute an efficient and competent pharmacist. Nor does it offer a medical man a sufficient acquaintance with this branch, although often the usual requirements of a physician are too frequently supposed by himself and his patients to better fit him for the preparation of medicine, than is the capable graduate of pharmacy. There are so very many important actions, effects and results occur which are due entirely to physical peculiarities and can be controlled only through pharmaceutical management. Where, except through a course of pharmacy, can the medical student learn of these possibilities? Notwithstanding the tendencies of the times, regarding drugs, lead almost to their entire disuse, which is simply that stroke far to the other side, and which, it seems, must be made before a proper settling is ever reached; notwithstanding this want of faith, there are times left when a physician must needs do something looking to the relief of his patient other than to regulate his diet, improve his surroundings, reduce his temperature by ice-water, cure his stomach ache by removing his appendix or overcome hysteria by ovariectomy. These simple (?) remedies are not sufficient at times to meet requirements or to satisfy the patient's demands for corrective treatment. If, indeed, drugs have yet to be used, does it not follow, to be consistent with the advances made in other direct lines, that they should be intelligently handled? Is there not more empiricism in the use of medicine than in any other branch of the profession? If empirical practice have lessened and are vanishing, have they not disappeared before the light of a better and surer knowledge? And before this same certain light will the mist so long clouding the use of medicines disappear. He, among you, who would even in this day of skepticism deny that there are a few real specifics would be most surely regarded as, at least, eccentric. If there is worth in a few agents discovered by a thorough and certain investigation of their action and characteristics, is it not possible that more of them may be established, provided they are skillfully prepared, of definite strength and always uniform in potency? I have been trying to show that a practical knowledge of pharmacy is necessary for the physician who poses as an advanced member of the profession. No one can doubt how valuable it is to those who are fond of remedies. It would be tedious to go into details of the help they would have at hand through this source. The tendencies of the times are favorable to the adoption of a pharmaceutical

course in medical schools. To ascertain to what extent the branch is now taught I addressed a note of inquiry to the proper officers of twenty-five of our principal medical colleges inclosing an addressed card for reply. Only nine of these came back, and I conclude from the silence of the other sixteen that they were ashamed that no advances have been made in this line. Adding to this nine our Baltimore's own colleges, five, we have fourteen from which to draw conclusions. Of these, five teach pharmacy separately or in connection with *materia medica*; three in connection with schools of pharmacy; six do not claim to teach it at all. One alone examines and makes a satisfactory stand a requisite for examination, and as I have the honor of being connected with this institution I can bear testimony to the great interest taken by the students and the willingness with which they undertake the study owing to the extended advantages gained thereby. These facts seem encouraging; certainly they are when we remember that the idea is almost new. Concluding, we sum up, believing to have shown: 1, that pharmacy would be greatly helped and improved if better understood by medical men; 2, that medical students would derive signal and peculiar advantages from a thorough study of pharmacy, followed by an examination; 3, that both advanced and conservative medical men would find in pharmacy means to better attain their ends; and finally, that general medicine would gain largely through the teaching of pharmacy to students of medicine, since it must of necessity bring about an improved, more dignified and ethical *materia medica*. As it is now, if I can be pardoned for the assertion, many medical men are simply made dupes of by enterprising manufacturers and their representatives. They are constantly made to believe there is a real difference between tweedle-dee and tweedle-dum. Wonderful variations are shown and accepted, between the action of one firm or another's preparation of some substance which is as fixed and as certain in its effects as anything can possibly be.

The physician thoroughly taught in pharmacy is never the material that the promoter of new and mysterious pharmaceutical products seeks or one with whom he is successful in inducing to use his really claimless compound. Doing away with this endless nameless class of remedies, which in almost every instance after a time play the part of the old-time patient, would be of incalculable benefit to medicine proper. Abolish the use of these proprietary products and unscientific compounds and the last vestiges of empiricism will go with them.

ADENOMA SEBACEUM.

Read in the Section on Dermatology and Syphilography, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY W. E. MAXWELL, M.D.

PORTLAND, OREGON.

Mr. C., age 31, single; traveling salesman; American parentage; healthy, well developed and of fair intelligence; habits not strictly temperate; raised in moderate circumstances; no epilepsy or other nervous troubles known in his family.

Beginning about half an inch below the right ear and posteriorly, running obliquely downward and backward across the sterno-mastoid muscle, is a

double parallel row of closely connected but distinct, averaging pin-head-size papules, on a slightly elevated red base, measuring one inch long by one-fourth inch wide, but somewhat narrower in its middle from arrested development and slightly bent upon itself as if broken, but not disconnected. This patch presents an irregular, rough surface of twenty-seven distinct but closely connected papules, each surrounding the dilated orifice of a sebaceous follicle, from which a slender, thread-like sebum can be expressed.

The summit of each papule is paler than the base on which it rests. The base itself is a shade redder than the surrounding surface, which is a light crimson and finely punctated, being made up of innumerable small dilated vessels. Below this patch and at its lower end and separated only by a narrow strip of normal skin, is a group of five papules similar in every respect to the patch above, but less distinct. Both patches are devoid of hair growth. No comedones near, although the papules would suggest a cluster of comedones if not for the circumscribed elevated red base.

This growth was not noticed at birth, but was in early infancy, and is said to grow redder at times. The papules have not decreased or altered in character in any way since first noticed, and he is not positive as to any increase either in number or size of papules.

Presenting himself for treatment Feb. 14, 1894, electrolysis was tried as described by Crocker in his work on skin diseases. The needle was attached to the negative pole of a galvanic battery and inserted well down into the orifice of each papule and in the larger ones making two or more insertions. Three to four milliamperes of a McIntosh galvanic battery were used. This was tried three or four times at irregular intervals, the last being August 1 following.

In December following, seeing no results from the electrical treatment and the striking similarity in the arrangement and external character of the papules in this case to the case so thoroughly studied and reported in the *Journal of Cutaneous and Genito-Urinary Diseases*, December, 1893, by Dr. Politzer, in which he obtained such satisfactory results by scarification, commended this treatment to me. My patient's limited time, however, from business relations, justified a more active procedure on my part.

The upper patch was now curetted to a point just below the level of the normal skin surface. The tissues showing quite a fibrous resistance and slightly more vascular than normal. It soon healed with a smooth pink cicatrix.

In March, 1895, he returned to my office to consult me as to an unlooked-for behavior in the cicatrix, which was likely to become more unsightly than the original growth. It had assumed somewhat the appearance of a hypertrophied scar. He was told that it was probably (?) a beginning cyst formation and advised to report later. On his return in April a very slight increase in size could be observed. It was punctured in several places, but nothing more than blood escaped. It had not felt sore nor painful at any time. The lower patch was not curetted and remains as first seen. Under his right eye was a varix about the size of a pea, which has been obliterated by electrolysis. A few telangiectic vessels of small size can be seen on left side of his face and one above left eye. He says tumors have been known in his family, but the nature of which he could not

tell. No microscopic examination has been made. The diagnosis given is on clinical grounds.

Whether a return to the original condition to which it at present bears no likeness, or hypertrophied scar or keloid will be the result of treatment, I will know later. Except the occurrence of cystic and colloidal degeneration in the growth, I find no report of the return of any other than the original growth from incomplete removal.

The clinical behavior in this case bears some points in common to cases reported by Crocker of congenital fibro-sebaceous disease, more especially the one referred to him by Bilton Pollard in 1890:

1. In its probable congenital origin.
 2. Its changeable color at times.
 3. Its slightly elevated base.
 4. Being devoid of hair where hairs normally exist.
- It differs from Pollard's case, however:
1. In the larger size papules; the follicular openings in the papules with the sebaceous contents.
 2. The absence of comedones.
 3. The presence of telangiectases near and remote.

Of the few unilateral cases reported, this is the only one away from the face and on the neck. It is the first American and second case reported in America, and is reported for its rarity, its unilateral and unusual location and yet unsettled termination.

I now propose to make a section of it when its further pathology will be studied. Its location and definite arrangement, even for cosmetic effects, would have justified it at first.

Later: The new growth is keloidal.

SYPHILITIC ULCERATION OF THE RECTUM.

Read in the Section on Dermatology and Syphilography at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY JAMES P. TUTTLE, M.D.

ADJUNCT PROFESSOR OF SURGERY AND LECTURER ON DISEASES OF THE RECTUM AND ANUS IN THE NEW YORK POLYCLINIC.

While syphilis is acknowledged to be the most frequent cause of stricture of the rectum, and the profession at large are well posted as to this fact, I have been surprised in post-graduate teaching to find how little the *modus operandi* of its production is understood, and how little the prodromic and precursive conditions are appreciated.

I do not propose in the present paper to discuss stricture of the rectum in a general way, as this would lead me into too wide a field. In order, therefore, to make plain the bearing of my remarks it may be well to state at the outset that I have little faith in any syphilitic stricture of the rectum, that has not been preceded by ulceration of that organ. Gummata may produce narrowing of the canal as in the cases reported by Zapala (*Arch. f. dermat. und syph.*, Prague) and Molliere, but certainly it is very rare. The condition described by Fournier as ano-rectal syphiloma is said to have been seen by numerous observers, but there is no positive proof that ulceration had not preceded the infiltration, which is its chief characteristic. If the doctrines of Fournier on ano-rectal syphiloma, and Trelat on quaternary muscular infiltration and atrophy are correct, there is no anatomic or physiologic reason why we should not have similar strictures all along the alimentary canal just as frequently as at the rectum, which we all know we do not have. Ulceration is in my opinion, then, the almost invariable precursor if not the cause

of syphilitic stricture of the rectum and is, therefore, the important element to be understood; the essential condition to be diagnosed.

When once the muscular wall has become infiltrated, its fibers atrophied and the interstitial tissue becomes sclerotic, there is no longer any hope of curing the stricture. Our only course then is palliation or resection. When the condition is recognized in its early ulcerative stage, before the above lesions have taken place, much may be done; indeed, the large majority of the patients may be cured. With this exalted view of its importance, I thought it not unfit to bring before this society a brief discussion of the clinical characteristics and course of syphilitic ulcerations of the rectum.

We may hastily run over, without discussing, the syphilitic manifestations about the anus, such as chancres, condylomata, erythema, secondary skin lesions, deep ulcerations, the result of friction and uncleanliness of the parts, fissure-like cracks, dry, brittle mucous membrane, mucous patches, etc. These manifestations occur early in the course of syphilis, indeed, they are generally associated with the secondary skin eruptions. Where they have a tendency to advance rapidly, and to great destruction of tissue, they are generally associated with some profound constitutional disturbance, such as nephritis, cirrhosis of the liver, or tubercular diathesis. These conditions should be borne in mind and inquired into with the utmost precautions. These secondary manifestations about the anus are important in themselves, but not pertinent to the point we have in mind. They are not likely to be overlooked and their nature is generally apparent. They are, consequently, treated early and cured before much damage has been done. These facts will explain in a large degree why we so rarely have syphilitic stricture of the anus. It is within the external sphincter that we find the dangerous ravages of specific ulceration. Van Buren said years ago, "When we consider how rarely the rectum is carefully explored, except when painful symptoms render this measure necessary, and that secondary eruptions are usually painless, the absence of recorded cases of secondary ulceration is not difficult to understand; while the common occurrence of secondary syphilitic manifestations at the other end of the alimentary canal—in the mouth and throat—justifies the assumption that they also occur if not so frequently, in the rectum."

We are examining more rectums now-a-days and find that the predictions of this eminent teacher are more than justified. I shall not depart from the ordinary divisions of primary, secondary and tertiary lesions. The initial lesion is rarely seen in the rectum; first, because, as I believe, it is very infrequent, at least in this country, and second, because it produces so little disturbance if within the mucocutaneous border, that it heals before the patient has occasion to consult a physician.

The primary sore in the rectum differs in no wise from that seen elsewhere, except at the verge of the anus between the mucous folds, when it may assume the form of fissure in ano. Care should therefore be exercised in examining all cases of fissure, to see that there is no localized induration at the point of ulceration; that its borders are not elevated, and that there are no other concurrent symptoms of syphilis in the individual. Especially is this important

in women as the rectum in them is so exposed to contact with the male organ. The existence of pain in these fissure-like ulcers is no proof that they are not syphilitic, for if they involve the mucocutaneous border they are almost as painful as any other form of fissure.

The primary lesion in the rectum has been so rarely recognized that many eminent syphilographers have denied its existence *in toto*. Those who have read the reports of Fournier, Martineau and Hartley certainly can not doubt its existence, and I do not care to enter into any further statistics to prove it. They may occur as abrasions, erosions, round, crater-like ulcers, brown papules, or, as said before, as fissures between the mucous folds. All these manifestations are distinguished from similar non-specific lesions by a history of exposure, and by their localized cellular induration and infiltration. They do not involve the deeper layers of the gut; they heal in about three weeks or less, leaving a slight induration, rarely a cicatrix and no stricture. They will be rarely seen and more rarely diagnosed, but as we do not any longer treat syphilis at its initial stage unless some constitutional manifestation is apparent, little harm will be done by our failure to recognize these early signs.

Between the secondary and tertiary syphilitic ulcerations of the rectum, it is almost impossible to draw the line, unless we make it in weeks or months. Ulcers of secondary appearance may come on years after infection, just as a secondary skin eruption may recur after five or ten years in a properly treated case of syphilis. I prefer, therefore, to confine the term tertiary to ulcerating gummata and call all others secondary or secundo-tertiary. The time at which these ulcers occur varies from the third week after infection to the most remote period of life and their characteristics do not differ much whether occurring early or late, with the exception that the later in the disease the more likely are the ulcers to involve the deeper layers of the rectal wall. They are of variable shape, generally oval, but running up and down the rectum instead of around the gut as is the case in tubercular ulcers. They are crenated, crater-shaped, with sharply cut, infiltrated edges, never undermined, with grayish, sluggish-looking bases and bleed easily upon touch or friction. This condition of the edges, this color of the bases, this hemorrhagic tendency, positively diagnose these ulcers from tubercular ulcers which have a light yellowish look, are nearly always undermined, and ragged at the edges, discharge a thick muco-pus and rarely bleed. The early secondary syphilitic ulcers do not as a rule involve the muscular layers of the rectal wall, but if superficial and if treated at this stage they disappear, leaving behind no cicatrix or contraction. They soon become chronic, however, and invade the deeper tissues, one after the other, until they lay bare the sacrum, perforate the vaginal wall, or even the peritoneum itself. The ulcers have a tendency to extend up the bowel, instead of around it, although they do sometimes take the latter course, and as they advance from point to point the older portions heal and leave behind a smooth, white, depressed cicatrix, with slightly pigmented borders, the essential characteristic of which is to persistently contract. The bases of these ulcers are at first soft and edematous, but as they become more chronic and progress, cellular infiltration takes place in the submucous and mus-

cular coats. The walls of the rectum assume a stiff and leathery feeling, and narrowing of the canal begins. The muscular fibers degenerate into fibrous tissue and there is left a contracting, connective or cicatricial tissue, the prominent feature of which is to hypertrophy and contract, and this is the condition which produces incurable stricture of the rectum. During this formative stage, we may have almost an occlusion of the gut, by a tissue differing much from the dense and cicatricial tissue which is the last stage of syphilitic stricture. In this condition there is a localized, cellular infiltration, which is not dense and hard, but soft and easily torn and composed of new, embryonic cells as will be seen from the following pathologic examination given by Mallassez (*Dict. Encyc.* page 728). "At the level of the contracted portion, at the point most elevated and least permeable, which offers to the introduction of the finger and the passage of matter a great resistance, were found, not as is ordinarily taught, a tissue analogous to cicatricial, but a tissue analogous to 'bourgeons charnus'—proud flesh. This tissue, formed of new elements, is very vascular and offered little resistance to instruments when one sought to dilate it; it was only lower down in the widest part of the stricture that there were seen fascicles of hard, connective tissue surrounded by embryonic tissue and presenting the characteristics of cicatricial tissue. Between the fascicles of the muscular tissue were found also a large number of embryonic infiltrated elements, which reunited themselves at certain points.

... Finally, in the part which was below the stricture and which corresponds to the sphincterian regions, one observed almost always the cicatrices of the old ulcerations." From which it appears that the hard connective or cicatricial tissue stricture is the result of preceding ulcerative processes.

In women, recto-vaginal fistulae are more likely to be found before the permanent cicatricial stricture is formed, and in my experience they are invariably below the contracted point. Especially is this the case if there be anterior rectocele, because the hardened masses of feces and the irritating discharges lodging in this pocket, the walls of which are already thin and inflamed, cause sloughing and breaking through into the genital tract. These fistulae are not due to straining in order to pass the contents of the bowel through a strictured channel, but are purely the result of ulcerative processes. Curling (*Diseases of the Rectum*, page 112) and Paget (*Medical Times and Gazette*, 1865, page 279), seem to take the view that these ulcers are extensions from condylomatous developments about the anus. I have never seen a case which would confirm this view. Indeed I believe that condylomata are secondary to the ulcerations, and due to the irritating discharges from them, together with lack of cleanliness about the parts. The ulcers nearly always begin above the external sphincter, and there is a border of healthy, mucous membrane between them and the cutaneous border. They may be multiple, and extend throughout the entire extent of the large intestine but as a rule they decrease in size and frequency as we ascend the colon.

The first stages of stricture consist of ulceration, followed by a cellular deposit of soft embryonic tissue in the sub-mucous and muscular walls of the gut. This tissue becomes organized into connective tissue, hardens, contracts, and the surfaces heal over leaving a shining, bluish-white cicatricial appearance.

In their early stages these strictures are soft and dilatable, but after the cicatrization has taken place the muscular tissues become infiltrated and atrophied or degenerated, and dilatation is no longer practicable. The early recognition of the ulceration, and the prevention of these later sequences should therefore be the aim of syphilographers and rectal surgeons. When the permanent stricture has once formed, the condition is more in the domain of the general surgeon than of the syphilographer. Prevention of stricture is our province—not its cure.

Prevention may be accomplished to some extent, in the following ways: 1, by systematic subjective and objective examination of every syphilitic patient with regard to the involvement of his or her rectum. The patient should be warned what to look for and at what period he should expect these manifestations. The use of the speculum, where the finger is not educated or where one feels any suspicious condition is of the utmost value. 2, by examining every case with rectal ulceration with reference to specific taint. Within the past year I have had sent to me as cases of cancer, three undoubted cases of syphilis of the rectum. Two of them, fortunately, had not reached the cicatricial stage of stricture and are now comparatively well. 3, we should be careful and accurate in our diagnosis between simple traumatic, tubercular and syphilitic ulcerations of the rectum. The history of the case may, or may not be of value. Many cases of syphilitic ulceration of the rectum are cases of "syphilis innocentium" and unwittingly deceive us in our subjective examinations.

The presence of pain is no proof that an ulcer is not syphilitic. It is the location of the ulcer of the rectum which governs the pain rather than its nature. A syphilitic ulceration upon the muco-cutaneous border is just as painful as any form of ulcer, and a traumatic ulceration of the rectum above the external sphincter is just as free from pain as a syphilitic ulcer. The history of constipation, the use of enemata or other instrumental or digital manipulation of the rectum would suggest a traumatic nature for the ulceration. Yet these conditions existing and producing the ulcer, if there be constitutional syphilitic taint, the ulcer, originally simple, may take on a syphilitic nature and progress as other syphilitic ulcerations. Ulceration of the rectum from cirrhosis of the liver or kidneys is of a shallow character, associated with profound constitutional disturbances, it involves the mucous membrane, generally, of the entire rectal cavity, and occurs in the later stages of these diseases. It is not likely to be confounded with specific ulcerations. Chronic, advancing ulceration of the rectum, with cicatrizing border at its earlier points, is almost invariably syphilitic. Dry, brittle, mucous membrane about the anus, which cracks open by slight distention or upon the introduction of the finger, or pale pink, crenated, hypertrophied folds of the lower border of the mucous membrane are very likely to be associated with constitutional syphilis and frequently with ulceration higher up.

Nevertheless, these conditions are not positive proof, as the French and some English surgeons claim, of syphilis. The ulcers of the rectum which are likely to be confounded are the tubercular and syphilitic. The distinguishing points between these two varieties may be stated as follows:

Tubercular Ulcer.—Hereditary predisposition; general constitutional appearance; other organs may or may not be involved; base yellow; edges undermined, not indurated; ulcers if multiple, do not generally coalesce but are united by submucous fistulae; do not advance upon the surface, but burrow and form pus cavities and fistulae; pus thick, stringy, scanty; rarely bleed; the deeper tissues seldom involved; no tendency to heal as they advance from point to point; no infiltration or atrophy of muscular wall; little if any tendency to contract or produce stricture.

The crucial test is the finding of tubercle bacillus; but failure to find it is only negative evidence and of little value.

The therapeutic test is of little value in the diagnosis of rectal ulceration as the most thorough anti-syphilitic treatment will generally fail to cure an ulceration of the rectum unless associated with proper local measures. There is one form of local tubercular ulceration which is very difficult to distinguish from ulcerating gummata. These both begin in globular, elastic, sub-mucous swellings. In their early stages they are not attached to either the mucous membrane or muscular wall of the gut. They may be single or multiple; of small or large proportions. The gummata are harder, less elastic and more likely to be multiple than the localized tubercular manifestations. They are also generally associated with other tertiary syphilitic lesions elsewhere in the body. Mollière says they do not suppurate but undergo a sort of fatty or cheesy degeneration and thus break down. The localized tubercular ulcer discharges pus, its edges are undermined and there is only a slight inflammatory zone about them. They are acute and yield readily to local treatment. The gummatous ulcer, on the contrary, discharges little pus, it is chronic, is surrounded by an inflammatory zone and does not yield to local treatment unless associated with constitutional therapeutics. It remains chronic, eventually involves the deeper walls of the gut, and may be the commencing point of syphilitic stricture of the rectum, but the ulceration remains still the essential factor in the production of the fibrous, cicatricial condition.

TREATMENT.

The constitutional treatment of these conditions does not differ from that of syphilis elsewhere. Mercury, however, should not be given internally in these conditions as it is necessary to give the parts as much physiologic rest as possible. It should be used by hypodermic injections, inunctions or sublimations. The iodids should be administered in the form the least irritable to the stomach. I have recently given it in a solution of pepsin and this solution administered in milk. Another plan which has been suggested to me by Dr. Dillon Brown of New York, consists in dissolving the iodid in milk, and making of this a rennet whey, the fluid part of which retains the iodid and this is administered to the patient. It is a most unirritating solution and seems to agree with the most delicate stomachs.

For local treatment, except in the gummatous form of ulceration, I do not believe in irritating or cauter-

Syphilitic Ulcer. Hereditary or acquired history; ulcers generally single; bases gray; edges indurated, sharp cut and not undermined; if multiple, ulcers unite by coalescence; pus very serous and always bloody; deeper tissues always involved when ulcer has existed for any length of time; progress rapidly, and generally up the gut, instead of circularly; tendency to heal as they advance and leave contracting cicatrices; muscular and submucous walls of gut infiltrated, stiff and leathery; constant tendency to contract.

izing agents. Soothing and protective remedies have yielded the best results in my hands. Irrigation with boric acid or pyoktanin solutions, the application of slightly stimulating remedies, such as weak solutions of nitrate of silver, sulphate of copper, carbolic acid or bichlorid of mercury, and the insufflation of iodoform, or better still, aristol, upon the ulcerated points will generally cause them to heal and relieve the uncomfortable sensations of the patient. Recently I have obtained a very rapid healing in one case from the local application of a 10 per cent. solution of alumnol. Where this course of procedure does not result in cure we have one recourse, and that is absolute physiologic rest to the parts. This is given by inguinal colotomy; the formation of an artificial anus through which all the fecal matter shall pass and the continuation of our local treatment. If the ulceration heals following this procedure, and does not leave a dense, fibrous condition of the rectal wall, the artificial anus may be closed and the passage of the feces restored to their normal channel. If there is a dense, cicatricial condition of the rectum left, then it would be wiser either to close the rectum permanently and let the patient bear the artificial anus through life, or to resect the strictured portion of the rectum and bring the healthy portion of the gut down and attach it to the anus or that portion of the rectum which is not involved, above this orifice. In the localized gummatous form of rectal ulcers, scraping out of the diseased tissue with a sharp spoon and then treating it as a simple ulcer, together with constitutional anti-syphilitic treatment will generally result in a cure. These methods applied with the early recognition of the disease will save us the mortification of seeing so many incurable strictures of the rectum and will avert a world of suffering to those who seek our aid, but beyond and above all methods of treatment is the importance of early recognition in these cases.

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PSEUDO-CHANCRE.

Read in the Section on Dermatology and Syphilography, at the Forty-sixth Annual Meeting of the American Medical Association, held at Baltimore, Md., May 7-10, 1895.

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Few syphilographers doubt the existence of syphilitic reinfection, but most of them regard it as an occurrence of extreme rarity. The literature teems with recorded cases; but an exact analysis shows that the vast majority of them is open to grave doubt. They are either cases of manifestly incorrect diagnosis, or they are cases so imperfectly recorded that they lose all value as evidence in this much disputed subject.

Until the middle of this century the law of Ricord obtained universal acceptance. Syphilitic immunity, once established, was supposed to last during the remaining life of the patient. And the exceptions that were noted were so infrequent and so insufficiently proven that they detracted nothing from the validity of the general proposition. Petit, Fournier, and the entire Parisian school accepted it absolutely.

In the year 1858, however, renewed attention to these exceptions was called by Zeisse.¹ He showed conclusively that in certain cases re-infection did oc-

¹ Lehrbuch der Syphilis, 2d ed., 1872, p. 58.

cur, and that absolute immunity after one attack was not the invariable rule in syphilis any more than it was in the infective diseases of acuter course and similar nature, such as variola, morbilli, etc. He was soon followed by others who collected series of cases of alleged re-infection. Gascoyne² had twelve cases; Caspary³ three, and Diday⁴ twenty-five. In more recent times Scarenzio,⁵ Morel Lavalee,⁶ E. Feibes,⁷ Glasgow Patteson,⁸ Salsotto,⁹ Koebner,¹⁰ Pauly,¹¹ Pospelow,¹² Diday and Doyen,¹³ Eichorst,¹⁴ Lang,¹⁵ Peters,¹⁶ Swinburne,¹⁷ Fisichella,¹⁸ have all reported similar cases.

When we examine these cases critically we notice especially the paucity and incompleteness of the history of the so-called second attack of the disease. As a rule the sclerosis is the only symptom that is noted; the other manifestations of secondary disease being so mild and uncharacteristic, when present at all, that we may well be left in doubt as to the true nature of the so-called chancre.

Sigmund long ago pointed out¹⁹ that there occurred tertiary ulcerations that possessed all the characteristics of the true sclerosis; and Fournier²⁰ classified several lesions which simulate the initial chancre. Brègeal²¹ called attention to gumma of the penis; the frequency of its occurrence rendering it extremely liable to be mistaken for a primary lesion. Von During²² has observed pseudo-chancres in which an apparently characteristic induration lasted for from five to six weeks, and which were never followed by secondary symptoms. Keyes²³ believes that in most of the recorded cases of a second attack of syphilis a pseudo-chancre was mistaken for a true sclerosis, and Taylor, at a recent meeting of the New York Dermatological Society, expressed a similar opinion.

Finally, the doubt as to the real existence of a re-infectio syphilitica has gone so far that Hudelo,²⁴ making an examination of 148 recorded cases, hardly admits the validity of nine of them. Nevertheless, there are a few undoubted cases. Some of those recorded by the authors mentioned above seem to be beyond suspicion, and Hutchinson's case, which occurred in a physician, can not be doubted—more especially as the patient had had variola twice.

The following lesions may simulate a true chancre:

1. *An Artificial Induration.*—Such as may be produced on a herpetic or chancroidal ulceration by the use of nitrate of silver, carbolic, nitric or acetic acids, the acid nitrate of mercury, or even alcohol. This is undoubtedly a frequent source of error, and it requires the strongest corroborative evidence in the shape of other early syphilitic lesions to diagnose as a chancre any ulceration that has been treated in such a way

2. *A Nodular Lymphangitis in Gonorrhea.*—If phymosis is also present the nodule can be felt but not seen, and until the glans can be exposed again we must remain in the dark. Even if there is no phymosis the nodule may be exulcerated, and we must suspend judgment.

3. *Scabies.*—Here lesions on the penis are the rule, and form one of the diagnostic points of the disease. If now such a lesion has been scratched or irritated in any way it is quite liable to be mistaken for an initial lesion.

4. *A Secondary Induration,* occurring late in the disease at the site of the initial lesion. This is the pseudo-chancre of Fournier, and whilst it is of rare occurrence, it exactly simulates the original tumor.

5. *A Papule or Tubercle* situated on the penis as part of a more or less general specific eruption. This has to a certain degree the same characters as the chancre, being a small-celled accumulation of similar morphologic characters.

6. *An Ulcerating Gumma.*—This is especially likely to deceive when situated on the corona, where induration is with difficulty determined. Of not infrequent appearance in late syphilis, its beginning as a submucous induration, and its hard base and border when ulcerated, cause it to simulate an initial lesion very exactly.

7. *An Epithelioma.*—In certain cases the exulcerated tumor with glandular involvement may render the diagnosis difficult. All of these pseudo-chancres are fertile sources of error in diagnosis. All of them may look so like a true chancre as to deceive even an expert. Some necessarily occur in patients already syphilitic; in others the patient may or may not have had the disease.

The two cases of which I present you models and a photograph to-day are cases in point. Both were regarded as initial lesions by competent judges; the first one might have been recorded as a case of true sclerosis without true subsequent systemic infection, whilst the second was apparently a case of true re-infectio syphilitica.

Case 1. Rudolph H., German, 44 years old, of robust physique and healthy color, came to me at the beginning of September, 1893, to consult me concerning an ulceration on the frenum and the under surface of the sheath of his penis.

His history was as follows: He was a married man with a perfectly healthy wife, and he had not been delving in extramarital fields. This usually valueless statement acquired some little importance when I got to know him intimately, as I did later on, and to appreciate the happiness of his home life and his character for veracity. He was quite at a loss to account for his sore, unless it had been acquired in a manner which I personally believe does sometimes occur, in spite of the ridicule that is heaped upon it. The son of the man in whose office he was employed was suffering from an enormous sclerosis of the under surface of the glans, which subsequently became phagadenic; he was under my care at the time, and developed later on so bad a general papulo-squamous syphiloderma that I sent him to Aix-la-Chapelle to get him out of the way of his friends. This boy was in the habit of dressing his sore whilst sitting on the only water-closet belonging to the office, and spending a considerable portion of the day at that agreeable occupation. All the employés of the office knew exactly what was the matter with him, and they were loud in their complaints at the dangers they supposed they were compelled to run. H. did not contend that this was the source of his infection, but he knew no other way to account for it and his sore was exactly on the spot where one would expect it to be had an accidental inoculation occurred in the manner indicated.

He first noted a little lump in the frenum at about the end of July; it gave him no trouble at first, but grew rather rapidly and soon began to ulcerate. The physician whom he consulted diagnosed a syphilitic chancre and treated it with vasoline for a week. It grew steadily worse, however, spreading in size and

² Medical Times and Gazette, Dec. 5, 1874.

³ Vierteljahressch. f. Derm. u. Syph., 1, 1876.

⁴ Archiv. Gen. de Med., July and August, 1883.

⁵ Monatshefte f. prakt. Derm., 1883, p. 285.

⁶ Ibid., 1886, p. 32.

⁷ Berl. Klin. Wochenschrift, 1891, p. 988.

⁸ Brit. Journal of Derm., 1891, p. 286.

⁹ Gaz. Med. di Torino, 1892, No. 48.

¹⁰ Berl. Klin. Wochenschrift, 1892, No. 46, p. 549.

¹¹ Annales de Derm. et de Syph., 1892, p. 690.

¹² Ibid., p. 125.

¹³ Ibid., 1893, p. 351.

¹⁴ Muench. Med. Wochenschrift, 1894, No. 16.

¹⁵ Annales de Derm. et de Syph., 1893, p. 1219.

¹⁶ Annales de Derm. et de Syph., 1893, p. 296.

¹⁷ Ibid., p. 1055.

¹⁸ Ibid., p. 628.

¹⁹ Phila and Ellbroth's Handbook.

²⁰ Erreurs de Surprise, etc., Journal of Cut. and Genito-Urinary Diseases, 1863.

²¹ Thèse de Paris, 1886; Monatshefte f. Prakt. Dermat., 1887, p. 699.

²² Monatshefte f. Prakt. Dermat., 1889, p. 492.

²³ Venereal Diseases, 1880.

²⁴ Annales de Derm. et de Syph., 1891.

increasing in hardness; the ulceration became deeper and the discharge more profuse. Bubo was not present, nor was there any pain. His physician then changed his diagnosis to that of chancroid and used the nitrate of silver stick, followed by powdered boric acid. This cauterization was repeated twice in the next four or five weeks, but the sore continually increased in size. The patient then consulted a specialist in a neighboring city, who also declared the ulceration non-specific, and touched it up with nitric acid, dressing it afterwards with aristol. Nevertheless there was no improvement; the ulceration progressed.

□ On Sept. 11, 1893, I saw him for the first time. The penis was edematous to a considerable degree and situated at the frenum and on the sheath just below it was a large irregular ulceration. It was oval in shape, with its long diameter transverse to the shaft of the penis: it was fully one and a half inches broad and one inch in length. The cast that I show you was made some time later, when the healing process was already well advanced: it is less in size than when I first saw it, but it shows the characters of the ulceration with fidelity. From the main lesion a thin line of ulceration extended up along the frenum onto the under surface of the glans: and here was situated a second smaller ulceration similar in character to that below.

□ The base of the ulcer was clean and fairly well covered with granulations. The margins were sloping and not undermined. Most characteristic, however, and most striking, was the induration. It was very marked, brawny to the touch and sharply circumscribed from the surrounding tissue. On the glans it was, of course, not so marked, but still perfectly evident. The entire mass was apparently a well defined tumor with superficial exulceration. It was a typical sclerosis, as far as the physical signs went.



Fig. 1.—Pseudo-chancere: herpetic or chancroidal ulceration with artificial induration. Cured by calomel locally; no internal treatment; no signs of syphilis.

The only other sign was a bilateral adenopathy. The inguinal glands in both groins were tumefied, hard and painless. Though not as stony as we frequently see them in the infecting chancere; they were not the painful, enlarged buboes of chancroid.

Other symptoms there were absolutely none—neither general adenopathy, rheumatism, defluvium capillorum or exanthem. The ulceration had been present for seven weeks.

I was naturally inclined to diagnose chancere, though I felt by no means certain that that was the case. I applied an iodoform dressing and awaited results. I kept the patient under careful observation, seeing him almost daily.

In one week's time it was very evident that the iodoform was doing the patient no good; the ulceration was extending. Calomel was then used, and with a marvelously satisfactory result. Improvement commenced at once, and though slow, was unbroken. The ulceration steadily healed, but the induration remained unaffected. By November 1, cicatrization was complete, but a marked and apparently characteristic induration, larger than a large bean still remained. This was still present, though smaller, on Jan. 1, 1894.

Meantime I watched the patient very closely for

the slightest appearance of anything that would indicate systemic infection, but without finding it. The examinations were frequent and not perfunctory. The entire integument and all the cavities of the body were closely scrutinized. At the present writing, nearly two years after the first appearance of the sore, I am able to say that there has never been the slightest symptom of secondary syphilis.

Unless we are willing to admit that a chancere accompanied by inguinal adenopathy may be the only result of infection with the specific virus, we must regard the lesion in R. H.'s case as a false or pseudo-chancere belonging to the first class of artificial indurations. And this in spite of the very clear history of its beginning as a subcutaneous nodule given by the very intelligent patient, and in spite of the hardness, painlessness, absence of chancroidal bubo and cure by calomel powderings. Whether it was originally a herpes or a chancroid it is impossible to say, but it falls within the category of those cases that I have ventured to call pseudo-chanceres.



Fig. 2.—Pseudo-chancere. Indurated exulcerated lesion simulating chancere. Complete history of syphilis three years before. Ulceration one month old; spreading. No other evidences of recent syphilis. Rapid cure under KI internally. G. W. S. D., March, 1895.

Case 2.—F. M., 41 years old, a tall and thin but otherwise fairly healthy looking man, consulted me on March 20 of this year for an ulceration on the under surface of his penis. Though only a mechanic, he is a fairly well-educated German, and he gives a very clear and precise history of his case as follows: Three years ago he had a chancere which was soft at first, but subsequently became quite hard. It appeared exactly four weeks after intercourse, and the scar that it left on the glans penis is still visible. It was a lump as big as a bean or larger, and was treated by the physician to whom he went with gray ointment. After a time it ulcerated, but the hardness lasted fully two months after the ulceration had healed. A few weeks after the appearance of the tumor an eruption of pimples appeared all over his body, for which the doctor gave him drops. He had also persistent headaches, a bad sore throat and falling of the hair. In fact, he gives a circumstantial and complete account of syphilitic infection at the date mentioned. Since that time he has had occasional eruptions of pimples on the body, but he got tired of taking medicine and has had none at

all for two years past. The spots always went away of themselves in time.

He complains now of a sore that appeared on his penis some four weeks ago and which he calls a chancre. Examination shows the presence of a kidney-shaped ulceration situated on the under surface of the penile sheath near the preputial orifice. Its concavity is toward the meatus, and it measures one and three-quarters by one inch. Its margins are extremely distinct, raised and rounded; its edges are sloping; its base is covered with granulations intermixed with a small amount of necrotic tissue. The tissue immediately around and under the ulcer is distinctly indurated, and whilst not very hard, it is sharply limited, and can be readily differentiated from the soft tissue of the sheath. The ulcer has been gradually increasing in size since it began, but there has been no pain nor has it inconvenienced him in any way. There has been no treatment.

Examination of the patient's body revealed the following facts: There is a slight inguinal and cervical adenopathy, otherwise the glandular system seems normal. On the glans penis is a distinct scar, which the patient says is the mark left by the initial lesion of three years ago. At three or four places on the trunk and limbs are groups of characteristic large papular lesions which tend to spread peripherally. They have been present for several weeks, and the largest and oldest are covered with a crust, the removal of which reveals central breaking down. On the anterior surface of the left wrist is a distinct gumma, one inch in diameter. It was opened some five weeks ago by a surgeon under the impression that it was an abscess. Besides this there are on various places over the body groups of small circular cicatrices. Some, the more recent, are still pigmented, others are white and atrophic.

Treatment revealed the correctness of the diagnosis: recovery complete and rapid under iodid of potassium.

The patient then has a florid syphilis in its tertiary stage, as is evident by the unsymmetrical papular eruption and the gummata. He has a gumma of the penis, which presents enough of the characters of an initial lesion to be mistaken for one, especially on a hasty or superficial examination. He had what I may venture to call a typical pseudo-chancre, inasmuch as it looks and feels like one.

There is, so far as I am aware, no characteristic and no combination of signs that will enable us to diagnose a chancre. Only the advent of other symptoms in their proper order gives us data to form an opinion as to the existence of systemic infection or not. And we must look with grave doubt on all reported cases of syphilis with indefinite and badly marked secondary symptoms, such as almost all the cases of reinfectio syphilitica are.

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SOME REMARKS ABOUT ASEPSIS IN MILITARY SERVICE.

Read at the Meeting of the National Association of Military Surgeons, Buffalo, May, 1895.

BY LIEUT. COL. EDWARD BOECKMANN.

ASSISTANT SURGEON-GENERAL OF THE MINNESOTA NATIONAL GUARD.

(Concluded from page 172.)

Very recently something has been written about catgut, which can be boiled after treatment with formalin, a 40 per cent. solution of formol (formaldehyde), a tanning agent of pronounced antiseptic properties. Thereby nothing is accomplished. Formalin evaporates during the boiling; the catgut, which formalin has converted into a sort of absorbable wormgut, is sterilized like the last only on the surface. Those microorganisms, not destroyed during the hardening with formalin, whose germicidal power in a given time is very feeble, are liberated, as the catgut is absorbed, from the interior which is not affected by the boiling water. Consequently I do not hope much for formalized catgut which can be boiled. Tanned catgut, either formalized or chromicized, has, however, an apparent advantage in being ab-

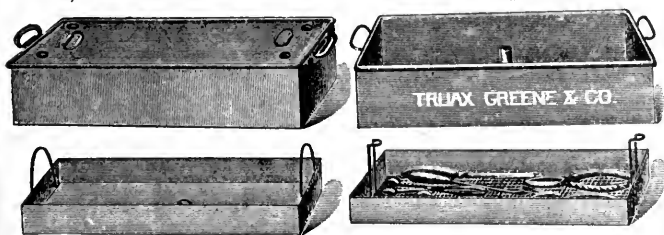
sorbed slowly; I, for my part, do not see any reason for using any but the fat-containing, sterile catgut, which resists absorption sufficiently long. In order to preserve catgut as a skin-suture to the exclusion of all others, it will be necessary, so far as I am able to judge, to continue along the line indicated in retaining the fat and to seek an agent, which will render catgut an impossible culture medium and remain with it, until the last fiber is absorbed. Lano-linized catgut seems to be a step in advance, but the last word has not yet been said, for which reason I would provisionally recommend my catgut to you as a specially adapted all-around suturing and ligating material in military service.

Boiling water is an excellent germicide and is excelled only by the free flame, which however has but little practical application. Boiling water kills all surgical bacteria, spore-bearing or not, in the course of a minute or two. The pyogenic bacteria according to Sternberg's world-famed tables are destroyed in 10 minutes by moist heat at about 150 degrees F., which corresponds to boiling for as many seconds. Moist heat is consequently disproportionately much more powerful than dry heat; the reason why is not definitely settled. It is probably a purely mechanical boiling to pieces of the capsule of the bacteria. Boiling is such a safe, quick, easy, economical and non-injurious method of sterilization that it can not be too strongly advocated, wherever it is practicable. Boiling is and will be our favorite method for the instruments. By making the water alkaline with soda or still better with green soap its sterilizing power is increased, as the instruments are at the same time cleaned and the temperature somewhat increased; twisting is prevented and the cutting-edge of sharp instruments not markedly affected. The instruments must not be placed in the water before the latter boils, and it can not be too strongly emphasized, that they should always be kept in first-class condition at all times. I know of no practical method of preserving instruments sterile and ready for use; if they are boiled and thoroughly cleaned after each operation, it is only necessary to place them in a tray and cover them with boiling water at the next operation and they are perfectly safe after a few minutes standing.

Although the boiling of instruments can take place in any vessel whatever, it is desirable, especially on the field, to be supplied with a specially constructed instrument-boiler. Such a one is depicted below. It is constructed on the principle of the steam sterilizer, illustrated further on, and consists of three separate parts: the boiler, instrument-tray and the cover. The boiler is filled with sufficient water to cover instruments; some soda, green soap or even lysol is added. The cover, formed like a pan and fitting inside the boiler is adjusted as shown in the illustration. The apparatus is placed on the fire, while the instruments are arranged in the wire-tray. When the water boils, visible at the border of the boiler, the latter is uncovered to receive the instruments. The central tube, which in no way interferes with the instruments, prevents the water from boiling over, by conducting off the formed steam, which disappears invisibly under the bottom by passing over a hot plate, not shown in the drawing; the plate protects the flame from extinction by the steam. Five minutes boiling is all that is needed; the boiler is removed from the fire and placed on a stand convenient for the operation. The cover which has been

sterilized simultaneously, is lifted out and turned over; the instrument tray is deposited within the cover. The boiled water serves many purposes during the operation. I cherish the hope, that this compact, transportable instrument-boiler is eminently adapted for operations in the field.

Steam, water in gaseous state, follows closely boiling water in germicidal power, when it has its temperature, when it is unmixed with air (saturated), when it penetrates the articles to be sterilized and when it condenses its moisture in every single particle thereof. If these precautions be observed, the articles concerned will be literally boiled in steam, resembling what occurs in boiling with water. Steam can consequently not cleanse everything; articles to be sterilized by steam must therefore be washed beforehand, if they are not clean. Steam is more particularly adapted to porous materials; solids are disinfected by steam solely on their surfaces; fluids are not sterilized by the steam itself, but by the heat communicated by the latter. In order to sterilize water, watery solutions or emulsions, like milk for instance, it is therefore perfectly indifferent, whether the containing vessel is placed in steam, boiling water or hot air. Concerning sterilization of fatty substances it must be remembered, that they can not derive the benefit of moist heat at all, because they either do not contain water or, like lanolin, contain it in such a manner, that it becomes separated. Consequently the sterilization of fatty matters by the aid of steam means a dry heat sterilization, ineffectual because of the low temperature.



Concerning the temperature of the steam, boiling water will at the ordinary pressure of the atmosphere at the sea-level give off steam at 212 degrees F.; this is *low steam*. The higher the altitude, the less consequently the pressure and the lower the temperature of the boiling water and its steam. This should be borne in mind when sterilizing with steam or boiling water at high altitudes. Steam of higher temperature than 212 degrees F. is obtained by conducting it through heated pipes or into heated chambers—*super-heated steam*, or by evolving it under pressure, *high steam*. All pathogenic bacteria, we know, sporebearing or not, are destroyed in steam at 212 degrees F. in the course of five minutes, low steam is therefore as regards temperature surgically perfect. Super-heated steam resembles hot air in germicidal power; its temperature must consequently be raised considerably and it must be continued for hours in order to destroy spores. High steam on the contrary is more powerful than low steam. High steam at 221 degrees F. will, in the course of ten minutes, kill all kinds of spores—pathogenic or not. No spores are capable of germinating when a high steam temperature of 230 degrees F. is reached. The high steam is not only surgically, but also bacteriologically perfect. Where the temperature at high altitudes is below 212 degrees F., the sterilization must be continued beyond the above mentioned five minutes, what we usually

also do at lower lying situations, where we “for safety sake” let the steam play for half an hour or more.

Concerning the penetration of the steam, we all know by experience, how much more easily steam penetrates than hot air. It is in addition a matter of fact that steam, which streams from above downward, penetrates to perfection every single particle of the porous materials in its path, because it, on account of its lower specific gravity than air, travels in a vertical column to a horizontal plain, while steam, which streams from below upward, its natural course, preferably seeks an outlet along the line of least resistance with unequal distribution and uncertain penetration of the articles as a result. Streaming over-steam, which we might designate the steam from above downward, is consequently the proper steam, while streaming under-steam, which travels in the opposite direction, is absolutely to be discarded in great as in small, when dealing with surgical steam sterilization of materials which are to be penetrated all through, unless these are uniformly packed—an unattainable requirement in practical life, where the sterilizing chamber is filled with articles of most different size, form and density as bandages, towels, sheets, cotton, etc., and which leave open spaces between them. Steam at rest also penetrates well, particularly when it is high, though not as expeditiously and thoroughly as the incessantly streaming one.

Concerning the condensation of the steam, it is of considerable importance that the materials to the greatest possible extent get the benefit of the contained moisture of the steam; the more moist the steam operates, the more it imitates boiling and the better it sterilizes. Condensation of the moisture is absolutely necessary and will take place when the articles are of lower temperature than the penetrating steam; the greater the difference, the greater is the condensation and the more wet the articles. For this purpose the quantity of water delivering the steam cuts an important figure. The greater the quantity of water boiled the greater is the amount of steam and the more abundant the condensation. Therefore the steam sterilizers should be constructed to hold a quantity of water proportional to the amount of articles and the size of the apparatus—half a gallon being appropriate for small sizes and one gallon for larger. For the same purpose we must provide for good fire—good, preferably double, non-sooting gas burners, powerful gasoline stoves or good kitchen fire; while alcohol or kerosene lamps are less suitable for larger sterilizers, they can be used with advantage for the small ones, for instance, milk sterilizers. Under abundant generation of steam the time of sterilization is shortened, the generation and condensation following rapidly, and outweighs the additional time required in heating up a larger amount of water. The highest degree of condensation is attained by conducting abundantly generated steam through coldest possible materials. It takes the steam, of course, longer time to penetrate a cold than a warm article, as the first condenses more steam than the last and at a lower temperature, and as this condensed moisture must again be vaporized by the incoming steam to advance further. In order to abbreviate the time it was formerly recommended to construct the steam sterilizer in such a manner that the contained articles could be heated up by dry heat before the steam was turned on; this would consequently highly facilitate the penetration by re-

ducing the condensation and time is apparently saved. Yet this heating up beforehand is largely a thing of the past: the time gained is lost in heating up the articles and, this is most weighty, we lose to a great extent the all-important advantages of an abundant condensation. It is a remarkable and at the same time welcome circumstance that the temperature during the condensation and the following evaporation of the condensed moisture increases beyond the original temperature of the steam and it rises higher the larger and more packed the apparatus is—up to 219° F. and even more. The reason of this can provisionally be indifferent; it is enough for our purpose to point out this happy occurrence. This increased temperature lasts about a quarter of an hour; when the condensation is complete, the condensed moisture again vaporized and the steam flows unburdened and free, the temperature drops to the normal. During the condensation and vaporization with their increased temperature the determining and essential sterilization takes place; later on the steam works with little or no moisture and therefore with little efficacy, if with any at all. At any rate the first fifteen minutes are more important than the same number of hours afterwards.

Concerning finally the saturation of steam or freedom from admixture of air, all agree that it is of much importance to have all air contained in the sterilizing chamber completely expelled, as heated air has a considerably less sterilizing power than steam. It looks very peculiar, that modern German and American authors, who in their books take special pains to emphasize this point, without hesitation construct, picture and recommend apparatus which in no way comply with the laws they themselves have subscribed to. It is an easy matter to expel the air completely from an apparatus constructed for streaming steam. The steam itself will effect this, provided it enters above and leaves below, since it, as above stated, is lighter than the air, remains on top of this and drives it out with a piston's action. If the steam enters below it will hurry upward through the contained air and leave above. It will certainly carry with it a good deal of air, but never completely, as the air is too heavy for it and it has not the power, abundance or uniformity. Under such circumstances it is no criterion, that every part of the sterilizing chamber shows an uniform temperature of 212 degrees F., as the retained air will be heated to the temperature of the steam. We have then in the same apparatus air at 212 degrees F. and steam at 212 degrees F. and this justifies me with great positiveness to insist that surgical steam sterilizers for under-steam are scientifically wrong and practically useless, at any rate, unreliable. We must vigorously demand that apparatus for streaming steam must be constructed for over-steam, whether they are large or small, stationary or portable. In apparatus for steam at rest the air must be expelled. This is attempted by a stop-cock on top, opened three or four times as the chamber becomes filled with high steam. The steam mass is then so considerable, powerful and compact that we reasonably expect to expel the air almost to completion, but not with positive certainty as is the case with over-steam.

After the above laid down principles for disinfection with steam we arrive at the result, that low, streaming, wet, saturated over-steam is surgically

perfect and that high, stationary, wet, saturated steam is not only surgically but also bacteriologically perfect. On either of these principles our surgical sterilizers must be constructed. The crucial question is, on what principle the most practical apparatus can be built? It is not very difficult to answer this question, when we consider that a sterilizer shall not only sterilize but that it shall also deliver the sterilized articles perfectly dry. French authors, who are so clever as to accuse German surgeons of relying upon inferior apparatus because they have adopted Lautenschläger's surgical sterilizer, while the Frenchmen employ Chamberland's bacteriologic autoclave, and forget that their sterilizers do not deliver dry materials and that their results do not outshine those of the Germans.

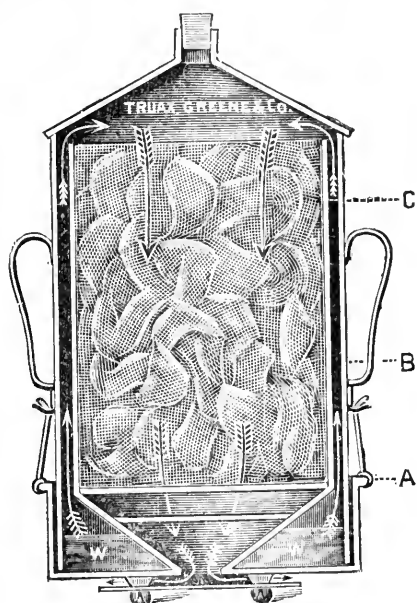
Chamberland's autoclave for high steam is viewed as a steam sterilizer, an ideal; viewed from a standpoint of a surgeon, it is far from it. It must be compactly built to withstand the high pressure; this makes the apparatus expensive and unfit for transport. It is impossible on the field. The autoclave is relegated to a stationary apparatus. Provisions necessary to measure the pressure and temperature, to make it tight and allow the escape of air and steam, complicate the otherwise simple construction and increase the expense. And, last but not least, when the sterilization is completed after one-half to one hour, according to the size of the apparatus, and the sterilized articles are removed they are moist and must undergo an extra process to become dry and fit for use. Even if the autoclave, which in my opinion belongs in the laboratory only, can be adopted and recognized in the larger hospitals with great means and facilities at their command it will be because of the above stated reasons, and can never be fitted for smaller hospitals, for individual surgeons and for the field.

Let us now, on the other hand, see how we can meet the designated requirements as regards sterilization, drying, transportation and economy in apparatus, constructed for over-steam. In the following illustration is pictured an apparatus which has cost me much money and much valuable time to bring to that perfection and simplicity I claim to be its principal virtues.

My sterilizer consists of three essential parts: A basin (A, the waterpan), an inner cylinder (B, the sterilizing chamber) and an outer cylinder (C, the hood). The basin and the inner cylinder form one piece, the outer cylinder another and these two parts are for transportation held together by means of a clasp. The bottom of the basin is perforated by a circular opening, an inch in diameter, corresponding to a similar one in the lower conical end of the inner cylinder; these two openings are seamed. The diameter of the inner cylinder is one inch less than that of the basin and the conical projection of the same begins at the level of the upper border of the basin, which is about three inches in height. At the junction of the inner cylinder and its cone is a wire diaphragm of galvanized iron. Between this and the opening below there is a square tin plate. Under the bottom of the basin is adjusted an iron plate, a quarter of an inch distant. The outer cylinder fits accurately within the basin; it is consequently nearly a half inch from the inner cylinder and it extends half an inch above the latter; it ends conically above in a short tube, fully an inch in diameter, for the

reception of a cork; it is provided with handles. The basin has a lip for filling and emptying not shown in the illustration.

Directions for use: Place the articles to be steam-sterilized in the sterilizing chamber, tightly or loosely packed as desired; adjust the hood, put in the cork, fill the water pan and place the apparatus over any good flame. When the water boils the generated steam will ascend in the narrow space between both cylinders and as the cork prevents its escape above and the water below, it must work its way through the sterilizing chamber and contained articles, leaving by the lower opening after having driven before it the air contained. Here it meets the glowing plate, which converts it into invisible, super-heated steam. That lively generation of steam occurs despite the fact that none is visible; we know it beforehand and it can be ascertained by lifting the cork. During the boiling some steam is continually condensed by the outer cylinder on its inside; the steam condensed in the conical part of the outer cylinder will not continually drop down on the contained articles because of conical form of this part, but will run back into



the basin. After completed sterilization, which requires from one-quarter to one hour, according to the size of the apparatus and the amount of packing, from the time the water boils, the steam contained in the articles must be expelled in order that it shall not moisten the contents, when these are removed and cooled. This is accomplished by removing the cork, regardless whether the flame be turned off or not, or the apparatus removed. All steam, both that given off by the water and that contained within the sterilizing chamber and its contents, will hasten to leave the apparatus through the upper opening and it will not take many minutes before the steam is nearly all gone and the articles dry. The articles nearest the diaphragm are first dried, both because the steam first leaves them and because hot air enters the sterilizing chamber from below to take the place of the departing steam. The iron plate under the bottom retains its heat for a long time and the air, which must pass over it to enter the apparatus, will be heated correspondingly. The uppermost layers of the articles will be dried last, since all the steam contained must pass through them; the close proximity to the steam gen-

erated from the water assists in keeping them slightly moist, but this can be remedied by emptying the water after completed sterilization. Larger apparatuses, which by their weight make emptying difficult, are supplied with an extra cover for the inner cylinder to protect the articles from drop. During the drying, which is accomplished whether the apparatus is over the flame or not, the temperature of the articles drops considerably below that of the steam—down to 170 degrees F. or still lower—despite that the inner cylinder is surrounded upon all sides by water and steam temperature of 212 degrees F. and despite that hot air of 400 degrees F. enters the sterilizing chamber from below this is the recompense for the increased temperature, which, as mentioned, takes place during the condensation and the vaporization.

As is made apparent the sterilizer constructed by me, originally devised for steam sterilization, is likewise an apparatus adapted not only for drying but also for sterilization by hot air, the last being mentioned under catgut. If the apparatus be placed over the flame without the cork in upper tube the generated steam will leave the apparatus through this. The inner cylinder will consequently be surrounded by water and steam at 212 degrees F., while no steam or moisture enters its lumen. At the same time a draught is brought about in the inner cylinder in the direction from below upward, as in any vertically placed pipe.



The air entering through the lower opening will consequently be heated by passing over the hot plate; the temperature of this air is about 400 degrees F. at the moment it enters the apparatus. As this temperature is scorching, the above-named tin plate is placed in its path midway between the opening and the diaphragm. This tin plate will absorb the heat and again radiate it; it acts consequently like a damper and at the same time as a radiator, with the result that the temperature at the level of the diaphragm will be about 100 degrees lower or 300 degrees F., a temperature which does not scorch, at any rate not in the time concerned. Under sterilization of catgut is mentioned how this temperature is reduced gradually as we approach the top, as the inner cylinder itself is only at 212 degrees F., the temperature of the surrounding steam, and this is refrigerating. In the upper part of the sterilizing chamber the temperature of the hot air is about 240 degrees F. The dry heat is subject to variations in the different apparatus; it is first of all dependent upon the strength of the flame, further on the thickness and size of the hot plate, upon its shape and its distance from the bottom of the basin, furthermore upon the diameter of the lower opening in the sterilizer, upon the size of the tin plate, upon the size of the apparatus itself, etc. I have originally con-

structed my sterilizer for steam and for hot air combined in order to dry steam-sterilized articles to a perfection not obtainable in any other apparatus. But when I found it was possible also to control dry heat I devoted my attention to construct a special one for sterilizing catgut also, while I have not paid any special attention in that respect to those apparatuses which are to be used for steam sterilization and drying only.

I would be pleased if I have been so fortunate as to convince you that my sterilizer is not only surgically perfect in scientific respect but that it also practically possesses material advantages. The simple construction secures a reasonable price; there are no stopcocks, regulators or safety valves; a thermometer is superfluous except for catgut; there are no solderings, which by melting when the sterilizer goes dry renders it useless; everything is seamed. It is consequently durable, especially when made of copper, and it is at the same time light and transportable. If it drops and becomes dented it is the work of a minute to straighten it out. The change from steam to dry heat is simply effected through a common cork, which is deposited in the lip of the basin when not in use. It is a matter of course that it is scientifically tested and has withstood this trial. Practically I never had any reason to suspect that it failed me. The model, which commends itself in the field, is illustrated below; it can be easily transported in a suitable wooden box.

It is deplorable that instruments can not be sterilized in steam without rusting; the steam can not, unfortunately, be rendered alkaline. Catcarrth has certainly demonstrated that instruments do not rust in steam when they are previously heated to 212 degrees F. before the steam is turned on. I have tried this method extensively and can verify the truth of Catcarrth's assertion, if we are very particular in heating and do not allow the instruments to be cooled off in the sterilizer after the sterilization. But I left this method as soon as I realized that boiling was so much more simple, and when I suspected that it was more than dubious that the instruments were disinfected by this procedure. If the instruments are of the temperature of the steam admitted no condensation will take place; the instruments will remain dry and consequently unaffected both by moisture and by rust despite that they are steamed. The instruments must be steamed while cold in order to be sterilized, and then they will rust. It is nowadays fashionable to construct apparatus for combined boiling of instruments and steaming of dressings. I myself have long ago cherished the same thought, but have arrived at the conclusion that instruments and dressings must be sterilized separately. It is an easy matter to construct apparatus for combined sterilization if we will employ under-steam, as Schimmelbusch and Beck have done. But I, for my part, will not agree to break with my own and at the same time universally recognized principles for the sake of such an insignificant trifle. Schimmelbusch, Beck and I have condemned the under-steam upon principle, and as far as over-steam is concerned, I have certainly some time ago in the *Medical Record* pictured an apparatus for combined boiling, steam and dry heat, but I do not recommend it for instruments anyhow, as the boiling pan will require too great dimensions so far as the transportable apparatus is concerned when they are to be made circular—the

most convenient and inexpensive form for steam sterilizers.

In conclusion, a few words in regard to our dressings which are particularly fitted for steam sterilization. They can in the course of half an hour be made ready for use in a transportable or smaller apparatus. In military service it is, however, very desirable to have them ready without notice. I have already demonstrated how we can always have ligatures and sutures at hand in sterilized form; I have not been able to do the same for instruments, while Bloch has happily solved the question for the dressings. He has proposed to wrap them up in blotting paper in double layer. Blotting paper is impermeable to microorganisms so long as it remains dry, while steam penetrates it with ease. We arrange therefore the materials in small packages and mark the quantity and quality of the contents on the outside. These packages are placed in the sterilizer, steamed and dried in the ordinary manner. To protect against moisture they should subsequently be placed in tin boxes. These packages will remain aseptic as long as they are kept dry; if in doubt, an additional sterilization is given. Anyone opens the outer blotting paper, while the surgeon or his first assistant handles the inner wrapper which holds the dressings. I believe that Bloch's method is eminently adapted to military surgeons, who must exercise their important and responsible work under exceptional and difficult conditions.

A CASE OF NON-OPERATIVE CURE OF ACUTE PYONEPHROSIS.

BY DR. ALEX C. WIENER.

CHICAGO, ILL.

Mrs. X., 28 years of age, had always enjoyed vigorous health. Six weeks before I saw her she had a miscarriage and unfortunately became infected on the removal of the fetus. Then, upon advice she underwent a laparotomy, because an extra-uterine pregnancy had been diagnosed. This, however, proved to be an error, and after three weeks she was sent home. Ten days later, by request of the sister of Mrs. N., a trained nurse, I was called, and found the patient with the appearance of a pyemic condition, extremely pale, blue lips, cold sweats all over the body, several chills daily, sleeplessness and loss of appetite. The temperature had gradually risen to 104 degrees; pulse 130, weak and intermittent; urine scant and very concentrated, passing eight ounces in twenty-four hours, and containing a small quantity of pus, after filtration through sugar, no albumin was found. Internal examination revealed an acute metritis and parametritis, forming an exudate the size of an orange in the right pelvis. The abdomen was soft in the lower part, considerable tension and extreme sensitiveness toward the right hypochondrium. In the right hypochondric region there was a tumor the size of a child's head, moving with the respiration and apparently connected with the right kidney, which led to the diagnosis of an acute pyonephrosis. I expected to be compelled to open the abscess and informed the relatives to that effect; but first I preferred to give Ozonate Lithia Water a trial, because of its formula: Lithia peroxyhydrate in White Rock Spring Water and charged with ozocarbonic acid gas, although I did not expect it to have much effect. The only therapy administered consisted of hot applications over the tumor, and two quarts of Ozonate Lithia Water daily, hypodermic injections of nitrate of strychnia. One thirty-second of a grain every three hours to overcome the critical condition of the heart muscle and milk diet. The result was the desired one. In three days the amount of urine increased to fifty ounces per twenty-four hours, containing a large quantity of pus. In eight days the patient was practically well, though still very weak, the pyonephrotic tumor having entirely disappeared.

This case clearly demonstrates that this water is a strong stimulator of the kidneys to secretion in renal disturbances. The great pressure from above is able to force a large quantity of pus out of the pelvis of

the kidneys in a very short time and dilute the pus to such an extent that it passes through the ureter without producing colic pains.

Since then I have treated numerous cases of acute cystitis with Ozonate Lithia Water, and all patients have remarked the immediate relief from painful and frequent micturition. Although I have not made chemical researches as to the secretion of urates under the treatment, there is a decided improvement experienced in all the different troubles based upon the overcharged condition of the blood with uric acid. The continuous use of this water after recovery can only have a beneficial effect, inasmuch as it would be preventing a recurrence of the disease.

A contra-indication to the extensive use of the water is the parenchymatous inflammation of the kidneys, as the Lithia, according to recent researches, is likely to stimulate the disease. On the other hand two or three quarts of the water are useful to wash out the kidneys and relieve the tubuli contorti from the presence of casts without being harmful. In cases of dropsy produced by heart disease, the use of the water ought not to be advised, as the amount of fluid embodied increases the work to be done by the diseased organ.

34 Washington Street.

REPORT OF AN EPIDEMIC OF TYPHOID FEVER AND THE USE OF THE WOODBRIDGE TREATMENT.

Read before the Portage County Medical Society, November, 1895.

BY JOHN J. ORTON, M.D.

HEALTH OFFICER, RANDOLPH, OHIO.

Gentlemen:—There is a rule in rhetoric which I think is called Pope's Rule:

"In words, as fashion, the same rule will hold,
Alike fantastic, if too new or old;
Be not the first by whom the new are tried,
Nor yet the last to lay the old aside."

This is a good rule to follow in the use of medicine as well as words. Nearly every mail brings us one or more circulars, singing the praises of some new remedy and it would be difficult and unwise to test them all. Being naturally conservative, and remembering the teachings of one of the now deceased professors of my Alma Mater to avoid "journal practice," it was with doubt and hesitation that I began to treat typhoid fever by the "Woodbridge treatment."

During September and October, our little village of about 250 inhabitants passed through one of the worst epidemics of typhoid fever in its history. Since May, 1895, twenty cases of typhoid fever have occurred in my practice. All but one, or possibly two, originated in this place. One came here sick from Cleveland, but not until toward the close of the epidemic, and one, a traveling salesman, became ill while away and came home; there is no way of telling whether his disease originated here or away, as he is often at home over Sunday.

Six persons have been sick with fever soon after leaving this place and five of these six have died. Three of the twenty cases under my care have died; two of typhoid fever alone, and one old gentleman of typhoid fever complicated with serious chronic diseases. At the beginning of the epidemic I searched the text-books in vain for some treatment that might prove satisfactory. All said that typhoid fever could not be shortened by a single day. Loomis, whose work on practice was the first I bought, and for whom

I entertain great respect and admiration, says: "The duty of the physician is to guide the disease, as far as he may be able, to a favorable issue and prevent injury to organs essential to life, keeping in mind that a certain definite period must elapse before this result can be accomplished."

Having read some of the articles on typhoid fever written by Dr. J. E. Woodbridge, of Youngstown, Ohio, I was favorably impressed with the results he reported from the use of his treatment, and wrote to him for instructions and obtained a supply of tablets put up by Parke, Davis & Co. according to his formulæ. Not being satisfied with the results I obtained, I went to Youngstown to see Dr. Woodbridge personally, but found that he was in Chicago. My journey was not in vain, however, for I was very kindly treated by Dr. M. V. Cunningham, who had charge of Dr. Woodbridge's practice during his absence and who told me all I wished to learn in regard to the use of the remedies used by Dr. Woodbridge.

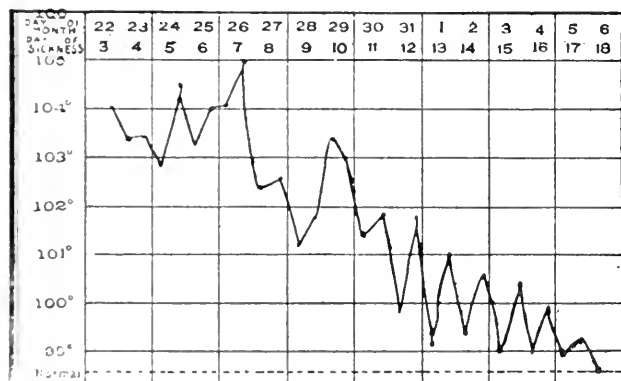
Since my return I have had excellent results in the treatment of typhoid fever; all of my patients have improved under this line of treatment, some of them more rapidly than I dared to hope for. I have the pleasure to-day of showing you several charts which differ from those shown in the text-books. These charts show a step-like decline to the normal temperature, which, in most of them, is reached in two weeks or less. On one, the normal line is touched in ten days, although there was a slight fever in the afternoon for five days longer. One of them shows the normal line touched on the twelfth day of treatment, and sixteenth day of disease, and one shows the same result on the fourteenth day of treatment and seventeenth day of illness. All of these patients had the rose spots and other symptoms necessary to establish a positive diagnosis, and three of them were seen by other physicians who confirmed my diagnosis of typhoid fever. As yet I have not been able to obtain as brilliant results as Dr. Woodbridge reports, but have found that, if the medicine is perseveringly used, the temperature will invariably decline, delirium, tympanitis and other alarming symptoms will disappear and an early convalescence will follow.

The medicine must be pushed as fast as possible until the temperature falls below 100 degrees or these results will not be obtained. No. 1 should be given every fifteen minutes for twenty-four or thirty-six hours; then No. 2 every fifteen minutes to every half-hour right along until the temperature falls below 100 degrees. By the end of the first twenty-four or forty-eight hours of treatment the medicine should have produced five or six or more free evacuations of the bowels, and, should one tablet of either No. 1 or No. 2 not be sufficient to produce this effect, two or three or more may be given at each dose. The size and frequency of the dose may now be reduced so as to produce a gradual decrease in the frequency of the movements each day, until, by the time the temperature has touched normal, one or two free evacuations of the bowels occur during each twenty-four hours, and at no time should a day pass without this action being accomplished. About the third or fourth day No. 3 should be commenced and should be given every three or four hours until the temperature remains normal. If the temperature again rises No. 2 should be pushed energetically. Of course the patient must be closely watched, and if any symptoms of pyalism should occur omit the tablets for a day

or two and give a saturated solution of potassium chlorate, a teaspoonful every three hours, returning to the tablets as soon as possible.

I have met with one patient, a lady 46 years of age, who did not tolerate the mercury well. After three days' use of the tablets she suffered with slight pyalism and sore gums but it was not very severe. I stopped No. 2 and gave the potash solution for forty-eight hours. I then gave small doses of podophyllin, gr. 1-8 to 1-6, every four hours alternating with No. 3. She did well on this treatment. I believe that by the careful use of these remedies, or by a similar line of antiseptic treatment, more lives can be saved than by any other plan. Stimulants and tonics should be given if indicated, but with this treatment they will not be needed as often as by the older methods. Plenty of cold (not iced) boiled or distilled water should be given and the patient encouraged to take several swallows with each dose of medicine. Milk diet should be enforced and no solid food given until the temperature remains normal. If the patient has an aversion to milk, some good liquid food can be given, but milk should be taken also in smaller quantities than when used alone. The following report of two cases show how the medicine can be pushed:

E. J., age 6 years, began to complain October 20. On the evening of October 22 I saw him and found a



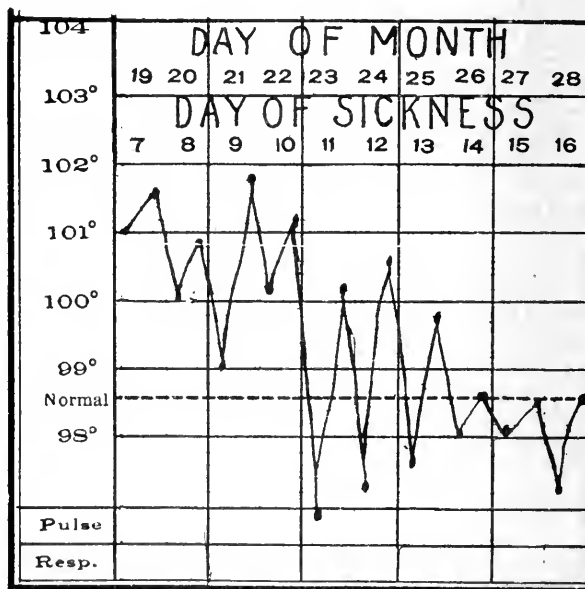
E. J., age 6 years.

temperature of 104 degrees. I gave No. 1 every half hour for thirty-six hours; then No. 2 every twenty minutes a part of the time and every half hour a part of the time until October 31 (nine days), when the temperature reached 99.8 degrees. The tablets were then given less often, and teaspoonful doses of liquid peptonoids, with creasote and guaiacol, were given every three hours. This patient was so young that I did not try to give No. 3, as I feared that he could not swallow the large capsules. On October 26 his temperature was 105 degrees, but fell day by day till it touched normal a few hours over fourteen days of treatment, and on the seventeenth day of illness. Although this boy took the tablets very often for nearly two weeks, castor oil was frequently given to obtain sufficient movements of the bowels.

On October 13, Mrs. O. H., age 71 years, first felt that she was not as well as usual. She had been assisting in the care of her daughter who came from Cleveland, five weeks before, sick with typhoid fever. On October 16 she was obliged to go to bed and her temperature rose day by day till it reached 101.6 degrees on November 19. Then I gave tablets of Dr. Woodbridge's No. 1 at 9 A. M., and gave them every twenty minutes until 10 P. M.; then every half hour till 2 P. M. on the 20th. The temperature then being

only 100.5 degrees, tablets were given every half hour till 5 P. M. The temperature then having risen to nearly 101 degrees, No. 2 was given every half hour till 9 A. M. on the 21st when the temperature was 99 degrees; No. 2 was given every hour till 2 P. M., then every half hour as the temperature was rising and continued till 10 P. M.; then every twenty minutes till 1 A. M. on the 22d; then every half hour till 9 A. M. At 9:30 the temperature fell to 96.6 degrees, but the pulse was 82 and good. Stimulants were given and hot applications made to the feet and limbs; her temperature rose to 100.2 degrees in afternoon. The next morning the temperature fell to 97 degrees and went to 100.6 degrees in the afternoon.

The temperature was sub-normal for three days and longer, and rose slightly above normal in the afternoon gradually having less departure from normal either above or below. Tonics and stimulants were given when temperature was below and Woodbridge tablets or capsules when above. This lady took the Woodbridge medicine seven days, when the temperature remained normal, or slightly below in the



Mrs. O. H.

morning. She told me that she nearly always had a sub-normal temperature when recovering from any sickness. This was an interesting case to me, as most text-books say that it is extremely rare for a person in advanced years to have typhoid fever. She had rose spots, tenderness over the bowels and enough other symptoms to leave no doubt of the correctness of the diagnosis.

Eight persons received the Woodbridge treatment with no death. In every case the effect of the medicine was plainly shown by a decline in the temperature and improvement in all symptoms. Those who received the treatment early had no dry tongue and but little tympanitis or diarrhea.

Twelve patients received other treatment with three deaths. No doubt deaths will occur under any plan of treatment, but I believe that the mortality from typhoid fever would be greatly lessened if physicians would use the Woodbridge treatment. I had excellent opportunities during this epidemic to test their efficacy, and, until something better is found, shall continue to use them in typhoid fever.

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SATURDAY, FEBRUARY 1, 1896.

IS THE MEDICAL EXAMINER AN OVER-ESTIMATED
INSURANCE OFFICER?

The *Medical Examiner*, November, states that the insurance press has lately been discussing the value of the Medical Examiner in his relation to insurance, which is summed up by the *Guardian* in the proposition that perhaps, after all, the high value set upon the services of the medical examiner is an inflated one, and that his true merit should be quoted at a much lower figure. The *Underwriter*, also, has a short article upon the medical man in his insurance capacity, in the course of which it makes sundry charges and insinuations. One of these has reference to the organization of Medical Directors of Life Insurance, which is defended by the *Examiner* as a non-secret association, whose interests are in harmony with the companies to which its members belong; and the knowledge which these members obtain or extend through their association must be useful to their companies. This must especially be true in respect of rejected risks. But risks once rejected must not be assumed as of necessity and in a routine manner, to be destined to future rejection. "No company," says the *Examiner*, "would tolerate such a proceeding. Simply because a case has been rejected by another company is no reason for a further rejection, off hand, without due investigation." As a matter of fact, the rule is that every applicant for insurance is given an individual hearing, and companies have a right to make thorough preliminary inquiries about him before incurring the expense of an examination. The vast majority of applicants give this information themselves, as they are specifically asked in the application whether or not they have been rejected.

"No insurance examiner has a prejudice against a

symptom. Certain symptoms or signs indicate certain conditions, and according to the condition so will be the opinion on the case. He has no business to be prejudiced either one way or the other. He has a duty to perform, and a conscientious examiner will do it without fear or favor. He has no right to let his prejudice enter into the question, otherwise he is a hindrance, not a help to the business. Companies employ him for his supposed ability to detect or exclude conditions which render the applicant an unfit subject for insurance; or, in other words, a life or a case which, if accepted, would bring a loss instead of a profit to the treasury of the company. Insurance companies can not dispense benefits if their business is a losing one. The doctor is valuable to them in so far as he is an aid in the acceptance of risks which will prove a benefit or a profit to them, and in excluding those which are uninsurable."

How far an examiner may allow his personal and peculiar views, as to cardiac symptoms, or those referable to the lungs or the kidneys, to weigh in the rejection of candidates, is a question that may safely be left with the company to watch and determine. If a medical man makes a practice of accepting or rejecting a certain group of candidates, and does so contrary to the light of the present-day pathology, he is likely to have but a short official tenure. In other words, the true and best interests of the companies move along in parallel lines with those of their medical advisers; the judgment of the latter may be at fault at times; the medical examiners themselves may not always be of one mind regarding the interpretation of risks, but the net result can hardly be any other than a vindication of the claim of the *Examiner*, that the day has not yet come when the companies can dispense with their almost universally trusted and trustworthy examiner. The value of the latter to his company will possibly, in the future, be placed at a higher rather than "a lower figure"; for a higher grade of specialized training is year by year being undergone by the medical profession.

THE FEES OF AN EXPERT WITNESS.

We have heretofore adverted to the case of DR. J. N. DIXON, of Springfield, Ill., and in our issue of April 13, 1895, we published in full the opinion of JUDGE CREIGHTON. Our readers will recall that this case arose in a suit for damages for injury caused by a defective sidewalk, brought by Olive Purdy against the city of Springfield, Ill. DR. J. N. DIXON being called as a witness by the city, having no knowledge of the facts in the case, was called as an expert, and when asked a hypothetical question declined to answer on the ground that an expert witness is entitled to a different and greater compensation than an ordinary witness is allowed, and that an expert is not required to give expert testimony without compensation as an expert, unless a reasonable compensation shall have been paid or provided for; that he had not been paid nor offered anything for compensation for

his expert or professional opinion in the case, a fee of \$10 having been asked for by him and expressly refused. The judge of the Circuit Court of Sangamon County then demanded that the Doctor answer the question and on his continued refusal fined him \$25 for contempt of court. The Doctor thereupon appealed the case to the Appellate Court, and an opinion affirming JUDGE CREIGHTON's opinion has been handed down.

The opinion of JUDGE CREIGHTON was remarkable for its thinly veiled sarcasm, and its arrogant statements in regard to physicians.¹ "Physicians in this State," says this learned Judge. "are the favored children of the State; a department of the State government is maintained very largely for their benefit; they hold a license to practice their profession and practice by grace as well as by right, and are so hedged about and protected by the laws of the State, and by public opinion and confidence, that in five minutes of time a doctor may earn more than an ordinary laborer could earn in a day." Exactly what this very remarkable paragraph had to do with the case, except to show the bias of the Judge is not very clear, and we fear that if our legal luminary were placed on the witness stand and asked what department of the State government is maintained very largely for the "benefit" of the medical profession, he would cut a very sorry figure.

When a Judge on the bench descends to such an attack on the medical profession, he makes an unwarranted use of his position, and necessarily lessens respect for the opinions of his court. Such statements would answer admirably for a DOGBERRY, but have no place in the enlightened jurisprudence of the nineteenth century.

The text of the decision of the Appellate Court, the HON. GEO. W. PLEASANT, presiding justice, is as follows. It will be noticed that it is entirely devoid of the wild statements and absurd declamation which we have pointed out as characterizing the "opinion" of JUDGE CREIGHTON:

STATE OF ILLINOIS,
APPELLATE COURT THIRD DISTRICT.
May Term, 1895. Filed Dec. 2, 1895.
Docket No. 114. Agenda No. 103.

JOHN S. DIXON
vs.
THE PEOPLE, &c. { Error to Sangamon.

OPINION.

Per Curiam.

The appellant, a physician and surgeon, was brought into Circuit Court of Sangamon County by the ordinary process of subpoena to testify as a witness in behalf of the defendant in a case then pending against the City of Springfield, brought to recover damages for personal injuries which the plaintiff alleged she had received from a fall upon a defective sidewalk.

The appellant knew nothing whatever of the facts of the case, and he declined to answer a hypothetical question propounded to him calling for his professional opinion upon the assumed state of facts mentioned in the question, except upon the payment of a fee of \$10. He persisted in such refusal and the Court ruled he was in contempt and assessed a fine against him.

It is conceded the fee demanded was reasonable in amount

and no question is raised in the brief as to the power of the Court to inflict a fine as punishment for contempt in refusing to answer any question which the law required the witness to answer, and therefore the sole question presented is: Could the appellant, under the circumstances, lawfully decline to give his professional opinion without reasonable compensation? As far as we are advised the question has never been directly passed upon in Illinois.

Nor can any rule be drawn from the currents of judicial decisions in other jurisdictions or from a concurrence in the views of text writers, so widely at variance and so directly in conflict are the opinions of different courts and law writers upon the subject.

It is not contended the reasonable compensation demanded by the appellant could be taxed as costs, but that the party desiring his professional opinion should be required to compensate him therefor, before the law should compel him to express that opinion for the benefit of such party. We think the court ruled correctly in holding the law required the witness to answer the question.

The statute has fixed the compensation to be paid all witnesses and the law requires every person without regard to his calling or engagements, to appear as a witness when duly subpoenaed and to accept as full compensation the statutory allowance however inadequate it may be.

The administration of justice in the adjustment of the contentions growing out of the business affairs or concerning mere private personal property or property rights of its citizens is one of the most important sovereign duties devolving upon the State. Upon the performance thereof depends the public peace and tranquility, and the safety and security of the property, reputation, person and family of every private citizen. Every citizen is therefore deeply interested in the proper discharge of that duty. It can only be discharged through the medium of judicial tribunals. Without the power to compel witnesses to attend and disclose facts in their knowledge pertinent to these contentions these tribunals are powerless to perform their functions. No distinction can, we think, be drawn between different kinds of knowledge, nor can a witness decline to make known facts which have come to his knowledge either by observation or study and experience, upon the ground that he can use such facts or knowledge for his pecuniary benefit in the business affairs of life, when the disclosure thereof is important to the attainment of justice in the courts.

No reason is perceived why compensation beyond that fixed by the general laws of the State should be allowed to this class, or to any one class of experts, unless it is allowed to every other class, of which there are many—some works on expert testimony enumerate as many as seventy classes of expert witnesses. To hold each member of these different classes of witnesses may lawfully demand that litigants shall arrange for the payment of reasonable compensation before he can be compelled to disclose in open court facts in his knowledge relating to the right and justice of causes there pending for determination would be impracticable and would often operate to subject a litigant to financial burdens so great as to practically deny him a hearing in the courts, would tend to make the administration of the law depend upon the financial ability of the suitors to compensate witnesses in order to have the benefit of facts in their knowledge, and to bring such testimony into discredit as having been purchased, and to attach scandals and grave suspicions to expert witnesses and expert testimony. Nor does the rule requiring experts to testify for legal fees deprive the witness of his property for public use.

Knowledge gained by study, observation and experience is not property within the meaning of the word as used in Section 13, Article 2 of the Constitution, wherein it is provided that private property shall not be taken or damaged for public use without just compensation. The word in its appropriate sense means tangible things and rights which accompany or are incident to the use, enjoyment or disposition of such things. (See authorities collected in Note 1 to page 284, Vol. xix, Amer. and Eng. Ency. of Law.) In *C. W. F. R. R. Co. vs. E. C. R. W. Co.*, 115 Illinois, page 385, it was said: "Property itself in a legal sense is nothing more than the exclusive right of passing enjoyment and disposing of a thing." The ordinance of 1787 has no operative force in this State, except so far as its principles are embodied in the Constitution.

The People, etc. vs. Thompson, 155 Illinois, page 451.

The judgment is affirmed: Affirmed.

That there is conflict of opinion the court clearly states, and we understand that Dr. Dixon has taken an appeal to the supreme court of Illinois.

HON. JOHN A. STERLING, in an article in this Jour-

¹ See the text of this opinion in this JOURNAL April 13, 1895, p. 571.

NAL March 17, 1894, p. 381, states: "It is the prevailing rule that the expert witness is entitled to demand and receive adequate compensation for his opinions on the stand; and he can not be required to speak until it is assured. This applies only where he is called to give a professional opinion on a scientific question."

The opinion of HON. W. A. PURRINGTON, of New York,² so clearly expresses the existing situation in this country on this point, that we reproduce it.

The rule as to the fees of expert witnesses varies with the jurisdiction. In New York, although under general subpoena a physician must of course appear in court and testify to facts of the case within his ordinary observation, he will not be compelled to give his opinion on matters of skill and science. And therefore it is proper for the district attorneys to employ medical experts on behalf of the people. The fact that an expert has received a large fee does not make his testimony incompetent or afford ground for a new trial. But this rule of compensation is not the same, however, in all jurisdictions, and the contrary was held in a laboriously argued Alabama case. Some States have regulated the matter by statute. Thus, in Minnesota the judge is authorized to allow an expert witness "such fees or compensation as may seem just and reasonable," and it might seem, therefore, that such a witness might refuse to testify until he received at least the promise of what he thought a just and reasonable fee. But the supreme court held, approving the reasoning of *ex parte* Dement, that this provision of law had reference to an allowance to be made after the witness had been dismissed, not before. In Colorado, if the expert witness testifies under subpoena without making an agreement in advance for his compensation, he is only entitled to statutory fees. The Indiana Code of Civil Procedure provides for compelling an expert witness to testify without extra compensation. But prior to the enactment of this rule in 1881, the courts of that State had laid down the same rule as in New York. The English rule is that one called as a witness to give his opinion on a subject with which he is peculiarly conversant from his employment in life, is not bound to testify unless the party calling him "pay for his time," and in a comparatively recent case an auctioneer was said to be a professional witness and not bound to testify even if sworn, until his fee, expenses, or compensation for time at a guinea a day, were paid.

Since this work appeared the Arkansas supreme court has decided a case, Jan. 26, 1895, but this was a criminal case and the question turned on the Arkansas statutes.³

Should the supreme court of Illinois affirm the opinion of the lower courts in the case of DR. DIXON, the necessity will again be emphasized for supporting the ILLINOIS STATE MEDICAL SOCIETY in its appeal to the legislature for a proper statute for regulating this matter, and whatever may be the result of this appeal to the highest State Court, DR. DIXON is deserving of the highest praise from the profession of his State for the pluck and energy with which he has fought against the unjust ruling which placed him in technical contempt of court.

THE ETIOLOGIC RELATION EXISTING BETWEEN CERTAIN NEUROSES AND DIET, AND ITS THERAPEUTIC APPLICATIONS.

Adopting the comprehensive definition of CHOMEL as the simplest expression of what we mean by disease, that it is "the occurrence of an obvious disorder, either in the material disposition of the constituent

parts of the living body, or in the exercise of functions," it is evident from our knowledge of cellular pathology, that errors of nutrition must necessarily play an important part in the causation of disease. This, as a doctrinal teaching, has long been accepted by clinicians; but there is still lacking in medical practice evidence of a clear knowledge of the relationship existing between special forms of disease and diet and also a want of agreement as to the application of the principles of dietetics in the management of certain maladies, which are mainly attributable to nutritive disturbances. When ABERNETHY in his blunt phrase declared that "three-fourths of all diseases are caused and can be cured at the table," he expressed a thought which has entered the mind of every experienced and observing physician. The popular belief that food may exert a pathogenic influence, which is embodied in the saying, "What's one man's meat is another man's poison," could scarcely have a better exposition of its scientific foundation than was given by HIPPOCRATES in one of his aphorisms: "Wherefore, I say, that such constitutions as suffer quickly and strongly from errors in diet are weaker than others that do not; and that a weak person is in a state very nearly approaching to one in disease; but a person in disease is the weaker, and it is therefore likely that he should suffer if he encounters anything unseasonable."¹ In other words, just as a man may have a congenitally inadequate liver or kidneys, so he may have congenitally inadequate digestive organs. This is a fact which strictly speaking does not belong to dietetics, but which must not be lost sight of in arranging dietaries for individual instances of disease. This is a trite observation, but it will bear repeating. Although physiologic experiment has shown that the brain and spinal cord apparently, of all the soft parts, endure privations the best and relatively suffer less loss of weight during prolonged abstinence from food, it is true clinically that altered innervation is one of the earliest symptoms of disturbance of nutrition. Some years ago OLIVER WENDELL HOLMES directed attention to the influence of food upon vital phenomena in the following characteristic style: "Most assuredly I do believe that the body and mind are influenced by the food habitually depended upon. I am persuaded that a too exclusively porcine diet gives a bristly character to the beard and hair, which is borrowed from the animal whose tissues these stiff-bearded compatriots of ours have too largely assimilated. I can never stray among the village people of our windy capes without now and then coming upon a human being who looks as if he had been split, salted and dried like the fish which has built up his arid organism. If the body is modified by the food which nourishes it, the mind and char-

² A System of Legal Medicine, by Allan McLane Hamilton, New York, 1894.

³ See Jour. Amer. Med. Assoc., June 22, 1895, p. 991.

¹ Sydenham Society's translation.

acter very certainly will be modified by it also. We know enough of their close connection to be sure of that without statistic observations to prove it." SHAKESPEARE makes Sir Andrew Ague-Cheek incidentally express much the same opinion in "Twelfth Night": "Methinks, sometimes, I have no more wit than a Christian or an ordinary man has; but I am a great eater of beef and I believe that does harm to my wit."

Coming now to the etiologic relation existing between certain neuroses and diet, it is to be observed that neurasthenia and the peculiar state of the nervous system inappropriately termed hysteria, are curable by the WEIR-MITCHELL plan of feeding and rest, on the lines laid down in his booklet on "Fat and Blood, and How to Make Them." Epilepsy is to a large extent a dietetic disease; at least it has been claimed, on good authority, that a non-nitrogenous diet alone without drugs will bear better results than the bromids without restriction of diet. Similarly in the treatment of delirium tremens, the late J. HUGHES BENNET becoming convinced of the inutility of tartar emetic, opium and other drugs, abandoned them entirely and gave nothing but nourishment as soon as the patient could take it, the result being, in his own words, "all the cases that enter my wards recover." The delirium of low fevers, according to the teachings and practice of DA COSTA, is very often due to debility and is an indication for increasing the nourishment. The use of a non-stimulating diet is required in the treatment of chorea, night-terrors and other manifestations of a neurotic inheritance in young children. Asthma, considered as a reflex neurosis, is closely allied to epilepsy and requires careful supervision of the diet. The late DR. RANDOLPH, of Philadelphia, conferred immunity from attacks for months upon an inveterate asthmatic subject, by the administration of predigested or peptonized food. The relation of cause and effect was shown by the fact that whenever the patient would return to his ordinary table diet the paroxysms would reappear. It is a matter of common observation that a heavy supper or indulgence in certain articles of food are liable to bring on an attack in a patient having the asthmatic predisposition. Neuralgia is now often interpreted as the cry of a nerve for better nourishment, and food is given the precedence over anodynes in the treatment. Closely related to this is the subject of visceral neuroses. The late PROF. WILLIAM GOODELL once said to his class, "Gentlemen, the crying medical error of the day is, in my opinion, the mistaking of nerve disease for womb disease." The form of nerve disease which he particularly referred to was that which has been so successfully treated by the WEIR-MITCHELL method, to which allusion has already been made. There can be little doubt that many women who have been

subjected to gynecologic operations and have recovered, owe their recovery less to the mutilation they have undergone than the strict regimen and good care which attended the operation.

The recognition of alcohol as a factor in many neuroses unfortunately does not always direct us to success in treatment, because when the case comes under observation the lesions are so far advanced that their repair and restoration is impossible, although their progress may be delayed and the morbid processes held in abeyance. Kakké or beri-beri, a form of multiple neuritis, has been shown by DR. TAKAKI to be caused by a rice diet, where the rice is of inferior quality and partly spoiled. Its nature being recognized, beri-beri has been banished from the Japanese navy by diet-regulation, in the same way that scorbutus has been driven from ships of other civilized nations.

In the treatment of insanity, while admitting the underlying neurotic predisposition, it is universally acknowledged that diet is a potent aid to recovery. In a recent paper DR. KIERNAN states that in acute confusional insanity, the treatment consists in "proper nutrition, quiet and relief from agitation, psychoses of this type being due to systemic exhaustion and not to toxemia." If, as has been asserted by DR. THOMAS MAYS, pulmonary phthisis is less an infectious disease than it is a neurosis, the importance of food in the treatment of consumption receives an additional emphasis.

It is worth noting that the yolk of egg contains lecithin, a form of phosphorized fat, which is very similar in composition to the characteristic proximate element in nerve substance and, therefore, egg-yolk is one of the most important articles of food for the class of cases under consideration, being convenient, and, when given with milk or wine, usually acceptable to the patient, and also easily assimilated. The caffeine-bearing group of stimulants, coffee, tea, cacao and kola, are habitually used as articles of diet and their deprivation during illness may produce symptoms of nervous disorder, as pointed out by DR. I. N. LOVE, in a very practical paper on "Coffee," read before the Mississippi Valley Medical Association in 1891, in which attention is directed to the clinical fact that restlessness, insomnia and other nervous symptoms may be attributable to the withdrawal of some accustomed stimulant rather than to the influence of disease.

INFLAMMATORY AFFECTIONS OF THE COSTAL CARTILAGES.

The affections of the costal cartilages are but little known. The majority of our text-books and systems of surgery do not touch upon the pathology of the costal cartilages. RIEDINGER in his article in volume XLII of *Deutsche Chirurgie* devotes the larger part of

one page to the tuberculous chondritis and emphasizes the necessity of the most thorough treatment because the process has a very marked tendency to return. DITTRICH¹ describes, in 1893, sixteen cases of tuberculous chondritis from PROFESSOR ESMARCH's clinic. HELFERICH² wrote about costal chondritis after typhoid fever in 1890, and additional scattered references to this subject may be found here and there in the literature. The paucity of the literature on the subject, the nevertheless undoubted frequency of costal chondritis, and the theoretical and practical interest in this important part of the pathology of cartilage, led PROFESSOR BERG, of Stockholm, to publish some very valuable results of his clinical studies in this subject.³ BERG has treated thirteen hospital and three private patients for inflammatory processes in or connected with the costal cartilages. Four additional cases placed at his disposition by professional friends bring the total number of the cases studied by him up to twenty. Of these, fourteen were men, six women. As to age, one case occurred in the second, five in the third, three in the fourth, six in the fifth, and five in the sixth decennium.

Concerning the etiology, one of BERG's cases, a tuberculous chondritis, is very instructive because it shows very clearly that traumatism upon two separate occasions and involving separate cartilages is followed in each instance by tuberculosis in the cartilages subjected to injury. The essential cause of costal chondritis is, of course, some form of microbic infection. In all of BERG's cases, except two, the patients presented themselves with fistulous openings, so that a bacteriologic examination was omitted. In one of two non-fistulous cases the typhoid bacillus was present in pure culture, and in a new case observed during the printing of the article, the bacillus coli communis was present in pure culture. Studying his cases carefully from a clinical point of view, but with special reference to the etiologic factors present, BERG separates the following groups: 1. Tuberculosis. In seven of the twenty cases the process was undoubtedly tuberculosis; in only one could the process be said to be due to direct extension, namely from the sternum; in the others the disease seemed to be isolated. In four of the seven cases there were distinct pulmonary signs of tuberculosis, but any evidence showing the direct extension of the process from the pleura to the cartilages was not obtainable. Tuberculous chondritis may occur as the only expression of a tuberculous infection in otherwise healthy individuals. 2. Typhoid fever. This disease preceded the development of the chondritis in seven cases; in one case the chondritis began during the actual attack; in four the first signs of the cartilage affection developed in from four to six weeks after the

beginning of the typhoid fever; in two the time that elapsed was much longer. As already stated, in only one of these seven cases was there a bacteriologic examination and this showed typhoid bacilli only. 3. Syphilis. In one case a syphilitic perichondritis gave rise to the symptoms that led to surgical interference. 4. Septic infections. In four cases the connection of the chondral process with common forms of septic infection seems natural; in one case the chondritis developed eight days after a lobar pneumonia; in another case this relation to pneumonia was a little less striking; in the third case of this group the pneumonia developed on the day after the operation of laying open a fistulous tract that led to an abscess behind the fourth right costal cartilage; the fourth case seemed to be due to a general acute infection accompanied with acute nephritis.

The course and the symptoms of costal chondritis seem quite similar in the various etiologic groups. A marked chronicity seems to be quite general. The disease begins with spontaneous pain or limited tenderness in the chest wall, sometimes accompanied with a local swelling. The pain is described as stitch-like. The tenderness is often sharply confined to the precise area in which the operation subsequently discloses a focus in the cartilage and this may therefore be an important early diagnostic symptom as was the case in one of BERG's cases. The relation as to time between the pain or tenderness and the development of a visible or palpable swelling is, of course, variable. The swelling is usually quite hard at first, often peculiarly flat and distinctly connected with the underlying cartilage. Sooner or later the skin becomes red, the swelling soft, often very extensive, and spontaneous evacuation may occur. The fistulae that result invariably require surgical treatment in order to heal definitely. It is self-evident that the external opening of the fistula may be located far away from the primary cartilaginous focus.

The microscopic changes seem to point to the perichondrium as the seat of the first and earliest changes in the majority of the cases. In four of BERG's cases there was abscess formation underneath the cartilage lying either upon the pleura or the pericardium. The process has a distinct tendency to spread in the wall of the thorax and to involve more than one cartilage, although the possibility of a primary infection of many cartilages at the same time can not be denied. In the twenty cases of BERG, twelve showed only one cartilage to be attacked; four cases showed two, two cases showed three, and in two cases four cartilages were involved. The distribution of the process in the various cartilages is as follows:

Costal cartilage, number	II	IV	V	VI	VII	VIII	IX	X
Number of times involved.	1	2	6	5	8	6	2	1

The naked eye examination showed in all cases

¹ Festschrift z. Esmarch, 1893, p. 247.
² Centrbl. f. Chirurgie, 1891.
³ Nord. med. Ark., 1895.

except the one of syphilitic perichondritis that the perichondrium, as well as the cartilage, present distinct changes. The perichondrium is thickened and may be either abnormally loosely or abnormally firmly attached to the cartilage. In one case there was a distinct osteophyte attached to the perichondrium. In the cartilage itself the following gross changes were observed: Multiple, carious foci of destruction proceeding from without, due most likely to newly formed vessels and papillary outgrowths of granulation tissue from the perichondrium, and also central foci of disease consisting of cavities with irregular walls lined with granulation tissue and containing very minute cartilaginous sequestra or degeneration products; occasionally long channels may run from the central focus to the abscess in the soft parts. In only two of BERG's cases did the sternum or the ribs show any osteomyelitis; in all the other cases the process was confined to the cartilages. In addition to foci of disease the cartilage may show more diffuse changes, being either very soft or abnormally hard and brittle, and often of a distinctly yellow color. The description of the histologic changes including the interesting study of metaplastic processes has been reserved for some future time.

The diagnosis may be difficult. Muscular rheumatism, pulmonary and pleural lesions and intercostal neuralgia might readily be inferred to be present during the early stages of the chondritis before swelling had appeared. Even after the development of the swelling the disease might be confused with tumors of various kinds, gummas of the muscles and inflammations limited to the soft parts of the chest wall. After the formation of fistulous passages the diagnosis would seem easy, especially when the probe leads to the cartilage, but the passage may be tortuous and lead to a carious focus on the deep surface of the cartilage. Careful examination as to the salient points in the history of the process is valuable. The early confinement of the pain or tenderness to a definite cartilage from which a swelling may subsequently have developed and other features that may be elicited are all important from a diagnostic point of view. The bacteriologic examination of the contents of the abscess may throw much light upon the process, and the fact that symptoms of ordinary tuberculous or other form of chondritis may be produced by syphilis should not be forgotten.

Finally BERG concludes his instructive study with the following summarizing conclusions in regard to the operative treatment:

1. Operation should be made as early as possible as soon as the diagnosis is made. Operation may be necessary in order to establish a definite diagnosis. If there be any reason to suspect syphilis antisyphilitic treatment should first be instituted.

2. Evidement may bring the process to a standstill,

but usually only after repeated efforts, and knowing the exclusiveness and multiplicity of the changes in cartilages it is probably best to substitute typical resection for evidement.

3. In the greater number of cases the entire cartilage should be resected, including one or two centimeters of corresponding rib. But fast rules can not be laid down, as each case must be treated according to the indications presented, the location, nature and extent of the lesion being the essential guiding points.

4. The changes in the soft parts must be thoroughly removed in the tuberculous cases. In other abscesses the fistulous passages and the cavities must be thoroughly divided.

5. Aseptic wounds are difficult to obtain, especially in the cases with preëxisting external openings; consequently, attempts at securing primary union should be limited to the most favorable cases; secondary suture or open tamponade is the after treatment that in general promises the most favorable results.

PHYSICIAN AS WITNESS TO WILL WAIVES SPECIAL PRIVILEGE.

The California Code of Civil Procedure provides that "a licensed physician or surgeon can not, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." But in making his attending physician a subscribing witness to his will, the supreme court of California holds, in the case of MULLIN'S Estate, decided Dec. 3, 1895, that a testator waives the privilege, and invites a full and proper examination of the matters and facts upon which his lips would otherwise have been sealed. Upon direct examination, the jury, in this case, was informed that the witness was a physician and surgeon, with years of experience and practice, and that he was the physician who attended the testator in his last sickness. Then, for their enlightenment, he was asked his opinion of the mental condition of the testator at the time of the testamentary act, and answered that the latter was of sound mind. The answer of necessity involved the use of the intimate knowledge acquired by the physician in prescribing for and treating his patient. It would be absurd to continue the court, to say that it was to be limited to the outward seeming and appearance of the patient at that particular moment, or, in other words, that the witness would have been justified in answering, for example, that from external appearances, and judging as a layman, his opinion was that he was of sound mind, but that using his professional skill and knowledge and intimate acquaintanceship with the patient acquired as his physician, his opinion was that he was mentally incompetent. Having answered that in his opinion the man was of disposing mind

there were open to the cross-examiner two fields of inquiry: First, the soundness of the witness' judgment, or, in other words, his qualifications as an alienist; and second, the character of the patient's infirmities—that is to say, the facts and circumstances upon which the judgment was exercised and the conclusion reached. Here the witness was interrogated, upon cross-examination, as to the character of his patient's affliction, which appeared to be serous apoplexy, resulting in hemiplegia, and showing that the brain is involved and affected by this disease; likewise, that the accompanying paralysis evinced itself upon the Thursday preceding the Monday upon which the will was executed and the testator died. In addition, the witness was interrogated as to the disclosures which the autopsy made of the physical condition of the deceased, and finally he was subjected to a cross-examination, keen and comprehensive, touching his professional learning and qualifications, and as an expert. This cross-examination, the court holds, was confined within the prescribed bounds, and was strictly proper.

CORRESPONDENCE.

Castration as a Treatment for Crime, not as a Punishment.

AUSTIN, TEXAS, Jan. 21, 1896.

To the Editor:—In your editorial comments on my paper which was read at the recent meeting of the Chicago Medico-Legal Society (see issue of January 18), I regret to see that you misapprehend its entire trend and object. Surely, you did not read it. You convey the impression that its object was to advocate castration of sexual perverts as a punishment; whereas the subject of sexual perverts was scarcely alluded to, and I distinctly disclaimed, in the very first paragraph, all idea of punishment; deprecate further along, that our penal system is based upon the ancient idea of revenge, and that its chief end seems to be punishment. And, again, I say, "punishment should have no place in a civilized code." (You must have had in mind my paper on sexual perverts which was read at the Medico-Legal Congress in 1893.) Moreover, nothing was said in this paper about castration except incidentally as a factor in the reform advocated, to be made available in certain conditions named. You are away off, and have unwittingly done me an injustice by ascribing to me sentiments foreign to the paper, and then saying the consensus of opinion was opposed to them.

The paper was a plea for reform in criminal jurisprudence, based upon facts which go to show that our statutes are not only inefficient—assuming that the aim and object sought is the protection of society and the repression of crime—but that our methods of executing them contribute really to the increase of crime and criminals; that the cause of lawlessness as witnessed in occasional lynchings, is the outgrowth of this inefficiency; that the people see that the law, even when rigorously enforced, does not afford them protection, but, on the contrary, crime, and especially, rape, is on the increase, and it is the feeling of insecurity that drives them to seek by other means the protection of home and family. A plea was made for a discrimination or classification of criminals, based mostly upon the recent researches of Lombroso, who has shown that a large percentage of criminals are born so, the victims of heredity and environment, and are alike irresponsible and irreclaimable. This class I would regard as permanent enemies to society,

and advocate their permanent sequestration—making them labor for their support and the benefit of that society whose privileges they have forfeited, and taking away, along with all other rights) that of procreating—inflicting upon a world a progeny, likely at least, to be criminal. And, with due deference to the learned legal gentleman who sneeringly said that "castration might do for Texas, but it would not be tolerated in an enlightened State like Illinois" (a remark not called for and worthy of a small mind), I will say that, unfortunately all the born criminals are not old men. But his objection that castration would be detrimental to moral character in the connection here stated, is too absurd; injure the character of a habitual, irreclaimable criminal!

Regarding all other criminals, the object of treatment or management should be reformation and restoration to society. This can be done in a very large number of cases; and the discipline should be instituted and executed under the supervision of intelligent medical men. It should be based upon, first, a correct diagnosis of each case. If of a reformable class, reform him: and the first step advocated was, to lift him above the environment calculated to harden him.

In brief, I endeavored to show that our penal system, based as it is upon the obsolete idea of revenge, retaliation, "an eye for an eye, a tooth for a tooth," is wrong and, naturally, ineffective: that as opinion has changed as regards insanity and inebriety, both of which were formerly punished as crime, so physicians are beginning to realize that crime in the habitual criminal is a disease and calls for treatment and not punishment. While I would not go so far as to say that all crime is the expression of a diseased state of mind, there is no doubt that much of it is, and the distinction between the state of the born criminal and moral insanity, if any, is too fine to be always recognized.

I pointed out the reluctance with which those who are intrusted with the making of statutes—for the most part persons who know nothing of the requirements of sanitary law—receive advice or information or suggestions; and ascribed as one reason, that there is no source whence the necessary knowledge can be obtained. I advocated, therefore, the creation by Congress, of a Department of Public Health, a repository for all knowledge bearing on health, whence it could be disseminated and utilized in the reconstruction of our statutes to bring them more in accord with the science of the day and a more enlightened civilization.

I regret that you did not read the paper more understandingly, because had you done so, I believe that you could not do other than endorse much that was there presented. It is only a matter of time; the changes that have taken place with regard to the management of the insane and the inebriate will sooner or later take place with reference to crime and criminals, and they will be managed more in accord with the dictates of humanity than at present. The great evil, next to the inefficiency of the penal code to fulfill its ends, is the indiscriminate treatment of the young and old, the born criminal and the first offender. A young man commits a crime through impulse and immediately repents and would give worlds to undo it. He is treated with all the rigorous severity that is meted to the hoary headed criminal. Very respectfully yours,

F. E. DANIEL, M.D.

Poisoning by Acetanilid.

QUINCY, ILL, Jan. 19, 1896.

To the Editor:—In our JOURNAL of Jan. 18, 1896, page 144, reference is made to a report in the *Virginia Medical Monthly*, by Dr. Ben. H. Broadnax, on the use of acetanilid. Having recently had in my own practice two cases of acetanilid poisoning, one terminating fatally, I can not, therefore, indorse Dr. Broadnax's recommendation for the use of this drug, particularly in new-born infants. A few weeks ago I prescribed for a

babe of four days, suffering with an erythematous inflammation of the skin of the nates, thighs and groins, a powder composed of equal parts of subnitrate of bismuth and acetanilid. During that afternoon and night the powder was dusted upon the inflamed areas three or four times. On the following morning the babe was found deeply cyanosed, and died a few hours later.

Before realizing that acetanilid was the cause of death in the case just noted, I prescribed the drug for another infant two days old. One application of the drug was made to the nates and thighs of the second child, about 10 P.M., and on the following morning this babe was also deeply cyanosed. Twenty-four hours later it had fully recovered from the toxic effects of the drug.

That acetanilid is not absolutely safe for external use in adults see reference in *N. Y. Med. Jour.*, Jan. 11, 1896, page 63, to a report in the January number of the *Yale Med. Jour.*, by Dr. William H. Carmalt, on "The Toxic Effects of Topical Applications of Acetanilid." The patient, a girl 18 years old, was suffering with an ulcer which had resulted from a burn over the larger part of the hand, in which there had been profuse suppuration. Powdered acetanilid was applied every four hours for twenty-four hours, when symptoms of cyanosis were observed. The employment of the drug was immediately discontinued and in twelve hours the symptoms disappeared." I have thus written that other physicians may guard against having a similarly unfortunate result from the use of acetanilid.

CHARLES W. ROOK, M.D.

Treatment of Obstruction of Lachrymal Duct.

DALLAS, TEXAS, Jan. 25, 1896.

To the Editor: Dr. P. Richard Taylor, of Louisville, Ky., read a paper before the Falls City Medical Society, entitled, "Dacryocystitis," published in the *JOURNAL* of Jan. 4, 1896. In this paper, the Doctor makes the unconditional assertion that probing the lachrymal duct for stricture is a failure, and that there is but one successful treatment, and that by a tube devised by himself. The Doctor distinguishes himself by giving us an instrument which seems almost indispensable in certain cases, to be mentioned later. My object is not to condemn his treatment, but to defend probing, which he brands "a failure." Inasmuch as I have never had a failure in an uncomplicated stricture, I must take issue with the Doctor. In all cases of complete stricture, I open up the duct with a knife and follow this with a probe as large as, in my opinion, is justified. Beginning on the second or third day, I inaugurate a series of probings every two or three days, at first, gradually increasing the interval between probings, from two to sixty days, which is kept up for some time after I consider the case well. When the obstruction is incomplete, I seldom use the knife to open up the entire duct, beginning probing at once with the smaller probes, sometimes increasing two or three sizes at one sitting.

The class of cases that seems to me to especially indicate Dr. Taylor's treatment are those stubborn cases characterized by contraction of the skin and mucous membranes. In such cases we often find a tendency to ectropion. These cases are exceedingly tedious.

When there is necrosed bone from sloughing or long continued suppuration, or injuries, no treatment is effective without first removing the necrosed bone. The cause in every case should be sought and, if possible, removed.

HENRY W. WANDLESS, M.D.

PUBLIC HEALTH.

To be Taught in Tennessee Public Schools. In addition to the branches in which instruction was given in the public schools of Tennessee, it was in 1895 enacted that physiology and

hygiene, with special reference to the nature of alcoholic drinks and narcotics and smoking cigarettes, and their effects upon the human system, shall also be taught as thoroughly as other required branches.

Restrictions upon Sale of Cigarettes. In order to provide for the better protection of the public health, the legislature of the State of Washington in 1895 enacted that it shall be unlawful for any person to sell cigarettes made of tobacco in combination with any substance or material, covering or wrapper, or containing any substance or material other than tobacco, until he shall have obtained a license therefor, and the applicant for such license must make oath, to the best of his knowledge and belief, that the cigarettes intended to be sold do not contain any injurious drug, or other deleterious matter, and that he will not knowingly sell any cigarettes containing any such injurious drugs, narcotic or other deleterious matter. It is also made unlawful to sell any cigarettes to minors under 18 years of age.

Cholera in Sand-Ballast. The Japan correspondent of the *New York Herald* writes as follows of the possible dissemination of cholera by sand-ballast: "Dr. W. F. Arnold, of the United States war ship *Petrel*, who was detached some months ago and directed to make a thorough investigation and study of the recent cholera epidemic in Japan, has returned to Yokohama from Shimonoseki. He reports that the quarantine service at Shimonoseki was most excellent, but the bacteriologic research quite indifferent. He got trace of one transport steamer which brought an unusual number of cholera cases from Talien Wan to Japan. She was disinfected no less than four times. This vessel used sand for ballast, and this ballast was not changed during the epidemic. The sand was picked up in India somewhere, just before the beginning of the war, and Dr. Arnold thinks that it had something to do with fostering the disease. He will make a thorough investigation of this vessel's history.

Provision Made in Minnesota for Expenses in Controlling Epidemics

—The law of Minnesota relating to the control of infectious diseases was amended in 1895 so that it shall be the duty of the chairman of any town, village, or city board of health which has incurred expenses for the control of infectious or contagious diseases in any such town, village or city to file an itemized statement thereof duly verified, under oath, with the clerk or recorder of such town, village or city, and thereupon it shall be the duty of the town supervisors, or the council of any city or village to audit and pay the said statement, or so much thereof as they deem just and proper, in the same manner as other accounts against such town, village or city are audited and paid. For this purpose, towns, villages and cities are authorized to levy an additional tax, not to exceed one mill of the dollar, of taxable property in any one year. But this enactment is not to apply to any city where provision was already made by law for the payment of such expenses by said city.

Tubercle Bacilli in Milk and Meat.—This subject is strongly handled by Dr. Simonton in an article in the *San José Mercury* of January 18. He calls attention to the fearful statistics of the death rate from tuberculosis in this country and says that as it is a preventable disease it should be terminated. Persons already afflicted should not be allowed to infect others with their sputa drying on sidewalk and step, and whole herds of cattle should be swept out of existence if necessary. He asserts that most of the 18,000,000 gallons of milk used here annually contain germs of tuberculosis, and that 15 per cent. of the cattle in California are already infected. He then makes a vigorous appeal to have the meat inspector and health officers generally, paid a generous salary, in proportion to the vital importance of their task, so that they could act without fear or favor, promptly and energetically. It is "a serious

matter to go into a man's dairy and kill his cattle," especially if he is a friend and patron of the official. The office should be dignified and remunerated until friendship and patronage are considered trifles in comparison with the disease and death the dairyman is scattering broadcast.

Precautions about Sending Tuberculous Patients Away from Home.—One of our religious journals contains an interesting and timely bit of correspondence that goes to show what may often occur when consumptives are sent to certain parts of the partially developed South, without the proper financial provision. Patients are not infrequently sent away, or allowed to go South without funds sufficient for their maintenance while away from home. Some patients are said to go in the expectation that they will be able to get work, when oftentimes there is no work suitable for them to do, and they may be without the strength to do it, even if it is to be found. The inference is inevitable that this "getting of work" for the patient should not be left to a chance, but should be looked into carefully before the journey is undertaken, unless the financial provision is so ample that the patient may not be overtaken by privations if the work is not procurable.

A clergyman in El Paso, Texas, writes to *The Evangelist* asking charitable friends to be careful in sending people there for treatment of pulmonary troubles, to make sure that they have enough to support them while there. The different churches are by no means strong, and find themselves very heavily taxed to support the very many needy invalids sent from other places. Such sick poor, he says, are "unloaded on us every winter by the score." They are expected to find work, but there is no work for them save in very exceptional cases. While disclaiming any desire to be harsh or uncharitable, he says: "If their friends can not support them here, we beg of them not to send them. Keep them at home that they may die of consumption among friends, and not of consumption, plus starvation, among strangers."

Legislation to Protect Health in Minnesota.—Several laws were passed in 1895 by the legislature of Minnesota designed for the protection of the public health. One of them, chapter 199 of general laws, provides for the sanitary regulation of bakeries and other establishments for the manufacture of bread and other food products. It prescribes how buildings therefor are to be constructed. No water closet, earth closet, or privy or ash pit shall be within or communicate directly with the bake room or any other room used in the manufacture of bread or other flour or meal food products, and the sleeping places for workmen shall also be separate and distinct therefrom. Ample toilet facilities apart from the utensils used in the preparation of food are to be furnished, as well as caps, slippers or shoes and an external suit of coarse linen. Furthermore, no person shall work or be employed in or about any bakery or other establishment for the manufacture of food products during the time in which a case of infectious disease exists in the house in which he resides nor thereafter until the local board of health issues a certificate in writing that no danger of public contagion would result from the employment of said person in said establishment. It is made the duty of the state bureau of labor and the boards of health, state and local, to see that the provisions of this act are enforced, while in cities of over 5,000 inhabitants, the common councils may require the owners or managers of such establishments to take out licenses. Chapter 200 requires all dealers, whether wholesale or retail, and others, in slaughtered fresh meats of all kinds, or in fish, fowls or game for human food, or for family use, to protect the same from dust, flies and all other obnoxious, offensive and deleterious insects, vermin or substances, while being transferred from place to place, to their customers, by securely and properly covering same with protectors, either tarpaulins, sheets or other effective covers. Chapter 201 aims to suppress the sale at

retail of decayed, tainted and unwholesome plucked poultry and game, particularly by requiring the entrails, crops and all other objectionable and offensive parts removed therefrom. Chapter 202 requires receivers of milk or cream in cans, bottles or vessels, shipped by rail or boat, which are to be returned, to empty same before the contents sour and to immediately wash and air the cans, etc. Chapter 203 relates to the inspection of milk and of dairies and of dairy herds. Chapter 204 is to prevent the adulteration of candy.

A More Aggressive Campaign Against Tuberculosis in New York.—On January 18, the New York City Board of Health made public a report of Dr. Herman M. Biggs, pathologist, and Dr. T. Mitchell Prudden, consulting pathologist of the Health Department, on the subject of expectoration in public buildings and conveyances. Circulars of information have already been published and distributed by the department, and some bacterial diagnostic work has been done by the Bureau under the charge of Dr. Biggs; but the officials feel that the time has come to make another advance. They will recommend that notices be posted in all public places and in all surface and elevated cars in this city, signed by the Board of Health, warning passengers against expectoration upon the floor of those conveyances; and further that similar notices be posted in the stations of the elevated roads, warning people against expectoration upon the platforms and stairs, or on the floors of the stations. The report above referred to says: "It has been for a long time known that the expectoration of persons suffering from laryngeal or pulmonary tuberculosis, pneumonia, influenza or the grip, and from diphtheria, contains the specific germs of these different diseases, and is capable of inducing these diseases in others. There is, furthermore, much evidence that a similar condition exists in certain more readily communicable diseases, such as scarlet fever, measles and whooping cough. In regard to some of these affections, the danger from the expectoration in public places is of course small, as the patients are ordinarily confined to their homes during the infectious period. But this is not universally the case. It has long since been shown that the chief means for the transmission of consumption is the dried and pulverized sputum of persons suffering from the disease. These germs are liable to be gathered on the feet and on the skirts of women, and taken into private houses, where the most perfect ventilation will not stay their evil effect. Expectoration in public places should be abated, as any other public nuisance which is brought to the attention of this department. That it is a habit and not a necessity, is clearly enough shown by the large number of men who are free from it, and the insignificant portion of women who practise it. There seems to be no good reason for the longer sufferance by the mass of people of the carelessness and the negligence of the few. We believe that this is a matter of great importance, and that on this ground alone it demands the interference of your Board. We believe that the time has now arrived when the people of the city of New York will heartily support the adoption of such sanitary measures as may seem necessary and expedient for the abatement of this widespread nuisance and source of danger."

The "Sacred Breath Cube" for Factories. Ventilating Fans in Laundries.—The *Medical Press and Circular*, January 8, states that a new law as to factories went into operation in Great Britain, at the beginning of the year 1896. The cubical air-space is, by the new act, moderately increased, but can not be said to be extravagantly high, but from a general sanitary standpoint the *Press* concludes that "the new measure constitutes a considerable advance upon all previous enactments of a similar nature. First and foremost the great principle of the prevention of overcrowding in work places has at length been formally recognized by the legislature of this country. The Act provides that a factory or workshop shall be deemed over-

crowded, so as to be injurious to the health of its inmates, if there be less than 250 cubic feet of space to each person during overtime. At the same time, there is an important rider to the effect that the Secretary of State may modify this proportion for any period during which other than electric light is used, and may as regards any particular manufacturing process or handicraft substitute any higher cubical figures than those mentioned. The necessity for such a proviso in many trades—such as baking—will be at once evident to all who are familiar with industrial processes. Then we find that the powers of the administrative authorities are greatly increased. Thus, a court of summary jurisdiction, meaning in London a police court, may on complaint by an inspector, and on being satisfied that a factory or workshop is in a dangerous or insanitary condition, prohibit the place from being used until such works as are necessary to remove the danger have been executed. This provision will strengthen the hand of the factory inspector to an almost incalculable extent. Adequate penalties are provided for the employment of persons in places injurious to health, or for allowing wearing apparel to be made up, cleaned or repaired in places where there is scarlet fever or smallpox. The last clause is so directly practical, so obvious, and so elementary as a common-sense first step in prevention or the spread of infectious disease, that the only wonder is why it was not placed on the statute book a generation ago. Further important provisions are made in the case of death from accident in a factory or workshop. Notice of occurrences must be given and a full register of them kept by the owner or occupier. A factory inspector must also attend the subsequent inquest, and the Home Secretary is furnished with powers for additional investigation should he think fit. Another most salutary feature of the new bill is that laundries carried on by way of trade, or for purpose of gain, are brought under the control of the Factory Act. In steam laundries fans must be provided to regulate the temperature of ironing rooms and to carry off the steam of wash-houses: stoves are to be separated from workrooms: the use of gas-irons emitting noxious fumes is forbidden: and floors are to be kept in good condition and properly drained. These improved conditions can not fail to confer an immense boon upon a hitherto neglected and oppressed class of workwomen. At the same time it is not a little curious that women engaged in this laborious and unhealthy trade are allowed to be employed for excessive hours of labor. A number of provisions are made with a view to enforcing the duties of employers in the observance of sanitation, of the fencing of machinery, of the affixing of notices, and of the general carrying out of their responsibilities under the Act. In the case of tenement factories we note the practical point that the owner is made responsible in place of the occupier, who is often a man of straw."

The new law is manifestly a step in the right direction and constitutes a notable landmark in the history of factory legislation.

Health Reports. The following health reports have been received in the office of the Supervising Surgeon General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Jan. 11 to 18, 3 cases, 1 death.
Michigan: Detroit, January 11 to 18, smallpox reported.
Missouri: St. Louis, January 21, 1 case.
Tennessee: Memphis, January 18 to 25, 2 cases.

SMALLPOX—FOREIGN.

Dublin, January 4 to 11, 3 cases.
Glasgow, December 28 to January 4, 3 cases.
London, January 4 to 11, 3 deaths.
Madrid, January 1 to 7, 10 deaths.
Montevideo, December 11 to 21, 1 case.
Nogales, January 11 to 18, 2 cases.
Odessa, December 28 to January 4, 4 cases, 2 deaths.
Rotterdam, January 4 to 11, 2 cases.
Swansea, January 4 to 11, 1 case.
Tuxpan, December 21 to January 4, 2 deaths.
Warsaw, December 21 to January 4, 3 deaths.

CHOLERA—FOREIGN.

Bombay, December 17 to 24, 1 death.
Calcutta, December 7 to 14, 42 deaths.

YELLOW FEVER—FOREIGN.

Havana, January 9 to 16, 5 cases, 2 deaths.
Cienfuegos, January 5 to 19, 2 deaths.
Santiago, January 11 to 18, 6 deaths.
Sagua la Grande, January 4 to 11, 5 cases, 1 death.

BOOK NOTICES.

Miskel, A Novel. By L. M. PHILLIPS. M.D. Franklin, Ohio: The Editor Publishing Co.: New York: Bailey, Fairchild & Co. 16mo, cl., pp. 266. 1895. Price 50 cents.

This is number 2 of the Doctor's Stories, a series of "medical" novels which we are informed will hereafter appear with regularity. The story turns largely upon hypnotism and Hindoo magic. A baby is stolen in Lucknow; the father, an English officer, also abducted. In course of time the custodian of the child becomes a resident of an Ohio town, where she astonishes the good people of that slow but altogether correct village by her wealth, her beauty, her accomplishments and her magic, and knowledge of the hypnotic art. She finally hypnotizes and ruins the only bank cashier, and runs a career of astonishing riot which finally takes her East to consult Hammond, Ranney and other neurologic luminaries: but through the doubly diabolic agency of her two Indian servants, who feed her on hasheesh, the prognostications come to naught and she seeks refuge in an inebriate asylum, only to die by the knife of one of the Hindoo assassins. Meanwhile by phenomenal valor, and the courage and ability of a self-sacrificing friend, the officer is restored to his family and everybody is happy forever afterward. On the whole it is a clever story.

Food Products of the World. By MARY E. GREEN, M.D. Edited and Illustrated by GRACE GREEN BOHN. Chicago: The Hotel World. 16mo, cl., pp. 248. 1895.

We can not have too many books on this subject, so long as man must be fed and depends upon food products for his supply. When the time comes that we shall be fed by some new and savory synthetic compound so highly concentrated that only a few drops will suffice for our daily nourishment, perhaps the study of food may lose its interest for us; but then as there will be no need for a digestive apparatus, it must be more or less speculative, regarding the particular mental pabulum that may interest the coming chemic race. Be that as it may, "while we live, let us live," and Dr. Green's book will be found a mine of information on foods. But the mine is intrinsically attractive, and one is apt to linger long over its developments.

The vast information possessed by the authoress is so charmingly placed at our disposal in this little book, that the literary as well as the gastronomic gourmet must be satisfied.

"The subject matter in this book," says the preface, "was originally published in a series of magazine articles begun just after the close of the World's Columbian Exposition. The fact that at the Exposition was gathered the most complete and cosmopolitan array of food products ever displayed, is sufficient apology for the frequent allusions made to these exhibits throughout the book." The hygienic and nutrient values of foods are well and clearly stated, and we have no hesitation in placing this at the head of recent works on foods. Its style is agreeable and there are few instructive works that can be read with more pleasure. The authoress is patriotic to a degree, and the great Exposition is a prolific theme. Hear her:

"Nothing equaling the agricultural displays of our States and Territories was ever seen before. The wheat lands of Canada and our own great West sent their contribution in cereals of superior quality and statistics of immense production. Corn was there in all its glory of waving leaf and tassel as decoration upon the booths, and in its richness of yellow and white, as the exhibit proper. The fruit belts of California, of our Middle States, of the South and East were

represented by such displays as would have graced the banquet-board of an Epicurus. Apples, pears, plums of royal purple and gold were there, grapes worthy to crown the temples of a Bacchus, and oranges from the west and south, the golden apples of our own Hesperides."

Addresses, Papers and Discussions in the Section on Surgery and Anatomy at the Forty-sixth Annual Meeting of the AMERICAN MEDICAL ASSOCIATION, held at Baltimore, Md., May 7-10, 1895. Chicago: AMERICAN MEDICAL ASSOCIATION PRESS. 1895. Price \$1.

This Section book of the ASSOCIATION contains the work of the last Section meeting, and it is regretted that owing to the failure of the stenographer who had been engaged for reporting the discussions, no discussions in these Sections were available. The stenographer was engaged on recommendation of some of our well known members, and it was not known until after the meeting that he was wholly incompetent, too late to remedy the error. Therefore the papers have been published as delivered without the discussions. There are several among them that will be of permanent value to surgical literature. The contributors to the volume include the names of Howard A. Kelly, W. K. Otis, F. C. Valentine, John B. Deaver, Nicholas Senn, John B. Roberts, Christian Fenger, E. B. Davis, J. McFadden Gaston, De Forrest Willard, J. B. Murphy, W. B. De Garma, Henry O. Marcy, B. Merrill Ricketts and others. The chairman, Dr. Jos. Ransohoff, is to be congratulated on the excellence of the program, and the general appearance of the volume.

NECROLOGY.

JAMES A. BLANCHARD, M.D., of Brooklyn, who for fifteen years was superintendent of the Inebriates' Home, died suddenly January 8, at the institution where his duties had kept him in a position of more or less professional isolation, ever since 1881. Dr. Blanchard was born in Norwich, Conn., fifty-five years ago, and studied in the schools of his native town until 1858, when he settled in Brooklyn and took up the study of medicine and surgery at the College of Physicians and Surgeons, in New York, from which he graduated in 1867. He then practiced his profession in this city until 1878, and in that year received the appointment of assistant superintendent of the Kings County asylum for the insane at Flatbush. His success, while in private practice in the treatment of mental diseases, was followed by a similar success in the management of the insane poor: and in 1881 he was made superintendent of the Inebriates' Home at Fort Hamilton, a position which he held until the year of his death. He was during nearly all these years, handicapped in being connected with this semi-political retreat, against which from time to time there would be a clamor for investigation, but against which the better class of citizens have in vain protested. Special legislation, even, has seemed powerless to effect any reform. During the war of the Rebellion, Dr. Blanchard enlisted in the Twenty-third New York Volunteers, and for valuable services rendered was promoted to the medical corps. At the end of a year he was obliged to leave the service on account of ill health and coming home resumed his medical studies. He belonged to the Hamilton and Crescent Clubs of this city, the Twilight Club of New York, the Kings County Medical Society and the Physician's Mutual Aid Society. His wife and one daughter survive him. The cause of his death was an attack of pneumonia, of two weeks' duration, culminating in cardiac syncope.

KENNETH N. FENWICK, M.D., of Kingston, Ontario, died January 21, in consequence of pyemia following an operation done a few days before on an eight-year-old child. He was professor of the Institutes of Medicine at the Royal College of Physicians and Surgeons, and a member of the attending staff at the General Hospital at Kingston. He was an ex-vice-president of the Ontario Medical Association. In addition to his

medical degrees of Canadian origin, he was a member of the Royal College of Surgeons of England.

F. R. DYER, M.D., of Ottawa, Ill., January 25, aged 43.—Albert Dart, M.D., Goshen, Ohio, January 15, aged 94.—H. N. Mackey, M.D., of Morgantown, W. Va., January 21, aged 67.—Benjamin Cory, M.D., of San Jose, Cal., January 16, aged 74.—W. D. Morehouse, M.D., of Wauwautosa, Wis., January 17, aged 64.—M. A. MacOwen, M.D., of Utica, N. Y., January 19, aged 76.—A. W. Lozier, M.D., of New York, January 14.

MISCELLANY.

Access to College Laboratories.—The members of the Académie de Médecine have placed on record their unanimous desire that every medical school and college should have a special experimental laboratory for the study of bacteriology, accessible to all the physicians and druggists of the place.

Serum by the Quart.—A Bordeaux physician has recently vaccinated some cases of variola with serum from a vaccinated young cow, injected hypodermically in quantities varying from one-twentieth to one-fiftieth of the weight of the patient. These large quantities produced no inconvenience, but were followed by immediate recovery. One and one-half liters were injected in the course of an hour in one case. —*Sem. Méd.*, Jan. 15, 1896.

Tuberculosis in a Penal Institution.—The Charities' Board of Kings County, New York, have voted to fit up a separate ward in the hospital attached to the Kings County Penitentiary for the reception of patients suffering from consumption and pulmonary diseases. The new ward will be located where the ironing and drying room used to be. It was lately moved into the laundry building. This improvement is made upon the recommendation of the physician attached to the penitentiary. There are at present twelve convicts whose condition makes it expedient to remove them to such a ward.

Authorizes Incorporation of Medical Societies.—A law was passed in the State of Washington in 1895 which provides for the incorporation, by two or more persons within that State, of associations for the prosecution of scientific or medical purposes. Such corporations can make their own by-laws, hold real and personal estate, hire or erect buildings for their own accommodation, and may receive and hold in trust, or otherwise, funds received by gift or bequest, to be devoted to the purposes for which they are organized. Preëxisting societies can come under the provisions of the law, if they desire to do so.

The International Scientific Language. The *Archives Cliniques de Bordeaux*, December, 1895, has a complimentary notice of Dr. Hamilton's address to the American medical editors on this subject. We translate a few lines: "It always reminds us of that incident in Grecian history when the generals were to elect a commander-in-chief, and each man voted for himself in the first place, but the second choice was unanimously in favor of Themistocles. Each man wants his own mother tongue to be adopted for the international scientific language, but the second choice is invariably in favor of French. Dr. Hamilton, however, is so liberal as to place French in the first place, which is remarkable, coming from an American." It concludes by endorsing all his remarks in regard to Greek, Latin and other languages.

William H. Thorndike Prize Fund. Mr. Townsend W. Thorndike has given \$5,000 to the Harvard Medical School to found the William H. Thorndike Prize Fund in memory of his father. From the interest of this fund a prize of \$200 is to be given annually to the author of the best essay on some subject in any branch of surgery. The students of the Harvard Medical School and graduates of under five years' standing of any recognized medical school shall be eligible in competition for it.

According to the wishes of the donor, should the principal increase to such an amount as should be considered sufficient to warrant the offering of a second prize of lesser amount from the interest of the fund, such a second prize is to be established, to be known also as the William H. Thorndike Prize. — *Boston Med. and Surg. Jour.*

A Bit of Pseudo-science, or the Early Photographic Diagnosis of Variola. The following amazing paragraph is taken from an American journal that covets the name of being a teacher of science. The writer has evidently forgotten to ascertain what is the length of the incubative period of variola:

"A Manchester photographer relates that he recently took a photograph of a child who was apparently in good health and had a clear skin. The negative showed the face to be thickly covered with an eruption. Three days afterward the child was covered with spots due to prickly heat. The camera had seen and photographed the eruption three days before it was visible to the naked eye. It is said that another case of a similar kind is recorded, where a child showed spots on his portrait which were invisible on his face a fortnight previous to an attack of smallpox."

The Return of the African Explorer, Dr. Donaldson Smith. The December 20 issue of the *Science* contains the following news item: "Dr. Donaldson Smith, who left England in the summer of 1893, with the object of exploring Lakes Rudolph and Stephanie, has just reached England. Since February, 1894, nothing had been heard of him, until a telegram from Aden, at the beginning of November, announced the success of the expedition, and the arrival of Dr. Smith at that place. Dr. Smith will read a paper before the Royal Geographical Society next month, and in January will return to America, where an account of his travels will be published." Dr. Smith is, we are informed, a Philadelphian by birth, and a graduate from the University of Pennsylvania about six years ago. The lakes above mentioned are in an almost unknown territory, lying northeast from the Victoria Nyanza, in Eastern Equatorial Africa.

Lupus of the Tongue. The tongue is neglected by the specialists: it does not belong to dermatology nor to laryngology, and consequently has little or no literature of its own. Lupus of the tongue is extremely rare, and an indolent trouble that is scarcely noticed. Nearly every case noted was discovered while an examination was being made for some neighboring affection. Dr. Spire sums up all the known cases on record, fourteen in all, from Bazin and Virchow in the sixties to his own experience, in an article in the *Archives Cliniques de Bordeaux*, December, 1894. In every case there were similar lesions on neighboring organs, and the lupus had the same appearance in all. In treating the case the characteristic nodule must first be destroyed. Dr. Moure paints it with phenic glycerin. Leloir applies a salicylized paste: Volkmann's curette may bring on a hemorrhage: Michelson used successfully a galvanocauterizing bath, but of all methods the author advocates ignipuncture, as being harmless, rapid, not painful after the part is treated with cocaine, and very satisfactory in its results.

Infective Stomach Hemorrhages of Angiocholitic Origin. Dr. Rondot's paper read before the French Congress of Medicine, August, 1895, and given at length in the *Archives Cliniques de Bordeaux*, December, 1895, is an interesting study of two unusual cases of hemorrhage of the stomach, from which he concludes that suppurative inflammations of the biliary ducts, such as an areolar abscess of angiocholitic origin or suppurative cholecystitis, may be accompanied by hematomesis with pain, thus simulating the symptoms of simple ulcer of the stomach. These gastric hemorrhages may appear in the course of biliary affections which manifest their presence by fever, enlarged spleen and the phenomenon of endocarditis and myocarditis. They seem to progress by feverish rushes, with pains foreign to the disease known as Cruveilhier's. These may be

followed by periods of deceptive calm, during which the latent trouble reveals itself by symptoms of endocarditis and hypertrophy of the spleen. The persistence of the cause explains the return and the dangers of the different symptoms. If they do not produce death directly, they may give place to symptoms of an infection with every phenomenon of infective endocarditis with hyperthermia and rapid degeneration of the muscles of the heart.

Reciprocal Medical Registration Lacking in the Dominion of Canada. The *Montreal Medical Journal*, in its report of the proceedings of the last meeting of the Canadian Medical Association, emphasizes the fact that there is still wanting in the Dominion an equitable and fair intercolonial medical registry. The *Journal* points out the desirability of an early settlement of this question, for it almost prejudices every application that is made to the British General Medical Council for a reciprocal registration with the mother country. There is so much at stake, the *Journal* thinks, that the matter should be pressed forward to its issue. The *Journal* further says:

The committee appointed at the last meeting of the Association to look into the question of inter-provincial registration expressed their regret that by the system which at present obtains, a graduate of medicine entitled to practice in one Province is not free to exercise his functions in all the Provinces in this large but sparsely settled Dominion, that this condition of things prevents the names of medical practitioners in this Dominion being placed on the British register, becoming thereby British practitioners. This latter is a boon which the council of Great Britain has more than once signified its willingness to grant. To secure these ends it is considered most desirable that a uniform standard of medical education for the whole Dominion be established. In order to effect this purpose it is suggested that the Secretary be instructed to communicate with the various provincial councils before the next meeting, asking that each council discuss the position and if possible appoint one or more delegates to a Dominion committee for the purpose of adjusting a suitable curriculum to carry out the suggestions herein, and that such committee be requested to forward its findings to the secretary of the association before the next meeting.

Somatic Illumination by Electricity. An Electrical Oscillator.—Two electrical discoverers report about simultaneously new medical and surgical uses for an extremely powerful electrical light. One of these, the claimed surgical application of such light, has been made by Rontgen, of Würzburg. The following condensed statement on this subject is taken from the *Medical Press and Circular* for January 8:

"The news of a remarkable discovery in photography is reported from Vienna. Briefly, it consists in the discovery of a new conductor of light. Professor Rontgen, the well-known professor of Würzburg University, has succeeded in photographing metal weights shut up in a wooden box, without showing anything of the casing on his negative. He is also said to have photographed the bones of the hand, all the soft parts being invisible. He photographs by means of light of an exhausted Crookes' tube through which an inductive current is passed. The discovery appears to be so far that the rays in question penetrate wood and flesh, but not bone or metal. It is surmised that photographs of the kind mentioned may have a valuable practical application in the discovery and location both of fractures and of bullets. If this discovery be sustained it will certainly take a first place among the many marvels of this scientific age. Those of our readers who are versed in electrical research may have already heard of Professor Rontgen's interesting researches."

A second claim, that of the American electrician Nicola Tesla, is laid that a strong electrical light can be developed powerful enough to penetrate the body-tissues and destroy certain pathogenic bacilli. He believes that he has produced an artificial light which, under certain conditions, is powerful enough to penetrate the human integuments. The last named was taken up some months ago by a physician in Vienna, who

it is alleged has discovered that by its use the bacilli of tuberculosis may be destroyed. By its means the most remarkable medical cures may become possible.

Another discovery by Tesla is that of an electrical oscillating machine for localized treatments and for general passive exercise. In an interview with a New York *Herald* reporter, Tesla gives the following explanation:

"The oscillator is a platform, which produces a number of more or less violent mechanical vibrations. For persons whose systems are in need of exercise this is said to be particularly useful. Force of movement can be given to the oscillator equal to the exercise or shaking up of the system which could be obtained by walking or riding for half an hour or even an entire day. These results are obtained without the fatigue which would result were the exercise taken in customary ways. These conditions are brought about through the use of electricity, powerful but minute electric shocks being rapidly distributed through the system.

"Mr. Tesla intends making several oscillating machines and placing them in the hands of certain physicians or medical institutions for the purpose of having their usefulness positively determined."

The Pithecanthropus Erectus.—In *Science* for December 20, Dr. D. G. Brinton gives his editorial review of the newest facts regarding the prehistoric man from Java. This remarkable find of the Dutch surgeon, Dr. Dubois, of a creature considered by him to be intermediate between man and the apes, has been the subject of wide discussion during the past year. Dr. Brinton says:

"So many have been the articles for and against the accuracy of his statements and conclusions, that the Dutch government sent for him to come in person and bring all his specimens to the International Zoological Congress in Leyden, in October last. He punctually appeared, with a large number of mammalian bones from the formation in which the *Pithecanthropus* was found, and an additional tooth of the animal itself. The geological experts present decided that the various bones indicated the oldest pleistocene or else the youngest pliocene. The anatomists expressed themselves about the skull, teeth and femur of the alleged 'missing link.' Professor Virchow, probably the most conservative, maintained that the bones were of an ape; but an ape generically distinct from any known; and if the skull and femur belonged to the same individual, then it was an erect ape, walking like a man; but he would not acknowledge that it bridged the gap between the anthropus and the anthropoid. Practically the same result was reached by the eminent French anatomist, Dr. Manouvrier. He studied the originals in the possession of Dr. Dubois; and he declares there can be no doubt that in them we see the remains of a creature intermediate between man and the ape, walking erect, with a cranium like that of the gibbons, but much larger than any existing gibbon. The conclusion is indisputable that in the *Pithecanthropus* we have an animal higher than the highest ape and lower than the lowest man."

A Defense of Doctor Jameson.—The *British Medical Journal* of January 11 contains the following defense of Dr. Jameson, whose operations in South Africa have been the subject of much comment:

"Nothing in the present crisis is more remarkable than that, through the general voice of national lamentation that has gone up about this miserable business in the Transvaal, the note of personal regard and even admiration for the man who has been the leader in it has made itself loudly heard. Hard things are being said of others; of Dr. Jameson the bulk of his countrymen simply refuse to believe that his misguided action was prompted by any other thought than the wish to save those whom he deemed it his duty at all risks to rescue from what he considered to be a position of imminent and deadly peril. This tenderness for a man who in the eye of international law is a freebooter, and who has committed the kind of mistake which Napoleon described as worse than a crime, will easily be understood by those who knew him before he had any thought of forsaking the peaceful career of medicine to follow in the footsteps of Cortes and Pizarro. As several more or less inaccurate accounts of Dr. Jameson's early career have appeared in the general press, the following particulars may not be without interest: He is now just 43 years of age. Though Scotch by birth, as far as his medical education is concerned he belongs wholly to University College. He entered that school in 1870, became a member of the Royal College of Surgeons in 1875,

and graduated as M.B. and B.S. in the University of London in the same year. He took the degree of Doctor of Medicine in 1877. His career as a student was a distinguished one, and he held the posts of house surgeon under the late Prof. John Marshall, and of house physician under Sir Russell Reynolds. He was afterward appointed resident medical officer to University College Hospital, but his period of office was interrupted by a voyage of some months to the United States, where he went in charge of a patient, and was cut short by the fact of a good opening for practice presenting itself at Kimberley. As an example of his energy of character it may be mentioned that within a day or two of the offer reaching him he began to prepare himself for his new life by taking riding lessons at the Albany Street Barracks. His subsequent career is known to all men. As a young man Dr. Jameson gave evidence of the same personal magnetism which has so endeared him to all sorts and conditions of men. To his intimates among his fellow students he was 'Jimmy' as he is now 'Dr. Jim' all over South Africa. He was a man of the most generous instincts. If impulsive, there was nothing ignoble about him. There was no taint of selfishness in his nature, and he was simply incapable of meanness or deceit. No one who knew Jameson, as men know each other in the unrestrained intimacy of fellow studentship, could for a moment believe that he would consciously have lent himself to any act of treachery or disloyalty. His professional brethren are still proud of him, and assuredly will not condemn him unheard."

Practical Notes.

Abscess Following Injections of Benzoate of Caffein. The *Sem. Méd.*, Jan. 15, 1896, records a case of pneumonia treated with subcutaneous injections of benzoate of caffein, where abscesses followed at the spots where the injections had been made. The pus of the abscesses contained pneumococci in a pure state.

Rectal Medication. Dr. Mastboom, of The Hague urges the profession to pay more attention to this form of medication and thus lift some of the burdens from the stomach. He has obtained exceptionally fine results with salicylate of soda in cases of grippe and rheumatism, as also with creosote, antipyrin, bromids, iodids and arsenic. He uses small doses, not more than 15 gr., well diluted and warmed.

Bronchitis and Pneumonia Produced by Ether. Anesthesia by means of ether is still vigorously combatted by some physicians. Among them Mickulicz, who noted three cases of asphyxiation in eighty cases where it was used. But Grossmann has observed 250 cases at Dr. Landau's clinic in Berlin, without a single complication, and he writes to the *Deutsch. med. Woch.*, No. 29, 1895, to call attention to Landau's method of placing the head of the patient in such a way, with the corner of the mouth open, that the mucous and saliva run out of themselves, and are not drawn in with the breath to produce strangulation or those rhonchi which give rise to the suspicion of lung or bronchial inflammation. *Rev. Internat.*, Jan. 10, 1896.

Treatment of Chronic Endometritis by Cauterization with Steam. This method of hemostasis suggested by Professor Sneguirev of Moscow, a year or so ago, has been successfully employed by Dr. Panecki, of Dantzie, in intra-uterine cauterizations, which are described at length in the *Semaine Médicale* of January 15, 1896. He uses a simple heater supplied with a thermometer. It fits over an alcohol lamp which boils the water. The steam is introduced into the vagina through a rubber tube and catheter, when the thermometer shows a temperature of 100 or 120 degrees for severe cases. As the lining becomes cauterized the parts near the opening turn white, and drops of a reddish liquid fall from the vagina. When about a teaspoonful of this liquid has accumulated, the lamp is extinguished, and a tampon of medicated gauze inserted. The operation does not require an assistant. It should be repeated at intervals of eight to ten days. It affords immediate relief in cases of catarrhal endometritis and is followed by marked improvement in this usually obstinate trouble, which differs from fungous hemorrhagiparous endometritis by its hypersecretion without menorrhagia.

Syphilis of Epiglottis. At a recent meeting of the Berlin Medical Association, Dr. Hansemann described a new syphilitic symptom hitherto not recognized as such, although it is of frequent occurrence. It is an inflammatory condition of the epiglottis, commencing at the extreme root of the tongue and working outward. The inflammation causes retraction of the epiglottis, which in time becomes anteflexed and even doubled. In the autopsy of fifty-five cases with unmistakable indications, Dr. H. noted twenty-five with the epiglottis anteflexed, thirteen shriveled and seventeen normal. In five cases the epiglottis was anteflexed without any other indications of syphilis, although atrophy of the root of the tongue was present in one case. As it is not infrequently important, to be able to determine definitely the presence of constitutional syphilis at an autopsy, this condition of the epiglottis may well support the suspicion of syphilis.

Treatment of Diabetes. At the same meeting Dr. Hirshfeld made a plea for individual treatment of cases of diabetes, as many intercurrent disorders cause the secretion of sugar to increase or diminish and different patients are affected differently by the same drugs as he explained in detail. The secretion of sugar diminishes in all patients with the withdrawal of carbohydrates, but this effect occurs very soon in some and tardily in others. This diminished glycosuria is not, however, an improvement in the disease, as many patients have serious troubles, especially coma, even with a longer continued and almost exclusive meat diet. The beneficial result of this diet seems to be a partial inanition because the consumption of the tissues is not covered. This deficient nutrition, as well as a too abundant diet, affect patients differently. Dr. Hirshfeld does not distinguish between curable and incurable diabetes, but considers them all phases of one disease. — *Deutsche Med. Wochens.*

Fever as a Factor in the Evolution of an Infective Disease.—At a recent meeting of the Académie des Sciences, M. Cheinisse described some experiments he had been making to determine the exact rôle played by the fever in the evolution of an acute disease. He selected infection from staphylococci, as the disease most easily studied and followed. His experiments were suggested by observing the effect of painting the skin with guaiacum, the new method of lowering the temperature. He found by his experiments that the suppression of the fever produced by painting with guaiacum, causes the disease to assume a virulent form. It resulted in the death of the animals thus painted, in twenty-four to forty-eight hours, from virulent septicemia, forestalling the formation of lesions. In the animals infected without further treatment the disease progressed to a fatal termination in two to four weeks, resulting in multiple abscesses in the kidneys, liver and heart (general purulent infection). He is convinced that this result obtained by painting animals affected with fever with the guaiacum is certainly due to the lowering of the temperature, and not to the act of painting, nor to any toxic action of the guaiacum. — *Sem. Méd.* Jan. 15, 1896.

Serotherapeutics of Tuberculosis. Since the Tuberculosis Congress of 1893, Messrs. Babes and Proca, who read a paper there, have been experimenting with dogs, sheep and asses, inoculating them with tuberculin and also with dead bacilli that have served in the production of tuberculin, as they found this combination more effective. They found that tuberculin would cure tuberculosis under certain conditions, if treatment was commenced very soon after infection. But it could be cured with much greater certainty by injections of serum commenced several days after infection and repeated several times, especially if serum used is taken from animals that have been treated with both tuberculin and dead bacilli. The latter after being removed from the tuberculin and after having passed through the body of the animal seem still to retain a

certain active principle which, without producing the fever characteristic of tuberculosis, still reproduces the local lesions similar to the pathologic products of the live bacilli. The accounts of their innumerable experiments was presented to the Académie des Sciences at the meeting of January 6, and is reviewed at some length in the *Semaine Médicale*, Jan. 15, 1896. One fact they insist upon is that the doses of serum must be comparatively large. Small doses are insufficient and only aggravate the disease.

Diphtheria Sine Antitoxin.—In the *New York Medical Journal* Dr. O. B. Douglas, a specialist of note in that city, writes that he is among those who have not yet been converted to the new remedy. He advocates local treatment, as well as a faithful and moderate medication. He says: "In treating diphtheria and all acute inflammations of the throat, mild medicines given often will serve you far better than harsh and heroic treatment at long intervals. I do not believe that antitoxin has come to stay. I know of no surer way to cure diphtheria than to attack it *in situ*. My method which has given best results is to begin at the earliest stage possible, and give the following medicines with unflinching regularity:

No. 1.

R Tinct. aconiti.	gtt. xx	1/20
Tinct. belladonnae.	3 ss	2/00
Glycerini.	3 iv	16/00
Aquæ gaultheriæ.	3 iv	120/00

No. 2.

R Potoss. chloratis.	aa	3 ss	2
Sodii bromidi	3 ss	15	
Glycerini	3 ss	2	
Tinct. ferri chlo.	3 iv	120	
Aquæ.	ad	3 iv	120

Dose: Half a teaspoonful for an adult.

These are to be given alternately every half hour, thus bringing the doses fifteen minutes apart. This frequency may seem severe upon the patient who gets little sleep during the first twenty-four hours, but we have a severe antagonist to combat and must not relax our warfare until we conquer, which I expect to do with almost as much certainty as I should in a case of measles. In addition to Nos. 1 and 2, I should always use a spray, often and freely, composed of twelve grains of carbolic acid in four ounces of lime water. All these preparations are agreeable to take. I give liquid nourishment freely, milk being ordinarily best; also whisky, sparingly at first, but sufficiently to get the desired effect as a tonic. Bichlorid of mercury may be of service sometimes. Intubation or tracheotomy is to be resorted to if necessary.

Hospital Notes.

MINNESOTA'S FOURTH HOSPITAL FOR THE INSANE.—In 1894 a law was passed in Minnesota creating a commission to locate, acquire land and prepare plans for a fourth hospital for the insane. Among the requirements was that it should be as near as possible to the cities of St. Paul and Minneapolis. Provision was also to be made for a separate ward for insane criminals. And the commission was to consider and report upon the advisability of adopting the cottage plan and methods for this institution.

THE ANNUAL REPORT of the Baltimore Presbyterian Eye and Ear Hospital, shows that 3,000 operations were performed during the year. The annual report of the Provident Dispensary Association, at Rochester, N. Y., shows that 1,119 patients were visited, and 1,808 prescriptions dispensed.—By the will of Mr. J. C. Kyle, of Topeka, Kans., \$10,000 is left to the Chris Hospital of that city. The Waukegan (Ill.) Hospital Association held a meeting January 14.—The fifteenth annual report of St. Joseph's Hospital, at Omaha, Neb., shows that 750 patients were treated in that institution during the past year. The pesthouse at Elizabeth, N. J., was destroyed by fire January 20. Loss \$1,000.—The Syracuse, N. Y., Dental Society is agitating the subject of a dental hospital in that city.

Society Notes.

ANNUAL MEETING.—The Twelfth Annual Meeting of the Fifth District Branch of the N. Y. State Medical Association will be held in Brooklyn on Tuesday, May 26, 1896. All Fellows desiring to read papers will please notify E. H. Squibb, Secretary, P. O. Box 760, Brooklyn.

THE NEW YORK COUNTY MEDICAL ASSOCIATION.—At its annual election held Monday, January 20, this association elected the following officers: President, Joseph E. Janvrin, M.D.; Vice-President, Herman J. Boldt, M.D.; Recording Secretary, Brynberg Porter, M.D.; Corresponding and Statistical Secretary, Nathan Gross Bozeman, M.D.; Treasurer, John H. Hinton, M.D.; For Member of the Executive Committee, for four years, John Shrady, M.D.

MILWAUKEE MEDICAL SOCIETY.—The annual meeting of this society was held Tuesday, January 14. The following officers were elected for the ensuing year: President, Dr. W. A. Batchelor; Vice-Presidents, Dr. Dwight Mereness and Dr. Ralph Chandler; Secretary, Dr. Gilbert E. Seaman; Treasurer, Dr. U. O. B. Wingate; Librarian, Dr. R. N. Hawley; Curator, Dr. A. J. Burgess.

ONEIDA COUNTY MEDICAL SOCIETY.—The quarterly meeting of this society was held in Utica January 14.—The annual meeting of the Toledo, Ohio, Medical Association was held January 10. The following officers were elected for the ensuing year: President, James C. Reinhart; Vice-President, William D. Stewart; Recording Secretary, Charles P. Wagar; Corresponding Secretary, Charles W. Newton; Treasurer, George A. Collamore; Librarian, Samuel S. Thorn; Member Library Board, Otto Landman; Executive Committee, W. C. Chapinan, E. C. Bodman, Wm. Cherry, James A. Duncan, C. H. Reed; Examining Committee, H. A. Root, B. Becker, J. Donnelly, Thos. Hubbard, Albert F. McVety.—The regular meeting of the Topeka, Kans., Academy of Medicine was held January 13.

Detroit Notes.

ON MONDAY, JANUARY 20, the Detroit Medical and Library Association listened to a paper by Dr. E. Fletcher Ingals, of Chicago, entitled, "Abscess of the Lung." The paper was discussed at length by Drs. E. L. Shurly and T. A. McGraw.

AT THE REGULAR MEETING of the Wayne County Medical Society, Thursday, January 23, Dr. C. B. Stemen, of Fort Wayne, Ind., presented the general outline and initiatory steps to the formation of the American University, speaking to the point in reference to the medical department of the same. The Doctor told what steps Congress had taken in the matter as to placing the naval and army departments together with certain available material in the Smithsonian Institute at the disposal of the students of this institution. The Doctor emphasized the point that the school would be post-graduate in all departments. In this particular, it would not interfere with any of the schools now in existence; it would simply be a step higher and would work in harmony with all existing institutions. The requirements for a degree in the medical department of this school would require the applicant to hold a B. A. certificate, together with a diploma for four years of study in medicine in some recognized medical school; but what the Doctor especially emphasized, as far as benefits to the profession went, was that the facilities were at hand in Washington for all the original investigation that anyone could desire in our chosen profession, and that these had already been guaranteed, to be placed at the disposal of the students. Dr. Stemen desired to learn the wishes and the wants of the profession in this important undertaking, and secure their coöperation. Dr. E. W. Jenks, in replying, agreed with the essayist as to the good to be derived from the establishment of the university and the importance of the undertaking, but thought the requirement of a B. A. certificate was much too high a standard. Dr. Arthur B. Holmes thought that the standard was a good one; that a man with a B. A. could listen to lectures with more

profit, being able to understand what was said much better than one that had not had a classical course. Dr. Hal. C. Wyman did not agree with the high standard required. He said that the farmer boy who was required to care for and keep in repair the farm implements was the one, that having completed his medical education, was able to manipulate the different mechanical appliances much better than his more fortunate colleague that had not had his former experience. Dr. John North, of Toledo, Ohio, spoke with considerable enthusiasm and complimented Dr. Stemen on his great undertaking and on the forethought of Bishop Hurst in making the appointment. Dr. E. T. Millegan and Dr. T. J. Parker commended the project. Dr. Kenneth Gunsolus also liked the idea of the university; but thought that it would not educate the people, and what we particularly needed was legislation by which only graduates could practice medicine.

HEALTH OFFICE REPORT for week ending January 25: Deaths under 5 years 39, total 91; births, male 58, female 56, total 114. Contagious diseases: Diphtheria, last report 27, new cases 7, recovered 10, died 2, now sick 22. Scarlet fever, last report 19, new cases 5, recovered none, died none, now sick 24. Smallpox, last report 3, new cases none, recovered 1, died none, now sick 2.

Cincinnati Notes.

THE MORTALITY for the week ending January 17 gives: Diphtheria 3, measles 4, typhoid fever 8, other zymotic diseases 4; cancer 7, phthisis 20, other constitutional diseases 6; apoplexy 5, bronchitis 11, gastritis 3, heart disease 4, meningitis 7, nephritis 5, peritonitis 2, pneumonia 20, other local diseases 19; violence 3, developmental 10; under 1 year 21; 1 to 5 years 17; all causes 141. Rate per 1,000 20.94. Corresponding week 1895, 117; 1894, 119.

THE STAFF of the Cincinnati Hospital have voted to increase the number of internes four and extend the limit of service to eighteen months instead of twelve.

DR. G. A. BUDD had an exciting encounter with a highwayman last week, in which his refusal to "throw up his hands" resulted in a bullet hole in his hat. The Doctor fired two shots at the robber, who unfortunately escaped.

J. A. BORSE, a Philadelphia drug broker, has been interviewed by Food Commissioner Luebbing regarding the cheap quinin the former has offered for sale; he stated, however, that he had sold none of it in Ohio nor in States which had laws against the sale of adulterated goods.

WHILE DRIVING from Milton to Belleville Dr. C. O. Probst, Secretary of the Ohio State Board of Health, was thrown from a buggy and painfully injured. Dr. Probst was in Milton investigating the recent outbreak of smallpox there.

DR. GILBERT I. CULLEN has been appointed surgeon for the Cincinnati, Jackson & Mackinaw Railroad for this vicinity.

THE OBSTETRICAL SOCIETY, of Cincinnati, at its regular annual meeting, at the Grand Hotel, Thursday evening of last week, elected the following officers: President, Dr. R. B. Hall; Vice-President, Dr. C. L. Bonnifield; Secretary, Dr. E. S. McKee; Treasurer, Dr. G. E. Jones.

DIPHTHERIA is prevailing to an alarming extent in West Alexandria.

AT THE MEETING of the Academy of Medicine held January 20, Dr. G. A. Fackler read a paper on "Some Fatal Cases of Typhoid Fever, with Post-mortem Findings," and reported a case of "Raynaud's Disease." Dr. Max Thorner read a paper on "Autoscopy of the Larynx and Trachea."

CHRIST'S HOSPITAL and Deaconess' Home are to close one floor of the hospital to curtail expenses.

THE CITY PHYSICIANS, of Covington, Ky., have applied to the city for an increase of salary, with the agreement that they will hereafter supply the medicines to the poor in tablet form.

DR. E. JOHNSON. Considerable interest has been aroused across the river in the case of Dr. E. Johnson. He lives at

Petersville, Ky., and was indicted at the last term of the circuit court because he continued to practice his profession without a certificate from the State Board of Health. Great interest was centered in the case, as it was thought it would determine the fate of other physicians now under indictment. Ex-Congressman George M. Thomas and J. Noel Johnson represented the defense. They contended that Dr. Johnson had fully complied with the law by securing affidavits from old citizens that he had practiced over thirty years; that the certificate was not granted was not the fault of Dr. Johnson, but the result of the arbitrary withholding of the same by the board. Commonwealth's Attorney Sallee took that view of it and dropped the case out of court. Johnson is bringing a \$10,000 damage suit against the board.

DR. JOHN PENNOCK GRUWELL, of Alliance, Ohio, a prominent member of the Society of Friends, died January 21 from an attack of la grippe. He was the oldest graduate of the Medical Department of the University of Pennsylvania.

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT. The report of the Health Officer for the week ended January 20 is as follows: Number of deaths (stillbirths not included): White, 58; colored, 52; total, 110. Death rate per 1,000 per annum: White, 16.1; colored, 30.8; total, 20.8. Death rate per annum corresponding week last year, 18.8.

SURGEON GENERAL STERNBERG OPPOSES THE CRUELTY TO ANIMALS BILL. Surgeon General George M. Sternberg has written a letter to Mr. McMillan, chairman of the Senate committee on the District of Columbia, stating his objections to a bill lately introduced in the Senate for the prevention of cruelty to animals. He thinks that the provision requiring those who experiment on animals to hold a license from the Commissioners should be eliminated or modified so as to permit medical officers and others properly detailed for experimental work in any of the departments of the government service to prosecute such experiments without a license. After stating other objections to the measure, Gen. Sternberg concludes as follows: "So far as observation goes, I do not think there is any necessity for legislation upon this subject. In my opinion, it is a mistake to suppose that those engaged in scientific investigation or in teaching physiology are any less humane than the members of the Washington Humane Society, and the passage of an act placing them under the supervision of inspectors appointed by this society would be an unmerited reflection upon them."

DR. KING RESIGNS FROM COLUMBIA COLLEGE. Dr. A. F. A. King, Professor of Obstetrics in the Columbia University, has tendered his resignation from the staff of the Columbia Hospital, because he would not countenance the unjust treatment of a co-member of the staff by the lay members of the Board of Directors. Dr. King's course is cordially approved by the medical profession in Washington. A prominent member of the directors has asked for an amendment to the by laws which will preclude any member of the medical staff attending the meetings of the Board of Directors of the Hospital. The result of the tempest now in progress in the hospital is anxiously awaited.

MEDICAL BILL HEARING IN THE SENATE. At the hearing granted to the members of all medical schools for or against the medical practice bill Dr. Bussey spoke for the bill. He said that the statements and declarations which had been made were sufficient in themselves to prove the necessity of a law. The main points favoring the bill were as follows:

1. Laws of like character have been enacted by forty three States and Territories.
2. Absence of any uniform standard of medical education in this District.
3. Faculty of organizing medical schools in this District without any standard of education.

4. This District is the common rendezvous of charlatans of low grade schools.

5. A uniform grade of qualification will elevate the standard of medical education.

6. It will offer perfection to the community from charlatantry and imposition.

SANITARY EXAMINER APPOINTED.—Dr. G. M. Kober, the typhoid fever expert, has been appointed a medical sanitary examiner in the health department to perform such duties as may be assigned him by the health officer.

MEDICAL SOCIETY OF THE DISTRICT.—At the regular meeting of the society, held on the 22d inst., Dr. Bovee presented two cases of fibroid tumors complicating pregnancy. Dr. McCormick presented a gelatin dressing for use in skin diseases. Dr. W. W. Johnston, chairman of the Committee on Public Health, presented an exhaustive and instructive report. He went into the subjects of typhoid fever, malarial diseases, smallpox, water supply and filtration, sewers and sewage disposal. He gave a complete history of the health of the District during the year of 1895. The report was adopted and a vote of thanks of the society was tendered the Committee. A special meeting of the society was held at 2 o'clock the same day, to take action on the death of Dr. W. E. Wolhaupter. Suitable resolutions of respect were adopted.

THE PUBLIC SERVICE.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending January 25, 1896.

Surgeon C. A. Siegfried, detached from the "Texas" and ordered to the "Columbia."

Surgeon W. G. Farwell, detached from the "Columbia" and placed on waiting orders.

P. A. Surgeon J. A. Guthrie, detached from the "Texas" and ordered to the "Katahdin."

Change of Address.

Ashmead, Albert S., from 270 W. 43d Street, New York, N. Y., to 205 Franklin Avenue, Norristown, Pa.

Bridge, Norman, from Los Angeles to 106 Grand Avenue, Pasadena, Cal.

Gedge, D. M., from San Francisco, Cal., to Honolulu, H. I.

Joralemon, J. C., from Toledo, Iowa, to Los Angeles, Cal.

F. H. Lawther, from Chicago, Ill., to Oskaloosa, Iowa.

Welch J. P., from St. Johns to Holbrook, Ariz.

Woodburn, F. C., from Ravenswood, Ill., to Indianapolis, Ind.

LETTERS RECEIVED.

Baughman, J. A., Neoga, Ill.; Bell, J. H., Minneapolis, Minn.; Barger, W. T., Cleveland, Ohio; Barr, G. Walter, Quincy, Ill.; Bridge, Norman, Pasadena, Cal.; Braymer, O. W., Camden, N. J.; Birney, E., Greene, Iowa.

Connalt, Churchill, New York, N. Y.; Cunningham, T. N., Princeton, Ill.; Carter, J. M. G., Waukegan, Ill.; Cutter, J. A., New York, N. Y.;

Cody, E. T., Chicago, Ill.; Collis, S., Philadelphia, Pa.; Cincinnati Sanitarium, College Hill, Ohio; Chapman, N., Washington, D. C.; Cantrell, G. M. D., Little Rock, Ark.; Cross Bros., Northfield, Vt.

Davis, C. G., Chicago, Ill.; Dann, N. R., New York, N. Y.

Epting, R. B., Greenwood, S. C.; Ewing, F. C., St. Louis, Mo.; Edenharter, G. F., Indianapolis, Ind.

Fletcher, H. L., Cincinnati, Ohio.

Gilhon, Albert, New York, N. Y.; Gardner, R. W., New York, N. Y.;

Greene, Chas. L., St. Paul, Minn.

Harrell, R. F., Ruston, La.; Hummell, A. L., Adv. Agency, (3) Chicago, Ill.;

Hubbard, Thos., Toledo, Ohio; Hawley, D. C., Burlington, Vt.;

Horlick's Food Co., Racine, Wis.; Holmes, Bayard, Chicago, Ill.;

Hill, J. A. & Co., New York, N. Y.

Ingraham, C. W., Binghamton, N. Y.

Joralemon, J. C., Los Angeles, Cal.; Jones, W. D., Rising City, Neb.;

Johnson, H. L. E., Washington, D. C.

Kremers, H., Holland, Mich.; Katharmon Chem. Co., St. Louis, Mo.;

Kemmerer, C. T., Eldridge, Ia.

Lewis, G. W., Fremont, N. C.; Lincoln, W. H., Wabasha, Minn.;

Lord & Thomas, Chicago, Ill.; Lyon, J. B., Kirkwood, Ky.

Morice, J. H., Philadelphia, Pa.; Mellier Drug Co., St. Louis, Mo.;

Mitchell, A. B., Washington, D. C.; Mitchell, T. E., Columbus, Ga.;

Morgan, E. A., Maroa, Ill.

Newcome, J. A., Sigel, Pa.; Newcome, W. C., Big Run, Pa.

Orton, J. J., Randolph, O.

Parsons, Dr., Rosby's Rock, W. Va.; Prentiss, S. B., Washington, D. C.;

Park, Roswell, Buffalo, N. Y.; Pasteur Anthrax Vaccine Co., Chicago, Ill.;

Pollock, R. M., Princeton, Ill.; Pierson, Wm., Orange, N. J.

Quackenbush, E., Portland, Ore.

Rust, C. A., Singuaw, Mich.; Reed & Carnwick, New York, N. Y.;

Randall, F. S., Chicago, Ill.; Reed, R., Harvey, Columbus, Ohio; Ridlon

John, Chicago, Ill.; Rhen, A., Marlon, Ohio.

Shurley, E. L., Detroit, Mich.; Stearns, F. & Co., Detroit, Mich.;

Stillson, J. O., Indianapolis, Ind.; Strong, B. F., Chicago, Ill.;

Smith, E. B., Detroit, Mich.

Taylor, H. L., St. Paul, Minn.;

Thomson, R. L. (2) Spokane, Wash.

Tuley, H. E., Louisville, Ky.

Underwood, G. B. & Co., New York, N. Y.

White Rock Mineral Spring Co., Waukesha, Wis.;

Welch, J. P., Holbrook, Ariz.;

Willis, H., Summerfield, N. C.;

Wells, W. A., Washington D. C.;

Whitford, Wm., Chicago, Ill.;

Woodburn, F. C., Indianapolis, Ind.;

Woodward, A. P., San Francisco, Cal.;

Winn, J. E., Richmond, Va.;

Woodburn, F. W., Indianapolis, Ind.;

Woodbury, Frank, Philadelphia Pa.;

Wyckoff, R. M., Brooklyn, N. Y.

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ORIGINAL ARTICLES.

CONSERVATISM IN OVARIOTOMY.

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I have recently received two vigorous letters, which I enclose, from friends who are doctors, upon the ethical status of the operation for the removal of the ovaries. These letters have brought vividly to mind a note which I published in the *American Journal of Obstetrics*, for February 1893, entitled "The Ethical Side of the Operation of Oöphorectomy;" I have gone over the ground once more from the standpoint of almost three years' growth in gynecology, to see what positive advances have been made in answer to this burning question. Both of the letters are from highly valued friends, for whose opinions I have a profound respect, and in whose judgment I place full confidence; I feel under obligation to reply to them in such a way as shall effectually promote the end in view. One of the letters, the second one, is from a distinguished physician, the leading practitioner in one of our large cities, and a man of national reputation. I publish both just as I have received them, believing them to be more valuable in this form than if I had asked the writers to make alterations in accordance with any minor criticisms I might have to offer.

Conservatism, the appeal of my correspondents to conscientious gynecologists, is undoubtedly the progressive spirit in gynecology; exsective and amputative gynecology has gone to its extreme limits, and the more thoughtful surgeons looking at all the questions involved, in their broader aspects, have already sounded the keynote of the new advance. To put the matter clearly before the minds of practitioners in general, I would cite categorically the following conservative procedures, which replace radical measures:

1.—Resection of diseased ovaries and opening and draining tubes, as urged by Dr. Wm. M. Polk, of New York, in the *American Journal of Obstetrics*, July, 1894, Vol. xxx, pp. 1-15, and in the *Transactions of the American Gynecological Society*, 1893, Vol. xviii, p. 175.

2.—Myomectomy as a substitute for hysteromyomectomy, by Dr. E. C. Dudley, of Chicago, in the *Transactions of the American Gynecological Society*, 1894, Vol. xix, p. 126.

3.—Opening and draining pelvic abscesses posterior to the uterus. See "Conservative Treatment of Pyosalpinx," by Cornelius Kollock, in *Transactions of the Southern Surgical and Gynecological Association* Vol. vi, p. 43. Also "Conservative Surgical Treatment of Para- and Peri-uterine Septic Disease" by Fernand Henrotin in the *Transactions of the American Gynecological Society*, Vol. xx, p. 223; reviewed editorially in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, June 22, 1895, p. 983.

4.—Vaginal drainage in some cases of extra-uterine pregnancy. See my article in *An American Text-book of Obstetrics*, Philadelphia, 1895.

5.—Excision of both large and small parovarian cysts, without sacrificing ovary and tube, in my own practice not yet reported.

I do not wish to dwell on these operations now, for it is rather my object to try to arouse a more general feeling of interest in the broad moral bearings of the entire question. In doing this, I dare not omit the most fruitful of all causes of the unnecessary mutilation of women, and that is, the large numbers of men all over the country who are entering upon this specialty without any adequate preparation, and are yet anxious at as early a date as possible to "make a record." I have seen repeated examples of this reckless exsective surgery, and it is my privilege every week to save women who have in some instances traveled long distances to get further advice. Only yesterday I saw a hysterical girl about 18 years old, drugged with morphin, and without any pelvic disease whatever, whose physician thought that ovariectomy was clearly indicated. A patient, now under treatment for a mild trigonitis (inflammation of the vesical trigonum), came to me because her previous attendant, after some treatments applied to her ovaries through the vault of the vagina, declared that her ovaries and tubes were diseased and must come out, or he could not cure her. And yet she has not a trace of pelvic disease outside the little trouble in the bladder. And so on, I might add case after case *usque ad infinitum*.

I shall not, in this brief appeal to higher morals, analyze causes minutely, but I can not help adding that apart from the question of integrity involved, these men have never thoroughly learned, at the hands of a skilled clinician, the technique of the bimanual examination; they make their diagnoses symptomatically, and hence the frightful errors. Nor would I lay all the blame on the untrained men; even the best men have erred, but they have had the saving grace to report their errors for the benefit of others. As evidence of this, I pick up with little effort, the following cases of pregnancy occurring in women, the first six of whom had been advised to have their ovaries and tubes removed, but had refused, and twenty-four of whom under the ordinary procedure of the day would inevitably have been made sterile:

Women refusing operation who afterward became pregnant and bore children: Dr. Wm. Goodell, two cases (*Clinical Gynecology*. Keating and Coe. Introduction, p. 10). Dr. Archibald MacLaren, one case. (*Trans. Amer. Gyn. Soc.*, 1893, vol. xviii, p. 334). Dr. Charlotte B. Brown, one case ("Rest, a Therapeutic Means in Gynecology." Read before the Medical Society of California, April, 1895). Dr. H. A. Kelly, two cases (unreported).

Cases of abdominal operations on ovaries treated

conservatively, followed by pregnancy: Dr. Wm. M. Polk, nine cases (*Amer. Jour. Obst.*, July, 1894, vol. xxx, p. 1). Dr. Robert A. Murray, six cases (See Dr. Polk's paper, just cited). Dr. B. McMonagle, one case (See Dr. Polk's paper). Dr. B. F. Baer, one case (See Dr. Polk's paper). Dr. Frank Talley, one case (*Amer. Gyn. Obst. Jour.*, March, 1895). Dr. H. A. Kelly, three cases (unreported). Dr. Matthaei, six cases, five children (*Zeitschr. f. Geb. u. Gyn.*, vol. 1, part 2).

Dr. Polk had six cases of inflammatory disease in which he conserved the appendages, with the result of nine pregnancies. Dr. McMonagle's case was altogether remarkable and ought to be carefully studied by every gynecologist. In one of my own cases I opened and drained a large right ovarian abscess, and pregnancy occurred within two years. We have here then, as a result of this conservatism, either by the insistence of the patient, or the election of the surgeon, in twenty-nine women thirty-two childbirths. (One of Dr. Polk's patient's, "wearying of maternity," secured a criminal abortion to rid herself of her second conception after the operation.) These facts need no comment, and speak volumes for the recuperative powers of these organs in disease. Another moral consideration of great weight is the necessity in all cases of making the woman clearly understand the effects of the operation on her whole life; undoubtedly many women accept the alternative of an operation in utter ignorance of its full consequences. The especial importance of this question to unmarried women may be seen when we reflect that about 20 per cent. of all women do not marry, and that these are precisely the cases most likely to suffer at the hands of the unskilled surgeon. He is unable to make a clear diagnosis owing to physical obstructions, and so after a time, if the patient continues to suffer pain, he hazards a conjecture that the ovaries are diseased and decides that they must come out.

There is another question raised by these letters which ought to be considered in the interests of pure morals, and that is, the attitude of the physician toward the prevention of the infection of wives by their husbands. I know of no more distressing and pitiful sight than the pure women I often see whose lives have been wrecked by a marital infection. Just what course to pursue in the particular instance, the surgeon must determine for himself; but one conviction ought to rest on every man in the profession, and at all times find unhesitating expression, and that is, that there must not be a double standard of morals. What is wrong for a woman to do is wrong for a man to do. A female prostitute is as good as a male prostitute, and ought to command the same consideration and respect. This is a wise policy which looks to the future of the race, and its quickening influences and sound scientific results will surely be felt by our followers. If men were, as a class, as chaste as women, many of the problems of gynecology would solve themselves.

With this introduction, I will now let my correspondents speak, only adding that I feel in entire sympathy with the spirit of the letters.

LETTER I.

The operation of ovariectomy has two aspects, the ethical and the medical, both of which, I think, are likely to be lost sight of by the ambitious young surgeon who sums up the whole matter so cavalierly, "recovery uneventful." On the ethical side, an uneventful recovery may mean for the woman a life of unhappiness, and it is an open question whether the sum total

of uneventful recoveries does not increase immorality among men.

The function of menstruation is a natural process most intimately associated with the highest and holiest feelings of womanhood. Most women rejoice in potential motherhood, and, when the time comes, gladly take their lives in their hands to accomplish it. I have personally known no exceptions to this rule, except those unfortunate women who were married to sensual and brutal husbands. A sensible woman wants to be well, to keep all the organs of her body in good condition, so as to perform all the duties of life. One of the most important of these, and precisely the one that comes nearest her heart, is the bearing and rearing of children. Now, the operation of ovariectomy places the marriage relation distinctly on a lower plane, and I am surprised to have seen this view expressed but once, even by the conservative surgeons. The grossness of the physical union in marriage is redeemed by its moral significance, the desire for children. This desire is stronger in women than in men, so strong that when I consider all the suffering of women in all the ages of the world for it, I am appalled. Think for one moment what women have endured, from the brutality of men, from the ignorance and blunders of medical science, from a pitiless and degrading theology that denominates the pangs of maternity, "the curse of Eve." Men want children, too, but they do not care so much about them as women do, they do not make sacrifices for them half so willingly.

The existence of prostitution shows the difference between men and women as to the sexual instinct when the hope of children does not enter into it. Women prostitutes are almost wholly from the working-classes; they are often ignorant country girls who have first been betrayed, and who are then forced to live in shame, because the hard economic conditions of life for women prevent them from gaining an honest livelihood. An English barrister working among the poor of London estimated last winter that 20,000 prostitutes in London would gladly give up the calling, if they could find reputable employment. And a late utterance from one of the physicians on Blackwell's Island, New York, is, that the most practical means of meeting the social evil is to open up avenues of employment for women. Men prostitutes, on the other hand, are from every class, and pay; they do not debase themselves for the means to live. It is unhappily too true that a great many men have no notion of endearment or of shame in the sexual life, and this difference between men and women bears upon the operation of ovariectomy in two ways. In the first place, it is morally indefensible to mutilate the wife for the sins committed by the husband before marriage. It adds frightfully to the physical disabilities of women, and it is a positive encouragement of vice. Every physician knows how many pure women fall victims to their husbands in this way, and it is the duty of every reputable physician to the community he lives in to discourage ovariectomy, except for most urgent reasons. "The wages of sin is death," and one way to enforce this wholesome doctrine upon unchaste men is to leave them with ailing wives. This may seem hard on the women, but it is by no means proved that ovariectomy has not more ills in its train than good. On general principles, a woman is better off mentally, morally, and physically, if menstruation is allowed to run its natural course.

As to the husbands who are respecters of persons, and who remain true to their wives made sterile in this way, their lot is a hard one. I do not believe it is possible for a husband to love his wife as is her due knowing that she is physically incapable of becoming the mother of his children. And no wife can live so intimately without recognizing a difference, so that in addition to her woman's sorrow in childlessness, she is made to feel herself hopelessly outside of her husband's feelings. In mutilating her the surgeon may have made her as hateful to her husband's sight, as if she had some frightful physical blemish. How much unsexing women may have to do with increasing immorality among men, I have no means of judging, but the popularity of ovariectomy and the propensities of men make the situation serious enough for the conscientious surgeon. Nor do I know what the ultimate effect of removing the ovaries is upon the woman's sexual feelings. Dr. Goodell thought at first it made no difference, but came to change his views. Many able physicians agree with him that the operation deadens the sexual sense. This is just one of the points that gynecology must clear up. It is certainly an unusual man who marries a castrated woman. Moreover, marriage based on sense, like marriage without love, is practically a life of unchastity. This feeling dominates every woman who declines to marry a man because she can not love him as a wife should. She is unwilling to live a life of legalized prostitution, which is in plain terms simply what a great many marriages are.

So far I have spoken only of the castration of married women,

but I think the operation is even more unjustifiable when performed on a single woman, and should never be resorted to except when it is a choice between castration and death. To remove a young woman's ovaries or womb and then to tell her that she is incapable of marriage physically is a barbarous cruelty. Ethically, in mutilating a virgin in this way, the surgeon may have taken from her all chance of happiness on earth, and even her hope of heaven. Economically, as the world is constructed, many women have no other prospect in life than marriage. Besides, unless a woman has means, or education, or unusual strength of character, a single life is insupportable. And, I take it, these are not the qualities that are oftenest met with in the gynecologic wards of our hospitals. On the medical side Dr. Lusk puts the case much better than I can. Ovariectomy is not a cure; it is a makeshift, and in so far is a confession of weakness. Moreover, while aseptic surgery is undoubtedly a great advance on the old methods, it is not difficult to acquire. It is vastly easier to cut out a woman's womb than to make and keep it a healthy organ. And this is precisely the problem that is before gynecology as a science. It must first find out a way to produce a race of women with healthy generative organs, and second, it must learn how to keep all this delicate machinery in order under the immense strain of function put upon it. In many instances I believe the world would be better off if these ambitious young surgeons were put to their books. We need better trained general practitioners, not more men who can perform abdominal surgery successfully.

Now gynecology is a brilliant specialty, it offers great rewards in reputation and is money. A great many young men of all grades of intelligence and morals, are rushing into it. Naturally, they look to you as their exemplar, for your success in it has been exceptional. This is why I urge the matter upon your attention. I think your responsibility is very great. Personally, my trust in your good judgment and your heart is absolute, but these are unknown qualities in the young gynecologists who are following in your footsteps. Every day all over the land women are being mutilated at the hands of ambitious young men who are anxious to report to the profession that they can do ovariectomy or hysterectomy. I feel sure that not a few of these helpless victims might be saved present pain and future misery by a word of warning from you.

LETTER II.

You know that I feel and have felt very strongly on the subject of your letter. The time has been when to express such views as you express would condemn one to charges of "old fogyism" or ignorance. But ever since the rage for ovariectomy took possession of the medical mind, I have had an invincible repugnance to the castration of women, and have often had hard work to restrain myself when statistics "of 100 cases without a death," "my first year's work in ovariectomy," etc., were read *ad nauseam* before our Medical Society. I shall never forget the night when one of our "best operators" handed round on a plate the two ovaries of a woman recently castrated: one had a small cystic tumor about the size of an apple, while in the other the cyst was not larger than a marble. The reporter dilated on the physical perfection of the woman, on the fact that she was about to be married, and then told of his successful operation. Just think of it! And is not this gynecology in its infancy, when to cure a minute cyst or to prevent its growth, the whole womanhood, the whole happiness and all the life of this woman were irretrievably ruined? And yet no one there said one word of disapproval, but all sat and admired the skill of this destroyer of everything that makes a woman's life worth living.

A wedding took place here this spring between a recently castrated girl and a young man who had been engaged to her for a long time. Do you not think that he would rather have married her with one ovary left, even if there were a probability of ill health and suffering? The girl, from being slender and young looking, in six months had grown stout and much older and was by no means improved in appearance.

This is all but a prelude to saying how much pleased I was at the way you presented your case against the operation. I agree with you that ovariectomy, before or after marriage, ruins a woman in all the essentials of womanhood. It makes of marriage just what you say. Just think of the feeling which a man must have when he marries a mutilated woman! What does he marry for? There can be no hope and no happiness in such a union; there is no end to look forward to; there is nothing which makes marriage perfect and holy.

I wish your views could be brought to the inner consciousness of the gynecologists of the country. I wish they could be made to see and feel: but I fear many of them will think your opinions beyond the domain of science and practice and will

pass them by. And then it touches the pockets. Ovariectomies are a source of income; many have grown rich on them and you strike at the root of a very thriving industry. But you should not drop your task for all this, and the fact that Dr. Kelly sympathizes with your efforts should encourage you to say and to do something to stem the torrent of mutilation.

VAGINAL HYSTERECTOMY—TWENTY-ONE
CONSECUTIVE, SUCCESSFUL CASES.

BY CHARLES GILBERT DAVIS, M.D.

CHICAGO, ILL.

In looking back over the history of surgical progress it is interesting to note the process of evolution which has so gradually brought order out of chaos and from the crude methods of the past evolved the brilliant results which to-day are crowning modern surgery. It is right and just that much credit should be given to antisepsis and yet a large percentage may be justly attributed to improvement of technique and simplicity of procedure. This is an age of brevity. All the world is seeking a more direct route to the point of destination. Unnecessary complications are avoided. To no part of surgery do we find these facts more applicable than in that which relates to the abdominal and pelvic regions. It is unnecessary to state that far too many operations have been performed on the organs in these localities and that many blunders have been necessarily committed. But this great experience has not been without its beneficial lesson; we are approaching simplicity and the outlook for the future is brighter. For many years several intelligent and far-seeing surgeons have intimated that the vaginal route was far superior to the abdominal for many of the operations on the uterus and adnexa. But it has been apparently difficult to abandon the older method for the new and more successful.

Vaginal hysterectomy, as a surgical operation, dates back to the early centuries of the Christian era, but it can not be said to have been thoroughly elucidated until the year 1813, when it was performed by M. Laugenbeck for cancer. Even then his medical confrères refused to believe that he had performed this operation, and it was not until some years later, when his patient died and a post-mortem was held, that his words were verified. The operation wavered awhile in popular favor and then fell into discredit when Freund, of Breslau, advocated abdominal hysterectomy. The bad success of this again brought the vaginal operation to the front in the year 1878, largely through the advocacy of Czerney, of Heidelberg. Since that period it has been gradually gaining ground, and to-day is rapidly supplanting the abdominal method as a relief for many of the pathologic conditions afflicting the uterus and its appendages. It may be employed:

1. In all cases where we determine to perform double oöphorectomy.
2. In double pyosalpinx or salpingitis.
3. In single oöphoro-salpingitis where we have unyielding, chronic metritis.
4. In severe displacements near the menopause, and all others not yielding to treatment.
5. Tumors of the uterus, interstitial or subperitoneal, not exceeding a child's head in size.
6. In all cases of malignant diseases of the fundus and cervix, when not involving the vaginal or pelvic walls.
7. In small cysts and other growths of one or both ovaries and tubés near the menopause.
8. In all cases of chronic peri-uterine

phlegmasia, with or without suppuration, not yielding to other treatment.

There are two distinct methods of performing this operation. In one the broad ligaments and arteries are secured by ligatures tied to different sections laterally as the operation proceeds. This, as the operation most frequently done by the German surgeons, may be designated as the German method. In the other no ligatures are used and the broad ligaments and arteries are secured by clamps or catch-forceps, which are allowed to remain for forty-eight hours. This is the operation usually performed in France and may be appropriately called the French operation. Its thorough establishment as a legitimate surgical method is undoubtedly largely due to the wisdom and experience of that eminent surgeon Péan, of France. Each of these methods has its adherents. I believe from observation and experience, that the practice of hemostasia by forcipressure is superior and can be adapted to a greater variety of conditions.

In a normal case of hysterectomy I usually proceed as follows: For five days preceding the operation the patient has a daily bath of warm water and white castile soap followed by brisk and thorough friction. The vagina is also irrigated morning and evening with a sublimate solution (1:5,000). The day before the operation a mild laxative is administered and a thorough enema given on the following morning. The patient is anesthetized and placed on the operating table in the dorso-sacral position. I prefer this to the left lateral position as giving a more symmetrical view of the organs concerned. An assistant introduces the catheter, being careful to entirely evacuate the bladder. This is quite essential as lessening the risk of wounding that organ. The vulva and vaginal cavity are again lubricated with white castile soap and warm water and douched with the sublimate solution (1:5,000). A pair of ordinary vaginal retractors are now introduced antero-posteriorly and held by two assistants, who at the same time support the limbs with the thighs well flexed on the abdomen. Using a pair of light vulsellum forceps the extremity of the cervix is now grasped with the left hand and the uterus drawn down, while with a bistoury in the right a curved incision is traced anteriorly and posteriorly to the os, within an eighth of an inch of that orifice, meeting on each side a vertical incision of about half an inch in length. With a few strokes of the curved scissors and with the end of the index finger these flaps are rapidly dissected back, before and behind, down to the attachments of the broad ligaments. The uterus is now grasped by the strong Museux forceps and, by using some force, brought down while we apply on each side the clamps. After these are placed, one at a time and well locked, we may with the straight scissors cut loose the attachments of the broad ligaments between the forceps and the uterus. On making traction the uterus is now descended still more and if necessary we may apply another set of forceps and cut the remaining sections of the broad ligaments. At this period of the operation we may find it convenient to remove the ordinary retractors and employ those especially designed by Péan. They permit a better view of the deep pelvic region. In many instances when the organ is movable only one pair of clamps will be necessary for the ligaments. The dissection is now carried on beyond the fundus anteriorly and poste-

riorly and making traction on the cervix downward and backward, the body of the uterus is reached with the hook or crochette and easily everted anteriorly. For clamping the ovarian artery and tubes I usually prefer the curved forceps of Péan, as they can be readily adjusted without protruding into the peritoneal cavity. The ovaries, if they descend into the wound, are clamped and cut away, but if adherent and difficult to reach they are not to be disturbed. Their functional activity ceasing immediately after the removal of the uterus makes their removal a matter of minor importance.

The operation is now virtually finished. No stitches are required to close the perineum or to attach it to the uterine flaps. Better drainage is secured by leaving it open. The wound may be douched with a sublimate solution and then with sterilized water. The clamps are well looked after to see if they are securely locked and all minor points of oozing checked with hemostatic forceps. The wound is now dusted with powdered iodoform, and gauze of the same antiseptic is loosely tamponed in the vagina between and around the bundle of forceps so that they are completely enveloped in the antiseptic dressing. The whole is now surrounded with absorbent cotton and sterilized gauze. A catheter should be left in the bladder and a tube in the rectum. The patient is placed in bed, the bundle of forceps resting on a pillow made for that purpose, and hot bottles around the extremities. If there is much pain an eighth of a grain of morphin with atropin is given once or twice hypodermically in twenty-four hours. The amount may be slightly increased if there are no symptoms of vomiting. The second day, if the stomach is favorable, milk whey may be given. In forty-eight hours the clamps are removed. In doing this a slight rocking or rolling motion may be given to the instrument so as not to open the arteries. The dressing having been entirely removed, a warm douche of sterilized water may be given at once. I consider this very beneficial, in fact, quite necessary as a guard against sepsis. In the administration of this douche much care should be taken that the fluid does not pass beyond the pelvic region and so enter the abdominal cavity. Should this happen, septic material may be conveyed, and the entrance of the fluid into this region at this time is liable to produce great pain and symptoms of shock. Twice I have seen alarming symptoms arising from this cause. This accident may be prevented by making deep pressure, with one hand, above the pubis until the douche is terminated. After the douche the vagina is lightly tamponed with iodoform gauze. No speculum should be introduced for fear of distending the parts and causing hemorrhage. The douche and dressing should be repeated twice daily. The patient may now have soup, broth or gruel. The bowels are moved by an enema on the third day. On the fourth day there may be given solid food, for the patient is on the road to rapid recovery. *Alcoholics should not be given.* I regard their administration in surgical operations as detrimental. Alcohol is an anesthetic and in no sense of the word a stimulant.

But hysterectomy is not always such an ideal operation as I have pictured. The adhesions may be great and so dense as to prevent that rapid descent of the uterus which so facilitates its removal. Or we may not be able to readily antvert or retro-

vert it before applying the clamps to the tubes. In this case it is sometimes necessary after denuding anteriorly and posteriorly, to bisect the organ with the straight scissors and then to proceed slowly to remove one section at a time. Again, it may be necessary to resort to morcellation; particularly is this the case when we have to deal with uterine fibroids. This process is not usually difficult with the morcellation forceps and curved hysterectomy knives. Indeed, I regard this as one of the most legitimate methods of removing all moderately sized uterine fibroids.

The following consecutive cases are illustrative of the above description:

Case 1.—Mrs. E. E., age 36 years; admitted to Chicago Baptist Hospital, Oct. 8, 1894; married eighteen years; has had two children, the youngest being 13 years of age. No miscarriages; excessive menstruation for several years; pain in abdomen. Diagnosis, uterine fibroid, size of an Osage orange. Operation, vaginal hysterectomy by morcellation, Oct. 10, 1894. Dismissed, Nov. 4, 1894, cured.

Case 2.—Mrs. T. D., Dakota; age 33 years; admitted to Chicago Baptist Hospital Dec. 10, 1894; married six years. Never pregnant; menstruation painful; examination revealed tumor; has suffered for many years with utero-ovarian neuralgia; much treatment but no permanent relief. Diagnosis, uterine fibroid. Operation, vaginal hysterectomy, by morcellation, Dec. 12, 1894. Tumor the size of an egg. Dismissed, Jan. 21, 1895, cured.

Case 3.—Mrs. J. S., Chicago; age 48 years; admitted to Chicago Baptist Hospital Dec. 18, 1894. Irregular menses and much abdominal pain. Diagnosis, uterine fibroid. Operation, vaginal hysterectomy, by morcellation, Jan. 9, 1895. One large tumor the size of a small child's head and fundus of the uterus studded with numerous smaller ones. Dismissed, Feb. 27, 1895, cured.

Case 4.—Mrs. W. K., Chicago; age 51 years; admitted to Chicago Baptist Hospital Jan. 16, 1895; married thirty-seven years and mother of eight children, the youngest 10 years of age. Had four miscarriages; passed the menopause two years ago. For several years has suffered with severe pain in the uterine region; leucorrhea copious and offensive. Uterus enlarged to four times its natural size. Has been treated by numerous physicians without permanent benefit. Diagnosis, chronic metritis. Operation, vaginal hysterectomy, Jan. 17, 1895. Dismissed, Feb. 27, 1895, cured.

Case 5.—Mrs. F. J., Chicago; age 25 years; admitted to St. Mary's Polish Hospital Dec. 18, 1894. Had been confined ten weeks previously. Examination revealed bilateral laceration extending beyond the internal os. A part of the cervix was completely torn away. Both ovaries enlarged and painful. Constant nausea, vomiting and irregular movement of the bowels. In view of the impossibility of restoring the integrity of the womb it was decided to perform vaginal hysterectomy, and this operation was done Jan. 30, 1895. Convalescence was slow. At the end of the second week, while giving the usual evening dressing to the wound, a slight hemorrhage occurred, which at first appeared threatening, but completely subsided with hot douches. Dismissed Feb. 30, 1895. The patient has been recently seen and is found to be enjoying good health.

Case 6.—Mrs. A. F. W., Chicago; age 40 years; admitted to Chicago Baptist Hospital Jan. 6, 1895. Married twenty-two years; has had three children and four miscarriages. Has suffered for several years with pain in pelvic and ovarian regions. Examination revealed the fundus of the uterus enlarged and increased to about twice its normal depth. Diagnosis, interstitial fibroid. Operation, vaginal hysterectomy, Jan. 30, 1895. Dismissed, March 8, 1895, cured.

Case 7.—Mrs. C. L. M., Chicago; age 40 years; admitted to Chicago Baptist Hospital March 2, 1895; married at 22 years of age. Has had two children, the youngest 11 years of age. Has never been well since the birth of last child. Menses painful and profuse. Has suffered terribly with utero-ovarian neuralgia, and as a result the entire nervous system is disturbed. Fundus of the uterus enlarged and the depth increased to over four inches. Diagnosis, interstitial fibroid with cystic ovaries. Operation, vaginal hysterectomy, March 3, 1895. Diagnosis confirmed. Tumor the size of a goose egg. Dismissed, April 9, 1895, cured.

Case 8.—Mrs. C. H., Somonauk, Ill.; age 54 years; admitted to Chicago Baptist Hospital March 2, 1895; married thirty-four years. Has had six children, the youngest 18 years of

age. No miscarriages; no regular menstruation for two years; had a bloody discharge from the vagina after any unusual exertion. Constant pain in the lower portion of the abdomen. For the last six months symptoms have been greatly increased. Examination indicated presence of fibroid tumor attached to the fundus of the uterus, the whole mass appearing to be the size of a child's head. Operation, vaginal hysterectomy, by morcellation, March 3, 1895. Diagnosis confirmed. Dismissed, April 8, 1895, cured. Her husband has written me recently that her health is better than for many years.

Case 9.—Mrs. W. M. N., Keota, Iowa; age 49 years; admitted to Chicago Baptist Hospital March 19, 1895; married twenty-six years. Has had three children, the youngest 16 years of age. No miscarriages; menstruation has been irregular for the last six months. For more than two years has suffered from pain in rectum, pelvic and ovarian regions. Leucorrhea; examination revealed uterus enlarged and a cyst the size of an orange apparently attached to the left ovary. Diagnosis, chronic metritis with cyst of left ovary. Operation, vaginal hysterectomy, with the removal of both ovaries and cyst attached to left one, April 17, 1895. Dismissed, May 13, 1895, cured.

Case 10.—Mrs. E. W. C., Chicago; age 26 years; admitted to Chicago Baptist Hospital April 13, 1895; married five years. Has never borne a living child. Miscarried at the third month about four and a half years ago; menstruation regular; leucorrhea profuse, yellow, creamy and irritating; has suffered pain in the pelvic region for three years. Has had much treatment without benefit. Diagnosis, salpingitis with metritis. Operations, vaginal hysterectomy, April 17, 1895. Owing to excessive inflammatory attachments it was necessary to remove the uterus by morcellation. The operation was tedious and difficult. Dismissed, May 14, 1895, cured.

Case 11.—Mrs. B. L., Chicago; age 20 years; admitted to Chicago Baptist Hospital May 27, 1895; married two years. Has never been pregnant; suffers great pain before each menstrual period; leucorrhea creamy and profuse; lancinating pain in the region of the ovaries, particularly the left. Diagnosis, chronic salpingitis. Operation, vaginal hysterectomy, May 29, 1895. Dismissed, June 17, 1895, cured.

Case 12.—Miss E. A. S., Chicago; age 29 years; admitted to Chicago Baptist Hospital May 1, 1895. Has suffered from dysmenorrhea for fifteen years, and during all that time has never been free from pain in the pelvic region; leucorrhea profuse and excoriating; has frequently been confined to bed for weeks at a time with pelvic inflammation. Diagnosis, oöphoro-salpingitis. Operation, vaginal hysterectomy, by morcellation, June 19, 1895. Operation very difficult owing to the numerous attachments. Dismissed, July 17, 1895, cured.

Case 13.—Mrs. J. O. P., Minneapolis, Minn.; age 50 years; admitted to Chicago Baptist Hospital June 24, 1895. Has borne two children, the youngest 23 years of age. Menstruation has continued and grown more profuse, amounting at times to a hemorrhage. Watery leucorrhea. Examination revealed the neck of the uterus enlarged, patulous and nearly absorbed with a spongy growth. Constant pressure with shooting pains. Diagnosis, carcinoma. Operation, vaginal hysterectomy, June 26, 1895. Dismissed, July 31, 1895, much improved in health and apparently cured. A message from this patient one week ago says that her health is perfect.

Case 14.—Miss M. S., Valparaiso, Ind.; age 16 years; admitted to Chicago Baptist Hospital Aug. 24, 1895. Three years ago suffered from an accident, was injured in the abdominal region and since then has suffered much pain through the ovaries, particularly the left. Menstruation very irregular, and during this time had excruciating pain in the left ovary. General nervous system much disturbed; leucorrhea profuse; suffers much; no treatment has given relief and her parents requested an operation. Patient sent to me by Dr. Vincent, of Valparaiso, Ind. Diagnosis, cystic ovaries with salpingitis. Operation, vaginal hysterectomy, Aug. 28, 1895. The right ovary was found in a state of cystic degeneration and removed. The left, owing to its being imbedded in inflammatory tissues was left. Dismissed Sept. 28, 1895. Pain in the ovarian region entirely gone. Nervous symptoms very much better and gradually improving.

Case 15.—Mrs. W. N. M., Emporia, Kan.; age 26 years; admitted to Chicago Baptist Hospital Sept. 5, 1895; married seven years. One child 6 years of age. No miscarriages. Family history good; had good health up to period of birth of child. Perineum was badly lacerated during child-birth. General health began to deteriorate and she suffered with severe pain in the region of the pelvis. In 1894 had the right ovary removed by laparotomy in Kansas City. Operation gave no relief. Menstruation was irregular and painful. Constant pain in the region of the ovaries and uterus. Examination revealed

chronic metritis and salpingitis. Operation, vaginal hysterectomy, with removal of left ovary and tubes, Sept. 11, 1895. Dismissed, Oct. 31, 1895, cured. A recent letter from this patient tells me she has not had such good health for many years.

Case 16. Miss L. P., Boulder, Colo.; age 28 years; admitted to Chicago Baptist Hospital Sept. 28, 1895. Began to menstruate at 13 years of age and since that period has never had good health. Great disturbance of nervous system. Complains constantly of backache and pain in the lumbar region. Had the left ovary removed four years ago and the uterus curetted twice in Kansas City. Suffers now from constant pain in the region of the right ovary. Menstruation regular but very painful, with increased disturbance of nervous system. Leucorrhea yellow and offensive. Diagnosis, chronic metritis with salpingitis. Operation, vaginal hysterectomy with the removal of the right ovary and tubes, Oct. 2, 1895. Patient still in hospital and the nervous system slowly but gradually improving.

Case 17. Mrs. M. L., Chicago; age 46 years; admitted to St. Mary's Polish Hospital Sept. 11, 1895. Has had no children. For a number of weeks has had an almost constant flow; much pain. Had curettement and local treatment by family physician which failed to give relief. The uterus was found enlarged and covered with a fungus, patulous growth and had every appearance of carcinoma. An immediate operation was advised. Vaginal hysterectomy was performed Sept. 28, 1895. Recovery was rapid. Dismissed, Nov. 11, 1895, apparently cured.

Case 18. Miss D. M. K., Fort Wayne, Ind.; age 31 years; admitted to Chicago Baptist Hospital Oct. 14, 1895. Two years ago had two operations in which the uterus was dilated for stenosis and displacement. Excruciating pain with menstruation. Diagnosis, cystic ovaries. Operation, vaginal hysterectomy, Oct. 16, 1895. Dismissed, Nov. 15, 1895, cured, with wonderful improvement of health and strength.

Case 19. Mrs. J. T., Chicago; age 22 years; admitted to St. Mary's Polish Hospital Nov. 3, 1895. Two children. Menses regular but painful. Suffered from muco-purulent discharge for the last year and a half. Examination revealed bilateral laceration of the cervix, ovaries prolapsed and cystic. Diagnosis, chronic metritis with cystic ovaries. Operation, vaginal hysterectomy, Nov. 24, 1895. On removing the clamps in forty-eight hours the wound was found apparently in good condition. After administering the douche the vagina was lightly tamponed with iodoform gauze and the patient placed in bed. In a few minutes it was discovered that the dressings were saturated with fresh blood. She was immediately placed on the operating table, the dressings removed and a severe hemorrhage was discovered from the right uterine artery. Distending the vagina with the retractors the clots were washed away and the bleeding vessel grasped with two clamps. The dressing was renewed and the clamps left in position for an additional forty-eight hours, at the end of which time they were removed without the recurrence of hemorrhage. Slight parotiditis at the end of two weeks. From this time she made rapid recovery and was dismissed, Dec. 18, 1895, cured.

Case 20. Miss M. B., Chicago; age 21 years; admitted to Chicago Baptist Hospital Nov. 24, 1895. During four years has suffered constant pain in the back and region of the ovaries. Bearing down with painful micturition. Examination revealed an enlarged condition of the uterus with painful swellings on either side in the region of the fallopian tubes. Diagnosis, uterine fibroma with pyosalpinx. Operation, vaginal hysterectomy, Nov. 27, 1895. Diagnosis was confirmed and a large quantity of pus, at least a pint, was removed from the tubes. The patient made favorable and rapid progress. Dismissed, Jan. 12, 1896, cured.

Case 21. Mrs. M. M. G., Chicago; age 41 years; admitted to Chicago Baptist Hospital Dec. 2, 1895; married eleven years, widow two years. Has had two children, the youngest 7 years of age. No miscarriages. Has not been well since the birth of last child. Menstruation very painful; leucorrhea profuse, excoriating and offensive; constant pain and bearing-down sensation in the pelvic region; exceedingly nervous; uterus enlarged; entire vaginal vault painful to the touch. Diagnosis, metritis with salpingitis. Operation, vaginal hysterectomy, Dec. 4, 1895. The patient made rapid progress and in ten days all nervous and digestive symptoms had disappeared. Dismissed, Jan. 6, 1896, cured.

Not a drop of alcoholic beverage was given to any of these patients neither before, during nor after the operation. Morphin was seldom administered, and then only in one-eighth grain doses with atropin hypodermically. The clamps were always removed

promptly at the expiration of forty-eight hours. Only once did hemorrhage follow this maneuver. This occurred in Case 21 and was easily controlled. Again, there was slight hemorrhage in Case 5 at the end of the second week. This was only slight, and I presume came from the vaginal wall while dressing the wound. One case, 19, developed slight parotiditis at the end of the second week but it subsided in a day or two. The temperature seldom reached above 101°. Once, in Case 18, it ascended rapidly on the third day to 105°, accompanied by great restlessness and delirium. After a vaginal douche of warm, sterilized water it soon resumed its normal course. At the usual time of menstruation the "menstrual storm" invariably made its appearance with a slight rise of temperature, but in no case were the symptoms very marked, and in no instance was there any appearance of menstrual flow.

My experience in vaginal hysterectomy leads me to believe that it has a much wider field for triumph in the future than was at first anticipated. I believe it will not only yield more satisfactory results to the honest surgeon, but that it will also spare many lives that might otherwise have been sacrificed to the more dangerous abdominal method.

240 Wabash Avenue.

HYSTERECTOMY, ITS LEGITIMACY, WHEN AND HOW.

REPORT OF A CASE INCLUDING REMOVAL OF FIBRO-CYSTIC MASS OF TUMORS, UTERUS, OVARIES, TUBES, PRECEDED BY LIGATION OF UTERINE ARTERIES.

BY R. E. HAUGHTON, M.D.

RICHMOND, IND.

Mrs. B. age 35 years, consulted me in regard to an abdominal growth and bad health as a result. So much so, it seemed that if she were not relieved soon she would not live long. It had been diagnosed an ovarian tumor and she was then as large or larger than at full term, and very burdensome. I examined her very carefully, took all the history and decided it was a cystic or fibro-cystic tumor and ought to be removed. The operation was a laparotomy and did not at first involve the idea of hysterectomy. Hence an exploratory incision was first made for completion of diagnosis. It presented the conditions and appearance of a multilocular ovarian tumor and was clearly a fluctuating one, but deviated in some particulars from the ordinary history of a simple ovarian cyst. First it developed centrally, while right or left ovarian cysts are found to begin in the right or left ovarian region, unless they are double, which is not usual. This led me to suspect I might find a fibroid or fibro-cystic development growing out from the body of the uterus. She had not menstruated for more than a year, the reason of which will appear in the sequel. This thought led me to an investigation of the possible condition, and relations of the uterus, but I was not able by any process, to find it nor reach it by any means of exploration adopted. I thought it had been lifted up out of the pelvis, and so it was found in the operation which took place for removal of growth. The tumor was both pelvic and abdominal, being a large tumor it had risen up out of the pelvis into the abdomen above the plane of the superior strait. She and her husband were fully advised as to its probable nature and the danger and risk of removal fully stated. I said to them in view of the rapid growth of late in the size of the tumor, that in consideration also of rapidly impairing health removal was the only thing left for them, beyond letting it alone and abiding consequences. They returned home saying they would decide as to the operation and notify me if it was for removal. Some days later, I was notified to go to their home and make the operation for removal.

The long laparotomy incision was made after a short exploratory one. The operation disclosed a large development of fibro-cystic tumors of various sizes from that of a child's head down to that of a small apple, growing out from about the neck of the uterus as a center and lifting the womb up and so compressing it that the usual examination failed to find it or determine where it was except that it was above. It had but a trace

left, in outline, yet sufficient to determine its structure and position. There were also almost universal adhesions to viscera and walls of abdomen, yet they could be readily detached as the operation progressed. Only about one-eighth to one-fourth of an inch of uterine structure in thickness remained. The tumor was movable and could be lifted up. The broad ligaments in sections and uterine arteries on either side were ligated close to the organ to secure them and thus prevent hemorrhage in the continuation of the operation. The broad ligaments were turned back laterally on each side like a cuff, after ligation of vessels and then after I had lifted up and forward the womb and tumor mass these lateral surfaces were united by suture, making an extra peritoneal finish of the operation. The operation of the vaginal neck was also next made by the supra-vaginal section. The ovaries and Fallopian tubes were also removed, as those appendages were shrunken or atrophied. Thus we had a removal of tumor, the uterus and its appendages included and were forced to this operation, more as it did not seem possible to have removed the tumor, except by the supra-pubic method. By ligation of uterine and ovarian arteries no hemorrhage occurred during the process, and the patient was placed in bed in a comfortable position with some depression: no bleeding at any joint. She rallied well and took some nourishment in the following morning, pulse fair, reaction good, doing fairly well quite comfortable, the morning of the second day. The external wound was closed by several interrupted sutures of silk and antiseptic compress and bandage. She began to show more depression second day in the evening, more rapid pulse, growing paleness of surface and death occurring on the third day, in the afternoon, from exhaustion as she was quite feeble and did not nourish well.

HISTORY OF FIBRO-CYSTIC TUMORS.

Whether the result could have been different in this case and others similar can only be determined by the study of the results of cases gone before, and also taking into consideration the late period of the operation in this case. Baker Brown says, he knows of no distinguishing signs between utero-fibro-cyst and ovarian cystoma. These have been recognized as a distinct class of tumors, and were first described by Cruveilhier. They have been frequently mistaken by the ovariologist for ovarian cysts. Where the growth has been rapid and fluctuation is very evident an error may readily occur. To make a more certain diagnosis an explorative incision may be made, yet in this case it did not throw any light upon the conditions, as even the hand in the abdominal cavity will not enable the operator to determine a fibro-cyst from an adherent ovarian cyst. Koberle says that the differential diagnosis ought to be clearly made, and Wells says that a darker and less pearly blue color of the tumor would be sufficient to put the surgeon on his guard against mistaking it for an ovarian cyst. Dr. Atlee admits the difficulty of diagnosis, and says that errors are frequent even in hard fibroid tumors, but are much more common in fibro-cystic tumors. He says further: "I believe that a positive diagnosis can be made only by tapping and testing the fluid by heat." "A fluid coagulable on exposure to air is, however, said to be the most reliable test." We find that so far medical men have not been able to make this differential diagnosis unless it be by this method of tapping and examination of the fluid, which enabled Atlee to determine correctly when others quite as celebrated as he had failed, as, for instance, Wells in a case presented to him for the purpose of diagnosis. For various reasons which seemed good this test was not made, as it did not seem so much a question of the kind of tumor as the more important question: Shall it be removed? Yet if there be a question of doubt at all in the comprehension of any or all questions coming before the surgeon it is right and best to use the means of skillful diagnosis, so that nothing be left undone which might cast a ray of light upon the clouded

sky of such a patient and reveal the true nature of her trouble. The question of the true nature of the tumor was raised in this case and fears entertained of its being a fibro-cystic tumor. Yet it was supposed that an exploratory incision would reveal its character rather than subject the patient to what has often proved a dangerous and fatal method of diagnosis, viz: tapping.

ESTIMATION.

I report this case because the conditions required a removal of the uterus and accessory organs, which were all involved in the widespread pathologic condition and because function was suspended, uterus and ovaries atrophied, menstruation stopped and the woman could not be more unsexed by removal than before, and finally, because it was apparent that if she could not be saved by an operation it could not be done at all. The tumor was a multilocular, fibro-cystic, of many and various sizes, from that of the size of an apple to a child's head of six months. Some of them contained fluid and some of them were solid fibroid tumors. They were arranged around the uterus as a center, springing out about the neck and body of the same, similar to a bunch of grapes or a cluster of hydatids which I once saw expelled from the uterus of large size, amid alarming hemorrhage. The entire weight after removal was forty-five pounds. Lastly, it was finally fatal on the third day, as I have stated from prostration, as I believe growing out of a long continued impaired nutrition during the history of the pathologic changes described in its development. Most likely the operative procedure added its modicum of influence as ultimate cause, but that the operation was correct in itself and successfully accomplished is a fact nevertheless now rendered certain. Lastly because it was a removal of uterus and accessory organs together with a large abdominal and pelvic growth somewhat unusual and out of the line of such cases, viz., atrophy of uterus and ovaries with consecutive arrest of function, where the removal of the growth necessarily required excision of all the organs involved.

HISTORY OF UTERINE REMOVAL.

Dr. Choppin, New Orleans (February, 1861), removed the uterus entire with one ovary and Fallopian tube and a portion of the other tube, leaving the other ovary. The woman recovered, being able to sit up on the third day. (*New Orleans Medical News and Hospital Gazette*.) Dr. Munde's (January, 1879, *American Journal of Obstetrics*) operation is described by Freund, of Breslau, with an illustrative cut, and which he calls a new method, an operation for complete removal of the uterus, in which the chief consideration is the prevention of hemorrhage and closure of the peritoneal defect. He does this by uniting the free peritoneal borders with the corresponding lateral portion of abdominal wound, thereby preventing the detachment of the anterior pelvic or abdominal peritoneum. His operations were made for cancer, of which at above date he had made ten operations; of this number only five have been published and five of the ten reported died (50 per cent.). I have referred to the modification proposed by Schroeder in Freund's operation, but as this is made for cancer of the body of the organ, and also involving the neck or mouth, one can thus make an incision which may cut clear of cancerous tissue

and by this means not complicate a possible recovery. In a case such as I have described, viz., the supra-vaginal incision is the only one that can or should be adopted if by that means the whole growth can be removed (I mean now a fibro-cystic or other tumor) by adopting it. In a paper on the surgical treatment of "Fibroid Tumors of the Uterus," of any variety involving the removal of the uterus recently, I discussed this matter more fully in comparison with others, showing that one of two methods may be resorted to, viz., laparotomy with the supra-vaginal section or the infra-vaginal method, if the tumor is not found too large; but if so found then the superior abdominal operation is the only one to be adopted if, provided, any operation is required and urgently demanded, as in the case here reported.

HEMORRHAGE AND ITS CONTROL.

This is one of the most important questions in such cases and up to the time of Martin's ligation of uterine vessels this method was not done, either for this purpose or for the limitation of blood supply to fibroid growths; and if one-sided ligation is not sufficient for such limitation of growth then double ligation may be done. In this operation of removal the double ligation may be used, securing control of hemorrhage in the after-steps of the operation. This ligation of vessels was done in case described, and when it had been made we had nothing but a vascular condition of tissue in which some bleeding occurred and this was easily controlled. One case is reported by Trenholme in which he used the ecraseur, and attributed the fatal result to it. This is a question which depends largely upon the conditions and circumstances which complicate the case, and the judgment of the surgeon.

HYSTERECTOMY, ITS LEGITIMACY.

Formerly, ten or twenty years ago, no question most likely would be raised in view of the cases which were reported as successful. Now, outside of exceptional cases, a halt may be called and the question comes back, what percentage of mortality occurs in the cases reported as a sum total. Moreover does the percentage of recovery justify such an operation, or to use a stronger term, mutilation? Before I proceed to give what seems to my mind legitimate indications for such an operation, I wish to go upon record as holding the opinion, carefully reached, that the tendency of surgical endeavor has been in the direction of too much surgery, too much cutting, and the mutilations, which I think express the idea, have occurred too often, and men have endeavored to carve their way to fame and distinction without the careful estimate which should be placed upon a human life standing in the social relations of wife, sister or mother. While I record this view, I am fully aware there are cases where there seems to be no alternative but an operation¹ or death, and this alternative should be accepted before it is too late, when vital force and power are almost gone and no resources are left for recuperation.² This is a critical question and it requires a knowledge of all the resources of surgical means as well as a comprehension of all the sources of vitality left to the patient. In

such cases as I am now describing the question of the sexual position of the patient does not enter; yet there are such cases as these where it becomes, as I regard it, a very important consideration. These questions come before surgeons at this juncture with more force than ever before, because of the considerations which arise along the line of treatment of many disorders peculiar to women, which have been more fully developed and outlined by Apostoli, of Paris. Others had preceded him, marking the way, but he has assumed a more commanding position. I refer to gynecologic electro-therapeutics. The difficulty has been that men have not comprehended the remedial power of the electric current, and have only applied it as a last resort, hoping it might do something more than had been done. In amenorrhea, dysmenorrhea, or pain so agonizing that it seems it might kill; endometritis and the discussion of fibroid tumors by electrolysis, also in hemorrhage, "where it has probably no equal in treatment," as Apostoli says. He uses the faradic current with the bipolar electrode in inflammation of the uterine and peri-uterine tissues, as metritis, para-metritis, salpingitis and salpingo-ovaritis, and even the most acute stage of disease does not contra-indicate employment of the current. Also the most severe local pain is much relieved either by the intra-uterine, bipolar electrode or the intra-vaginal, when the acute history has been passed. Apostoli assumes that 95 per cent. of his cases were improved and symptoms removed, while a fibroid tumor was not removed but rendered quiescent or latent. Dr. Thomas Keith, of London, in a paper June 8, 1889, says in regard to fibroids: "The only treatment not surgical worth consideration and free from danger is that of Apostoli." And after giving a history of the professional management by operation proceeds to say: "That hysterectomy, then, at best would appear to be a doubtful remedy for a certain class of cases, and these not the worst class of cases," viz., hemorrhagic cases. "The old spirit that at one time would have no abdominal surgery still lingers," and when other means than operative, "in the form of electrical currents are to be set aside as arrant quackery, and simply because they know nothing of its value." Another idea of those who operate most is this, that other surgeons who have made just as careful study and estimation as the specialist in surgery should not attempt an operation because he does not operate every day on some case, and hence is not so well advised. Away with the idea that one man may not minister at the altar of hygea as well as another. "Hysterectomy, which is performed every day for a disease that rarely of itself shortens life except by hemorrhage, kills every fourth or fifth woman subjected to it." This mortality is too much and should stop. "It is not surgery, it is humanity." Keith says: "I would give something to have back again those sixty-four women that I did 'hysterectomy' for, that I might make a trial of Apostoli's treatment upon them beside the wear and tear of flesh and spirit which those operations cost me, for in scarcely one of them was the operation simple." (*British Medical Journal*.) This operation may be performed when all other legitimate treatment has been used, as in cancer of the uterus, in sarcoma as well, when the disease has not invaded other organs, which would insure its recurrence if the patient survived the operation for removal; in fibroid and fibro-cystic tumors,

¹ I record my present view with the facts as given by Baldy and others, viz., Baldy, 31 cases, no deaths; Kelly, 70 cases, no deaths; Polk, 20 cases, 1 death; Pryor, 9 cases, no deaths; King, 65 cases, 1 death; Penrose, 25 cases, 1 death, making a total of 223 cases and 6 deaths. The mortality in the hands of six operators 1-2 per cent.

² So also we agree as to the success and percentage, but what about the health and condition in which the woman is left?

when by growth they have become distressing through pressure, pain and the consequences arising upon vital, thoracic or abdominal organs. Or when there is such a constant peritoneal irritation as to produce pain or adhesions; or when by hemorrhage likely to be sacrificed. One case in which I removed the tumor in time to prevent another hemorrhage and which must have caused death if the operation had not been performed, recovered well in about thirty days.

Dr Muller says, "that while ovariectomy has been brought to a high degree of perfection, the operation of hysterectomy has not yet passed the first stages of its development." Not only has the legitimacy of this operation been doubted and denied by experienced gynecologists, and while this question is being closely canvassed, the indications and contra-indications for a resort to it are gradually becoming settled. Nevertheless so much has been done, it is now claiming a place among the very grave surgical operations, which are not easily determined and may require a very careful exploratory incision and investigation before deciding that it shall be done and when it must be done in the careful judgment of the surgeon or surgeons, carefully weighing all the conditions; then they are not justly chargeable with temerity or cruelty in offering such relief, as only remains in this operation, with a percentage at best of mortality of one in five, or 20 per cent. This is the estimate of Thomas Keith, of London, and the adhesion of Sir Spencer Wells and Keith to Apostoli's methods of treatment, being among the world's most influential gynecologic surgeons, arrested the attention of all progressive and yet conscientious surgeons. While this is true, there are two factions of men, and all are not yet convinced of the efficacy of the galvanic treatment so ably defended by Apostoli, when he says that 95 per cent. of his cases were benefited, when not cured. I have written but suggestively, and here rest the subject for the present, hoping it may be like "a pebble cast into the ocean, its tiny wave may reach either shore" of professional opinion upon this subject.

CRIMINAL ABORTION.

BY WILLIAM McCOLLOM, M.D.

BROOKLYN, N. Y.

I use the words in their legal sense, viz, the effecting of the unlawful expulsion of the contents of the womb at any time after conception before the term of gestation is complete. The very old English law made a distinction between the crime perpetrated before and after quickening. The rulings of the supreme court of several of the American States corresponded with the old English law which was abolished a half century, more or less, ago. The Pennsylvania court was one of the first to discard the old doctrine and the courts of many of the other States have progressively fallen into line, and have ruled that it is a crime to destroy embryo life after gestation has begun. Judge Coulter, of Pennsylvania, ruled that "it is not the murder of a living child which constitutes the offence, but the destruction of gestation." An attempt by a physician or other person to procure an abortion is a crime, though the effort fail and the abortion is not produced, and it renders the party criminally guilty. When a physician prescribes medicine or gives advice and allows the patient or party to be-

lieve, or gives her reason for believing that it is given for the destruction of embryo life, though he does not intend such destruction, is little better than a criminal. I have heard physicians confess to such deception without seeming to realize that they were seriously compromising honesty and integrity and countenancing sin and crime.

Criminal abortion is frightfully prevalent and the practice is apparently on the increase among professed Christian women. It should be and it is the duty of the physician to enlighten applicants for relief from pregnancy who have no adequate idea of the criminality of the act. The women of the Church of Rome are better instructed and made to keenly feel the great sin of murdering unborn human life. I might raise the question whether the clergy are doing their duty in the matter or not, but I am addressing medical men only. Let us do our duty, if our spiritual advisers neglect to do theirs, in denouncing this common crime and great sin. It is evident that women of the lower class have no adequate idea of the criminality of the act, for they unblushingly apply to the physician and to the druggist for medicine to abort pregnancy, or, in other words, to bring about the monthly sickness. Great ignorance of the criminality of the practice is manifested by educated women, but it is not ignorance alone but a downright lack of moral sense as well, which greatly needs educating. The common law at the present day does not make the destruction of an unborn child murder. I quote Blackstone on English law: "Though to kill the fetus in utero is as such by common law no murder, yet if it be born alive and die subsequently to birth from wounds received in the womb, or from the means used to expel it, the offence becomes murder in those who cause or employ them." I also quote from another distinguished jurist, Wharton, "Law of Homicide," 93: "If a person intending to procure an abortion, does an act which causes the child to be born earlier than its natural time, and therefore in a state much less capable of living and it afterward die in consequence of such premature exposure, the person who by this misconduct brings the child into the world, and puts it into a situation in which it can not live, is guilty of murder, though no direct injury to the child is proved; and the mere existence of a possibility that something might have been done to prevent death, does not lessen the crime." We are inclined to the belief that such law is not good common sense; to kill the child in utero according to Blackstone is not murder or infanticide, but to inflict such injury upon it that though it is born alive and dies in consequence of the injury it is murder.

Some years ago I attended a woman, the wife of an attorney-at-law, seven months or more advanced in pregnancy, the child stillborn; the brain had been punctured through the eye from some instrument; this was not technically murder under common law, but I bluntly charged the mother with murder in the presence of her husband and friends, pointing out the evidence of it, and there was no denial. I have repeatedly been shocked at the manifest lack of moral sense in intelligent women in applying for medicine to reestablish the menstrual function when it was evident that they believed the absence of the menses due to pregnancy. The woman sometimes attempts to justify the act because she does not positively know that conception has taken place. The physi-

cian's excuse for giving noxious drugs or for sounding the womb when miscarriage results that he did not know that the suppression was due to pregnancy renders him not less criminally liable.

Under the older English law for an attempt to procure a criminal abortion without proof of the woman's pregnancy conviction could not take place. More recent rulings as well as amended laws now make the attempt to procure a miscarriage a crime. It has been the law of France for more than fifty years, that the proof of pregnancy is not essential to the commission of the crime. We try to excuse Christian women for asking us to terminate pregnancy on the ground of ignorance of the law of man, if not of the law of God. If they took as much pains to become enlightened in the common law regarding it as they do to how it can be accomplished with or without aid from others they would not long remain in ignorance in the matter. Physicians long in general practice know that the practice of criminal abortion is common, and that it is not confined to the laity or to the quack and the pretender. Sometimes the ordinary physician who may be a member of a regular medical society violates his duty; and the distinguished college professor without the fear of God or of sufficient fear of human law takes his large fee for the criminal act. I am not drawing on the imagination, but state what I know to be true. Such statement does not sound well, but this fearful immoral destructive practice can not be checked unless facts are stated and proclamation is made of this great evil.

I have no belief that the practice is common among physicians who have a reputable standing with the profession in the neighborhoods where they are known. The moral status of physicians is high and I trust that we have no more black sheep than the other learned professions. As we go down the scale from the higher to the lower the evil grows greater, until the criminal abortionist, who may be a graduate of a regular medical college, loses all shame and not only sends out his advertisements to the laity, but his cards at frequent intervals to reputable physicians as well. These villains would not continue to inform the medical profession at considerable expense to themselves year after year unless their business was helped by it. A little lower down in intelligence, if not in wickedness, comes the so-called midwife and the woman who prefixes doctor to her name, and poses as a dermatologist or specialist in disease of females; they flourish in many localities.

Now we come to the economical woman and her economical friend, with their skewers, steel knitting needles and other instruments of murder. Quite recently an intelligent, educated professed Christian woman whom I attended in a miscarriage in the fourth month of pregnancy, confessed without expression of sorrow or remorse that she had effected the abortion with her own hand by pushing a knitting needle into the womb, following the instruction of another young woman who had repeatedly succeeded in destroying embryo life in her own person and was kindly instructing her young friends in the art without hope of pecuniary reward. It is only necessary for me to briefly call attention to the existing criminal facts, for all physicians who have had full opportunity to observe know that the alleged statements are true, and not overdrawn; true of the city and true of the country.

Much might be said of the far-reaching, demoralizing destructive influence upon woman, upon the community, upon the State, upon the world; but the portraiture of the facts, bad as they would appear, I fear would have little influence in arresting the practice. The moral sense in woman, and possibly in the medical profession as well, has degenerated as regards this matter. The physician is so related to woman in his professional duties that he can do much, if he will, to instruct her as to the law and to show her that she would be a criminal, and shock her into a sense of her duty. It is presumed that few people know that the penal code of many of the States make the woman guilty of manslaughter if she consents to the procuring of a miscarriage. I quote from section 194, New York penal code: "A woman quick with child, who takes, or uses, or submits to the use of any drug, medicine or substance, or any instrument or other means, with intent to procure her own miscarriage, unless the same is necessary to preserve her own life or that of the child whereof she is pregnant, if the death of such child is thereby produced, is guilty of manslaughter in the second degree."

When one woman advises another woman to procure an abortion, instructs her as to the method or assists her in any way in its performance, she becomes a criminal and is guilty of manslaughter.

Section 191, Penal Code of New York, says: "A person who provides, supplies or administers to a woman, whether pregnant or not, or who prescribes for or advises or procures a woman to take any medicine, drug or substance, or who uses or employs, or causes to be used or employed, any instrument or other means, with intent to procure the miscarriage of a woman, unless the same is necessary to preserve her life, in case of the death of the woman or of any quick child of which she is pregnant is thereby produced, is guilty of manslaughter in the first degree."

The field for missionary work is a large one and should be faithfully worked, both by the conscientious physician as well as by the Protestant Christian clergy, who perhaps fully understand the enormity of the sin if they do not know how prevalent it is. It is not a pleasant subject to discuss before a mixed audience. Young women could be reached, instructed and warned by a properly published circular or tract sent to them by Christian organizations at intervals, where personal instruction would not be practicable. There is little to criticize, as it relates to the laws of most of the older and some of the newer States of America. A recent ruling, June, 1895, by the supreme court of Kansas, rendering an important section of the Crimes Act as it relates to criminal abortion invalid, is a long step of about fifty years backward. The law provides that an attempt on the part of any one to abort "any woman pregnant with a quick child" "shall be guilty of manslaughter in the second degree;" this is declared inoperative and invalid "where neither the death of the child nor the mother results from the acts committed." The low moral sense of the community, as it relates to the offence, has much to do in the non-enforcement of the law. The criminal is seldom put under arrest unless the woman is murdered, and then the party, if convicted, frequently gets the minimum penalty prescribed by law. If physicians would do their duty and make complaint in all cases when it comes to their knowledge that physicians or other persons are violating

the law in the destruction of unborn human life, it would do much to lessen the practice. I have more than once made written appeal accompanied with a threat that unless I could be satisfied that the practice would stop, I would enter formal complaint to the legal authorities. Parties have responded, pleaded for mercy and given solemn promise never to again produce the miscarriage of a pregnant woman for any reason until they had held a consultation with a reputable physician, and its necessity was advised. It is not safe or best that any doctor procure the miscarriage of a woman in case of necessity until a consultation with another physician is had; such practice would protect himself against suspicion of wrong-doing, and materially help to trace and convict the criminal. So long as it is allowed the physician to produce the miscarriage or the abortion of a woman without consultation the evil will not be materially checked, for the criminal abortionist is a perjurer and when under trial in court will swear if necessary to avoid conviction, that the act was performed to prevent the death of the woman from disease, pelvic deformity, or for some reason given, satisfactory to the jury. It is very easy to speak upon this shocking criminality practiced by professed Protestant Christian men and women, as well as by the ungodly, and to moralize upon the destructive influence, especially upon woman, but it is difficult to solve the question when we ask, What is the remedy? How can it be checked?

CASES ILLUSTRATIVE OF DIFFERENT FORMS OF COLOR-BLINDNESS.

CASE I.—CONGENITAL COLOR-BLINDNESS.

CASE II.—TOBACCO COLOR-BLINDNESS.

CASE III.—TRAUMATIC COLOR-BLINDNESS.

A Clinical lecture delivered before the Senior Class at the Jefferson Medical College, Philadelphia, April 5, 1895.

BY WILLIAM THOMSON, M.D.

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[Reported stenographically for the JOURNAL.]

Gentlemen:—Your Clinical Professor of Ophthalmology has invited me to address you on the subject of color-blindness. I must suppose that you have been made acquainted with the anatomy and physiology of the eye, by the teaching of my friend and colleague, Professor Hansell, who is so well qualified to instruct you upon this subject. Taking, therefore, your familiarity with these preliminary matters for granted, I will proceed at once to tell you what is meant by color blindness; and how the condition may be recognized. I will also explain the tests, and give you clinical illustration of their application. In this way, you will get a practical demonstration of the methods of examining patients who are suspected of having a defective color sense.

When we speak of congenital color-blindness, we mean that the eye may be perfectly normal in its structure, have no anomaly of refraction, and be a perfect optical instrument, except for one defect, and that is the inability to distinguish the difference between colors, which to ordinary, normal eyes is very obvious, such as red and green. It is precisely these colors, however, which have been selected for signals on the railroads and on shipboard, where failure to recognize them may cause serious loss of life and property. You will appreciate this better when I tell you that there are cases of total color-

blindness in which the solar spectrum looks to the patient like a lead-pencil drawing of it; where, from red to indigo, the spectrum looks as if drawn in different shades of gray. Such cases, however, of total color-blindness are rare; indeed, I have never met with a case of this kind. On the other hand, cases of partial color blindness are common. For instance, there is blue, yellow, red, and green blindness. What is most commonly meant, at the present day, by color blindness, on account of its wide-spread and far-reaching consequences, is the inability to distinguish between red and green, or green and gray. When you realize that the individual presenting this defect to the examiner would show the same in ability to distinguish between red and green flags or lights, which are commonly used as signals at sea or on railroads, you will understand the great importance of testing the eyes of all pilots, and of engineers and brakemen particularly. The correct interpretation of those signals depends upon the ability of the engineer or lookout to recognize certain colors at sight. The white light or flag on the railroad means: "Go ahead;" the green, "Proceed with caution;" the blue, "Do not move it;" but the red light or flag means imperatively, "Halt." It is important to recognize lights at sea, for another reason, because by their aid the course is indicated in which a ship is sailing. The red light is hung at the port and the green at starboard, with a white light on the mast-head. By the relative positions of these lights the direction may be known. In the recent calamity by which the steamship *Elbe* was injured in a collision in the North Sea and foundered with all on board, I am not sure that it was not due to the defect in vision of which I speak to-day. The accident occurred at night when there was no storm, and the atmosphere was clear enough for ships to see each other for a long distance before they met. It might have been due to the fact that the lookout on the *Craithie* could not tell which way the *Elbe* was going, owing to color-blindness, which prevented him from correctly interpreting the signals on the *Elbe*. So, you see that this is a matter of very great importance, especially to all of us who may have occasion to travel by land or water.

Now, we will see if we can approach this subject in some way so that you will get a clear idea of the color sense and of the relations of colors. Here, on this plate I show you a colored representation of what is commonly known as a "spectrum" "or solar spectrum." This teaches you that if you go into a dark room and make a small hole in a shutter, that the beam of light (or if passed through a prism) will break up into this arrangement of colors upon a screen, with blue light at one end and red light at the other, as everybody knows. The reason why the spectrum is formed is because a beam of white light is made up of a number of rays having different wave lengths, or rates of vibrations. Thus, the red rays at one end of the spectrum have about four hundred million millions of vibrations per second, while the violet at the other end have over seven hundred and fifty million millions. All rays under four hundred billions of vibrations per second are not perceptible as light and are known as heat rays, while those higher than the violet can not be appreciated by the human eye and are only recognized by their chemic and physical effects. Between these extremes of red and violet are found the orange, yellow, green and blue rays with

rates of vibration of four to eight billions per second.

You may ask why it is we see only a small portion of the spectrum, and that the higher and lower rays are not luminous. It is because the human eye has been evolved from lower forms of animal life, and its condition is the result of the action of external forces of nature upon it during the course of its development to fulfill the needs of the human organism. We will suppose that the light falls upon the cornea and passed through the crystalline lens and that impact takes place upon the retina. A commotion is set up among its rods and cones, the red rays and violet rays make a different impression upon the nerve endings in the cones, and this is carried backward through the optic chiasm to the part of the brain which we have ascertained, by pathologic and other observations, to be the center for vision, which is situated in the occipital lobe of the brain in the cuneus. From here it is carried on to consciousness, and if any of you, gentleman, can tell me where that is and how these impressions become conscious sensations, I shall be very much obliged to you for the information. Having traced the impression to the cortical center in the occipital lobe, there we must leave it for the present; all we know is that it is carried to the cuneus and thereafter it becomes to us conscious sensation.

Case 1. Congenital Color-Blindness. Now, gentlemen, I will show you this case of color-blindness, in order to demonstrate the nature of this phenomenon to you. I will first give him fine print to read and thus test each of his eyes, to prove to you that they are perfect as optical instruments, and that vision is acute and accommodation normal. He says that he first learned that he was color-blind when he bought what he thought was a blue necktie, and when he brought it home he was laughed at for buying a green one. This led to conversations upon colors, which showed him there were differences recognized by others, but which he could not appreciate.

It is of interest to mention that it is to Dalton, who was himself afflicted in this way, and who a hundred years ago was a distinguished professor of chemistry, that we owe our first exact views on the subject of color-blindness. He also ascertained the peculiarity by accident. He was living at Oxford, and when he went up to take his degree he was informed that he must wear a red coat, and it being against the rule of the religious society to which he belonged, he was much troubled about it. When the coat was brought home, he thought that they had changed it for a mouse-color or drab and he was very much pleased with the shade. He thought so well of it that he not only wore it to the ceremony when he received his degree, but he also wore it in the street until his friends spoke to him about it, when he learned for the first time that the coat was red. He investigated this subject and taught the use of the spectroscope in diagnosis. After Dalton came Dr. Thomas Young, who made observations upon the color sense, which have become classic. Now, coming down to our own time, Holmgren taught us that color blindness was comparatively common among the railway employes in Sweden, and devised a very practical test for the examination of their color sense.

Now, let us suppose that you will be called upon to examine a suspected case. It will be useless to ask him to name colors, for he has learned to apply these names which he will use in speaking, although he could not distinguish the green from the red, perhaps except by a slight difference of shade, both appearing as dark gray. Now, according to the doctrine of probabilities, if you take a large number of men, you will find that 1 man out every 100 will not be able to distinguish between red and green, or will be color blind; whereas there are only about 4 women out of 6,000 who are color blind. This would really show on this point a superiority of the female sex, in the ratio of 1 in 25, in males, to 1 in 1,500 females possessing this defect of color-blindness.

We will now proceed to the test for color blindness. The best way to ascertain the existence of this condition is to ask the subject of the test to match certain colors. Here is a mass of over a hundred small bundles of wool of different shades of green, pink, blue, orange, etc. In making then, what is known as Holmgren's test, three test colors, viz., light green, rose or purple, and red are placed in turn before the person to be ex-

amined, and he is told to select from the mass a number of skeins and to sort them according to the color.

This test will now be made upon our patient. Observe that he takes a rose-pink and lays upon it the light blues and hesitates about the grays. In assorting the colors, as requested, you can see, without asking him any questions, that he is unable to distinguish between certain colors, and especially green and red, and makes ludicrous mismatches. He reminds me of a young man who happened to be color-blind, and who describing his ladylove said that her cheeks (pink) were the same color as the sky (blue). I have no doubt that there are a number of gentlemen in this class who are color-blind, and if so, they should know it, in order that they may avoid errors and thus succeed in their professional lives. There are many things that appear differently to the color-blind physician, and we often depend upon full appreciation of color for our diagnoses. For instance, a rash upon the skin would not look the same to such an individual as to others with a normal color-sense. Chemic tests, dependent upon color changes, would be rendered uncertain and difficult to a color-blind doctor.

Here is a bundle of skeins of wool of neutral colors which our patient selects. Here is a pink, which this man calls a dirty white. If he were an engineer and should make such a mistake confusing a red with a dirty white flag, the results might be serious. Now, if we confront this man with the picture of the spectrum, we find that he can distinguish blue and yellow better than red or green. Therefore, if we divide the spectrum into four colors, red, yellow, green and blue, he can distinguish yellow and blue well and fails on the other two colors, and he has hence that form known as red-green color blindness.

Some difficulty arises owing to the partial education of the color-sense in these cases, so that we can not ask them to name the colors, or to select colors by name. But we must ask him to match skeins of worsted by placing him before this box filled with many colors, from which he must select those corresponding in color to the test skeins, but lighter or darker in shade.

The rose-pink, as you may know, is a mixture of red and blue. Therefore if he matches this with a blue, he is red blind; and if he matches it with green or gray, he is green blind. Now, you see he gives himself away in two ways; he not only matches the rose-pink with a blue, but fails to pick out the other pinks in the mass right before him. He then picks out a bright red and throws it upon the green test. This shows that his eye is incapable of responding to the four hundred million millions of vibrations in a second, which correspond with the red color. Now, if he were a doctor, and were to examine the eye-ground with the ophthalmoscope, the field would look to him as if bright green or dark yellow.

One other point should be mentioned. Nature is very miserly in her gifts and, while our color-sense is most acute in the very center of the posterior segment of the retina, outside of this portion of the retina we are all relatively color-blind. The response to the color rays becomes less decided as we pass from the center to the periphery of the field of vision in normal eyes.

As our color-blind subject sees in the spectrum only blue and yellow, he has a dichromatic color-sense, that is to say, a color-sense limited to two color sensations only. The normal sense is trichromatic: red, green and violet, which are the three color sensations necessary to produce white light. If this man should attempt to paint the solar spectrum, he would place blue at one end and yellow at the other end, with a neutral gray band between, as he has only two color perceptions. His entire color scheme of nature most correspond to this fact, and would necessarily be very different from that of other persons who have all three sensations. Therefore, his appreciation of nature is much more limited than that of those with full perceptions of color. He would not be able to pick strawberries out of a patch, or cherries from a tree, except by the form of the fruit; and in his eyes a red rose would not be very different in color from its leaves.

This examination which I have made by Holmgren's test can be very much facilitated and shortened by that instrument known as "the color stick," which was invented by me in 1879, for testing the employes of the Pennsylvania Railroad. The simplicity of this instrument and the positive character of the results, make it valuable also for preserving records, and it has the great advantage that the test can be made with it by laymen and non-professional people. I think that it is always better to have a trained surgeon to supervise the examinations; but at the time that this system was introduced it was impossible to find a sufficient number of ophthalmic surgeons to supply the demands of the Pennsylvania Railroad, where there were about forty thousand men in the employment of the company, scattered over thousands of miles of railroad. To accomplish this result, I devised this instrument. It consists of

forty skeins of worsted, arranged in a single row, upon two sticks joined together, but which can be taken apart. Each skein has a ring and a little bangle upon which is stamped its number. Twenty of these skeins are affirmative and twenty are negative; all the affirmative bear odd numbers, all the negatives are *confusion colors* and have even numbers. Now, if a person's color-sense is normal, he will select all the odd numbers, while the color-blind person will select a portion of the even numbers. As each skein is selected, it is turned backward so as to hang over the top of the stick. At the end of the examination the results are read off and entered upon a printed blank form, which is then sent to the superintendent, who can tell at a glance whether the man is or is not deficient in color-sense, by an inspection of his odd or even numbers.

Now we will give this man a skein of green to hold in his hand and he is told to pick up some others from the stick that look like it. Observe, now, that the even-numbered skeins show his mistakes. He is now given a rose-pink and told to pick out skeins to match it. The former test is confirmed by his selection again of even-numbered skeins. The result is read off immediately and recorded on the blank, and color-blindness is the diagnosis.

The new system recently adopted by the Pennsylvania Railroad is the following: The stick has been discarded and the test consists of two different sets of worsted skeins which must always be kept apart, not only in their corresponding parts of this box, but also in testing the men. The first set consists of twenty skeins, numbered 1 to 20 on bangles, these numbers being so concealed that the men can not see them. Among these numbers the odd ones (1, 3, 5, etc.) are greens, while the even numbers (2, 4, 6, etc.) are grays or light browns. The second set consists also of twenty skeins, but they are numbered from 21 to 40. Here the odd numbers (21, 23, 25, etc.) are all different shades of rose color, while the ten even numbers (22, 24, 26, etc.) consists of four blues, three greens and three grays.

The following directions are to be observed in the use of this test:

1. Examine only *one* eye at a time, by covering the other eye with a handkerchief or some other means, that will exclude it from vision.
2. Spread a white cloth, like a towel, on a table in a good light.
3. Take out all the worsteds from the green part of the box and put them on the cloth at random.
4. Take from this heap the large light green test skein which is marked A, and laying it to the side in a good light direct your man to select ten skeins from the heap. Tell him that they are not to be exactly like it in every respect, but that they are to be of the same color, only a little lighter or darker in shade.
5. Write down on your blank the numbers of the ten skeins selected by your man to match the test skein A. If only odd numbers appear which he selected promptly, then he is not color-blind; but if even numbers have been chosen, he must be more or less color-blind.
6. Ask him the name of the color he has been matching, or any other worsted, and register his answer on the blank.
7. Remove now all the worsteds and put them back in the green part of the box.
8. Now take out the second test and expose it on the table in the same way as before.
9. Show him the large rose-colored test skein, marked B, and ask him to match this with ten worsted in the same sense as before the first test.
10. Register his ten selections on the blank. Now any even numbers selected betray and determine definitely his color-blindness. If your man selects *blues*, with the test skein B, he is *red-blind*; if he selects *grays* or *greens*, he is *green-blind*.
11. Ask him the name of the test skein, or any other skein, and register it.
12. Put down whether his selection was prompt or hesitating.
13. Finally, as a control upon the test and as a substitute for the second and third color-test of the old system, there have been arranged especially for the surgical expert, two more large test skeins, one *c*, yellow, and the other *d*, blue. The test *c* is exposed and you ask your man to match it, if possible, by the skeins from 1 to 20. If normal in color-sense, he will decline or at the most only take the yellow-green skein, but if color-blind he will select a number of the green skeins, which should be recorded. Then use test *d*, the blue skein, and let him match it from skeins 21 to 40. If normal or green blind he will select blues only, but if red blind he will pick out a series of roses, which should be recorded.

The old system is now in actual use by more than forty of the principal railway corporations in this country and Europe,

and over fifty-two thousand miles of railroad are now protected by it. It is used not only for those actually in service of the railroads, but also for all applicants who seek such employment. To make the examination of vision complete, records are also kept of the results after testing by Snellen's test types for sight and power of accommodation.

In Holmgren's test as originally conducted, the examination took considerable time and required an accurate knowledge of the subject on the part of the examiner. By this system of mine, the tests are quickly made and recorded, and the results are equally positive.

Now, gentlemen, I think that you are satisfied that I have exhibited to you a typical case of marked congenital color-blindness. This was probably inherited either from his father or grandfather, possibly from his maternal grandfather, since, as already mentioned, the females usually escape color-blindness. I think, moreover, that you would not like to ride in a train behind a locomotive in charge of this man as engineer, who would then be called upon to recognize all kinds of signals at a glance by night as well as by day, when as he has just told you he sees green as dirty white, and red is indistinguishable from green.

There is another easy test known as the cobalt blue test, which I will demonstrate to you. A lighted candle is held about ten feet from the patient and a piece of cobalt blue glass is held before each eye in succession, the other being closed. Now to the normal eye, the flame of the candle should be pink or rose surrounded by a blue halo, but this man tells us that he sees only one color which he calls blue, and thus demonstrates his inability to see any red color, since this glass transmits both red and blue rays.

Case 2. Acquired Color-Blindness of Toxic Origin. I will now refer to this other case in which the color-blindness instead of being inherited has been acquired. This man for twenty years has used tobacco to excess, and he has, as the result, a central scotoma, or partial loss of vision with color-blindness over a limited area of the retina, involving the yellow spot, which is the center of most acute vision. In this large colored plate of the eye-ground, I now show you a very fine delineation of what we see at the back part of the healthy eye by the aid of the ophthalmoscope. Here is the optic disc or the entrance of the optic nerve, and here is the yellow spot, about 8 degrees to the outer side of the disc. Immediately at this point is the *fovea*, the seat of most acute vision and likewise of the highest development of the color-sense. When a man has any lesion in this region, it reduces his appreciation of both color and form very materially, if not totally. Outside of this central region everybody is relatively color-blind, the periphery of the retina being less responsive to color vibration than the center.

To prove to you the color defect, I take this red glass from the test case and place it in front of a lighted candle at six feet away; now by replacing it with green we find him unable to distinguish between green and red. I now measure the diameter of the test glass and find it 33 mm. I now bring the candle to 33 cm. (or thirteen inches) from his eye and he begins to feel the red color of the glass, and distinguishes it quite promptly if the lighted candle is moved a little from its position. When it is removed farther from the eye he is color-blind, but when it is approached, say to 25 cm. (or ten inches) he at once perceives either red or green colors, properly. Now, at 33 cm. this stick in my hand, of 33 cm. in length, covers 60 degrees of his retinal surface; the red or green glass is 33 mm. or one-tenth the size, and hence covers 6 degrees of his retina; and as he is color-blind for an object of this size, we are able to prove that within 6 degrees at his fovea he is color-blind, but if a larger portion of the retina is covered by the image of the test, it responds in a normal manner. From this, you will infer that this man would be incapable of seeing the signal-lights at night and would mistake red for green, or white for green, but that he would escape detection perhaps if tested by any colored wools, since each skein would form an *image* of more than 6 degrees upon his retinal center, and would touch rods and cones with normal sensation. Such cases are rare, and should be remembered by those who have the charge of lookouts on the water, or on railways on land. Accidents, alcohol, some of the fevers, may cause this condition and would render re-examination of suspected men necessary even after they had once passed the color-blind examination.

This, then, is a case of acquired color-blindness with central scotoma only, due to excessive use of tobacco; and it differs from the preceding case in being amenable to treatment by tonics, such as strychnin, etc.

¹ This man recovered his full sight both for form and color under disuse of tobacco, and internal use of strychnia. His color scotoma extended for 6° and involved the central or macular band of nerve fibers only.

Case 3. Traumatic Color-Blindness. I have another case to show you but the termination of the hour will permit me only to advert to it very briefly. This patient sustained a severe injury some months ago. He fell down twenty or thirty feet into an elevator shaft and suffered a concussion of the brain. At this time he probably sustained a lesion of the cuneus in the cortex of the occipital lobe of the right hemisphere. It was ascertained recently that he has hemianopsia for color only. One-half his field of vision in each eye, is color-blind, while he has a perfect appreciation of color and form in the other half.

I show him to you as a case of traumatic color-blindness limited to one-half of each eye, following an injury to the occipital region. I am indebted to Dr. A. G. Thomson for this case.

With this case, I conclude the clinical remarks I wished to make upon these three patients, which will illustrate the congenital, the acquired and the traumatized forms of this very interesting and very important condition of so-called color-blindness.

HYSTERIC BLINDNESS AND PSEUDO-MENINGITIS, WITH REPORT OF A CASE TREATED BY HYPNOTISM. BY HUGH T. PATRICK, M.D.

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Hysteric amblyopia with contracted visual field and dyschromatopsia is common, monocular amaurosis is less common and hysteric total blindness is rare. Gilles de la Tourette in his recent work¹ refers to only eight cases as already published, viz., Landouzy, two cases;² Briquet, three cases;³ Marlowe,⁴ Würdeman⁵ and Levy,⁶ each one case; and in looking up the references I find that the case of Würdeman is not a case in point, but one of hysteric deafness. To these I have been able to add fourteen more from the literature beside my own. Harlan⁷ refers to a case cured by the application of an imaginary magnet and to another which occurred in the practice of Dr. Agnew. Jeaffreson,⁸ two cases; Moore⁹ mentions a case occurring in the practice of a colleague. Brown,¹⁰ one case, although it is not reported as one of hysteric blindness; Buzzard,¹¹ one case; but it is not stated positively that the amaurosis was complete. Dujardin-Beaumetz and Abadie,¹² Thompson,¹³ Mendel,¹⁴ and Oppenheim,¹⁵ each one case, the latter's patient having had thirteen attacks in ten years, one of them lasting a year and a half. Gowers¹⁶ reports a case in which there were several transient attacks. I have included in this category two cases reported by Barkan,¹⁷ although in each instance a careful examination revealed perception of light on one side. Since the foregoing was written Mitchell has reported a case.¹⁸ A more extended search would possibly bring additional cases to light, especially from the older literature cases recorded as simulated blindness and malin-

gering, for prior to the investigations of the French school these cases were not generally understood, and even now there are physicians who can not, or at least do not, distinguish between patients who see but who do not know it, and those who see but will not tell it. But in considering the cases we have only to remember that hysteric amaurosis is simply an hysteric anesthesia, produced by the same processes and amenable to the same laws as other hysteric anesthetics. There is no essential difference between monocular blindness with binocular vision and total anesthesia of the hand which still allows the patient to tie a bow beneath her chin with unimpaired dexterity. Some of the older cases of "reflex blindness" from slight injury of the eye or from irritation of the fifth nerve were doubtless hysteric.¹⁹

The diagnosis of hysteric blindness is usually not difficult if the physician simply bear in mind the possibility of its occurrence and have a fair knowledge of the symptomatology of hysteria. What may be called the negative symptoms are first to be considered. The pupils are ordinarily normal, the fundi oculi are normal as are also the cranial nerves; the corneal and lachrymal reflexes are present and the interrupted galvanic current causes flashes of light as in a normal eye; but it must not be forgotten that exceptions have been noted to all these rules. In Mendel's case the pupils sometimes responded to light and sometimes were fixed; one of Harlan's cases had rigid pupils as did also that of Dujardin-Beaumetz and Abadie, and in Levy's and one of Barkan's cases they reacted sluggishly. In Levy's case also the corneal reflex was lost and the eyes turned upward and to the left, and in one of Jeaffreson's cases there was no light-reflex to the galvanic current. The fact that the blindness is not due to changes in the intra-ocular structures does not preclude the fortuitous presence of such changes; for instance, Gilles de la Tourette alludes to a case with syphilitic choroiditis. Hysteric strabismus, ptosis, facial paralysis and deviation of the tongue have been observed and there is nothing to exclude the possibility of any one of these complicating hysteric blindness. Donath,²⁰ in a case of hysteria under observation for four months, found that sometimes one pupil, sometimes the other did not respond to light and this was accompanied by paralysis of accommodation, but there was no amaurosis. S. Weir Mitchell²¹ reports a peculiar instance of hysteric amblyopia almost reaching amaurosis in which the pupils reacted sluggishly and at times that of either eye only to light let fall upon the retina of the opposite eye. In making the diagnosis it is to be remembered that a lesion of the brain may cause total blindness with normal pupils and fundi if the focus of disease be bilateral, situated posterior to the corpora quadrigemina, and large enough to destroy the visual centers or cut the optic radiations on both sides; but a lesion of such magnitude whether due to hemorrhage, softening, inflammation, abscess or a new growth would cause other and marked concomitant symptoms, and therefore another necessary negative symptom of hysteric amaurosis would be the absence of other signs of such a lesion. The positive symptoms to be considered would be those of hysteria but I shall stop at the barest mention of the principal ones. Anesthesia,

¹ *Traité de l'Hystérie*. Paris, 1891.

² *Traité de l'Hystérie*. Paris, 1891.

³ *Traité de l'Hystérie Clin. et Théor.* Paris, 1859.

⁴ *N. Y. Med. Jour.*, Feb. 9, 1889.

⁵ *Med. News*, Feb. 14, 1891.

⁶ *Ueber hyst. Amaurose*. Inaug. Dissert. Berlin, 1890. Abstract in *Neurolog. Centralbl.* Sept. 15, 1890.

⁷ *Med. News*, Jan. 11, 1890.

⁸ *Lancet*, April 13, 1889.

⁹ *Internat. Clinics*, 11, second series, p. 315.

¹⁰ *Northwestern Lancet*, Oct. 15, 1890.

¹¹ *Diseases of Nerv. Syst.*, p. 91.

¹² *Soc. Méd. des Hôp.*, 1879.

¹³ *Transactions Med. Ass'n Missouri*, 1893, p. 165.

¹⁴ *Deutsche Zeits. f. prakt. Med.*, 1871, No. 17.

¹⁵ *Lehrbuch der Nerven*. Berlin, 1891.

¹⁶ *Diseases of Nerv. Syst.*, Vol. II, p. 165.

¹⁷ *Zwei Fälle von vollenständiger Erblindung in Folge von männlicher Hysterie*. Heftung. Festschrift zum Fünf- und zwanzigjährigen Jubiläum des Vereins Deutscher Aerzte zu San Francisco, 1895.

¹⁸ *Med. News*, Aug. 24 and 31, 1895.

¹⁹ Vid. J. Santos Fernandez, *Amer. Jour. Med. Sciences*, January, 1881.

²⁰ *Deutsche Zeitsch. für Nervenhe.* Bd. 11, p. 217.

²¹ *Med. News*, Jan. 28, 1893.

hyperesthesia, monoplegia, hemiplegia, paraplegia, contracture, tremor, chorea, stuttering and other affections of speech, disturbance of the special senses, convulsions and the general mental state, any of these bearing the characteristics known to belong to hysteria; vaso-motor phenomena, loss of pharyngeal reflex, and especially anesthesia of the conjunctiva and eyelids are to be mentioned and always sought for. The mode of onset might be of diagnostic worth; blindness coming on suddenly after great psychic disturbance or gradually as a concentric and increasing contraction of the field of vision with dyschromatopsia, or following an etiologic factor sufficient for auto-suggestion but inadequate to produce blindness otherwise, as a slight traumatism, atropin dropped into the eye or association with a blind person, would indicate the hysterical nature of the affection. But hysterical amaurosis may come on without ascertainable cause (possibly during the night) in a person who has never shown any signs of hysteria and who is found to bear none of the stigmata; that is, the case may be an example of primary, or initial, mono-symptomatic hysteria. We must then depend entirely upon the negative signs and it is particularly in these cases that hypnotism may come to our aid in diagnosis as in treatment. Hysterical blindness is to be differentiated from that of exhaustion or anemia and if it follow an injury, especially in the vicinity of the eye, with profuse hemorrhage, the diagnosis might at first be difficult. Neither is the hysterical affection to be confused with the blindness of ophthalmic migraine, that is, migraine with marked disturbances of vision. These consist ordinarily of scintillating or central scotoma, amblyopia, or hemianopia not infrequently accompanied by disturbances of speech. There may also be visual hallucinations or transient blindness. Charcot and Babinski²² have attempted to show that this affection is sometimes hysterical but, however that may be, the blindness is totally distinct from hysterical blindness. We might have an hysterical ophthalmic migraine accompanied by an amaurosis that could not be called hysterical, and we might have an hysterical amaurosis following a migraine not in the least hysterical. The pathology of the two affections is entirely different. The one is of purely psychic origin, the other due to a disturbance, probably circulatory, of the visual centers. There is another psychic blindness that is to be distinguished from the hysterical, although the lines of division may blend in individual cases. This I am tempted to call the blindness of insanity and is simply a delusion entirely comparable to the ordinary delusions of the psychoses. These cases again shade off into those of photophobia, blepharospasm, etc., in which the patient fears the light, can scarcely open the eyes, may believe that he is blind but can see if he can be made to look.

Hysterical pseudo-meningitis, a knowledge of which we owe almost entirely to our French confrères, was first described as such in 1873 independently by Arnozan²³ and Saint-Ange,²⁴ although Briquet fifteen years previously had written of hysterical headache accompanied by chills, vomiting and sometimes fever. The principal later contributions have been by Dalché,²⁵ Chantemesse,²⁶ Macé,²⁷ Pitres,²⁸ Bardol,²⁹

and Brugère,³⁰ although a number of cases have been reported by other observers in France, Germany and England; none, so far as I know, in this country. I shall give here but the briefest résumé of the subject and pass rapidly to the report of my case which is, I believe, unique in showing the combination of this symptom-complex with hysterical amaurosis.

Hysteria may present a clinical picture so similar to acute or subacute meningitis as, for a time, to make a correct diagnosis impossible. There may be constant headache, vomiting, retracted abdomen, rigidity of the spine, opisthotonos, double vision, great prostration and mental hebetude, delirium or somnolence, retention or incontinence of urine, convulsions, with fever and rapid or subnormal pulse. Furthermore, the vomiting of hysteria is like that of meningitis, spasmodic, projectile, generally without nausea or gastric pain. The fever of meningitis is ordinarily moderate and irregular or rapidly fluctuating; the same may be said of that of hysteria. In hysterical pseudo-meningitis temperatures of 101, 101.5, 101.8, 102.5 and 103.1 degrees F., have been observed and a pulse-rate as low as 48. The diagnosis must generally be made by means of other symptoms of hysteria (as indicated in connection with hysterical amaurosis) although in some cases the entire absence of fever and abnormality of the pulse indicate the character of the affection. In most instances a careful search has revealed hysterical stigmata. In Charcot's case a rhythmic chorea at once gave the clew. In one of Guignon's cases it was the general conduct of the patient that indicated the nature of the malady. Occasionally only the sudden recovery of the patient has changed the diagnosis to hysteria. In one case Chantemesse demonstrated an inversion of the ratio of the urinary phosphates, such as was found by Gilles de la Tourette and Cathelineau³¹ to be characteristic of an hysterical attack. As Gowers has pointed out, the strabismus of hysteria is nearly always convergent, of both eyes and spasmodic, while that of meningitis is paralytic and not equally convergent on both sides from the first. In the hysterical affection with pain in the head a hysterogenic zone may at times be found on the scalp. In a doubtful case where the question of tubercular meningitis is to be considered the tuberculin test for tuberculosis might be tried or tapping the spinal canal with examination of the fluid for bacilli. The pupils are generally and the fundi oculi always normal, but these signs are of small negative value. The pulse in the hysterical affection may be rapid, normal or slow, but has never been observed to be irregular. Indeed as there is no pathognomonic symptom of meningitis and no one symptom is necessary to make the diagnosis, neither the presence nor absence of the disease can be affirmed from one symptom.

Case.—C. J., a Swedish servant girl, aged 30, was brought to the Policlinic Hospital, Monday, Oct. 26, 1894. The preceding Friday she had been taken with a severe pain in and above the left eye. The pain continued and she rapidly lost vision, first in the left eye, then in the right and when she entered the hospital she was totally blind. She was seen by the ophthalmologists, Drs. Coleburn, Mahoney and Wilder, who, finding no local trouble to account for the blindness, the following day referred her to me. I saw her, for a few minutes only, the same evening. Her pulse was 120, temperature 100 degrees F., tongue thickly coated: there was evidently marked prostration and considerable mental hebetude. When ques-

²² Archives de Neurol., 1890. Vol. 20, p. 305.

²³ Gaz. Méd. de Bordeaux. 1873, p. 250.

²⁴ Ibid. 1873, p. 292.

²⁵ Gaz. Méd. de Paris. Jan. 17, 1885.

²⁶ Thèse de Paris, 1884, and Soc. Méd. des Hôpitaux, May 28, 1891.

²⁷ Thèse de Paris. 1888.

²⁸ Leçons sur l'Hyst. etc. 1891. Vol. I, p. 198.

²⁹ Thèse de Paris, 1893, and Rev. Mens. des Mal. de l'Enf. XI, p. 296.

³⁰ Thèse de Bordeaux. 1893.

³¹ La Nutrition dans l'Hystérie; Prog. Méd. 1890.

tioned she complained of extreme pain in the head, worse on the left side, especially in the frontal and temporal regions; the pain extended to the face, back of the neck and to a certain degree down the spine and there were some fugitive pains in the extremities. Marked tenderness to percussion was present all over the left side of the head and face except the inferior maxillary region, and to a lesser degree on the opposite side and along the upper spine. Cutaneous hyperesthesia was also marked, greatest where the pain was greatest but to some degree over the entire body. The head was not retracted but there was rigidity of all the extremities and the deep reflexes were abnormally brisk. The abdomen was not retracted but the patient was constipated and had vomited some. She was totally blind in both eyes. There was no perception of candle-light even as condensed by a two-inch lens, nor did the eyes follow the light or show, by other involuntary movement, recognition of the illumination. The fundi were normal, the pupils reacted promptly to light from all parts of the field and there were no ocular paralyses. Other cranial nerves were apparently normal except that she was totally deaf in the left ear. This deafness had come on since the beginning of the attack. As before stated, there was marked general weakness, but no localized paralysis and no anesthesia was discovered. There had been no convulsions. Thoracic and abdominal viscera were normal except a small patch of broncho-vesicular breathing below and internal to the angle of the right scapula. She was menstruating and the pelvic viscera were not examined. The foregoing data were too conflicting to allow of a positive diagnosis at once and I made none. I think it will be allowed that with a temperature of 100 degrees F., pulse 120, excruciating headache, pain and rigidity back of the neck, vomiting, constipation, foul tongue, hyperesthesia and increased reflexes it looked much like cerebro-spinal meningitis. But this would not account for the blindness without other ocular trouble, nor for the deafness without involvement of the facial. A meningitis with an abscess in the occipital region might have been invoked to explain the symptoms but the abscess would have to be large enough to destroy the visual centers in both hemispheres or cut the optic radiations of both sides posterior to the corpora quadrigemina. But there was no discoverable source of infection and the blindness had come on within forty-eight hours, too quickly for the development of such an abscess. An ice-coil was ordered to the head and the next morning found the patient rather more comfortable but in much the same condition as the previous evening. A more careful examination now showed that although she was deaf in the left ear and heard perfectly well with the right, yet when I spoke loudly into the left ear, the right remaining uncovered, she heard nothing. This was strong evidence, not of simulation, but of hysteria, and a prolonged search for stigmata finally revealed to the right of the sternum between the second and third ribs a spot of anesthesia about the size of a silver quarter. As I continued to examine and to try to accurately define this area it grew in extent until it reached the opposite side and up to the neck. I now felt reasonably sure of the diagnosis, or at least part of it, and as I had secured the attention of the patient by the examination of sensation, I immediately hypnotized her by simple suggestion. Fortunately, she was a good subject, although never hypnotized before, and in a few minutes suggestion had greatly ameliorated the pain and tenderness. The hypnosis with suggestion for the pain and tenderness was repeated in the evening with excellent results. The next morning she was quite comfortable and had a faint perception of light with the right eye. She was hypnotized and told that she could count fingers with this eye and on being awakened she was able to do so readily. A repetition of the treatment in the evening enabled her to read print. The left eye was still completely blind, but one sitting gave her perception of light, and the eye now followed the candle as it was moved about. The next morning she was given three sittings, one immediately after the other, enabling her in turn to count fingers, read print left eye, and hear perfectly with the left ear.

She remained in the hospital about six weeks but the further history may be summarized. No very severe symptoms appeared, but she was troubled by a number of minor ailments, some of them very annoying. Aching pains in the back, abdomen, chest and extremities, anorexia, emesis, constipation, insomnia and once retention of urine for a day and a half, at the end of which time it was drawn, were some of the symptoms. They all came and went and varied in intensity without apparent cause, and were generally tem-

porarily relieved by hypnotism, except the retention of urine and constipation. In connection with this case there are a few points that would seem, perhaps, to merit a more special mention.

Relation of the Headache to Loss of Sight.—Careful inquiry elicited the fact that the attack began as an ophthalmic migraine, that is, a severe headache with scintillating scotoma, or at least a play of lights and colors that she could not accurately describe; further, that about January, 1893, up to which time she had been perfectly well, she had a severe headache over and in the right eye, with impaired vision for a few days. About nine months before the present illness she had had a second and more severe attack on the left side, with complete blindness of the left eye lasting two or three weeks, and vision was still somewhat impaired when this last attack occurred, in which the pain distinctly preceded the visual trouble. Furthermore, during her stay in the hospital the most constant of her troubles was headache, and it invariably affected the visual function. When it was intense, as it was on one or two occasions, she would be unable to count fingers; if it were of moderate severity she would be unable to read ordinary print; when she had no headache her visual acuity was practically normal. The pain in the head was almost exclusively on the left side and it was as invariably the left eye which displayed the amblyopia. This difficulty in seeing could always be relieved by hypnotism, but what is of greater interest is the fact that suggestion directed against the pain *alone* would improve the sight. Again, when the pain was rather severe she had in addition to more or less amblyopia, marked dyschromatopsia, green and blue being lost, with greatly contracted fields for red and white. Relieving the headache by suggestion, not a word being said about vision or colors, never failed to remove the dyschromatopsia and enlarge the previously contracted fields. With the amblyopia she had at times diplopia or polyopia monocularis, which was also banished by relieving the pain. All of this goes to support the modern doctrine that hysteric manifestations are of purely psychic origin and due to the development of a sub-conscious imperative conception, the "idée fixe subconsciente" of the French. I do not like the term, but it seems better than any current one to express the process in these cases.

The Fever.—As before noted, the girl had a temperature of 100 degrees F. when first seen, and during almost her entire stay in the hospital it remained elevated. It was generally about 99 degrees F., never exceeded 100 degrees F., but seldom fell to the normal. At the same time the pulse was somewhat accelerated. The question of hysteric fever has been a bone of contention among pathologists and clinicians for more than a hundred years (Pomme, 1760-1782) and although its existence would now seem to be an established fact, yet in these days of recognized multifarious infection it must be repugnant to most of us to make, in any particular instance, this diagnosis. I have been loath to do so in my case and can only say that no other cause could be discovered. There seemed to be no probability of a malarial element in the case, but she was given an active course of quinin and arsenic. Although she was at times constipated, yet the bowels received attention³² and I

³² I saw some years ago in consultation a case of hysteria in which the attending physician had made a diagnosis of meningitis, and in which the fever was doubtless due to intestinal intoxication.

think intestinal infection may be excluded. She coughed at times, but râles were never heard and the cough had all the characteristics of a nervous affection. No sputum could be obtained for examination. The small area behind where respiration was slightly bronchial in character remained unchanged weeks after her fever had left. In short, no source of infection was discovered. Her temperature, moreover, was irregular, rose and fell without any apparent cause and eventually disappeared rather suddenly.

The *Relations of the Case to Hypnotism* may be very briefly stated. The patient went to sleep promptly at the first attempt; but it should be added that a friend had been treated by hypnotism in Stockholm so it was not entirely unknown to her. It was an efficient diagnostic and therapeutic aid although the diagnosis might have been made without it and other treatment might have been equally effective, if less rapid, in producing the desired results. Although hypnotic suggestion was so effective the patient was never unconscious and afterwards could remember all that had been said to her. For instance, she recalled perfectly being told that she could feel nothing with her left arm, but did not know that I had thrust a pin into it. I tried once one variety of what has been called hypnotism at a distance, although in this case as, I think, in all others, it was an instance of simple suggestion. As before noted, she suffered from insomnia and one morning I told her—not during hypnosis—that at nine o'clock in the evening she should think of me, imagine me with her in my usual place, count nine, and that when she reached nine she would fall asleep, as I would put her to sleep from my home. She did as directed and it succeeded admirably.³³ She subsequently tried this a number of times of her own accord without avail. I also tried post-hypnotic suggestion; this several weeks after she had left the hospital. During hypnosis I raised her arm and told her it was rigid and would remain so after she should awake until I should give her permission to lower it. When awakened the arm remained above her head. At this juncture I was called from the room and on my return after a few moments I found her just as I had left her. After some conversation, I asked her what her hand was doing up there and she replied with a rather shame-faced expression, "you know well enough I can't put it down."

The patient one day, several weeks after having left the hospital, asked me if I was the doctor who told her at the time she was blind to make a face at him (I had done so to test the facial) and I then learned that that was the only incident of my first examination that she remembered, there having been, as stated, considerable mental hebetude. I hypnotized her and then with some urging she recalled most of the details of the examination, and what is of greater interest, could remember them after coming out of the hypnosis.

These seemingly unimportant details are cited to show that the most profound hypnosis is not necessary for effective suggestion.

Venetian Building.

³³ Needless to say I did not think of her at all and that the process was one of auto-hypnosis.

PASTEUR's birthplace, the town of Dole in the Jura, has appropriated \$1,000 for a memorial to him, and solicits subscriptions from abroad to make it a worthier testimonial to this famous scientist.

AUTOSCOPY OF THE LARYNX AND OF THE TRACHEA.

Demonstrated before the Academy of Medicine in Cincinnati.

BY M. THORNER, A.M., M.D.

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Dr. Alfred Kirstein, of Berlin, has of late perfected a method of examining the air passages without the aid of laryngeal mirrors, which he calls *autoscopy*. This word indicates, according to the inventor, a method by which the interior portions of the larynx and trachea *themselves*, can directly be seen, and *not* their *image*, as we are wont to see it in the usual way of laryngoscopic examination. The writer has seen some of the early experiments with this method, and has been able to watch its development to the present state of perfection; and from these observations as well as from his own experiences with this method, he is prepared to say that the autoscope must be considered, to say the least, a very important addition to our armamentarium.

The development of this method from its beginnings is very interesting as it appears in the early publications of the inventor.¹ His first communication on this subject began with the words: "The usual method of laryngoscopy does not show us the larynx itself, but its reflected image. I have discovered, however, that the interior of the larynx is open to direct inspection in a great number of people; many manipulations in this region can be done under direct supervision of the eye, without the aid of mirrors, prisms or similar appliances." His instrument then consisted of a metallic tube, about 25 cm. long. It was introduced behind the well-cocainized epiglottis, while the patient was in the horizontal position with the head hanging over the edge of the table; and for better fixation, a Mikulicz-Rosenheim esophagoscope was previously introduced into the esophagus. It was possible by illuminating the laryngeal tube with electric light, to get a good view of the interior of the larynx.

But what a torture such an examination must have been to the patient! And what a difference between these first experiments and the present method of examination! I shall not detail all the different steps of evolution of the autoscope, but simply say that autoscopy as it stands now is the logical outcome of these early attempts.² The fundamental change from these to the present method consists in the substitution of the laryngeal tube by a spatula; and by the application of the fact that it is sufficient in some people to push the tongue downward and forward with an ordinary tongue depressor, to get a view of the epiglottis, the interior of the larynx, and sometimes even of the trachea. This fact is well known to everybody who works a great deal with the tongue depressor. It has been made use of by Reichert, when, in 1879, he described his method for

¹ Laryngoscopia directa und Tracheoscopia directa (Besichtigung des Kehlkopfes u. d. Luftröhre ohne Spiegel), Eine vorl. Mittheilung. Allg. med. Centr. Zeitg., 1895, No. 34. Autoskopie d. Larynx u. d. Trachea (Besichtigung ohne Spiegel), Berl. klin. Wochenschr., 1895, No. 22. Autoskopie d. Larynx u. d. Trachea, Archiv f. Laryngologie u. Rhinologie, Bd. iii, 1 u. 2 Heft. Autoskopie des Lar. u. d. Trachea (directe Besichtigung ohne Spiegel), Sitzungsbericht d. Versammlg. süddeutscher Laryngologen zu Heidelberg am 4. Juni, 1895. München. Med. Wochenschr., 1895, No. 28.

² Fortschritte in der Untersuchung des Rachens und des Kehlkopfes ohne Spiegel (Autoskopie), Allg. med. Centr. Ztg., 1895, No. 48. Meine verbesserte Methode der Autoskopie der Luftwege, Allg. med. Centr. Ztg., 1895, No. 51. Autoskopie der Luftwege (Selbstschau, Besichtigung ohne Spiegel), Therapeut. Monatshefte, Juli, 1895. Autoskopie der Luftwege, Deutsch. med. Wochenschr., 1895, No. 38.

the elevation of the epiglottis in laryngoscopic operations,³ which mainly consists in firm pressure upon the root of the tongue and the median glosso-epiglottic ligament, whereby the epiglottis is readily elevated. Add to this the possibility of placing the body in such a position that the longitudinal axis of the laryngo-tracheal tube forms a straight (instead of an angular) line with the axis of the buccal cavity, and you have the two main conditions for the execution of this method.

The instrument, called by Kirstein the autoscope, consists of three parts, viz.: the spatula, the sliding hood and the handle.

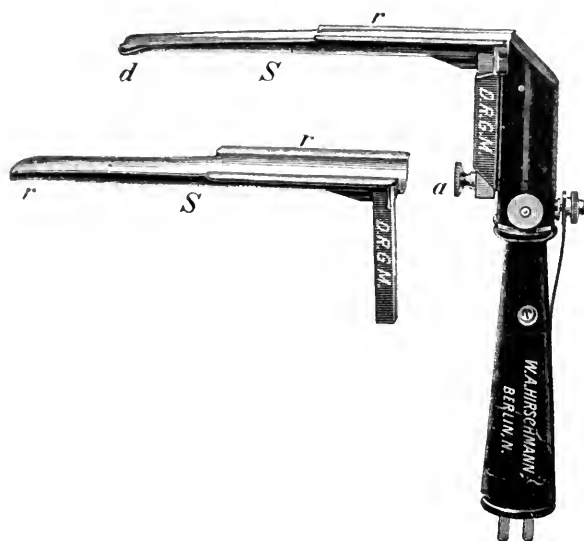


FIGURE 1.

The spatula (Fig. 1, S.) is a slightly concave metal plate of 14 cm. length, which is in the main straight, but is slightly curved downward toward its laryngeal end (d). This extremity has also a somewhat thickened lip, and has well rounded edges to prevent injury to the parts with which it comes in contact. Here its width is about 1.5 cm., while the other, the proximal extremity, is about 2.5 cm. broad.⁴ At this end there descends at a right angle from it a square metallic bar by which it is connected with the handle by means of a set screw (a). The sliding hood (Fig.



FIGURE 2.

2) is 6 cm. long, and 3 cm. broad, is made in different heights, and is attached, by means of a sliding arrangement (Fig. 1, r), to the proximal extremity of the spatula. The hood serves the purpose of keeping the teeth, the lips and, in man, the mustache away from the spatula, leaving thus sufficient space between the two plates for inspection and for the introduction of any instrument. As handle most convenient the well-known electroscope of Casper is used, to which the spatula is attached at a right angle. This instrument contains a small electric lamp, the light of which is focused through a convex lens, and then deflected ninety degrees by the aid of a prism: thus the light is thrown along the spatula, in

the direction of the laryngeal cavity, which is brilliantly illuminated.

The technique of the examination is the following: The physician stands before the patient, who is seated on a chair (Fig. 3), with the neck slightly inclined forward. After connecting the electroscope with a battery, the circuit is closed by pressure upon the button, and the illuminated instrument is introduced into the mouth in exactly the same manner as in applying an ordinary tongue depressor. This is the first position, or pharyngoscopy, by which the usual picture of the buccal cavity and of the oral pharynx may be inspected.

In the second position (autoscopy of the lower portion of the pharynx), the spatula is gently pushed further backward, and the handle is gradually elevated, while a firmer pressure, directed downward and forward, is being made upon the base of the tongue. During this whole procedure the physician must by no means omit looking steadily along the well-illuminated instrument. It is now easy to overlook the entire anterior surface of the epiglottis with its ligaments and the valleculæ, a larger portion of the posterior and lateral walls of the pharynx, and sometimes also the arytenoid cartilages and the pyriform sinuses.

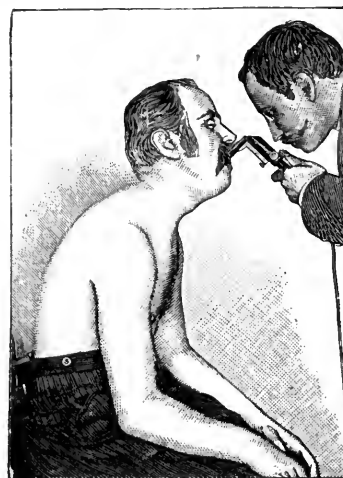


FIGURE 3.

This photograph was taken from a partly stripped patient in order to show distinctly the position of neck and head during examination.

For the third position (autoscopy of the larynx and the trachea), the handle is still more elevated, so that the plate of the sliding hood comes in contact with the upper incisors, whereby, however, every pressure on the teeth must be strictly avoided, and while the laryngeal end of the spatula now firmly depresses the base of the tongue in a downward and forward direction great care must be taken to not use the upper incisors or the alveolar process (in case a set of artificial teeth has been previously removed), as a fulcrum in order to exercise a firmer pressure upon the base of the tongue by leverage. During this procedure the slightly notched distal end of the spatula is receiving the median glosso-epiglottic ligament, upon which by means of the curved and thickened extremity of the spatula considerable pressure is exercised, whereby the epiglottis is elevated, so that the laryngeal cavity is now open for inspection. The arytenoid cartilages, the ventricular bands, the vocal cords, the interarytenoid fold, and the subglottic space are now readily seen. To examine the trachea the patient must stretch his neck a little more forward, without elevat-

³ Archiv für klin. Chirurg., Bd. 24, 1879.

⁴ The original instrument had a somewhat shorter, and decidedly broader, spatula, the laryngeal extremity was also not as much curved downward. The description and measurements given here are those of the best improvement.

ing or dropping the head (Fig. 3), so as to allow the axis of the laryngo-tracheal tube to come into a straight line with the axis of the buccal cavity. It is then possible to inspect the whole trachea down to the bifurcation, and the beginning of the bronchial tubes. The division of the examination into three positions is entirely arbitrary, and the various steps of an examination should never be done in an abrupt manner; on the contrary, it will ordinarily be carried out without any interruption, and with one or a few quick movements, and requires usually but a few seconds.

There may be a few obstacles to this method in some patients. Some people have such an irritable throat that they have to get use to these manipulations. In others again it is impossible to elevate the epiglottis sufficiently by pressure upon the base of the tongue. For such cases a special spatula has been constructed, the laryngeal end of which does not descend, but is level with the body of the spatula, and perfectly smooth. This spatula is introduced behind the epiglottis, which must have been previously well cocaineized, and in this manner the epiglottis is elevated. In all other cases one must be particularly careful not to introduce the spatula behind the epiglottis as this causes wrenching and coughing, and renders an examination impossible. In case of operative procedures the instruments (for instance curette, forceps, etc.) introduced into the larynx keep the epiglottis elevated. It goes without saying that instruments for autoscopic operations must be especially constructed for this purpose, *i. e.*, having a long (about 20 cm.), straight shaft attached to a handle at an obtuse angle, after the fashion of the nasal instruments.

This method has grown beyond the stage of a mere experiment; it is a fact. According to the inventor it is of equal importance for the specialist as laryngoscopy. It may be readily admitted that it is not an easy art; that it should be studied and practiced just as well as laryngoscopy and rhinoscopy. But the results are surprising to the observer who has been in the habit of examining the larynx exclusively with mirrors. It is true that there may be as yet a few shortcomings to this method; for instance, it is difficult to get a good view of the anterior commissure with the autoscope, at least in a number of patients; yet, as the inventor truly remarks, this is sometimes also the case with the ordinary laryngoscopic examination. However, the inventor himself, and those who have practised autoscopy and have some experience with it, do not insist upon saying that it will supplant laryngoscopy, or that it may be used in all cases. This would be exaggeration. But at this time it may be stated that it will prove a valuable adjunct to laryngoscopy to the physician, who knows when to use the one and when to apply the other. I may state from a somewhat extended personal experience with this method, that it is, in skilled hands, by no means painful to those patients, in whom it can at all be exhibited; and their number is by no means so small as it might appear to those who first attempt to use the autoscope. And you may notice that this patient whom I used for this demonstration, does not show the least uneasiness. It requires only some patient practice with this instrument, in order to become familiar with the proper manipulations, which must be firm and decided, and yet gentle, and to a certain extent, yielding. If thus

executed, autoscopy will in most cases be considered only moderately disagreeable by the patient. And in spite of its disadvantages it certainly has some great advantages. The actual tissues appear in autoscopy before the eye of the physician, and not their image, and the anatomic details appear with a clearness that must be seen to be appreciated. Above all, the posterior wall of the larynx, the interarytenoid fold, which can be examined only with great difficulty by the aid of the mirror, can be inspected almost in a surface view; and the possibility of inspecting the whole of the trachea, and the beginning of the bronchi would alone be sufficient to insure for autoscopy recognition among our most valuable diagnostic and therapeutic resources.

PULMONARY TUBERCULOSIS—ITS DIMINISHING PREVALENCE.

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In a paper presented, several months ago, to the Chicago Medical Society, I enunciated the proposition that pulmonary tuberculosis is declining in prevalence, and supported the assertion by some condensed statistical tables. The conclusions arrived at, although neither novel nor surprising, have met with no hearty acceptance. On the contrary, I have been informed that my deductions were extracted from an array of facts much too circumscribed; that a careful survey of a wider field would show other and differing premises; that my conclusions were misleading; that the prevalence of pulmonary tuberculosis has, in fact, undergone no decline. Recently I have tabulated statistics from a broader field, as suggested, with the result of confirming the opinion previously expressed.

Readily accessible medical literature gives us very little information upon this subject.

Weitemeyer¹ informs us that in Munich during the 75 years from 1814 to 1888, there were 329,862 deaths from all causes, and 47,282 from pulmonary tuberculosis, equal to 14.33 per cent. In periods of 25 years the proportion was as follows:

First 25 years	15.34 per cent.
Second 25 years	14.93 " "
Third 25 years	13.71 " "

The decline is equivalent to 10 per cent.

In the same city the death rate from pulmonary tuberculosis, per 1,000 of population, was, in 1883, 4.08, and in 1893, 3.08, a decline of 24.5 per cent.²

Hollinger³ gives the following additional statistics:

Berlin, 1883	3.47 per 1,000 of population.
" 1893	2.57 " "

A decline of 54.8 per cent.

Vienna, 1883	6.92 per 1,000 of population.
" 1893	4.70 " "

A decline of 31.7 per cent.

Simpson⁴ states that in the 11 years, 1873 to 1883, pulmonary tuberculosis declined in prevalence in the North of Scotland.

Borden⁵ gives an example of extraordinary susceptibility and increasing fatality in the case of the Apache Indians, as follows:

Average annual population	388
Deaths from pulmonary tuberculosis	15.6
Rate per 1,000 of population	40

Being averse to burdening medical literature with any unnecessary matter, especially of a statistical nature, I addressed a letter to each of twelve of the foremost physicians of this country requesting an answer to the following question:

"Is pulmonary tuberculosis increasing or decreasing in prevalence, and, if either, to what do you attribute the change?"

Of those who kindly replied to the interrogatory not one gave an answer satisfactory to himself. Each stated that the opinion which he expressed was based upon personal impressions and experience and not upon statistical evidence. In the majority of instances the fact is mentioned that the writers were unable to refer to any statistics upon this subject. It would seem, therefore, that the material presented in the accompanying tables will not be found useless or superfluous.

As already stated, the tables show a marked, widespread and steady decline in the prevalence of the malady under consideration. This is so clearly and graphically shown as to render any extended comment in the text unnecessary.

TABLE I.—MORTALITY OF PULMONARY TUBERCULOSIS PER 1,000 OF POPULATION.

New York											
Year.	Population.	Deaths from Pulm. Tuberc.	Per 1,000 Pop.	Year.	Population.	Deaths from Pulm. Tuberc.	Per 1,000 Pop.	Year.	Population.	Deaths from Pulm. Tuberc.	Per 1,000 Pop.
1805	76000	262	6.8	1835	270000	1637	5.6	1865	729000	3394	4.65
1806	78600	354	4.5	1836	278000	1514	5.4	1866	766000	3481	4.53
1807	83500	464	4.56	1837	287000	1458	5.0	1867	808000	3256	4.03
1808	87500	427	4.90	1838	295000	1225	4.15	1868	851000	3414	4.01
1809	91600	413	4.51	1839	304000	1318	4.33	1869	896000	3364	3.75
1810	96000	519	5.33	1840	313000	1276	4.12	1870	943000	4030	4.27
1811	96000	575	6.20	1841	324000	1270	4.53	1871	956000	4186	4.37
1812	96000	667	6.97	1842	335000	1339	3.99	1872	967000	4274	4.41
1813	96000	562	5.93	1843	347000	1503	4.33	1873	982000	4134	4.20
1814	96000	572	5.96	1844	357000	1429	3.97	1874	1031000	4034	3.91
1815	100000	613	6.15	1845	371000	1657	4.47	1875	1044000	4172	3.99
1816	104000	675	6.52	1846	377000	1698	4.29	1876	1075000	4184	3.90
1817	108700	574	5.30	1847	424000	1726	4.54	1877	1108000	4045	3.65
1818	112000	571	5.21	1848	453000	1867	4.12	1878	1141000	4468	3.91
1819	118000	577	4.90	1849	484000	2086	4.31	1879	1175000	4343	3.67
1820	123000	625	5.09	1850	517000	1722	3.71	1880	1209000	4706	3.89
1821	131000	715	5.46	1851	538000	2374	4.41	1881	1244000	5312	4.27
1822	139000	624	4.50	1852	561000	2487	4.43	1882	1281000	5247	4.10
1823	147000	643	4.63	1853	584000	2739	4.69	1883	1318000	5290	4.01
1824	156000	726	4.70	1854	608000	3032	4.98	1884	1357000	5235	3.87
1825	166000	743	5.08	1855	633000	2635	4.16	1885	1396000	5196	3.79
1826	173000	820	4.73	1856	665000	2478	3.72	1886	1437000	5477	3.81
1827	180000	529	4.60	1857	699000	2314	4.02	1887	1477000	5260	3.55
1828	188000	706	4.82	1858	735000	3046	4.14	1888	1522000	5260	3.45
1829	195000	860	4.51	1859	775000	3237	4.19	1889	1566000	5179	3.30
1830	203000	774	4.71	1860	712000	3186	3.92	1890	1612000	5232	3.41
1831	215000	1033	4.80	1861	795000	3025	3.80	1891	1659000	5160	3.11
1832	229000	1015	6.20	1862	778000	3170	4.07	1892	1707000	5033	2.95
1833	240000	1251	5.19	1863	762000	3075	4.57	1893	1747000	5124	2.91
1834	258000	1071	5.76	1864	745000	3615	4.15	1894	1808000	4658	2.57

England and Wales				Massachusetts				Chicago.			
Year.	Population.	Deaths from Pulm. Tub.	Per 1,000 Pop.	Year.	Population.	Deaths from Pulm. Tub.	Per 1,000 Pop.	Year.	Population.	Deaths from Pulm. Tub.	Per 1,000 Pop.
1800	1,750,000	5113	2.91	1800	1,750,000	5113	2.91	1800	1,750,000	5113	2.91
1801	1,750,000	5113	2.91	1801	1,750,000	5113	2.91	1801	1,750,000	5113	2.91
1802	1,750,000	5113	2.91	1802	1,750,000	5113	2.91	1802	1,750,000	5113	2.91
1803	1,750,000	5113	2.91	1803	1,750,000	5113	2.91	1803	1,750,000	5113	2.91
1804	1,750,000	5113	2.91	1804	1,750,000	5113	2.91	1804	1,750,000	5113	2.91
1805	1,750,000	5113	2.91	1805	1,750,000	5113	2.91	1805	1,750,000	5113	2.91
1806	1,750,000	5113	2.91	1806	1,750,000	5113	2.91	1806	1,750,000	5113	2.91
1807	1,750,000	5113	2.91	1807	1,750,000	5113	2.91	1807	1,750,000	5113	2.91
1808	1,750,000	5113	2.91	1808	1,750,000	5113	2.91	1808	1,750,000	5113	2.91
1809	1,750,000	5113	2.91	1809	1,750,000	5113	2.91	1809	1,750,000	5113	2.91
1810	1,750,000	5113	2.91	1810	1,750,000	5113	2.91	1810	1,750,000	5113	2.91
1811	1,750,000	5113	2.91	1811	1,750,000	5113	2.91	1811	1,750,000	5113	2.91
1812	1,750,000	5113	2.91	1812	1,750,000	5113	2.91	1812	1,750,000	5113	2.91
1813	1,750,000	5113	2.91	1813	1,750,000	5113	2.91	1813	1,750,000	5113	2.91
1814	1,750,000	5113	2.91	1814	1,750,000	5113	2.91	1814	1,750,000	5113	2.91
1815	1,750,000	5113	2.91	1815	1,750,000	5113	2.91	1815	1,750,000	5113	2.91
1816	1,750,000	5113	2.91	1816	1,750,000	5113	2.91	1816	1,750,000	5113	2.91
1817	1,750,000	5113	2.91	1817	1,750,000	5113	2.91	1817	1,750,000	5113	2.91
1818	1,750,000	5113	2.91	1818	1,750,000	5113	2.91	1818	1,750,000	5113	2.91
1819	1,750,000	5113	2.91	1819	1,750,000	5113	2.91	1819	1,750,000	5113	2.91
1820	1,750,000	5113	2.91	1820	1,750,000	5113	2.91	1820	1,750,000	5113	2.91
1821	1,750,000	5113	2.91	1821	1,750,000	5113	2.91	1821	1,750,000	5113	2.91
1822	1,750,000	5113	2.91	1822	1,750,000	5113	2.91	1822	1,750,000	5113	2.91
1823	1,750,000	5113	2.91	1823	1,750,000	5113	2.91	1823	1,750,000	5113	2.91
1824	1,750,000	5113	2.91	1824	1,750,000	5113	2.91	1824	1,750,000	5113	2.91
1825	1,750,000	5113	2.91	1825	1,750,000	5113	2.91	1825	1,750,000	5113	2.91
1826	1,750,000	5113	2.91	1826	1,750,000	5113	2.91	1826	1,750,000	5113	2.91
1827	1,750,000	5113	2.91	1827	1,750,000	5113	2.91	1827	1,750,000	5113	2.91
1828	1,750,000	5113	2.91	1828	1,750,000	5113	2.91	1828	1,750,000	5113	2.91
1829	1,750,000	5113	2.91	1829	1,750,000	5113	2.91	1829	1,750,000	5113	2.91
1830	1,750,000	5113	2.91	1830	1,750,000	5113	2.91	1830	1,750,000	5113	2.91
1831	1,750,000	5113	2.91	1831	1,750,000	5113	2.91	1831	1,750,000	5113	2.91
1832	1,750,000	5113	2.91	1832	1,750,000	5113	2.91	1832	1,750,000	5113	2.91
1833	1,750,000	5113	2.91	1833	1,750,000	5113	2.91	1833	1,750,000	5113	2.91
1834	1,750,000	5113	2.91	1834	1,750,000	5113	2.91	1834	1,750,000	5113	2.91
1835	1,750,000	5113	2.91	1835	1,750,000	5113	2.91	1835	1,750,000	5113	2.91
1836	1,750,000	5113	2.91	1836	1,750,000	5113	2.91	1836	1,750,000	5113	2.91
1837	1,750,000	5113	2.91	1837	1,750,000	5113	2.91	1837	1,750,000	5113	2.91
1838	1,750,000	5113	2.91	1838	1,750,000	5113	2.91	1838	1,750,000	5113	2.91
1839	1,750,000	5113	2.91	1839	1,750,000	5113	2.91	1839	1,750,000	5113	2.91
1840	1,750,000	5113	2.91	1840	1,750,000	5113	2.91	1840	1,750,000	5113	2.91
1841	1,750,000	5113	2.91	1841	1,750,000	5113	2.91	1841	1,750,000	5113	2.91
1842	1,750,000	5113	2.91	1842	1,750,000	5113	2.91	1842	1,750,000	5113	2.91
1843	1,750,000	5113	2.91	1843	1,750,000	5113	2.91	1843	1,750,000	5113	2.91
1844	1,750,000	5113	2.91	1844	1,750,000	5113	2.91	1844	1,750,000	5113	2.91
1845	1,750,000	5113	2.91	1845	1,750,000	5113	2.91	1845	1,750,000	5113	2.91
1846	1,750,000	5113	2.91	1846	1,750,000	5113	2.91	1846	1,750,000	5113	2.91
1847	1,750,000	5113	2.91	1847	1,750,000	5113	2.91	1847	1,750,000	5113	2.91
1848	1,750,000	5113	2.91	1848	1,750,000	5113	2.91	1848	1,750,000	5113	2.91
1849	1,750,000	5113	2.91	1849	1,750,000	5113	2.91	1849	1,750,000	5113	2.91
1850	1,750,000	5113	2.91	1850	1,750,000	5113	2.91	1850	1,750,000	5113	2.91
1851	1,750,000	5113	2.91	1851	1,750,000	5113	2.91	1851	1,750,000	5113	2.91
1852	1,750,000	5113	2.91	1852	1,750,000	5113	2.91	1852	1,750,000	5113	2.91
1853	1,750,000	5113	2.91	1853	1,750,000	5113	2.91	1853	1,750,000	5113	2.91
1854	1,750,000	5113	2.91	1854	1,750,000	5113	2.91	1854	1,750,000	5113	2.91
1855	1,750,000	5113	2.91	1855	1,750,000	5113	2.91	1855	1,750,000	5113	2.91
1856	1,750,000	5113	2.91	1856	1,750,000	5113	2.91	1856	1,750,000	5113	2.91
1857	1,750,000	5113	2.91	1857	1,750,000	5113	2.91	1857	1,750,000	5113	2.91
1858	1,750,000	5113	2.91	1858	1,750,000	5113	2.91	1858	1,750,000	5113	2.91
1859	1,750,000	5113	2.91	1859	1,750,000	5113	2.91	1859	1,750,000	5113	2.91
1860	1,750,000	5113	2.91	1860	1,750,000	5113	2.91	1860	1,750,000	5113	2.91
1861	1,750,000	5113	2.91	1861	1,750,000	5113	2.91	1861	1,750,000	5113	2.91
1862	1,750,000	5113	2.91	1862	1,750,000	5113	2.91	1862	1,750,000	5113	2.91
1863	1,750,000	5113	2.91	1863	1,750,000	5113	2.91	1863	1,750,000	5113	2.91
1864	1,750,000	5113	2.91	1864	1,750,000	5113	2.91	1864	1,750,000	5113	2.91
1865	1,750,000	5113	2.91	1865	1,750,000	5113	2.91	1865	1,750,000	5113	2.91
1866	1,750,000	5113	2.91	1866	1,750,000	5113	2.91	1866	1,750,000	5113	2.91
1867	1,750,000	5113	2.91	1867	1,750,000	5113	2.91	1867	1,750,000	5113	2.91
1868	1,750,000	5113	2.91	1868	1,750,000	5113	2.91	1868	1,750,000	5113	2.91
1869	1,750,000	5113	2.91	1869	1,750,000	5113	2.91	1869	1,750,000	5113	2.91
1870	1,750,000	5113	2.91	1870	1,750,000	5113	2.91	1870	1,750,000	5113	2.91
1871	1,750,000	5113	2.91	1871	1,750,000	5113	2.91	1871	1,750,000	5113	2.91
1872	1,750,000	5113	2.91	1872	1,750,000	5113	2.91	1872	1,750,000	5113	2.91
1873	1,750,000	5113	2.91	1873	1,750,000	5113	2.91	1873	1,750,000	5113	2.91
1874	1,750,000	5113	2.91	1874	1,750,000	5113	2.91	1874	1,750,000	5113	2.91
1875	1,750,000	5113	2.91	1875	1,750,000	5113	2.91	1875	1,750,000	5113	2.91
1876	1,750,000	5113	2.91	1876	1,750,000	5113	2.91	1876	1,750,000	5113	2.91
1877	1,750,000	5113	2.91	1877	1,750,000	5113	2.91	1877	1,750,000	5113	2.91
1878	1,750,000	5113	2.91	1878	1,750,000	5113	2.91	1878	1,750,000	5113	2.91
1879	1,750,000	5113	2.91	1879	1,750,000	5113	2.91	1879	1,750,000	5113	2.91
1880	1,750,000	5113	2.91	1880	1,750,000	5113	2.91	1880	1,750,000	5113	2.91
1881	1,750,000	5113	2.91	1881	1,750,000	5113	2.91	1881	1,750,000	5113	2.91
1882	1,750,000	5113	2.91	1882	1,750,000	5113	2.91	1882	1,750,000	5113	2.91
1883	1,750,000	5113	2.91	1883	1,750,000	5113	2.91	1883	1,750,000	5113	2.91
1884	1,750,000	5113	2.91	1884	1,750,000	5113	2.91	1884	1,750,000	5113	2.91
1885	1,750,000	5113	2.91	1885	1,750,000	5113	2.91	1885	1,750,000	5113	2.91
1886	1,750,000	5113	2.91	1886	1,750,000	5113	2.91	1886	1,750,000	5113	2.91
1887	1,750,000	5113	2.91	1887	1,750,000	5113	2.91	1887	1,750,000	5113	2.91
1888	1,750,000	5113	2.91	1888	1,750,000	5113	2.91	1888	1,750,000	5113	2.91
1889	1,750,000	5113	2.91	1889	1,750,000	5113	2.91	1889	1,750,000	5113	2.91
1890	1,750,000	5113	2.91	1890	1,750,000	5113	2.91	1890	1,750,000	5113	2.91
1891	1,750,000	5113	2.91	1891	1,750,000	5113	2.91	1891	1,750,000	5113	2.91
1892	1,750,000	5113	2.91	1892	1,750,000	5113	2.91	1892	1,750,000	5113	2.91
1893	1,750,000	5113	2.91	1893	1,750,000	5113	2.91	1893	1,750,000	5113	2.91
1894	1,750,000	5113	2.91	1894	1,750,000	5113	2.91	1894	1,750,000	5113	2.91
1895	1,750,000	5113	2.91	1895	1,750,000	5113	2.91	1895	1,750,000	5113	2.91
1896	1,750,000	5113	2.91								

1870	1047000	2764	2.60	460000	843	1.83	297000	756	2.54
1871	1070000	4636	2.66	460000	860	1.82	299000	643	2.15
1872	1090000	4709	2.49	500000	882	1.76	303000	647	2.13
1873	1110000	2671	2.40	520000	984	1.89	307000	744	2.42
1874	1135000	2513	2.21	540000	875	1.62	311000	720	2.31
Providence.			Milwaukee.			Brooklyn.			
1870	69000	235	3.45	71000	93	1.31	---	---	---
1871	72000	194	2.70	75000	143	1.91	---	---	---
1872	76000	241	3.17	80000	105	1.31	---	---	---
1873	80000	231	2.90	85000	115	1.37	435000	1376	3.16
1874	83000	270	3.25	90000	136	1.62	450000	1267	2.86
1875	87000	299	3.49	94000	117	1.24	468000	1522	3.25
1876	90000	294	3.15	98000	127	1.30	486000	1539	3.17
1877	93000	294	3.14	102000	189	1.85	505000	1587	3.14
1878	97000	305	3.14	107000	175	1.63	525000	1509	2.87
1879	103000	293	2.84	111000	170	1.53	546000	1665	3.03
1880	105000	322	3.07	116000	138	1.20	567000	1736	3.06
1881	107000	344	3.21	123000	203	1.65	589000	1754	2.99
1882	109000	357	3.19	131000	207	1.58	612000	1806	2.95
1883	111000	364	3.28	139000	199	1.43	636000	1847	2.89
1884	114000	344	3.01	147000	220	1.50	661000	1913	2.89
1885	117000	347	2.96	155000	238	1.53	687000	1965	2.86
1886	120000	368	3.06	163000	246	1.49	733000	2026	2.76
1887	123000	314	2.54	171000	291	1.64	761000	2085	2.74
1888	126000	357	2.77	180000	289	1.60	791000	2051	2.58
1889	129000	309	2.40	192000	284	1.48	822000	2055	2.50
1890	132000	386	3.03	204000	294	1.43	855000	2169	2.53
1891	135000	344	2.58	215000	318	1.48	890000	2012	2.26
1892	138000	333	2.41	225000	316	1.39	930000	2128	2.28
1893	141000	325	2.30	240000	262	1.09	965000	1999	2.07
1894	144000	331	2.30	255000	354	1.39	1045000	2260	2.16
Baltimore.			Washington.			Ontario.			
1875	287000	1118	3.90	157000	579	3.64	---	---	---
1876	296000	1115	3.70	162000	603	3.63	1905000	2259	1.13
1877	305000	1100	3.63	167000	689	3.62	1908000	2157	1.13
1878	314000	1127	3.59	172000	716	3.18	1911000	1999	1.04
1879	323000	1162	3.60	178000	746	4.21	1914000	2065	1.09
1880	332000	1221	3.67	183000	759	4.15	1917000	2154	1.12
1881	340000	1206	3.54	189000	804	4.27	1920000	2397	1.24
1882	350000	1217	3.47	195000	730	3.78	1923000	2464	1.28
1883	360000	1272	3.53	201000	819	4.09	1956000	2500	1.27
1884	370000	1126	3.04	207000	788	3.80	1988000	2347	1.13
1885	380000	1270	3.34	213000	796	3.80	2020000	2313	1.14
1886	390000	1182	3.03	217000	736	3.40	2052000	2417	1.15
1887	400000	1097	2.74	222000	702	3.16	2085000	2556	1.22
1888	411000	1151	2.80	226000	677	3.09	2117000	2521	1.19
1889	422000	1147	2.71	230000	756	3.29	2149000	2417	1.17
1890	434000	1249	2.93	238000	749	3.15	---	---	---
1891	445000	1073	2.41	246000	714	2.90	---	---	---
1892	456000	1127	2.47	254000	681	2.69	---	---	---
1893	467000	1099	2.35	262000	675	2.58	2270000	2760	1.22
1894	478000	1106	2.31	271000	671	2.48	---	---	---

Table II.—Mortality of Pulmonary Tuberculosis—Per 1,000 of Population—By Decades. Averages. Foreign.

Place.	1805 to 1814	1815 to 1824	1825 to 1834	1835 to 1844	1845 to 1854	1855 to 1864	1865 to 1874	1875 to 1884	1885 to 1894	Mean of years.	Deaths per 1,000.
New York.	5.72	5.25	5.05	4.57	4.39	4.15	4.22	3.93	3.29	4.00	4.23
Baltimore.	---	4.10	4.00	---	---	---	---	3.59	2.71	4.0	3.60
Philadelphia.	---	---	3.52	---	---	3.29	3.12	3.06	2.65	3.0	2.47
Providence.	---	---	4.39	3.78	3.08	3.22	3.15	2.63	60	3.40	4.00
England & Wales.	---	---	---	2.77	2.57	2.41	1.90	1.65	41	2.32	3.56
St. Louis.	---	---	---	3.60	---	2.71	2.67	1.87	3.2	2.15	2.80

Massachusetts.	---	---	---	---	---	3.87	3.47	3.28	2.65	4.1	3.33	4.10
Chicago.	---	---	---	---	---	2.62	2.80	1.75	1.71	1.58	4.4	2.01
New Orleans.	---	---	---	---	---	4.90	---	3.78	4.06	3.83	1.4	3.77
Cincinnati.	---	---	---	---	---	---	---	2.42	2.97	2.75	2.8	2.73
Milwaukee.	---	---	---	---	---	---	---	1.50	1.50	1.45	2.5	1.48
Baltimore.	---	---	---	---	---	---	---	3.01	3.23	2.47	2.2	2.77
Brooklyn.	---	---	---	---	---	---	---	3.84	3.05	2.0	3.94	2.60
San Francisco.	---	---	---	---	---	---	---	1.10	1.20	1.5	1.17	7.0
Cleveland.	---	---	---	---	---	---	---	---	1.40	1.0	1.40	12.5
St. Louis.	---	---	---	---	---	---	---	---	1.21	7	1.71	14.0
San Francisco.	---	---	---	---	---	---	---	2.90	2.46	2.07	1.7	2.50
Grand Total.	---	---	---	---	---	1.51	1.56	1.70	1.52	1.63	50	1.65
United States.	---	---	---	---	---	1.45	1.56	1.70	1.52	1.63	50	1.65

TABLE III.—MORTALITY OF PULMONARY TUBERCULOSIS PER 1,000 OF POPULATION IN THE UNITED STATES.⁶ Decennial Census.

Years.	Population.	Deaths from Pulmon. Tuber.	Per 1,000 of Pop.	Remarks.
1850	23,191,000	33,516	1.45	Average for five decennial years, 1.65. Increase of 12 per cent.
1860	31,443,000	49,082	1.56	
1870	38,558,000	68,896	1.79	
1880	50,156,000	91,551	1.82	
1890	62,622,000	102,199	1.63	

Although in the case of Ontario, Savannah and the United States there is shown to be an increase in the prevalence of pulmonary tuberculosis, I believe that an intelligent and comprehensive review of the statistics presented in the tables will confirm the opinion which I have expressed, viz., that the malady has decreased in prevalence during the recent past, and that the tendency is toward a further reduction.

34 Washington Street.

TWO CASES OF EXTENSIVE EXCISION OF THE ELBOW JOINT, WITH REMARKS.

Read by title in the Section on Surgery and Anatomy, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY GEORGE FRANKLIN SHIELDS, M.D., C.M.,
F.R.C.S.E., L.R.C.P.
SAN FRANCISCO, CAL.

In the following report of cases and observations thereon, no description of the various operations for excision of the elbow joint will be introduced, since the writer is of the opinion that the time of the Surgical Section is too valuable to be used in placing before its members a résumé of that which may be found in any work on general or operative surgery. It will be sufficient to say that in both cases the single posterior median incision was used, and that the customary care was taken in clearing the bones and sawing them through.

Case I.—Miss F., aged 24, of Jacksonville, Ill., was April 27, 1892, thrown from a buggy, sustaining a severe comminuted fracture of the condyles of the right humerus, which extended to the elbow joint, as well as a fracture of the olecranon process of the ulna. The doctor who first saw the case put up the arm in a straight position, using a posterior splint which was replaced in two weeks by a plaster cast, this being removed during the third week, when the patient was told to exercise the arm. This she was unable to do, as she could neither flex the arm nor pronate or supinate the forearm. After visiting several surgeons, who informed her that nothing could be done, she started for the Sandwich Islands as a school teacher, and

¹ N. Y. Med. Jour., Nov. 5, 1892, p. 526.

² Hollinger, JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, March 2, 1895.

³ Ibid.

⁴ Lancet, Sept. 29, 1883.

⁵ Boston Med. and Surg. Jour., July 6, 1893, p. 8.

⁶ The writer desires to return thanks to the registrars of the various cities referred to for valuable and special statistical information, and to the gentlemen who so courteously sent replies to his letter of inquiry.

en route called upon me while in San Francisco in October, 1892.

When I saw her the condition was as follows: The general health of the patient was bad and she might be described as being generally "run down." The elbow was ankylosed so that the forearm was at an angle of 135° to the arm. She could neither supinate nor pronate the forearm, which occupied a position slightly nearer supination than pronation. All the muscles acting on the elbow joint were atrophied, and the arm was from its position practically useless. The elbow joint was obliterated by a callous mass which gave it a swollen appearance, and this was painful on pressure and on attempts at forcible motion.

On consultation with Dr. J. F. Morse, surgeon to the German Hospital in San Francisco, it was decided that nothing short of excision of the destroyed joint could be of any benefit. The patient agreed and the operation was performed. As soon as the incision was made and efforts at clearing the bones were begun, we found that inflammation of the lower end of the humerus had occurred and that the bone was so disorganized that it would be necessary to remove an unusually extensive portion to escape diseased tissue, so with great misgiving we sawed the humerus through an inch above the margin of the olecranon process. The arm was put up at right angles. At the end of the first week passive motion was instituted, and in the course of the second week the forearm had been gradually carried through various angles until it was brought from full flexion to full extension. This passive motion was continued throughout the whole course of the treatment. On the third week the wound was healed with the exception of a small sinus which led down to the lower end of the humerus, and as this would not heal it was laid open, when we were enabled to remove a ring of bone which had necrosed and which was about one quarter of an inch in length. The wound now readily healed, and the patient commenced voluntary efforts at flexion and extension, but the limb was like a flail and would fall from one side to the other in a helpless manner. In order to correct this I had made a steel joint to take the place of the internal and external bony and ligamentous lateral supports, and to my gratification the patient rapidly improved her power of motion and moreover developed an extensive pronation and supination, which she aided by rotation of the humerus.

When I last heard of her she was able to play the piano, dress and feed herself, "do up her back hair," and when dressed could readily conceal her injury except to the practiced eye, which would of course notice the shortening.¹

Case 2. R. O., aged 26, was struck by a piece of iron on the tip of the left elbow on March 1891. The joint was swollen and painful and the arm fixed in the extended position remaining so for a year, when efforts were made to forcibly flex the joint. This led to increased pain and stiffness and subsequently an abscess formed just above the olecranon process, which opened itself and continued to discharge up to the time when I first saw him in March 1893. On examination a sinus was found to lead down to a caries of the olecranon and also of the articular surface of the humerus. The joint was swollen and all the bones going to form it were thickened. The arm was fully extended and there was no power of flexion, extension, pronation or supination. The muscles of the arm and forearm were much atrophied.

Excision of the joint was advised and agreed upon. The operation showed the joint to be tuberculous and it was necessary to remove half an inch of the shaft of the ulna as well as an unusually large portion of the humerus, the section being made about half an inch above the margin of the olecranon fossa. Only the upper portion of the excision wound was stitched and the cavity (after extensive curetting and free use of the scissors to remove suspicious tissue) was stuffed with iodoform gauze.

The after-treatment was much the same as in case 1, except that no steel joint was found necessary. At first there was a tendency to a flail joint but the parts contracted and the muscles adapted themselves to the new conditions.

The eventual result will be best understood by using the patient's words when I saw him yesterday to remove a small piece of bare bone two years after the original operation.

I asked him what he had been doing; he said that he had been washing dishes, picking fruit, waiting on table and wood-chopping, all of which occupations require that the elbow joint should have extensive motion. I then requested him to go through the motions of extension, flexion, supination and pronation with his coat on in the presence of two doctors who, when asked what was the matter with him (not knowing of the operation) said that his arm was congenitally shortened.

In commenting on these two cases let it be said that there is nothing unusual except the extensive removal of bone and it is to this that I desire to call particular attention, in fact it is the sole reason for the present report. In case 1, both my consultant and myself on discovering the extensive destruction of the humerus felt hopeless as to the future possibility of obtaining a movable joint, and it is indeed strange that the muscles could so adapt themselves to the new conditions that an almost normal range of motion resulted, even with the aid of a mechanical steel hinge. I desire to call attention to the fact that the collar which surrounds the forearm need only be tight enough to keep the apparatus in position and does not interfere with supination and pronation of the forearm. In case 2 it seemed almost foolish to attempt anything but amputation, but with the memory of case 1, as a guide, the operation was not only done but proved most successful and instead of an armless cripple we have a man who when dressed and ordered to go through a wide range of motion makes it difficult for even a medical man to diagnose his condition.

I trust that these two cases may in some slight measure demonstrate the fact that even extensive removal of the elbow joint may be followed by good results, and that one should hesitate in cases of extensive destruction before he is satisfied with either a stiff joint or decides to amputate the limb, since he can always carry out either plan should efforts for a movable joint fail.

32 O'Farrell Street, San Francisco, Cal.

BACTERIOLOGY.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY S. A. HOPKINS, M.D.

BOSTON.

I am sorry to be obliged to preface my remarks with an apology, but when I accepted the honor of addressing this society, I had in mind certain original work upon which I was then engaged and which I hoped to have completed in time to lay before you in this paper. I regret to say that in this I am disappointed. As you well know, the demands of science are hard to fulfill. She has little respect for the limitations of time and strength of her votaries. While, therefore, I shall be able to offer you but little in the way of original work, I am very glad to have this opportunity of speaking to you on a subject that is of the deepest interest and significance to me, and which I trust may in its future development prove to be of the greatest practical value to us all.

We have as specialists in medicine in the department of oral surgery made such remarkable advances in recent years in the practical operations for the relief of pain and to restore the teeth to the highest

¹ Jan. 17, 1895. Since the above report I have received a letter from the Sandwich Islands in which Miss F. informs me that her arm has grown stronger steadily, and that she can now "put up an eight pound dumb bell above her head."

degree of usefulness that we are puzzled to know how to go further. The degree of skill that a dentist may exercise in his calling can not be easily overestimated. It is not going too far to say that in the performance of the most difficult surgical operations no more delicate touch, no higher degree of skill can be exercised than is called forth in your daily practice. A high plane has certainly been reached in the direction of practical operations, but I feel sure that there is another direction in which our mental activity has not yet had full scope, and I am convinced that in the study of pathology and especially in the study of bacteriology there is a rich field to be cultivated and a splendid harvest of scientific truths to be garnered. By a brief outline of the general subject of bacteriology and by a hasty reference to the specific work which bacteria perform in both health and disease, I shall endeavor to point out to you the importance of this science in general medicine, and I shall briefly call your attention to its possibilities as applied to oral diseases and the destructive processes that go on in the human teeth.

It is a subject for comment that when in the latter part of the 17th century Lieuwenhoek made his wonderful improvements in microscopes and thus prepared the way for and made the study of bacteriology possible, some of his first researches, his first discoveries, were made in connection with the microorganisms of the human mouth. The study of bacteriology may be said to have begun with the improvements in microscopes that I have just mentioned. It was Koch's discovery of the solid culture media that placed the work on a scientific basis and made possible investigations that up to that time could not have been made. It was Pasteur's application of the new science in the treatment of anthrax and other diseases that made bacteriology practical as applied to the treatment of diseases and opened to the world a new method of treatment which bids fair to outshine in its usefulness and scientific accuracy all previous knowledge of curative medicine. The limitations of this paper will not admit of even the mention of the names of many other eminent scientists who did important pioneer work in this field, but no mention of this science, however, brief, can be made without reference to Lister's work, with which we are all familiar. The thousands of lives saved by antiseptic surgery will be an everlasting monument to his name. Much of the pioneer work in the study of mouth bacteria has been done by Möller of Berlin, who has made important discoveries and written an excellent work on the subject that will repay careful study. In our own country, the Surgeon General of the U. S. Army, George M. Sternberg, has written the most comprehensive and exhaustive manual of bacteriology that has yet been published. When we consider the immense amount of original work which this volume contains, and consider how large a part of it was done while hampered by the limitations of an army life, we can not but wonder at the courage and persistence of the man, while we accept the reflected honor of naming him as our countryman. I wish to give credit to G. Sims Woodhead of Edinburgh, to Prof. Sedgwick of the Massachusetts Institute of Technology, and to Prof. Ernst of the Harvard Medical School, for many suggestions offered in this paper.

Bacteria were originally supposed to belong to the animal kingdom, but it is now known that they are

vegetable microorganisms. It is important to get this firmly fixed in one's mind, for while it is known that microorganisms belonging to the animal kingdom exist, and play an important part in the economy of life, yet it is an erroneous and most unfortunate misapprehension of facts which places bacteria in the same class. I am convinced that a great deal of the repulsive feeling which is aroused in every layman's mind by the mention of bacteria is largely due to this misconception. I am sorry to say that this error is not wholly confined to laymen, for it has been my misfortune to frequently see trained physicians express surprise when it was asserted that bacteria were vegetable microorganisms. I do not think the importance of bacteriology has yet been understood or appreciated by the public, who have been slow in giving their support to this science, and popular support we must have if we are to give mankind the benefit of our labors in any field; hence any misconception of facts which is likely to prejudice the mind of the public against a science is to be regretted. The bug theory, therefore, should be laid aside, and this important factor in our lives relegated once and for all to the domains of botany where it belongs. (Charts showing some of the common forms of bacteria, cocci, bacilli, spirilla, parasites, saprophytes, aerobic, anaerobic, motile, non-motile).

It is a curiously fixed belief in the popular mind that bacteria necessarily means disease. Of course we know nothing could be more unfortunate than this belief, for it serves only to create a panic in the minds of people less familiar with the subject which can not be easily quelled. It is true that many of our most fatal epidemics have been traced to these infinitesimal organisms. They and they alone have been proved to be the essential factor in the production of many diseases. Undoubtedly there will be many more convicted of guilt, but we should not lose sight of the fact that the great army of bacteria, so far as we know, are harmless, while many forms render most beneficent and important services to mankind.

The world of bacteria seems to my mind to bear a close analogy to the higher vegetable world with which we are more familiar. We have among bacteria almost as great variety of shapes and forms as among the higher orders of plants, and the shapes and sizes vary in different soils or culture media. Certain forms grow best in some particular soil or culture medium and will die if not cultivated in a suitable medium, just as the higher plants develop best in soil and under conditions best suited to their growth. Some forms, like our common weeds, seem to have no special object in nature, or at least their usefulness has not yet been ascertained, and certain varieties of plants will be crowded out and die if others are allowed to grow in their vicinity. Certain bacteria produce spores almost analogous to seeds, which retain their vitality long after the death of the plant, and spring up to life again when planted in suitable soil under suitable conditions. Some bacteria, like the noxious weeds and poisonous plants, create havoc in the human race, but the wisdom of creative intelligence has not failed in the creation of bacteria any more than in the higher vegetable world, and has made life itself dependent upon their intervention. These infinitesimal organisms are as necessary to existence as are the higher plants, and the latter would cease to flourish were it not for the

presence of bacteria. Without the aid of these microscopic bodies some of the most essential and at the same time the most familiar and common-place processes of nature could not be carried on. Our farming operations are dependent upon them, and the farmer, without being versed in the higher sciences is putting forth in the cultivation of his crops his best efforts to encourage the action of the bacteria in the soil, without which he could not raise a crop. These infinitesimal allies of the farmer convert the excrement of animals and plants into simple constituents necessary for the development of plant life. (Prof. Sedgwick's plate).

Beginning with the nitrates, plant life is evolved with the aid of the sun's rays, until it is converted into living vegetable matter, which in turn may be converted into animal. From this position at the top of the chemic scale we find it first decomposing into nitrogen and organic nitrogen, that is, albuminoid ammonia. The next step is nitrogen as free ammonia. The next step is its conversion into nitrites, and the last step is from nitrites to nitrates, where it began its existence as plant life. These changes are brought about by the action of the nitrifying bacteria. The expression sterile land is strictly scientific, for no sterilized land, land that is free from bacteria, can afford support to the human race. It would be interesting, if time permitted, to show in detail the work of these bacteria. We find that in cultivated lands they predominate in great numbers, in fact the object of cultivation is to break up the land in such a way that the conditions that are best suited to the development of a great many bacteria shall be fulfilled. In land that has not been disturbed for a long time we find very few bacteria at a greater depth than one meter below the surface, but in cultivated land we find them in abundance at a much greater depth. The effectiveness of bacteria lies largely in the fact of their being reproduced in such enormous numbers in an almost infinitesimal space of time. It is estimated that a gram of earth in the superficial layers may contain anywhere from 5,000,000 to 50,000,000. In the dirty and crowded thoroughfares of Naples the number of bacteria to one gram of dust is not less than one billion. If any argument were needed to illustrate the dangers of mouth breathing, it might be found in the statement I have just made. Fraenkel and Wynogradski have both described a form which has this nitrifying power of which I have spoken, but it is probable that this process does not depend upon any one form, but is brought about by the labors of many different varieties; but these forms, like many of the mouth bacteria, do not grow readily on the usual culture media, and their study is attended with great difficulty.

In connection with the bacteria which are found in the soil, it would not be out of place to say a few words in regard to the work which they perform in connection with sand filtration. Purification of the water in the pockets of the earth is brought about by sand filtration. It has been known for many years that under certain conditions sand forms a perfect filter, but it is only within recent years that we have known the method of this operation. This has been taught us by the study of the bacteria of the soil. We have seen how the organic matter which finds its way on the field in various forms of decomposed vegetable and animal matter is taken up and converted into plant life, and we find that much the same pro-

cess goes on in sand filtration. If you constructed a filter of clean sterilized sand and then poured contaminated water or sewage into it, you might find that the water as it came through was quite clear to look upon, but on a chemic and bacteriologic examination being made, you would find it teeming with organic matter, and possibly pathogenic bacteria, and entirely unfit for use. But if you continued to pour the filthy water through and examined it as before, you would notice that as the filter grew older the water became purer, and after a certain time, provided there had been free access of air, and you had not poured the filthy water through so fast as to mechanically clog the filter, you would find that perfectly clear water percolated through, and upon subjecting it to chemic and microscopic tests you would find that it was pure. You would also find that it would continue to be pure as long as the filter was not overcrowded and had a plentiful supply of oxygen. Now what has happened? Microorganisms capable of destroying organic matter have attached themselves to the particles of sand in the filter and are performing the same office here as in the soil, and they will continue to do so as long as the filter is properly used. Thus we have science of bacteriology simplifying the question of the water supply of the world.

Many of our large cities are already approaching the end of their possibilities as regards the natural supply of pure water, and in the great majority of our large cities and towns it is a serious question as to when the water supply will be exhausted. The time is apparently not far off when we shall be able to construct filter beds and establish bacteriologic laboratories in connection with the water works of every large city and town, and when the fact is firmly established that filter beds actually filter, and the public mind has been set at rest on this subject, we shall be able to take our water from the nearest river, and be surer of having it purer than that for which we now pay millions of dollars to procure from some distant mountain rill or crystal lake. This work has been going on with great success in the city of London for years. London at the present time employs over a hundred and twenty acres as filter fields, and the difference in typhoid fever rates between London and outlying districts which are not supplied with London water is very marked indeed.

There is an interesting case of a town, Altona, which might be called a suburb of Hamburg, lying as it does some few miles out of the city, and which takes its water from the Elbe at almost the same spot from which Hamburg is supplied. During the cholera epidemic at Hamburg a few years ago there were no cases of cholera in this town until an accident happened to one of the filter fields. From this cause a few cases of cholera were developed, but as long as the people had used water filtered in this way, although they were drinking precisely the same water as the city of Hamburg, no harm came to them. The city of Lawrence, Mass., has recently subjected its water to sand filtration with remarkable results in the reduction of typhoid and similar diseases, and many other towns are following the example of Lawrence. Of course the remarkable rapidity with which bacteria act is dependent upon their vast numbers and the rapidity with which they multiply. The number of cocci in one millegram of a pure culture has been estimated at eight billion. If further evidence were needed to show the important part these infinitesimal organ-

isms play in our daily life, the familiar ferments of bread, cider, vinegar, wine and beer need only to be mentioned. It is probable that many of the physiologic processes that go on in the body are greatly dependent upon these microorganisms. Indeed, it has come to be a question whether life itself could be carried on without the intervention of bacteria.

I have thus briefly mentioned the work done by non-pathogenic bacteria in order to emphasize the great field the science of bacteriology has before it as applied to the arts and sciences. We as physicians, whether we are in general practice or particularly concerned in the specialty of dentistry, are more interested in the pathogenic forms. I have selected a few of the diseases with which we are more or less familiar, and which have an acknowledged bacteriologic origin, in order to point out some of the work that has already been accomplished in this direction. It must be remembered that pathogenic bacteria are for the most part parasites feeding upon living matter, and the difficulty in cultivating them is greatly increased by this fact, because it is impossible to employ living culture media. Therefore the more strictly pathogenic the form is, the more difficult it is to cultivate. Until we advance a great deal farther in the making of culture media we can not hope to isolate and study the bacteria of many diseases which are acknowledged, if analogy goes for anything, to be of bacteriologic origin. As an example of pathogenic bacteria and the spread of disease, the cholera bacillus has an especial interest.

Asiatic cholera was for ages looked upon as a devastating plague. Its origin and method of development were for many years hidden mysteries, and mankind was helpless and almost hopeless in coping with this awful destroyer. To-day, while there are sporadic cases which it is difficult to trace and hard to explain, the evidence accumulated by Koch and others leaves no question but that cholera is a parasitic disease, and that the comma bacillus is the active agent in its production. This theory of the comma bacillus is not, however, accepted by all scientists, and the investigations of such a careful worker as Pettenkofer are not to be lightly passed over. He and his followers maintain that cholera is caused by the lowering of the ground water in the pockets of the earth, and it can not be denied that the spread of the disease bears a causal relation to this phenomenon. But it is also true that meteorologic and other conditions which cause the lowering of the ground water and the increase of the drying zone are the very ones best suited to the development of the comma bacillus, and it requires no stretch of the imagination to reconcile the two theories.

Pettenkofer's theory of the ground water and drying zone serves, when rightly considered, only to support the theory of Koch, which is the only theory which will stand Koch's tests. The laws of Koch, in the tests which are to be applied to all pathogenic forms of bacteria, are three. 1. The organism must be of constant occurrence in the disease. 2. The organism must be cultivated and pure cultures obtained. 3. It must be able to produce a pathologic process exactly the same or similar to that which is produced in the normal course of the disease when inoculated into susceptible animals. In the case of the cholera bacillus the last condition or the third law was fulfilled not without difficulty, from the fact that the acid juices of the stomach had a marked

effect in destroying the bacteria, but by certain processes which I have not time to describe, Koch and others were able to cause the same pathologic conditions in lower animals by inoculation of cultures of the comma bacillus that takes place in the patient suffering from Asiatic cholera.

Cholera is endemic in the delta of the Ganges river. In Persia, Asia Minor, and in China at the mouth of the Yangtse it breaks out with regularity year after year. It is brought into Europe by the ships of commerce and other vehicles of travel, and several of the worst outbreaks have been caused by the return of the Mecca pilgrims. Overcrowding and lack of hygienic measures bring about water contamination, and meteorologic conditions favoring the development of the bacillus contribute to the spread of the disease. The specific organism is, roughly speaking, shaped like a comma. It varies in length from 1 to 2 μ and is about .5 μ in thickness; it sometimes occurs singly, sometimes in groups, and frequently has the appearance of irregular curves. Many bacteriologists consider this organism a spirillum form of which we see only broken portions. Like many other forms of bacteria the organisms present slightly different appearances when grown on different media, and there are slight differences in culture from different localities. It is said that an expert can take up certain cultures and say, this is from Shanghai, this from Egypt, this from Naples, and so on; but the microscope reveals the same characteristic comma-shaped forms in all. They grow on almost any material that is not acid. Acids destroy, and the presence of other bacteria in the culture also destroys the cholera bacillus. This fact suggests a possible means of treatment, and work is being done to ascertain the possibility of treating cholera patients by the introduction of other harmless forms. The fact that the comma bacillus is so readily destroyed by acids gives rise to the query, why are they not destroyed by the gastric juice of the stomach? Pettenkofer, Klein, Boichfontain, a New York *Herald* reporter, and doubtless thousands of others, whether intentionally or not, have swallowed the bacillus in milk, water, vegetables and other food without injury, and their immunity doubtless depends largely on the power of the healthy gastric juice to destroy this organism. It is proven beyond doubt that derangement of the stomach and intestines is one of the conditions which are favorable to the development of the disease; and that a reduction of the acid of the gastric fluid by such a disturbance may encourage the development of the organism is altogether probable.

Sailors who go ashore in an infected port, especially when they spend the night drinking and rioting, and have the usual morning derangement of the stomach in consequence, are particularly prone to the disease; and to the Mecca pilgrims, to whom I have referred as being responsible for some of the epidemics that have broken out in Europe, offer favorable conditions for its development from the wasted and unwholesome condition that is brought about by travel and fasting. These conditions lead to gastric and intestinal disturbances which are favorable to the development of the bacillus. Steerage passengers upon crowded vessels are apt to present conditions favorable to an outbreak. The gastric juice of the healthy stomach will in all probability kill these microorganisms. That fact does

not permit of our relaxing our vigor in sterilizing food and water during a cholera epidemic. We can never be quite sure that the gastric juice is in good condition, and the sterilization of everything that goes into the mouth in the nature of food and drink would crush out the most fatal epidemic immediately. Cleanliness and proper attention to hygienic measures will do much to prevent the spread of the disease, and it will be a government crime if it even obtains a foothold in this country; but it is human to be careless and to take chances, and even though we know the exact way the disease is produced and developed, it will not in all probability seriously mitigate against future outbreaks until knowledge of bacteriology becomes more general than it is to-day.

Of typhoid fever, time will not permit me to speak, except to say that the bacillus has been isolated, and while attempts to produce it on animals have not met with success, most animals being immune to the disease, and we can not very well inoculate human beings, yet the microorganism has answered all the other tests, and the evidence is undoubted that it is the cause of typhoid fever. The water supply, in this case contaminated by the dejecta of typhoid patients, is again the most common agent for the spread of the disease. Milk diluted by water from a contaminated source, or milk cans washed in contaminated water, has been the cause of more than one epidemic. Recently at a Wesleyan College in Connecticut an outbreak was traced to some oysters the students had eaten. It was found upon investigation that these had been taken from their original bed and deposited at the mouth of a fresh water stream to freshen and fatten, and investigation showed that the stream was contaminated by the feces of persons suffering from typhoid, and the source of the epidemic was proven beyond a doubt. Although contaminated water supply can not be responsible for all cases, it certainly is for the principal epidemics of typhoid fever, and most outbreaks can be traced to the pollution of the stream by the feces of patients suffering from the disease.

We pass to a brief consideration of tuberculosis. Tuberculosis is of interest not only because it is an exceedingly common and widespread disease, but because an immense amount of bacteriologic work has been done in its study and in the attempt to find a satisfactory method of treatment. I may add that it is also interesting from the fact that bacteriology was dealt a serious blow in connection with this disease by the ill-advised use of Koch's lymph, or as it is now known, tuberculin. If time permitted, I should like to detail the steps of Koch's studies and to outline the results which he hoped to attain, and did attain in a measure. I am one of the few who still believe that in tuberculin or in some modified form of tuberculin, we shall have a valuable addition to our methods of treatment in this disease. Koch's labors were incomplete when he was forced to make them public. They were not satisfactory, and the entire ground will have to be worked over again very carefully. When this is done I have no doubt that Koch will be acquitted of having committed what at this time seems a serious error. Koch's tuberculin as a means of diagnosis for diseased cattle seems to have answered all the required tests, and inestimable benefits will undoubtedly result from the destruction of tuberculous animals. We are just now going through a period of somewhat heated discussion as to the

value of tuberculin as a means of diagnosis, and I prefer not to express too positive an opinion. Whether the danger from tuberculous cattle is as great as has been assumed, I am not able to state, but the fact that healthy animals are to be preferred to those suffering from tuberculosis is plainly evident, and if we can be aided by tuberculin in determining this fact, it will certainly prove a great blessing.

The bacillus of tuberculosis is a delicate rod about 2.5μ in length and from $.2$ to $.5 \mu$ in width. It does not stain as readily as many others, and care must be taken in preparing the cover-glasses for the microscope. It is difficult to cultivate on artificial media; it is also difficult to obtain in pure cultures. It is, however, constantly present in all tuberculous lesions, whether they appear in the lungs, in the intestines, liver, membranes of the brain, eruptions of the skin, or any other region of the body. It does not follow that all degeneration of lung tissue is caused by tuberculosis. It is extremely probable that other forms of pathogenic and pyogenic bacteria may be found to be responsible for many destructive changes in the lung tissue. The disease, although it carries off a larger proportion of our people than any other disease, still must not be considered hopeless. We are beginning to realize more and more each year, that much can be done to prevent the spread of consumption and much to prolong the life and improve the condition of the sufferer from this disease. The importance of an early diagnosis is apparent, and this can best be accomplished by a bacteriologic examination of the sputum of suspected cases. Examinations must be made at frequent intervals, as it is not improbable that a great many negative results may be obtained before the bacillus is discovered. If once discovered, however, even if the number is very small, treatment should not be delayed. Begun in these early stages, the prognosis is by no means hopeless, and a diagnosis can frequently be made in the way I have indicated long before it is possible to determine the condition by physical examinations and percussions. Important as the diagnosis and treatment of the disease must seem, the prophylactic treatment is vastly more important. The dry sputum of the tuberculous patient is the principal cause of the spread of the disease, and we well know to our sorrow how a disease spreads through a family, to such an extent that up to within recent years it was thought to be an inheritance for which there was no responsibility and from which there was no escape. While it is true that the conditions which make the reception and development of the disease easy may be inherited, the disease itself is not. When we realize how the dried sputum in handkerchiefs, spittoons or anything else upon which it may have been deposited can be wafted through a room by the slightest disturbance of the air and find a suitable field for development in the lungs of some other member of the family, we do not need the theory of inheritance to explain its spread. So tenacious of life under certain conditions is this bacillus and so easily distributed by currents of air, that were I about to hire a house, particularly a furnished one in which consumptive people were known to have recently lived, I should feel like taking the same precautions regarding sterilization and disinfection that would be necessary after diphtheria or smallpox.

The responsibility of dentists as well as the danger

they encounter from exposure to this disease is worth considering. For his own protection as well as that of his patients the dentist should see to it that his napkins, spittoons, and instruments are carefully sterilized. This process can not be too thorough, because the danger is a real one, and exposure may come at any time. Considering the number of mouth bacteria that our napkins, instruments, etc., come in contact with each day, considering that most of the pathogenic varieties of bacteria enter the system through the mouth, it seems as if sterilizing methods should be employed in the most careful manner by every dentist. We can not work under strictly antiseptic conditions, it is true, as it would be impossible to sterilize the juices of the mouth or the atmosphere of the operating room. While we can do much to render the possibility of infection from these sources as remote as possible, we are only responsible for the transmission of disease from one patient to another, and the dentist who neglects to sterilize his instruments after using, has a fearful responsibility on his conscience.

The bacillus of diphtheria is of interest to oral surgeons not only because it is found in the mouth and throat, but because of the almost sensational interest that has been aroused by the treatment of this disease by inoculation of antitoxin. The bacillus, which is known as the Klebs-Löffler, is a rod of varying length, with rounded ends, somewhat resembling a club in shape. The bacilli are slightly curved, and have a tendency to arrange themselves in pairs. It is not, however, by any means an easy matter to distinguish these microorganisms from others under the microscope. I have myself seen forms which it was impossible to distinguish by the microscope alone from true diphtheria. One of these forms that I have mentioned came from a cavity in a molar tooth. This emphasizes the importance of making cultures on different media, and not trusting alone to the microscope in bacteriologic examinations.

As a matter of fact, bacteria are almost sub-microscopic; they are too small to be studied by the microscope alone, and any conclusions that may be arrived at from this method of study should be confirmed by making cultures and noting the growth of the organism.

(To be continued.)

THE CLINICAL VALUE OF THE FREE DISPENSARY.

Read at the Meeting of The Doctors' Club, Oct. 25, 1895.

BY THOMAS A. DAVIS, M.D.

President of the West Side Free Dispensary; Associate Professor of Surgery, College of Physicians and Surgeons; Surgeon to and President of the Medical Staff of Cook County Hospital, etc.
CHICAGO.

Mr. Chairman and Gentlemen:—I did not know until yesterday afternoon (through the *Chicago Tribune*) that papers were to be presented here to-night; but understood there would be some little effort at extempore discussion in defamation and laudation of the dispensary system. I was glad to see the preparation for so thorough consideration of the subject from such practical standpoints and by such distinguished gentlemen, and I am sure that, though I can offer but little of interest myself, I shall have learned much, and by the application of such knowledge do sufficient good to compensate for my shortcoming in relation to the present meeting.

The dispensary is an old institution, originating in the seventeenth century from philanthropic people as a protection to the sick poor against the greed of the apothecary, and later on was used to relieve the crowded hospitals from outdoor patients as an economic move by the State.

In 1696 Dr. Samuel Garth, an English physician and poet, became a prominent supporter of the new scheme, and his labor in that direction exposed him to the animosity of many of his own profession, especially the apothecaries. That Dr. Samuel Garth appreciated the need of the dispensary for the poor, is evidenced by his poem, a verse of which runs as follows:

THE DISPENSARY.

"There stands a dome majestic to the sight,
And sumptuous arches bear its oval height;
A golden globe placed high with artful skill,
Seems to the distant sight a gilded pill.
This pile was by a pious patron's aim,
Raised for a use as noble as its frame."

That the dispensary is valued highly by the poor is evidenced to-day by the large numbers who avail themselves of its privileges. To ascertain the opinion of the attending staff of the west side Free Dispensary on the question of "Dispensary Abuse," I asked a letter from each physician, and requested an opinion based wholly upon his experience in the dispensary service. I received fifteen letters in reply, some of which, with your indulgence, I will read:

CHICAGO, ILL., Oct. 17, 1895.

Dear Doctor:—Kindly give me at your earliest convenience your idea as to the dispensary abuse (from your own experience in the west side Free Dispensary). That is, to what extent is the medical profession imposed upon by people able to pay for service?

T. A. DAVIS, President.

Dear Doctor:—I must say in reply to the above, that I have kept no record and must depend on my memory and judgment, but I should think about 25 per cent. of the patients are able to pay a reasonable bill for doctor's services, if inclined to do so. It may be that my estimate is a little too high, but it is my opinion that it is not far from right at most.

Fraternally yours,

Dear Doctor:—Replying to your circular favor of Oct. 17, 1895, I would state that in my own limited observation, I have found no case of radical imposition upon the medical profession by those able to pay for medical attendance. Undoubtedly many such people yearly take advantage of our work there, but I believe them to be very much in the minority. Perhaps only a few out of the hundreds of unfortunates.

This has been the result of my own observation.

Fraternally yours,

Dear Doctor:—In reply to your favor of the 17th inst., in which you ask me as to the amount of dispensary abuse in my own clinic at the west side Free Dispensary, is received, and after considerable thought, I have come to the following conclusions:

1. About 15 to 20 per cent. of the patients could possibly pay a reasonable office fee for a few visits, say two to five. They could borrow this amount if necessary to life.
2. A large percentage of the patients have consulted some physician for a few times, and not finding the relief sought, have felt financially unable to continue the treatment and have then sought the dispensary.
3. For prolonged treatment, as for some chronic disease, the percentage able to pay is not over 3 per cent., in my estimation.
4. Almost all of my dispensary cases are chronic in character.

Fraternally yours,

Dear Doctor:—In reply to your request as to what extent I think the medical profession of Chicago is being imposed upon by the treatment of patients in free dispensaries, I will say that in so far as my observation has gone in the west side Free Dispensary, there has not come under my observation any case where I had knowledge or believed the patient was able to pay for services rendered. Of course I have always treated any that came without questioning them as to their financial condition: but in some cases where an operation was needed, and in questioning if they could pay the hospital fee necessary for their board and nurse's attention, 90 per cent. of

them would answer that their circumstances were such at present, that it would be impossible for them to raise the money. Hoping this is satisfactory, I remain fraternally yours.

Dear Doctor: In reply to your inquiry as to the extent of imposition practiced by the public upon the west side Free Dispensary, I have to say that, from my limited experience with the dispensary, I am of the opinion that it is considerable, as at least one-half of my patients or their husbands or fathers were in regular wage-earning employments and consequently not entitled to absolutely free medical services. When the Ringer Bros. circus was here a few weeks ago, four or five of its employees applied for dispensary treatment. I recently had one patient whose husband was employed and earning \$2.75 per diem.

Fraternally yours,

Dear Doctor: In reply to your note of inquiry, I wish to say that, judging from my own experience, the dispensary is a public benefaction. Certainly less than one-fourth of the patients are impostors.

Fraternally yours,

Dear Doctor: In reply to your request of October 17 will say that, while I know personally of many deserving cases, still the undeserving ones are far in the majority. There are very few cases, in my mind, but what are able to pay *something* for services rendered; but how to discriminate between the two remains a puzzle. I candidly believe that the present abuse of the dispensary system should be corrected in some way, if a possible thing to do so. I am fraternally yours.

I have marked the percentage of impostors as I judged to be fair from the expression given in each letter, and I find the average to be about 20. That would leave 80 per cent. of those receiving attention as in need of charitable aid, and at this rate our dispensary alone has been a benefactor to two hundred and eight thousand people during the past decade. This is conclusive evidence as to the value of the dispensary to the sick poor, though I do not know that the poor could not be as well served with less sacrifice to the profession and with lessened tendency to pauperization of the poor.

That the dispensaries are maintained chiefly from philanthropic motives appears untrue. At this time the dispensary is considered an indispensable factor in a medical college, and in addition to the duties devolved from a philanthropic standpoint college requirements have entered largely into dispensary management, so that now the prime object of dispensary maintenance is educational.

The first in importance of these demands made by the college on the dispensary is in the way of material for college clinics. The second is for the proper clinical instruction to be given by the dispensary teachers, and the last we may say is beneficent, for the care of the sick poor.

In the past the dispensary has been the main source of supply for material for the clinical instruction of students in our principal medical colleges, and the service has been considered as of much value. It has been of some value, but I venture to say that if Cook County Hospital would open its doors to the medical student for the bedside study of disease (with proper restrictions under the supervision of the medical staff) the college dispensaries could be done away with, with profit to the former institution and to the medical profession and humanity at large. This at first might seem audacious, but when we investigate more closely the character of the instruction given in college clinics, it will be readily seen that the important detail of scientific clinical study is never known. The patient appearing for the first time in his life before a large class of medical students, is ushered in without his history being known, and in most instances, I venture to say that when he has taken his departure from the clinic there is little doubt but he has proved an "alibi." But the clini-

cian is guilty before the eyes of science for so disposing of his material without exhausting the various means for making a diagnosis. His therapeutics is worse than useless, for the pathology of the case has gone unrecognized. These clinics (I have no reference to college clinics supplied from hospital material) are given upon ambulatory patients, and time is not given to the essential branches of the science, diagnosis, pathology and therapeutics. So that I almost question their utility as educational means at all. It is in the hospital alone that these most important branches can be studied.

Reasoning, then, that just in the degree that these imperfections occur in the use of patients in scientific clinical teaching does the value to the sick poor depreciate, I conclude that a change from the present dispensary system is most desirable. Before suggesting a remedy which I think will appear in harmony with scientific charity organizations, I wish to allude to the character of the men who have served as physicians in our principal dispensaries, and if my statements can not be truthfully controverted, it is the dispensary system and not the men which is at fault.

In this city, from the father of the greatest medical association in this country, down to the promising young member of the profession, nearly all have served their time in the dispensary.

The men who have accomplished most in advancing the interests of the profession scientifically, have written our medical books, and have been the educators of our present medical profession in colleges, have nearly all served their time in the dispensary. This fact, *per se*, is all that could be desired as evidence of the high moral and intellectual tone of the institution. Credit should be given to an institution so noble in its aim. It has served its purpose until now; modern scientific charity demands a cessation of the indiscriminate free offerings on account of its demoralizing and pauperizing influence upon the poor.

It has served a good purpose in stimulating the minds of dispensary teachers to study and to teach; and many diseases have been justly dealt with in exemplification of the subject at hand; but the crowding into an hour's time of so many ambulatory cases means necessarily such hasty dealing with the patients that the present dispensary system is certainly unsatisfactory, and we should hail with delight a system which would meet all the requirements of the times. May I suggest the following as a remedy:

That the County Hospital be opened to the medical student for the bedside study of the sick.

That the physicians attending that institution be selected for their ability to teach medicine, and that they be put under civil service rule.

That the present method of caring for the "at home sick" be continued by the county, through the county agent, who can investigate each case to prevent the imposition from those who are able to pay for services.

That the ambulatory sick poor, through an order from the county agent, shall be treated at a department arranged for that purpose at the County Hospital.

This, it seems to us, would provide well for the needy poor and prevent imposition, and at the same time give ample facilities for proper clinical teaching. Then there could be no excuse for the existence of those dispensaries which are maintained solely for the prestige given to the physicians who attend them

(and twenty-one of the thirty dispensaries existing in this city to-day are of that class). Now then, by resolutions being passed and distributed by the medical societies of this city, deprecating them, the "dispensary evils" would soon be abolished, and thus the profession protected from the imposition now existing so extensively.

In our scheme we have contemplated the arrangement of three classes of cases:

1. The hospital cases.
2. "At home" cases which are now being cared for by the dispensary, which has received the small appropriation from the county (\$1,500 yearly for about 10,000 sick calls), barely enough to purchase the necessary medicines, and which apply through the county agent for medical attention. To reach this class of cases, the dispensary having charge of the west side of the city has divided it into nine districts—each district attended by one physician who is paid simply car fare from the dispensary.

3. Ambulatory patients who now rove around from dispensary to dispensary.

We would establish a bureau of clinical instruction with headquarters at the County Hospital. The function of this office should be to classify the clinical courses to be given, and to arrange the medical students into classes for methodic work. Small bedside classes, medical, surgical, gynecologic, dermatologic, obstetric, etc. Large classes in amphitheater, small classes in ambulatory patient department, and small classes for outside visiting departments. As to the ambulatory patients' department, or the dispensary department proper, I would adopt means of inquiry, with the object of excluding those who are not in need of charitable aid (and great care and kindness must be exercised in this department so as not to increase the mental suffering of those who are driven to accept charitable assistance). Complete histories are to be written in all cases and kept on file in the department to which the patient is assigned, and a record made on this history sheet of each visit made together with the treatment given.

Chicago has sent out to the world, chiefly to the great Northwest country, some 30,000 doctors to whom she never gave an opportunity to learn practical medicine by bedside study. Think of this great cosmopolitan city with her charity hospital, drawing its patients from two millions of people, and wonder why she does not reciprocate to the country which has so generously supplied her with the blood of commerce, by providing the country with the amplest opportunities possible for the education of its physicians. This she can do by opening the doors of her great institution for efficient clinical instruction.

AN AURAL MASSEUR.

BY EDWARD J. BROWN, M.D.

MINNEAPOLIS, MINN.

At the present time an aural masseur which is practical, safe and not too expensive, would seem to be a much felt want.

As a very simple and reasonably effective instrument I can commend the Ziegler otoscope with stiff rubber bag attachment, which I purchased in Heidelberg six years ago. With a soft rubber tube for fitting the otoscope tightly in the external canal, any safe and desirable amount of exhaustion or pressure

may be secured. No competent aurist would ever think of applying such a force to the drum membrane without being able to note the effect. Having the instrument in position I have been in the habit of drumming upon the bag with the four fingers of the right hand, having found that by this means I could make from 500 to 600 distinct impressions upon the membrana tympani in a minute. The stiff bag is not a necessity, as I have found that an ordinary syringe bulb answers a very good purpose. With this instrument I have relieved a long-standing case of tinnitus aurium by six treatments.

A far easier instrument to use and so a more effective one, I have lately constructed with the aid of my friend and jeweler, Mr. Carl T. Thayer. This is a machine involving the piston action of the Chevalier Jackson masseur. It is made up of an inexpensive jeweler's lathe and a small pump attached to the table of a sewing machine. The eccentric is so great that the extension of the piston may be varied from zero to two inches, and the machine is so geared that with foot power alone from 2,000 to 3,000 movements of the piston may be easily made.

My object in this publication is not to exploit anything particularly original, but to make it possible for any aurist who desires a masseur that is neither "cheap and nasty" nor dangerous, to secure one without "mortgaging his farm."

THE NECESSITY FOR CONSTRUCTING ANOTHER HOSPITAL FOR THE INSANE IN ILLINOIS.

BY BOERNE BETTMAN, M.D.

PROFESSOR OF OPHTHALMOLOGY AND CLINICAL OTOTOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS; PROFESSOR OF OPHTHALMOLOGY IN THE POST-GRADUATE MEDICAL SCHOOL; PRESIDENT OF THE ILLINOIS STATE BOARD OF CHARITIES.

CHICAGO.

The need of another insane hospital must be evident to any one who has beheld the poor accommodations accorded to the insane detained in the county poorhouses. The best authorities the world over are unanimous in their opinion regarding the necessity of State care for these defective individuals. The four institutions which now exist accommodate 5,000 patients, fully 2,000 more are scattered throughout the State and should, in our judgment, find lodgment in State buildings thoroughly equipped for their care and treatment. For further particulars regarding the construction of building and the most advanced methods for the care and treatment of the patients and other matters relating to the subject of insanity, we refer to the excellent reports prepared at the suggestion of Governor Altgeld by the superintendent and medical staff of the State lunatic asylums. They have appeared in print under the heading, "Compilation of Special Reports of Superintendents of Illinois State Institutions."

Another institution with a capacity of 1,000 beds for the care of both chronic and acute cases requires the immediate attention of the Legislature. In order to obtain an adequate expression of opinion of salient features which are involved in the erection of such an edifice, the following letter was sent to authorities in this and foreign countries:

"The State of Illinois has about 7,000 insane in public and charitable institutions. Five thousand are cared for in State hospitals, the remaining 2,000 are in hospitals and wards of the poorhouses of the counties.

ANSWERS TO THE CIRCULARS OF THE STATE BOARD OF CHARITIES WITH

ANSWER FROM.	STATE CARE FOR ALL THE INSANE.	SPECIAL HOSPITAL FOR INCURABLES.	WHAT PERCENTAGE OF PATIENTS CAN WORK ON THE FARM.
Dr. Liebe, Bielefeld (German epileptic colony). F. Kölle, Zurich. (Epileptische Anstalt).	State care preferable under all conditions.	Not desirable, because it deprives the other hospitals of a working force (farm, shops, etc.) Two such institutions exist in the Canton of Zurich, besides one for acute cases.	Depends on the population and the prevalent forms of disease.
J. Morel, Ghent. (Highest authority.)	State care preferable if frequent inspections by competent inspectors are made, to stimulate the care of the patients and the work of the medical staff.	Opposed to the principle. Draws attention to the fact that a very great number of idiots and imbeciles can be taught a trade for help in asylums. Special institutions for idiots can suffice to provide the other institutions with clothes and food. Extension of workshops. Special hospitals for the chronic and insane epileptics recommended (compare his pamphlet).	Up to two-thirds.
Dr. Zinn, senior, Eberswalde near Berlin.	State care preferred.	Board opposed to incurable hospitals.	Between 40 and 60 per cent.
J. P. Byers, State Board of Charities, Ohio.	State care.	Less expensive hospital may be built for incurables.	From 50 to 60 per cent. employed at "something."
Henry M. Hurd, Supt. of Johns Hopkins.	State care essential. Refers to New York experience.	Less extensive buildings for incurables, but on the same plant.	10 to 15 per cent. male patients can work on the farm. 20 per cent. female patients can be employed in gardens, laundries, etc. 30 per cent. of male patients (estimate) could work on farm.
Dr. Wise, St. Lawrence Hospital, New York.	State care.	Might be cheaper.	57.6 per cent. employed, 292 patients live on a farm 3 miles from hospital.
Dr. Edwards, Kalamazoo. Dr. Edward F. Wells, Chicago.	State care essential. Cites experience in Illinois.	Not desirable. Cites experiences of New York, Massachusetts and Pennsylvania. If buildings for the insane are very cheap they are not safe, and if entirely safe they are not very cheap. Every advantage of economical provision and maintenance of comfort and occupation, which the chronic insane may have in separate asylums, may be afforded them in hospitals for all classes; and further, if any division of this kind will cost less for the chronic, it will add correspondingly to the cost for the care of the acute cases.	About 50 per cent. of the males. An equal population of the females may be employed in other directions. Useful employment is pleasurable and remedial—enforced idleness is a grievous punishment.
Dr. Hertinz, Alt-Scherbitz.	State care by all means. More economical and humane.	Acute and chronic cases to be cared for in the same institution but the chronic in separate, cheaper buildings with less expensive care.	70 to 80 per cent. occupied in colony.
Dr. G. W. Jacoby, New York.	State care only.	Cheaper but substantial hospitals for incurables. (New Pennsylvania hospital for the chronic insane.)	About 20 to 25 per cent. of male patients. 18 to 20 per cent. of female patients.

"Governor Altgeld decided in 1892 that the existing State hospitals should not be enlarged, but that a new hospital should be built. In order to avail ourselves of the most advanced thought and of recent experience, we beg to address to you the following circular containing a number of questions to which you will be kind enough to give us an answer from your personal experience:

"Would you prefer care of the incurable in county hospitals and poorhouses at the expense of the counties, to care at the expense of the State, either with mere State supervision or with concentration of those patients in State hospitals?

"Does the difference in the needs between curable and incurable patients justify the construction of a less expensive hospital for the chronic incurable?

"What percentage of patients do you judge fit for work on a farm (after the plan of Alt-Scherbitz in Germany)? First, male; second, female.

"Is a separate institution for epileptics desirable, and to what extent will it relieve the insane hospitals?

"Is the Scotch boarding-out system feasible in this country?
"What is, to your knowledge, the best plan for hospital of a thousand patients?

"1. For largely acute cases. (What percentage of those cases would require special medical care and nursing in real hospital wards and watch-wards, after the arrangement of Dr. Scholtz, in Bremen, compare *Allg. Zeitschr. f. Psychiatrie*, Vol. 50?)

"2. Hospital for chronic patients."

The answers to the above were pregnant with good advice and the results of years of experience. We submit a number of them in a condensed form. (See table.)

It will be observed that the prevailing thought is to improve the surroundings of the insane by placing them under State control. To construct the buildings after the pattern of Alt-Scherbitz which tends to

REFERENCE TO THE CONSTRUCTION OF A NEW INSANE HOSPITAL.

DESIRABILITY OF A SEPARATE INSTITUTION FOR EPILEPTICS.	BOARDING-OUT SYSTEM.	BEST PLAN FOR A HOSPITAL; STYLE OF HOSPITAL FOR THE ACUTE CASES.	REMARKS.
Desirable.		Alt-Scherbitz. All acute cases should have supervision and care of physicians.	
<p>Colony.</p> <p>Gives very good plan for an epidemic colony:</p> <ol style="list-style-type: none"> 1. House for children with school. 2. Houses for patients able to work. <ol style="list-style-type: none"> a. Male. b. Female. <p>Occupation in gardens, agriculture, book binding, carpenters, tailors, basket makers, carpet weavers, cobblers, etc. Trades with fire or building excluded.</p> <ol style="list-style-type: none"> 3. Houses for insane epidemics. 4. Infirmary. 5. Farm, buildings. <p>Morel is not too enthusiastic on this point. Difficulty in distinguishing epileptic insanity from insanity in patients with epileptic fits. Does not seem quite conclusive.</p>			A book in the press on epileptic colonies by Dr. Kölle.
Favors special wards for epileptics.	Not favorable in America. Rather unite those patients and employ them like the idiots and feeble-minded in workshops, etc.	Refers to his pamphlets preparing the construction of two large asylums (1,000 patients each) built according to his plans.	Letter very important written in English.
The institution for epileptics founded 1893, at Gallipolis, will ultimately receive all the epileptic insane.	Proved a fair success in Massachusetts because there are enough impoverished families of good breeding.	No congregate buildings recommended.	Pamphlets sent.
Separate institutions for epileptics desirable as a relief to insane hospitals.	Pavilion plan.	Central hospital with 100 beds for each sex for acute and hyper-acute cases. Remaining 800 cases in three groups of buildings. Infirmary one-story buildings; remaining two for industrial patients of each class.	Refers to his reports.
It will relieve the hospital from an undesirable population having a bad effect upon the system.	Not a success in this country.		
Desirable. Would relieve asylums of Michigan of 7½ per cent.	Not a success here.		
Insane epileptics should be retained in insane hospitals. An institution—largely industrial in character—is needed for non-insane epileptics who are public charges. They require an especial care which cannot be given them in almshouses.	Neither desirable or successful in this country.	Buildings in four groups, viz.: Hospital group, for both sexes, to accommodate 20 percent. of inmates; group for convalescent and mild cases, for both sexes (in widely separated buildings) with a capacity for 20 percent. of inmates; a general wards group for males, and a general wards group for females, each with capacity for 30 percent. of inmates. The wards should not be too large and should be arranged to facilitate efficient supervision. They should be on one floor—each complete in itself—and in two story, fireproof, or semi-fireproof, pavilions. The cost should be moderate—neither cheap nor expensive—and certainly not extravagant.	Refers to papers on "Hospitals for the Insane—their Scope and Design," which was submitted to the board.
Special colony for epileptics rather desirable.	Boarding-out system questionable.	Cottages containing 30 to 40 patients. In chronic cases 70 to 80 may be housed in one building.	Refers to Die Kolonisierung der Geisteskranken in Verbindung mit dem Offen-Thur-System, ihre historische Entwicklung und die Art ihrer Ausführung auf Rittergut Alt-Scherbitz, von Dr. Albrecht Paetz.
Special institutions for epileptics to avoid deleterious influences of one class of patients upon the other.	Decidedly impracticable in this country.	<p>(a) For largely acute cases, the "block" system with special observation and hospital wards best represented by the plan of one of the Riding asylums in England, and New Bloomingdale Asylum at White Plains, New York.</p> <p>(b) Hospital for chronic insane, cottage system as it exists in Alt-Scherbitz.</p>	

overcome the penitentiary appearance and impressions so painfully pronounced in most of our institutions. To replace in most instances methods of restraint by the substitution of means of employment and outdoor pursuits which are prone to stimulate into healthy activity all of the functions of the body. Another noteworthy feature which of late years has come into prominence as a means of rendering more efficient the attempts at restoring the perturbed mind to its normal condition, is the establishment of a nurses' training school. The cure of insanity depends largely on influences exerted over the mind. The employment of drugs plays but a small factor in reaching the desired end. Everything depends upon psychic effects which must in a large measure be called forth by the individuals under whose constant

supervision the patients are placed. It will therefore be apparent that these attendants must be well instructed to perform their duties. The diverse nature of insanity demands a variety of methods, depending upon the individuality of the patient.

A great evil which exists in large institutions is the stereotyped and uniform regimen to which the mentally diseased are subjected. This is largely due to the insufficient number of attendants and to their lack of preliminary training. The system now in vogue in general hospitals, namely, that of educating a competent corps of nurses, should be introduced into hospitals for the insane. It would redound to the credit of the State, and by restoring to reason a larger percentage of the insane, probably would prove an economical measure.

SELECTIONS.

Effect of Removal of Supra-Renal Capsules.—Brinet records some new experiments with his eleven rats whose supra-renal capsules he removed a long while ago. He finds that they can bear fatigue from muscular exertion and artificial irritation just as well as normal rats. Two of his rats were killed and dissected and the capsules had not started to grow again.

Other writers assert that accessory capsules are not unusual in rats, and this perhaps explains why eleven of the rats lived out of the seventy-five he operated upon, and why they can bear fatigue. *Centralblatt für Physiologie*.

Experimental Study of Pancreatic Diabetes. Chabad has removed the pancreas in animals, and in each case it has produced acute diabetes mellitus. Partial removal only produces symptoms similar to those of diabetes insipidus. The removal of a larger portion causes slight diabetes mellitus, and of the entire pancreas the acute form. He concludes that the pancreatic diabetes thus produced is entirely due to the removal of the pancreas and not to any functional disturbance in other organs. The blood loses its alkalinity in this diabetes, and as the pancreas supplies alkali to the blood, with its removal the blood ceases to be alkaline. The favorable effect of alkalies in diabetes can thus be explained by these experiments on animals. They have fully established the fact of the existence of pancreatic diabetes. — *Gazz. degli Osp. e Clin.*

Serotherapy in the Treatment of Cancer.—A number of French observers have been experimenting with this treatment, and although they have not succeeded in effecting a complete cure, yet what they have accomplished is remarkable. 1. In the fifty cases they studied, the pain subsided immediately, and this unexpected phenomenon lasted during the entire course of treatment. 2. The ulcerations improved, healthy granulations and scabs formed, while the tendency to bleeding diminished. 3. The swellings grew smaller, the infiltration of the neighborhood ceased, the infiltrated glands shrunk, and the entire cancer often showed considerable decrease in size. 4. In the severest, most hopeless cases, the development of the cancer seemed definitely arrested. 5. The general health improved.

Three months of this improvement were followed by a stationary stage. After a while new knobs were found near the almost healed center, but their development was very slow. The injections produced slight exanthema in a few cases. They were followed by syncope in four, but all phenomena tend to prove that the course of the cancer was very much delayed by this treatment. *Centralblatt für Chirurgie*, Jan. 11, 1896.

The Bacteria of Catgut and Its Sterilization. Dr. Lajackowski writes to the *Przeglad Chir.* that he finds another bacillus in catgut beside Brunner's, which he calls alpha catgut bacillus, while he names his beta. The beta bacillus is a thin long rod with rounded ends, extremely movable. Certain differences between the alpha and beta appear when line and drop cultures are made of them, which must be referred to the originals to be studied. Both showed powerful resistance to the action of antiseptics and also to dry and moist heat, in both of which the beta surpassed the alpha. His experiments in this line were very interesting, as also his efforts to ascertain the effect produced by these bacilli on the living organism, especially where they prepared a soil for the pus cocci. His experiments resulted in finding that while subcutaneous and intravenous injections of both alpha and beta in rats produced no perceptible effect, yet, when mixed with streptococci, they caused the death of the animal in two to three days with general septic symptoms. He concludes, therefore, that the catgut bacilli are harmless in themselves, but seem to increase the injurious effects of the pus cocci. He announces that catgut can be thoroughly sterilized by soaking it twenty-four hours in ol. juniperi twelve

hours in ether and sixty hours in hydrochloric acid (1 to 500). Another method is to apply the Reverdin-Braatz process, temperature 150°. Still another is to keep it in boiling xylol two and one-half hours. *Centralblatt für Chir.*, Jan. 4, 1896.

Pathology of Castration for Hypertrophy of the Prostate Gland.—This is now one of the questions of the day, and the fact has been established that castration produces the desired atrophy. Prjewalsky has been experimenting in Russia to find out the cause for this result of castration. He has removed the testes of dogs, the nerves of the seminal plexus in some, and experimented in various ways. He finds that the nerves play the principal part in this problem, which is very complex. His conclusion is that it is the lack of anatomic continuity in certain nerve fibers which produces the atrophy after castration. In every case where he removed the external seminal nerves in a dog, there was disordered testicular secretion at once. Suppressing the function of the internal seminal plexus produced complete testicular atrophy, resulting in the entire disappearance of the parenchyma of the organ. The excision of "Cooper's nerve" produced atrophy of the prostate gland, but had no effect whatever upon the size of the testes. — *Gaz. Méd. de Paris*, Jan. 11, 1896.

Estimation of Blood-Corpuscles. The *Centralblatt für Physiologie* states that Bleibtren's method of determining the volume of the corpuscular elements in the blood has been criticised unfavorably by Eykman (*Pflüger's Arch.*, 50, p. 340), who points out the following most important error: According to the formula to be used in the calculation the volume of the blood-corpuscles is altogether too small, notwithstanding the fact that they are increased in size, whenever the blood is diluted with a hypotonic solution. This is owing to the decrease in the amount of water in the serum. After a detailed account of the operation of this and other sources of error, he describes certain experiments which show that the 0.6 per cent. solution of common salt advocated by Bleibtren, produces marked deviations from the correct estimates obtained when isotonic solutions are employed. After noting the lowering of the freezing point, he measured the osmotic energy of the serum according to Gryns' method. This is based on the assumption that the volume of the blood-corpuscles remains unchanged in a liquid which does not affect their substance, if the liquid has the same osmotic energy as the original serum. It proceeds by centrifugizing defibrinated blood to the constant volume of the residuum. The liquid above is then removed and replaced in several different simultaneous tests by solutions of salt, varying in strength, and centrifugized until the balance is restored. A solution which does not produce any change in the residuum he considers isotonic.

Bleibtren's objections to this centrifugal method only apply when the diluting liquid affects the substance of the corpuscles. Harmonious estimates of the blood unmixed, or mixed with solutions of salt approximately isotonic, are certainly obtained by this method. It also establishes the fact that the substance of the blood-corpuscles increases considerably when mixed with a 0.6 per cent. solution of salt.

Bleibtren replies to his critics, Eykman and Hamburger, in a later issue of *Pflüger's Arch.*, p. 405, acknowledging that his method estimates the volume of the corpuscles too low on account of the fact that the 0.6 per cent. solution of common salt is not isotonic with the plasma. But changing to isotonic dilutions, he claims that his method will be found of great service. He no longer sustains his former unconditional condemnation of the centrifugal method, although he still believes that even in the most favorable cases it will not give the actual volume of the blood-corpuscles, but only a proportionate amount. On account of the varying sizes of the corpuscles in pathologic blood, we can not expect absolutely correct proportions between the actual and the estimated volume, and differences will probably be found similar to those noted between the blood of different animals.

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SATURDAY, FEBRUARY 8, 1896.

THE ATLANTA MEETING.

As usual, the JOURNAL of the Association will manage an official train from Chicago to Atlanta direct without change of cars. Every convenience will be furnished, and it is expected that the train will leave Chicago on Sunday afternoon, May 3, arriving in Atlanta Monday at 4 P. M. We hope all of our members from the West and Northwest who desire to attend the meeting, will make arrangements to concentrate on JOURNAL train at Chicago. The President, Trustees and several members of the Business Committee will be on this train. The Secretary of the Association, Dr. ATKINSON, has already made application to the various railroads for the usual reduction in rate of fare, which will be applicable all over the United States. The large increase in membership of the Association should make this an easy task for the permanent secretary.

Section officers will facilitate the preparation of the program by forwarding titles of papers to the JOURNAL as fast as received.

THE HYGIENE OF WAR.

Under the heading, "The Hygiene of War," the *Lancet* (London, England) in a recent issue refers to a work undertaken by Dr. PAUL MYRDACZ, staff surgeon-major of the Austrian army, which bids fair to supply reliable data to all persons interested in military vital statistics with reference to active service. Two fasciculi of his work have been issued, one giving the history and present state of the French sani-

tary service and the other the medical history of the Crimean war; but Dr. MYRDACZ intends to embody in his work a description of the health departments of the principal armies of Europe, a medico-chirurgical history of recent wars, the effects produced by modern projectiles and a general review of improvised hospitalization and transport. According to the *Lancet*, medical officers of the Austrian army are obliged to satisfy examiners regarding their knowledge of the Crimean campaign, with especial reference to sanitary matters, before they can be promoted, and it was in order to act as a text-book for this ordeal that this historical fasciculus was originally written. It contains a complete *resume* of the chief events of the memorable siege of Sebastopol. Details concerning the military operations are given side by side with a full account of medical and sanitary procedure, the whole forming an animated recital of a most important campaign.

So far as regards the organization of the hospital departments of the great armies of the world we have already been informed fully by MAJOR J. VAN R. HOFF, U. S. A., in his excellent paper on the subject read at the last meeting of the Association of Military Surgeons of the United States, and recently published in pamphlet form. MAJOR HOFF with laudable patriotism includes the Army of the United States in his paper, although its present numerical strength is nearly equaled by that of the garrison of more than one European city. He is justified, however, when we consider what the Army of the United States has been and what it would be if the exigencies of the times called for the military strength of the States to assemble under the National flag. After describing the present status of the medical department and hospital corps, he comments on the fact that we have no detailed scheme of organization for active service. "Contrasted with the almost perfect sanitary organization of other armies, our own unpreparedness in this direction points a moral we can ill afford to ignore."

The new Army Regulations under the heading "Field Service" has only four short paragraphs in relation to the work of the Medical Department, and in none of these is there the slightest suggestion of organization on the grand scale. The Regulations of 1889 contained an outline of the methods to be adopted in war service and for the care of the wounded on the battle-field; but this has been omitted from the new edition, probably to be embodied in the Regulations for the Medical Department to which it properly belongs. It is understood that the manuscript of these latter regulations, prepared by SURGEON GENERAL STERNBERG, has been approved by the SECRETARY OF WAR and will be published in a short time. It is unlikely, however, that they will enter into the details of hospital organizations such as are

to be found in the existing status of the medical departments of the large armies of Europe. We do not require to have our small army organized by brigades divisions and army corps. It is scattered in small commands at military posts from the Atlantic to the Pacific. Nor do we require to have our medical officers and hospital corps detachments organized for attachment to skeleton or possible brigades and divisions. They are at present as scattered as is the Army. But just as our military men keep always in view the possibility of war, as the *raison d'être* of our military establishment, and familiarize themselves with all the methods by which an organization for war may be built up on our standing army as a nucleus, so our medical and other staff corps have always in view the same possibility and the necessity for their expansion under a call for war service. MAJOR HOFF's paper is itself an illustration of this on the part of an army medical officer, and the existence of the Association of Military Surgeons before which the paper was read manifests a full appreciation of the subject on the part of the medical officers of the military forces of the States. We do not, therefore, coincide with MAJOR HOFF in his view that our condition in this regard is one of unpreparedness; for should the emergency arise we feel confident that under the present able administration of the Army Medical Corps the expansion of the Department would go on *pari passu* with the aggregation and consolidation of the troops mustered into service under the call of the PRESIDENT for an armed force, and that by the time we had brigades, divisions and corps to go into battle we would have brigade, division and corps ambulance organizations to care for their wounded.

MEDICAL MAKESHIFTS.

The advocates of higher medicine have no more serious duty than to impress upon the members of the medical guild, especially upon the men of the future, the necessity for maintaining and asserting the dignity of their profession, the importance of its labors to the welfare of the body politic, as well as to the health and vigor of individual bodies physical, and the pecuniary value of its services to the State, compared with those rendered by divines, jurists, legislators and executive officials.

The eleemosynary relations, which practitioners ungrudgingly assume because of the dominant humanitarianism of their calling, have, in fact, operated to belittle their occupation. When the terrifying shadow of death has been dissipated, the skill of the doctor, who has caused the house of mourning to become one of rejoicing, is forgotten. Equivalent remuneration is seldom tendered, and if after long waiting a charge is presented it is apt to be questioned, though it be rarely proportionate to the value of the life

saved. Where the attorney receives thousands of dollars, not one physician in a multitude can expect hundreds, and the retainer of the counselor in advance of his services, has no parallel with the physician undertaking a new case. The recent decision of a St. Louis court sustaining a surgeon's charge of \$5,000 for a trephining operation, is a notable exception in medical experience, as was the honest declaration of the learned judge that he allowed the bill, "not simply because the financial condition of the defendant was such as to allow so large a bill to be paid without serious inconvenience, but on account of the character of the operation, which of itself was well worth the fee demanded," but would even this judge have admitted that the successful management of a case of typhoid fever implied quite as much knowledge, skill and judgment, and was entitled to a similar compensation? The instance is still recent where a well-known millionaire contested a smaller fee than this in a case involving risk to life, at the very time he had given a famous lawyer, without objection, a retainer of \$10,000 in a mere question of property.

It is this ignorance of the weighty value of physicians' services, and the diffidence of the latter in asserting it, as well as their tacit acquiescence in the popular estimate of that of which the public is not competent to judge, that has led to makeshift methods in all matters medical in municipal and national administration. COL. WARING, the Commissioner of Street Cleaning of the city of New York, deserves commendation, not alone for the excellence of the service he has instituted as for his fearless valuation of it. He has done the work as it should be done, and not upon the miserable makeshift principle of making the money available go as far as it could. State Boards of Health have demonstrated their value to their several communities, but not one of them is bold enough to insist upon the really necessary provision of means by State legislatures, and they do their work as best they can with what is given them. An epidemic is averted, the loss of millions through trade paralysis is prevented, thousands of lives of wage earners are saved, but not one of the members of these health boards receives anything but a pitiable salary, if paid at all, and the expenditures of the board have to be itemized to unit dollars and fractional cents. A million or more dollars are voted for a battle-ship; would a million be appropriated as promptly to defend the country against such an enemy as yellow-fever, which can slay more victims in less time than powder and shot, paralyze trade more effectually than a blockading squadron, and retard progress more seriously than the occupation of a city by a beleaguering army? There is no National Department of Health in this country—absolutely necessary as it is admitted to be—because of the prevailing makeshift spirit, which induces the people to

get along without one, and thus save its cost, for costly it need must be, if it be what it should.

Another illustration of the motive of this article is to be found in the recent report of the Surgeon General of the Navy, who in explaining the impossibility of filling the vacancies of the medical corps, says: "The law does not provide for the temporary appointment of acting assistant surgeons to meet the emergency that has arisen," and it is fortunate that these makeshift appointments are not permitted. The emergency referred to is simply an existing necessity for the full complement of medical officers, authorized by statute, and therefore not a mere temporary emergency at all, but a persistent, urgent deficiency in the organization of a department of the government due to the failure to provide the requisite number of officers, for causes easily remedied by legislation, and there is no reason why recourse should be had to makeshifts in the shape of acting assistant surgeons, who are not required to pass the examinations for admission, which are presumably merely the measure of ability to do the duty required, but who, notwithstanding their inability to pass these examinations, are nevertheless, expected to perform this duty. Naturally, the same thing will occur as when the acting assistant surgeons, who having served throughout the civil war, interchangeably with regular officers, applied, as they were justified in doing, by reason of long, faithful, and satisfactory service, to be admitted to the permanent class, although they had never fulfilled the preliminary requirements.

While there is in fact, no excuse for makeshifts in any branch of the national service, they have not been less uncommon in the Army than in the Navy. Not long ago, a cavalry officer, relieved from duty at an Army Recruiting Rendezvous, was narrating his experience during his term of service and stated in reply to the inquiry as to who was the medical examiner associated with him, that there was none, and upon a physician expressing astonishment that expert professional duty of this important character should be exacted of him, said that this was not unusual. "I held Tripler's manual open in one hand, while I followed it as best I could," he added. "But do you know how to auscult?" and after the nature of the operation was explained to him, he replied, "Oh! I put my ear down and if I did not hear anything particularly alarming I passed the man!" When it is remembered that the recognition of visual, pulmonary and cardiac defects is the most difficult of the medical examiner's professional work, it is not surprising that this cavalry examiner admitted that a great many of his recruits were subsequently found unfit for service. Every such improper enlistment, involving discharge for disability existing at the time of enlistment is a matter of indefensible expense to the government, besides impairing discipline and efficiency if the phy-

sically defective recruit is retained to avoid the loss of pay, clothing and transportation. Nothing can justify the makeshift principle which requires an incompetent individual to discharge duties for which a sufficient number of qualified officers ought to be provided; nor is there any excuse for employing army hospital stewards or naval apothecaries in the rôle of medical officers, whether as physical examiners, considered the most delicate and responsible of military and naval medical officers' duties, or as prescribers and care-takers in cases of disease or injury, when the possibility of fatal consequences or of permanent impairment should preclude their ever handling scalpel or hypodermic syringe. Whether it be two hundred or three hundred or more thoroughly qualified medical officers who are required for the proper performance of these duties, they should be obtained at whatever cost, and no pretense of economy can ever justify their substitution in a single instance or under any circumstances, by incompetent makeshifts.

THE INFLUENCE OF PUBLISHERS UPON MEDICAL LANGUAGE AND LITERATURE.

Neither the lay or the professional public has any adequate understanding of the methods whereby, and of the extent to which, publishing houses are influencing opinion, and of all the motives at work. An illustration of the fact lately came to our notice, that throws quite a vivid light upon the ways of book-makers. A certain lay dictionary of the English language having an extensive sale especially in some parts of the United States, throws the weight of its authority in favor of certain methods of spelling words. A rival publishing house proceeds to hire a corps of "expert" philologists to re-edit its own rival dictionary, and instructs said philologists to spell all disputed words differently from the competing book, if for such difference of orthography there can be found any sort of a decent excuse. The smile that wreathed the face of the lexicographic editor as he told this "plain unvarnished tale," also expressed clearly enough the fact that philology, good taste and general usage, had been thrown, like physic (or physick), to the dogs, and that commercialism was the sole motive in continuing useless word-wrangling. The silly public would feel compelled to buy both books in order to justify its hodge-podge of linguistic customs. At this rate, it is plain that every publishing house will, in time, have its authoritative lexicon, and every "disputed word" may have as many forms and varying definitions as there are enterprising publishing houses.

But the Babel-makers do not stop here. Each publishing house must abide by its own "standard," and so all books and periodicals published by the firm are cut and clipped to fit the Procrustean bed established by the dictionary published by that firm,

regardless of authors' rights and wishes, regardless of the original from which reprints and subsequent editions may have sprung. It thus becomes evident that the formation of dialects and new languages is not to be ended by the supposedly sufficient influence of intercommunication and the printing press. The establishing of a dominant tongue may thus turn out to be dependent upon the commercial supremacy of the publisher who prints the most books and that pushes his own dictionary into the most general use.

Now in medicine we are actually enduring or fast coming to something very like this. A medical publisher that has published a medical dictionary makes that the rule of the printer's office regardless of all other considerations. All its books and periodicals are put out with spellings, etc., guaranteed as correct by the special authority, entirely oblivious of philologic principles, of common usage, or of desirable reforms. Each thus pursuing his own orthographico-financial way, confusion is growing fast and furiously worse confounded. The poor proof-reader or typesetter, if he change his employer, is constrained to unlearn a thousand rules that held across the street or in a neighboring city, and learn anew what the particular authority demands that has been chosen by the firm—and chosen because "we must uphold our own dictionary sure!"

Thus is born the bastard of opposition to all progress in medical language. That such progress is extremely desirable, nay, absolutely necessary and inevitable, no dispassionate observer would deny. That such cunning trickery of publishing houses can finally and entirely prevent betterment and shortening of the language is absurd. All they can do is to delay and make reform more difficult. Come it will despite the most stupid conservatism and the most selfish commercialism. Americans will be as likely to spell center and literas Frenchmen do, as likely to stick the *u* back into *color* or *favor*, or the *x* into *hemorrhage*, *ether*, or *gangrene*, as they will be to give up Pullman cars for old stage-coaches, or to dress once more in stocks and stoles.

But, as says the old saw, we have yet the tail to skin. The ingenuity of the schemer is not exhausted. There is left the commercial medical college, its "List of Books Recommended" and the special professorial commendation of a certain text-book. The diploma-mills are fast becoming annexes of the publishing business. The only limit set, happily, by the very nature of things, is the effective one of competition. A traveler tells how in waiting for game on a Scotch moor, he told his gillie all about the wonders of American civilization, its Niagara, its twenty-five story buildings, telegraphs, phonographs, wizards and billionaires, receiving from his listless listener no glance or word of interest, no slightest sign of wonder. Finally in despair he asked Jamie what he

thought of these things. "Aweel, mon," said the pawky doubter, "ye should know I'm something of a liar mysel'." A fortunate barrier against medical text-book monopoly is assured by the fact that each great man has his own best text-book on the subject; or, if not, he has at least his own little private jealousy and rivalry to spur him to say, "Thus far and no farther!" In this way, as so often, we find, "there is some soul of goodness in things evil."

And the books, such books! as have been issued from the press during the past twenty years! When conceit, ignorance and avarice come to the judgment bar for their rewards, the heavenly bank will certainly be soon bankrupt!

THE MEDICAL PEDAGOGY OF CHICAGO.

In connection with the editorial summary on medical education in a late issue of this JOURNAL, it is interesting to note that the *Cook County Medical Announcement*, "a quarterly periodical of local medical information," is in its latest issue a directory of Chicago physicians engaged in medical education at the present time. These number 590, or just about one-sixth of the total (estimated) number of medical practitioners in the city. The list, however, does not profess to include any of the physicians connected with the schools who have not regular or definite appointments, and therefore may be considered as an under, rather than an over, statement of the total of medical teachers, and we can assume legitimately that over one-sixth of Chicago's medical population are of a sufficiently high grade to be professors or instructors in one or the other of the thirteen or fourteen different institutions of medical learning. The list also gives other interesting data than merely the enumeration; it shows that quite a respectable minority are pluralists, so to speak, holding positions in more than one faculty, and there is one instance, at least, where the same individual is given as at once a professor in four different institutions, representing the regular, homeopathic and eclectic schools of practice. The lion has evidently lain down with the lamb and the medical millenium must be close at hand.

There are other curious facts to be found in this list, suggestive of still more curious reflections. The most impressive one of them all, however, is that if the profession of medicine is not overdone in this country, if there is not already a larger proportion of doctors than the population can support and the ratio disastrously on the increase, it is not through any fault of a very considerable and eminently respectable minority of the medical practitioners of the great city of Chicago, who are presumably doing their best to increase and multiply the full-fledged members of our honored profession. So large a plant should have a correspondingly magnificent product.

Speaking seriously, however, these figures naturally bring out the question: What is the value to the profession and to the world of this multiplication of institutions of medical instruction? Why should there be five regular undergraduate medical schools in Chicago to say nothing of "homeopathic" and other irregular institutions? There is no need to give the answers to the questions; they will suggest themselves to any well informed physician.

An honorable rivalry between two, or, at most, three well established and equipped medical colleges in the same medical center is in its way a good thing, if the efforts are only directed to improving the quality of the instruction without too much reference to the quantity of doctors turned out on the world and the corresponding increase of fees. But any very extensive competition makes true the business adage about its being the life of trade and may in the long run tend to the disadvantage of the profession as a whole, whatever benefits may accrue to the few, or, perhaps, under the circumstances, to the many who receive the advertisement as professors in a medical faculty. The dispensary evil, in regard to which so much has been said, may yet come to have its counterpart in the medical college evil, alike, though perhaps not equally, detrimental to the best interests of the medical profession.

It would be of interest had we the similar figures for other medical centers, New York, Philadelphia and St. Louis, to compare them with those given for Chicago, and to fully round out the compilation of evidences of medical educational zeal we ought also to include the data of physio-medical, vitapathic, Christian science and other so-called medical schools that flourish and are recognized as such by a gullible public.

THE TRUE AIM OF SICK-ROOM DISINFECTION.

The *London Lancet* has attempted an analysis of the latest improvements for the practical disinfection of living rooms. In its editorial columns it is remarked that the frequency with which second and third case of scarlet fever or "recurrences" appear in houses that have been disinfected by the inspectors of sanitary authorities, casts grave doubts on the efficacy of procedure usually adopted, despite its official sanction. Stripping the walls, lime-washing walls and ceilings and scrubbing woodwork and floor boards with soap and water are indeed effectual enough, and to these when thoroughly done we are disposed to ascribe any successful results rather than to the more technical process of so-called disinfection by sulphur fumes, which is little better than a superstitious rite or incantation shorn of the religious character it had in the mind of ULYSSES when he "fumigated" the halls desecrated by the massacre of his wife's suitors, after removing the

corpses and washing away the blood with a promptness that precluded all thought of other than moral pollution. But in the light of bacteriologic experiments dry sulphurous acid fumes, whether generated by burning sulphur or carbonic acid sulphid, or, as has of late become the fashion, by opening cylinders of the compressed gas, are for all practical purposes useless. The gas would act as a powerful germicide on articles of fabrics previously saturated with water, but its bleaching action precludes its employment in this way with colored material, carpets or curtains, and it is as what is called an "aerial disinfectant" that it holds its ground in popular esteem. But aerial disinfection is an absurdity; no one wants to purify the foul air, which is easily enough removed by simple ventilation. In disinfecting a room the true aim is to kill the germs contained in dust on ledges or in the crevices between the boards, or adhering to the walls and other surfaces, and the dry gas is powerless to do this, which is best obtained by a sublimate solution of the strength of one part in 1,000, or by lime- (not white-) washing, providing the lime be freshly burnt and caustic; the carbonate of lime, or chalk, used in white-washing under the name of whitening, and into which lime is converted by long exposure to the air, being inert. The series of experiments on the infection and disinfection by various means, of wall paper, distempers, and other wall surfaces conducted by DR. KRONBERG, under the direction of the late PROF. UFFELMANN, at Rostock, showed that subsequent scraping were invariably and almost instantaneously sterilized by washing or spraying with the sublimate solution, and equally so by the lime-wash after the lapse of twelve or twenty-four hours. *The danger of corrosive sublimate is we believe exaggerated*; since the smallest fatal dose for an adult being probably three to five grains—equal to at least a quarter of a pint of the solution—accidental poisoning with the solution is practically not probable, and as a further safeguard it might be colored with indigo or "laundry blue." Carbolic acid, which is sold without restraint and is in universal use, is more dangerous on that account, and is, indeed, frequently employed with suicidal intent and with fatal effects. In France, Germany and Italy sublimate has nearly superseded all other disinfectants, and its neglect in this country is inexplicable. As to carpets, bedding and clothing, all that is capable of being washed should be plunged into a copper of boiling water for a quarter of an hour, and such articles as would be spoiled by this treatment should be disinfected by steam.

This point in reference to the powers of sulphurous acid gas, whether dry or moist, will in the future, we think, receive a fuller consideration than it has had in the past, namely, that it leads to a prolonged aeration on the part of the occupant after the officials have left the premises. Here we have an aerial disinfectant that is a clear gain, supplementary and complementary to the routine work of the disinfecting staff.

CORRESPONDENCE.

Treatment of Nasal Duct Obstruction.

CHICAGO, Feb. 3, 1896.

To the Editor: If I may be permitted to add a few words to Dr. Wandless' letter on this subject I would say that the statement of Dr. Taylor, regarding the frequent failure of probing for the cure of stricture of the soft parts, is largely borne out by the facts. As practiced by the average ophthalmic surgeon the use of probes accomplishes very little toward relieving the lachrymation and other annoying symptoms. Indeed, stricture of the naso-lachrymal duct has long been one of the opprobria of eye surgery and when one considers the pathology of this condition we have at once an explanation of such an unsatisfactory state of affairs. Suppose the general surgeon were to rest content with an internal urethrotomy in these cases which, pathologically, closely resemble the simple form of nasal duct obstruction: what would be the probable result six months afterward? About as much as is accomplished by merely incising the cicatricial band that usually constitutes ordinary obstruction in the duct!

If Dr. Wandless' program could be followed in all cases a cure would doubtless result, because if there is one thing that is established in these cases it is the necessity of faithfully using as large a probe as possible for months and even for years at a time. Cutting through the stricture combined with the irregular or occasional use of a small probe, not only accomplishes nothing but such a procedure makes the latter state of the patient worse than the first and discourages him from undergoing further treatment. He wanders over the country deriding ophthalmology in general and his late oculist in particular.

Whatever Texan patients may do my experience of Northern sufferers is that they soon tire of coming to one's office for months, even at increasing intervals. *Teach them, then, to do their own probing* and have them thoroughly understand that their ultimate cure lies entirely in their own hands. Use large, aseptic probes and disinfectant collyria and in two weeks after the preliminary operation the patient may be dismissed, having in the meantime, been taught how and when to probe his (more often *her*) own duct. My experience is that all patients, even the most nervous women, learn to do this easily—often better than the oculist himself.

CASEY A. WOOD, M.D.

An Inquiry Concerning the best Climate and Waters for Bright's Disease.

CAMDEN, N. J., Jan. 26, 1896.

To the Editor: Can you advise me what location and climate, in this country, offer, in your judgment, the most hope for a person afflicted with incipient Bright's disease to visit? Any answer, on inquiry through THE JOURNAL, you may be good enough to make will be appreciated by

Yours truly,

E. L. B. GODFREY, M.D.

From a Retired Member.

NEWPORT, N. H., Jan. 28, 1896.

To the Editor: Your letter with sample copy of the JOURNAL are received. Many thanks for the remembrance. In the success of the AMERICAN MEDICAL ASSOCIATION and its publications I have felt a deep interest from the time of its organization in 1847. I have most of the annual reports and *all* the volumes of the JOURNAL until July, 1891. During a severe and protracted sickness that spring and summer, through some misunderstanding, my membership fee was not sent and my name, as it was right it should be, was dropped from the subscription list. As delegate from our State society I attended the annual meeting in New York in 1864 and in San Francisco in 1871, and as a permanent member, in Boston and Washington, always

finding the occasions full of pleasure, instruction and benefit. My interest in medical literature and science, and in the power, influence, strength, honor and usefulness of our noble profession remains unabated, notwithstanding I am within less than three weeks of my eighty-sixth birthday, an hour too late in life's evening to warrant a renewal of membership.

Most respectfully yours,

J. L. SWETT.

Opinions of The Journal.

99 BROADWAY, SOUTH BOSTON, MASS., Jan. 31, 1896.

To the Editor:—Thank you for the beautiful plates you had provided for my article on splinting.

The JOURNAL under your management has become of medical journals in America *facile princeps*. The matter published during the year is considerably in advance of that in the textbooks, and the typographic dressing you give it is worthy of the matter. I congratulate you on your excellent work since editing the JOURNAL, and hope the JOURNAL shall enjoy your services until it attains the circulation it deserves—20,000—and indefinitely after that.

Very sincerely,

EDWARD A. TRACY.

I have thought for some weeks that I would write you and express my pleasure and appreciation of the way in which you have conducted the JOURNAL. It now stands clearly at the front, and I have only to say, God bless you.

HENRY D. HOLTON, M.D.

Brattleboro, Vt.

ASSOCIATION NEWS.

Atlanta Physicians Preparing for the Meeting.—There will be an important meeting of the regular physicians of Atlanta at the Young Men's Christian Association hall to-morrow night at 7:30 P.M. It will be under the auspices of the Atlanta Medical Society, but all regular physicians, whether or not they are members of the society, are invited to be present.

The AMERICAN MEDICAL ASSOCIATION will hold its annual meeting here in May and the meeting will be held to take the first steps toward the entertainment of the convention. Dr. Beverly Cole, of California, is president of the AMERICAN ASSOCIATION and the most distinguished doctors of the country are to be found in its ranks and will be here at the meeting.

It is expected that there will be about fifteen hundred doctors here when the meeting is called to order. The physicians of Atlanta are determined that the distinguished visitors shall be given the best entertainment possible while they are here.

Dr. Willis Westmoreland, of Atlanta, is chairman of the committee of arrangements, and he is taking an active interest in the coming meeting. *Atlanta Journal*, January 20.

NECROLOGY.

MARCEUS L. TAYLOR, M.D., a resident of Booneville, Miss., died on the 25th ult., at Philadelphia in the Hospital of the University of Pennsylvania. Dr. Taylor was born about 1850. For nineteen years he was connected with the United States Army. While stationed at Jefferson Barracks he was notified of the serious illness of an old friend. He started out on horseback for a long journey of 170 miles in the midst of a blizzard. He reached his destination safely and accomplished his purpose, but was never well afterward, owing to the exposure during the ride. He had decided to practice medicine in Philadelphia and came here for this purpose, but he was obliged to seek hospital treatment soon after his arrival. His death was due to malaria and asthma. He leaves a widow. His body was sent to Booneville for interment.

EDWARD H. TINEN, M.D., of typhoid fever, at Chicago, January 28, aged 22.—George F. Magoun, M.D., of Grinnell Iowa, January 30.—Henry Ladd, M.D., of Melmore, Ohio, January 30, aged 83.—J. P. Gruwell, M.D., of Alliance, Ohio, January 20, aged 85.—Felix P. Callahan, M.D., of Peoria, Ill., January 29.—A. L. Harris, M.D., of Atlanta, Ga., January 28.—J. W. Pugh, M.D., of Stockton, Cal., January 24, aged 78.—John Healy, M.D., of Raywick, Ky., January 28, aged 60.—M. L. Stafford, M.D., of Luray, Mo., January 26, aged 45.—J. M. Waldron, of Porter, Mich., February 1, aged 36.—John R. Meachem, M.D., of Racine, Wis., February 1, aged 72.—Thomas Burgess, M.D., of Nashville, Tenn., January 30, aged 69.—P. P. Whitesell, M.D., of Noblesville, Ind., January 28, aged 73.

THE LATE DR. BASIL NORRIS—Your committee respectfully submit the following expression of respect, and resolutions in memory of the late Dr. Basil Norris:

He who acquires the knowledge of preserving health, obviating disease or death and exerting himself to do good to all men, deserves the homage of his fellow-creatures while living, and when he has passed away he should be held in pleasant and appreciative memory by all who have known him. Dr. Norris, we are gratified to know, received a very large share of esteem and honor, and that we, the members of this Society, of which he was an honorary member, do record the fact that we sincerely cherish the memory of our departed friend and brother.

Dr. Norris was born in Montgomery County, Maryland, March 9, 1828. He was graduated at the University of Maryland in 1849, and entered the United States Army in 1852. He served with troops in Texas, Utah and New Mexico until 1862. He was then promoted Surgeon, and in 1863 was appointed Medical Director of one of the grand divisions of the Army of the Potomac. For meritorious service he was raised to the rank of Lieutenant-Colonel, and finally Colonel. When retired, he was Medical Director of the division of the Pacific. His writings are said to have been numerous and scholarly. He was a genial man, an accomplished physician and efficient officer. He died in San Francisco, Nov. 11, 1895.

WHEREAS, Our professional brother, Dr. Basil Norris, who after a successful career, has been removed by an All-wise Providence, therefore,

Resolved, That as an earnest friend and co-worker his death is sincerely felt by this Society; and that to his relatives and friends we tender our sympathy and condolence;

Resolved, That a copy of this memoir be transmitted to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and the medical journals of this State, accompanied by the request that it be published.

G. W. DAVIS, M.D.,
F. B. CARPENTER, M.D.,
C. E. FARNUM, M.D.

Committee of San Francisco Medical Society.

BOOK NOTICES.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science, by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume VI. "Diseases of the Respiratory Organs." New York: William Wood & Company. 1895.

This volume is accompanied by a note from the publishers which states that "owing to unforeseen difficulties in the preparation of volume V, it has been necessary to issue volume VI out of its natural order. Volume V will be the next volume to appear." The contents of this volume include the following articles: 1, "On Diseases of the Nose," by Prosser James, of London; 2, "Diseases of the Accessory Sinuses of the Nose," by Jonathan Wright, of Brooklyn; 3, "Diseases of the Naso-pharynx and Pharynx," by E. J. Moure, of Bordeaux; 4, "Diseases of the Ear," by Albert H. Buck, of New York; 5, "Diseases of the Tonsils," by E. J. Moure, of Bordeaux; 6, "Diseases of the Larynx," by Francke H. Bosworth, of New York; 7, "Diseases of the Trachea and Bronchial Tubes," by Sir Thomas Grainger Stewart and

George Alexander Gibson; 8, "Diseases of the Lungs (Excluding Croupous Pneumonia and Tuberculosis)," by Winslow Anderson, of San Francisco.

The names of the authors are so well known and authoritative, that one knows instinctively that the subjects respectively assigned them will be properly treated. An important statement is made by Moure, p. 289, where in speaking of the antitoxin treatment of diphtheria he says the period of immunity "conferred by the antitoxin has not been determined, but would appear to be about two or three months."

The publishers have illustrated the work well, and its appearance is uniform with the preceding volumes. We can truthfully award this volume the same high praise that was given its predecessors in the series.

An Atlas of the Normal and Pathological Nervous Systems. Together with a Sketch of the Anatomy, Pathology and Therapy of the Same. By DR. CHRISTFRIED JAKOB, with an introduction by PROF. DR. A. D. STRUEMPPELL. Translated and edited (authorized) by JOSEPH COLLINS, M.D. 8vo, cl., pp. 230. New York: William Wood & Company. 1896.

This is No. 2 of Wood's Medical hand atlases, and has 221 figures on 78 plates, three of them folding charts. To the anatomist, the physiologist, the clinician, and as well the general practitioner, who desires to comprehend the clinical picture as seen at the bedside, this atlas will be invaluable. It gives the relationships in a clear and lucid manner, and as stated in the prefatory note: "The student as well as the practical physician who wishes to keep in touch with the advance which medical science has made, from the standpoint of the neurologist, is given the opportunity to get a clear conception of it by means of this atlas."

Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photo-lithochromes from Models in the Museum of the St. Louis Hospital, Paris, with explanatory woodcuts and text, by ERNEST BESNIER, A. FOURNIER, TENNESON, HALLOPEAU and DU CASTEL, Physicians to Hôpital St. Louis, with the Coöperation of Henri Feulard, Curator of the Museum, and the Secretary, Léon Jacquet. Edited and annotated by J. J. PRINGLE, M.B., F.R.C.P. Part I. London: F. J. Rebman; Philadelphia: W. B. Saunders, 1895. To be published in twelve parts, at \$3 a part.

The Hôpital St. Louis was founded by Henry IV and opened for patients in 1602. It is therefore next to the oldest hospital in Paris, and for the past fifty years has treated about 8,000 patients annually. The museum has been famous for its extensive dermatology and syphilography collections, and now we have these treasures spread before the world, so that all may see color reproductions of this great museum, representing cases actually treated. The plates have an explanatory text by the staff of the St. Louis Hospital, and the names of Besnier and Fournier are alone sufficient to give tone and character to the work. The translation by Dr. Pringle and the typography are worthy of all praise.

The Medical Muse, Grave and Gay. A Collection of Rhymes up to date, by the Doctor, for the Doctor, and against the Doctor. Collected and arranged by JOHN F. B. LILLARD. Cl., pp. 141. New York: I. E. Booth. 1896.

This collection has some excellent and some very poor selections, but the reader having paid his money may take his choice. We miss some of the earlier medical rhymsters such as Armstrong and Fessenden, and there is no attempt to invade the Continent and make any translations from Volkman, or from the French. We miss that characteristic poem of Dr. Holmes entitled "Rip Van Winkle, Jr., M.D.," with which he delighted the Massachusetts Medical Society some years ago, and there are many omissions of more recent American productions. However, the idea of the collection is a good one, and this book, which we hope may reach its second edition soon, is well started, although there are some that might well be spared. We expect to see the second edition twice as large. There are a number of good things in the old *Flos Medicinæ* that might

well be included in the next edition, either in the original or from some of the innumerable metrical translations, one of the best being that of Ordonaux, of Albany. Some of Dr. Holland's (Timothy Titecomb) rhymes are well worthy of being included in such a collection, and we sincerely hope that the compiler, for the credit of American medicine, may next time issue a really representative volume of medical poems, for which this too miscellaneous collection only stimulates the desire.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. WITTHAUS, A.M., M.D., and TRACY C. BECKER, A.B., LL.B., and a staff of collaborators. In four royal octavo volumes. Volume III, pp. 697. Forensic Medicine (continued). New York: William Wood & Company. 1896.

In this volume the subject of forensic medicine is continued, and the contents are as follows: 1. "Vision and Audition in their Medico-legal Relations," by J. H. Woodward, M.D.; 2. "Medico-legal Aspect of Insurance," by D. Murray, Esq., and G. J. Edwards, Esq.; 3. "Insanity in its Relations to Medical Jurisprudence," by E. D. Fisher, M.D.; 4. "Mental Unsoundness in its Legal Relations," by T. C. Becker, Esq.; 5. "Care and Custody of Incompetent Persons," by Goodwin Brown, Esq.; 6. table of cases cited in the volume.

The topics, as will be seen by the synopsis, are important to physicians in their capacity as experts, to alienists, lawyers and as well to practicing physicians. The statutory requirements of all the States of the Union are given in regard to the commitment of the insane, and to their care and custody. This volume is a worthy companion to its excellent predecessors.

The Old Virginia Doctor.

Dr. John Herbert Claiborne, an ex-president of the Medical Society of Virginia, has sent us a brochure, bearing the above title, and having for its object an embalming of the memory of the medical profession of the Old Dominion as it existed in the post-Revolutionary period. As Dr. Claiborne set his mind upon the study of medicine fully fifty years ago—he was graduated in 1849—he must have been personally cognizant of some of the survivors of the class of which he writes, and writes most feelingly. He says of the medical aspirant of those early days, that there was little chance for poor men's sons in Virginia's medical fold, the expenses of preparation were so heavy.

"The medical student had to hold the sinews of war from the inception of his career. And he was usually the scion of a house in which years of entailed wealth had given leisure, and leisure culture, and culture preëminence. He was the son of a gentleman. He was a gentleman himself; and he never forgot it. He was of kind and gracious dignity to his fellows, more kind and gracious to his inferiors, never knew any superiors, magnified his noble life, and if he ever let himself down, it was only semi occasionally, with the old boys, of which his compeer, the old Virginia lawyer, was generally one.

"There were two of him—the old Virginia doctor: the town and the country doctor. But there was not the difference, real or supposititious, between them, as exists now between these same representatives of the same profession. The town was small, and the country large. The town doctor extended his practice far into the country, and his clientele often brought him into the circuit of his country brother. And he recognized him as a brother. Had they not both been students under the same master? Had they not been apprentices perhaps in the same surgery or shop? And had they not read the same books? And did they not both use, and equally as well, the same instruments? The former assumed no airs, and put on no pretense of superior skill, or greater wisdom than his country comrade. They met one another on the same plane of honest and sturdy fight with disease and death, and were both well and equally equipped for the contest with the common enemy, and carried with their armamentaria a sound sense and a sagacious judgment, that shrank from no call and failed in no emergency. Nor did they divide amongst them-

selves the human members, and assign to separate care the eye, the nose, the head, the scrotum and umbilicus. He was no specialist, but swift as the mythologic Mercury, whose device he bore upon his staff, and strong of heart as Ajax, asking nothing but light, he went to heal and to save.

"There was only one class that did not love the old doctor—to them he was a terror, viz: the children of the family and plantation. To the white children he was the author and director of all the calomel, and rhubarb, and jalap, and oil that was given them when sick, and administered not by persuasion or promise of reward, but forced down their throats by threats of bringing in the doctor with his lancet and pullikens (tooth-forceps). To the colored children he was something worse. He was a superstition and a fetish. His physics were made of dead men's bones. Mammy had been in his shop once, and had seen a dead man—all bones—hanging up behind the door. And he carried great sharp knives, and the nurse at the 'gret house' said that he had cut off Uncle Tony's leg when the mule ran away and broke it.

"But the climax came with his visit to vaccinate everybody. During the first quarter of the present century, Jenner's immortal discovery that a prior attack of cowpox rendered the human subject immune to smallpox, had just been accepted in all its import and promise. And edict followed edict, from plantation to plantation, that all should be vaccinated. That day was a field day for the old doctor. He himself had had variola by inoculation during his apprenticeship, as was the custom of the day, that he might be protected from contagion in his subsequent practice. But vaccination now was known to be equally efficacious to protect the doctor, and more desirable, as the disease itself might be spread by an inoculated patient.

"As the doctor approached the plantation the children, who had heard of his coming, fled like chickens, and had to be ferreted out from corner, and crevice, and bush, and brought back, '*vi et armis*,' with struggles and screams that made the day a memento of pandemonium. But whoever shrunk from the ordeal, the old doctor never faltered. And when he had planted his mark upon the biceps, time did not efface it. No septennial period demanded a repetition of the process. Not seven years, nor twenty-seven years, nor sixty-seven years have yet effaced it, in the few who have dodged death's javelins so long. In peace and in war, in prison and in hospital, this strong talisman has stood the test of time."

Literary Announcements.

NEW ANATOMIC ATLASES.—The Anatomic Congress held at Bâle the past year voted for a certain nomenclature, and consequently the old atlases are comparatively out of date. Vienna and Leipsic are each publishing now a handsome atlas with the official nomenclature. Both are fine works. The Vienna atlas, by Dr. Toldt, is to contain 1,000 wood engravings, and be published complete in two years. The other, by Dr. Spalteholz, will be finished this year; it is to have 750 auto types in colors and contain a brief description of each plate. The price of each is about the same, 30 marks.

PUBLIC HEALTH.

Typhoid Fever in Mexico. A writer in the *Revista Médica* of Jan. 1, 1896, asserts that typhoid fever is becoming acclimated in the city of Mexico, as a few cases have occurred, all quite mild. It seems that until recently it was never encountered by physicians there.

New York State Board of Health. At a recent meeting of this Board the subject of tuberculosis in cattle was reported upon by the special committee on tuberculosis. According to the *American Medical Review*, January, this committee is expected to report monthly on the cattle tested by tuberculin during the month, giving the number of diseased cattle found and destroyed, together with the amount of awards made to the owners of the condemned animals. The aggressive character of the newly constituted Board is further shown by the fact that the chemist of the Board, Dr. Tucker, was directed to

secure a sample of the illuminating oil used by the Manhattan Elevated Railroads of New York city, for the purpose of ascertaining whether the State law requiring a 300 fire test is being complied with.

Hygiene at the University of Michigan.—The positions of professor of hygiene and dean of the literary department of that institution has been offered to Dr. Eliza M. Mosher, of Brooklyn. This position has never before been held by a woman. Dr. Mosher is a graduate from that University, of the class of 1875, and was for a time a professor of physiology and hygiene at the Vassar College. She is expected to enter upon her duties at Ann Arbor in October next.

Epidemic of Typhoid Fever Among Cavalry Officers.—Following a banquet of the officers at Rennes, France, six were attacked with typhoid fever and two died. The sickness was confined to the lieutenants, who sat at a separate table, although the menu was the same for all. They were the only ones who used champagne frappé, which gave the investigators a clue. They found that the water drained from the ice in the refrigerator into a receptacle below. The ice was obtained from the river flowing through the town into which the sewers drain. The conclusion seems inevitable that the carafes for this table must have been filled with water drained from the ice, to save the attendants the trouble of fetching pure water from the public hydrant outside of the building, and some distance away.—*Bull. Méd.*, Jan. 12, 1896.

The Dangers of "Made Lands" of Cities.—The *Medical Press and Circular*, January 15, contains a summarized report of one of the health officers of an eastern district of London, on the unsanitary conditions of houses that have been built on ash-heaps or filled-in ground.

"The medical officer of health for Hackney has once more called attention to a besetting sin of jerry-built houses. In a lately issued report he pointed out that many of the houses in his district were built upon a layer of house refuse, which in turn rested upon a bed of clay. Such a condition of affairs naturally leads to the drawing into the house of various gases of decomposition and of other components of ground air. This danger has been discussed in our own columns for many years past. That it is a common and fruitful source of disease can scarcely be doubted. In many parts of the suburbs of London it is a constant practice of the enterprising builder to fill up with ash refuse any pit that has been quarried for stone, sand, or other material. He then proceeds to run up a more or less showy villa on this green mass of miscellaneous animal, vegetable and mineral stuff. As a rule, the basement is not provided with an impermeable concrete flooring, so that the house settles, the drains are dislocated, and the inside of the house becomes permeated with poisonous ground air. The remedy is simple. No new house should be occupied until it has been duly inspected and certified as properly constructed by a competent sanitary authority. At present, the remedy which the tenant of an unhealthy dwelling has against his landlord is slow, tedious, and uncertain. The advent of some searching and practical domestic legislation would speedily put an end to the ghoulis race of jerry-builders."

Premature Occupation of New Houses; A Test for Relative Humidity of Habitable Apartments.—The sanitary writer for the European edition of the *Herald* treats of the disadvantages and dangers arising from dampness of the domicile. Regarding newly built houses he says, "Sanitarians, for the most part, teach us that a period of four months in summer and six months in winter ought to be allowed between the end of the building operations and the entrance of the inhabitants in a house. In this way will be avoided the accidents that arise from the premature occupation of an apartment. It is scarcely necessary to add that as soon as the house has begun to be occupied, to avoid dampness, it should be heated and ventilated, treated, in a word, by all the usual means to maintain a healthy condition of the apartment. If the dampness persists in spite of all these precautions, the proprietor is responsible for the defects in his building. Physicians are sometimes requested to estimate the relative dampness of an apartment or room. This is not always

easy by simple inspection, as a room may be damp although saltpetre does not grow on its walls or mold in its corners. The following is an exact means of appreciation and one that is within every one's scope. In the room in question a kilogram of fresh lime should be placed after hermetically closing doors and windows. In twenty-four hours it should be weighed, and if the kilogram has absorbed more than 10 grams of water (that is, more than 1 per cent.), the room should be considered damp and classed as unhealthy. The question of the dampness of dwellings is a frequent cause of dispute between landlord and tenant, naturally solved in the affirmative by the latter, and in the negative by the former. The question can be settled in the future by the test of the hydration of lime, of which I have just spoken, and which will give irrefutable proof or refutation of the validity of such complaint. The dampness of dwellings is a cause of illness. The death rate is greater in quarters where the apartments are damp than where they are dry. Ventilation is defective where the walls are impregnated with water; the porosity of the walls is done away with and can only be reestablished after the evaporation of the water has been completed, and the heat required to effect this evaporation is furnished by the person living in the room. This is the cause of the vivid impression of cold which we experience in damp places, and it is a well known fact that exposure to the action of cold renders the organism more accessible to the attack of morbid germs. The rotting of walls, which appears particularly in places where the water used in building contained nitrates and chlorids, is caused by changes from dryness to dampness and vice versa. It gives rise to fragmentation of the mortar and even of the building stones themselves. Finally, frost can split a wall that is soaked in moisture.

"The dampness of dwellings is due to internal or external causes. There can be no doubt that a new building ought to be treated for a certain length of time by ventilation and heat with a view to evaporating the really enormous amount of water incorporated with the building materials. According to Pettenkofer, a three-story house requiring 167,000 bricks would need some 835,000 liters of water to build. When this evaporation has been effected great care should be taken in insuring proper drainage for rain and other water."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Indiana: Seymour, January 29, 1 case.
Louisiana: New Orleans, January 18 to 25, 14 cases, 2 deaths.
Michigan: Detroit, January 25 to February 1, 1 death.
West Virginia: Wheeling, year 1895, 14 cases, 2 deaths.

SMALLPOX—FOREIGN.

Dublin, January 11 to 18, 1 death.
Havana, January 16 to 23, 3 deaths.
Odessa, January 4 to 11, 12 cases, 4 deaths.
Prague, January 4 to 11, 5 cases.
Rio de Janeiro, December 21 to 28, 35 deaths.
St. Petersburg, December 28 to January 11, 21 cases, 7 deaths.
Swansea, January 11 to 18, 2 cases.
Tuxpan, January 4 to 11, 3 deaths.
Warsaw, December 28 to January 11, 5 deaths.

CHOLERA—FOREIGN.

Calcutta, December 14 to 21, 35 deaths.
St. Petersburg, December 28 to January 11, 79 cases, 43 deaths.

YELLOW FEVER—FOREIGN.

Havana, January 16 to 23, 5 cases, 2 deaths.
Rio de Janeiro, December 21 to 28, 52 deaths.
Sagua la Grande, January 11 to 18, 5 cases.

Consulate-General of the United States of America.
RIO DE JANEIRO, Dec. 31, 1895.

Sir: I have the honor to remit report for the week ended Dec. 28, 1895.

There were 26 deaths from *Accesso Pernicioso*, an increase of 6; 52 from yellow fever, an increase of 15; 35 from smallpox, a

decrease of 5; 5 from beriberi, an increase of 3, 3 from enteric fever, a decrease of 10; 1 from whooping cough, none in the foregoing week; none from measles, 1 in the foregoing week; and 45 from tuberculosis, a decrease of 10. From all causes there were 423 deaths, an increase of 23.

Yellow Fever. The weather is unusually hot and dry, and with it goes on yellow fever daily increasing. Unless there is some change in the weather, a bad epidemic may appear.

Smallpox. This disease is slowly decreasing, and bids fair to finish soon, but as yet it is epidemic.

Cholera. The cholera scare in Campos is about over, and no cases, not even suspected ones, have occurred here. A telegram in this morning's papers, states that one undoubted case and two suspected ones have appeared in Buenos Ayres.

Respectfully yours,

R. CLEARY, M.D.
Sanitary Inspector, M. H. S.

MISCELLANY.

The "Health University" *redivivus*.—We notice the following in a Chicago paper: "Dutton Medical College, Chicago: incorporators, George Dutton, Sophia B. Dutton and Robert Green."

Correction.—In list of contributors published in the last number of the JOURNAL for preceding year: Dr. Wm. Francis Drewry's address should have been Petersburg, Va., instead of Pittsburg, Pa.

Blaze at Jefferson Medical College. [Special telegram to the JOURNAL, Feb. 4.] During Professor Chapman's lecture, a fire broke out in the chemical laboratory, which seemed to threaten the destruction of the entire building. By the commendable coolness of the students in attendance the flames were extinguished without serious loss.

The Autophakoscopy is a small instrument by which a person can see for himself and watch the progress of the spots visible in the eye which a cataract is invading. It is described with twenty-two cuts in the *Ann. d'Ocul.*, September 1895, but has been rejected by oculists who do not approve of the patient studying the evolution of his trouble.

Suicidal Self-Medication. The London letter of the *American Practitioner and News* for Dec. 14, 1895, says:

"At Manchester, England, an inquest has been held on the body of a hawkier who, feeling unwell one day, took twenty pills. Next day he declared himself better and took eight more. The next day he died. His stomach was found red and congested as the result of his line of treatment. A verdict of death from natural causes was however returned."

Our Cuban Exchanges.—Science is supposed to raise its devotees above the cares and perplexities of life, and our esteemed Cuban exchanges are certainly a proof that this is the fact. They go calmly on their way, noting this and that "interesting case," with never an allusion to the wars and rumors of wars around them that the "special correspondents" are investing with such importance in the daily press. It is possible that if the censorship were removed, we might have a different tale.

Minnesota Provides Treatment for Inebriates. Minnesota is one of the States which, in 1895, provided for the treatment of inebriates by counties at a reputable institute within the State, the same to be selected by a committee of three citizens appointed by the probate judge of the county. The money used for such purpose is to be treated as a loan to the individual receiving the benefits thereof, for which he shall give a non-negotiable note, payable in five years without interest, which the probate judge may, in his discretion, extend at maturity. Besides this, in chapter 155, of laws of 1895, provision is made for the examination and commitment of inebriates to the special department for the treatment of inebriates in the Rochester State hospital.

Commitment of Insane in Minnesota. The Minnesota Legislature has, in chapter 119 of the general laws of that State for 1895, reenacted, in an amended form, a number of the sections of chapter 5 of laws of 1893, entitled, "An act to confirm the

location of the Minnesota hospitals for the insane, to provide for the commitment thereto, the management and supervision thereof, and the licensing and supervision of all other hospitals for the insane. This was necessitated, for the most part, by a decision of the supreme court of the State, early in 1894, that the sections of the original statute which prescribed the course of procedure and authorized commitment of persons to hospitals for the insane, were invalid because in conflict with those provisions of the State and federal constitutions which forbid that any person shall be deprived of his life, liberty or property without due process of law. The new enactment gives the procedure prescribed a little more the character of a judicial inquiry and determination.

A New English Ambulance; the Pneumatic Tire for Ambulances.—The letter-writer from London to the *American Practitioner* thus writes of an improvement recently adopted for ambulance purposes in the city named:

"A new pattern of ambulance, called the 'Salvator,' is being adopted by many corps of the St. John's Ambulance Brigade. The most notable defects in most ambulances are the liability to downward position of the head of the patient, the screws, pins and straps liable to be lost, the fitting together of various portions, and the many things to be done at the time of emergency. In the Salvator the stretcher is simply laid on a light iron carriage, and at once the two are securely locked together. The carriage is fitted along one side with a box containing splints of various sizes, and under the head end of the carriage there is a box containing bandages, scissors, tourniquet, and other appliances. Great attention has been given to the balancing of the litter, so that perfect horizontality shall be preserved."

The use of the pneumatic and rubber-rim tires are under trial upon certain wagons, just as in this country, where they are in use in a number of our cities. A guarantee of a year's wear can be had for wheels that sell for about \$100 per pair.

Medical Corps in Minnesota National Guard.—In 1895 there was a law passed providing that there shall be a medical corps in the national guard of the State of Minnesota under the direction of the surgeon-general to consist of one medical director with the rank of lieutenant colonel, three surgeons with the rank of major, and seven assistant surgeons with the rank of first lieutenant, except that an assistant surgeon who has served as such for five consecutive years, shall be eligible for promotion to the rank of captain. And in case of an increase in the number of State troops, the number of the medical corps is to be enlarged in a ratio of three medical officers to a regiment, and one medical officer for single troop of cavalry or battery of artillery. Candidates to fill vacancies in rank of first lieutenant must not be over 45 years of age, graduates of a recognized medical college, stand an examination by a board consisting of three members of the corps, and be reported by the surgeon general as fully qualified. The duties of the medical director are quite fully outlined in the statute, as are also those of medical storekeeper, which functions he may fill, or may detail some medical officer to fill. Hospital stewards shall serve as apothecaries, head nurses in hospital and assist the surgeon in keeping records of his department.

Surgery in Ruptures. The *St. Peters. Med. Wochens.*, of Dec. 28, 1896 is almost entirely devoted to a long article on this subject by Dr. Greiffenhagen, addressed more particularly to country physicians, urging prompt and radical surgical treatment of intestinal ruptures, as modern science has deprived it of all its dangers. In the young especially, there can be no question of an operation if a temporary truss does not cause the rupture to heal of itself. The working classes also need surgical treatment to relieve them of the expenses of trusses and bandages, and whenever a patient expresses a wish for such treatment, that in itself is sufficient indication, unless there is hernia to such an extent that the abdomen is really unable to contain the intestines. Another suggests the Condamin operation for umbilical rupture; the Kocher-Salzer operation for

femoral and the Macewen for internal inguinal rupture. In the treatment of external inguinal, another prefers Kocher's to begin with, but concludes with either Macewen's, Frank's or Bassini's. His historic account of the treatment of rupture from the days of antiquity to our own is very interesting, and he asserts that we will not be far wrong in assuming that one of every thirty or forty throughout the world, is ruptured more or less.

Professor Albert.—We are glad to learn from the *Klin. Rundschau*, of Vienna, that Professor Albert has recovered from the attack of gout which prostrated him during the Christmas holidays. He has decided to restrict himself to the charge of his clinic this winter, and not attempt to lecture. His amphitheater is undoubtedly one of the worst in existence and his health would certainly suffer if he were to lecture where the thermometer is often as low as 7 degrees C. Professor Hochegg is suggested as lecturer in his place.

The "Mother's Friend" and the Infant's Murderer.—The enormous consumption of opiates among the poorer class of English cities crops out from time to time, and we give below an item from the *Press and Circular* that shows that even grocers are heavily engaged in selling the infant-killing narcotics. "The extent of the trade in infant hypnotics may be judged from the evidence presented in a recent prosecution by the Pharmaceutical Society of England against a grocer for selling one of these nostrums. This concoction, which is called the 'Mother's True Friend,' was a mixture of Epsom salts and morphia, to the amount of one grain of the latter to the ounce of water. The defendant pleaded that he had sold two gallons a week of the liquid for the last twelve years, but he admitted that for the privilege of doing so, he had paid already £25 as fines to the Pharmaceutical Society upon five separate convictions. He was fined another £5."

The Modern Arabian Medical Practice.—If the following be a true description of the modern Arabian school of medicine in Northern Africa, what must have been the measure of the harshness of that school in the earlier times? In the course of his description of life in Morocco, in "The Church at Home and Abroad," Rev. James Johnston thus describes the course of treatment adopted by the Moorish physician:

"For a woman to be ill in Morocco is a misfortune indeed. If in a state of suffering, the Moorish woman is allowed, infrequently, to go to the native doctor, who is seated in the marketplace, surrounded by the implements of his calling. An array of flat irons, a small firepot of charcoal, and a huge black bottle constitute his stock in trade. Whatever the disease, external or internal, there is invariably one remedy. He places the iron in the fire until it is hot, and then applies it to the part affected, after which the patient must swallow a draught of a mysterious potion. What this barbarous ordeal entails may be more easily imagined than described. To the rescue of their suffering sisters from such misery, an increasing band of qualified lady physicians are devoting themselves, and they are welcomed where the male medical missionary is refused admission."

Hemicrania or Migraine not a Local Trouble.—Bary adopts Moebius' theory that migraine is a general morbid condition and not necessarily a local trouble, and consequently asserts that the pain can present itself in other parts of the body as well as the head. (*Neurol. Centralbl.*, No. 6.) He cited in confirmation of his assertion the case of a woman belonging to a family in which serious nervous troubles were hereditary. She was subject to excessively painful migraines. Occasionally the pain in the head would stop abruptly, but would be immediately superseded by a severe pain in the epigastric region. The gastro-intestinal functions showed no disturbance but were perfectly regular through these paroxysms. There was no hysteria, no neurasthenia.—*Bulletin Méd.*, Jan. 12, 1896.

Treatment of Hydrocele with Injection of Concentrated Carbolic Acid.—The *Centralbl. f. Chir.*, Jan. 4, 1896, gives an account of the results of this treatment in Professor Bruns' clinic. Of

forty-seven cases treated, twenty-eight were cured with sac injection; four with two, and two with a simple puncture a few weeks after the injection. In the six cases that were not healed, the trouble was so slight with four when it reappeared as not to necessitate treatment. There never were any symptoms of intoxication in any of the cases. Professor Bach writes to the *Klin. Chir.* in regard to the above and compares this treatment with the results obtained from iodine. The advantages are about even, he concludes with this in favor of carbolic acid, that it is painless and does not require any interruption of the usual occupations. A Russian clinic, Rasumowski's, of Kasan, has also had considerable success with carbolic acid as described in another article in same number. A saturated alcoholic solution of carbolic acid was used in this case.

A Curious Mistake; "Tyson's Glands."—Dr. James Tyson, of Philadelphia, writes to the *New York Medical Journal*, January 4, for the purpose of disclaiming a discovery erroneously accorded to him by a fellow-countryman of the real discoverer. It appears that in a paper by Dr. Finlayson on Eponymic Structures, in the *Glasgow Medical Journal*, December, occurs the following: "Tyson, James T., American professor of pathology, physiology and microscopic anatomy. Born at Philadelphia, 1841. Glands of (prepuce and labia)." The letter of our American Dr. Tyson says: "As I am evidently intended in this reference, I think I should state that I am not so fortunate as to have discovered these glands. They were described probably over two hundred years ago by Edward Tyson, M.D., Fellow of the College of Physicians and the Royal Society, Physician to the Hospital of Bethlehem, and reader of anatomy at Chirurgeon's Hall, who was born in 1649 and died in 1708." Another curious error in names recently perpetrated in one of our New York contemporaries is the reference to Sir Richard Quinn, of London, as "Sir Richard Quinn."

The Manhattan State Hospital for the Insane.—The Governor of New York State is required by law to make, early in February, appointments to the Board of Managers of the above named institution, which is the new name of that notorious public retreat, the New York City Asylum. The act under which the transfer of this abode of neglect and mismanagement was transferred to "State care" was approved on January 28. The *New York Herald* says: "The new board is to consist of seven persons, two of whom shall be women, and all shall be residents of the city of New York. They shall hold office for one, two, three, four, five, six and seven years. It has been expected that under the new regime of the State Lunacy Commission the old management of the asylums and the abuses which went on under the eye of the general superintendent, Dr. A. E. Macdonald, would be discontinued, but there is some likelihood that the old management will be quite as much in favor with the Lunacy Commissioners as it was with Tammany Hall."

Pathological Department of the New York State Commission in Lunacy.—An appointment by the above named commission has been made to the position of Director of the Pathological Institute of the State Hospitals for the Insane, after a competitive examination in accordance with the civil service laws of the State. This new position has been established under an act passed by the legislature of last year. Dr. Ira Van Gieson, of New York city, has passed the required examination in general pathologic anatomy, architecture of the nervous system, minute anatomy of the nervous system, pathologic anatomy of the nervous system, technique and methods of neural investigation and the lines of research to be applied to study of the pathology of insanity. Dr. Van Gieson has been connected with the laboratory of the College of Physicians and Surgeons, New York, for ten years past as instructor in normal histology and neurology, and is regarded as an authority on microscopic technique and the pathology of the brain and nervous system. His

selection was highly indorsed by many prominent members of the medical profession. The laboratory, which is to be maintained for the benefit of all the State hospitals, will be conducted on a scale which has not hitherto been undertaken by any State or country, the aim of the commission being to provide for an exhaustive study of all the morbid conditions that underlie mental diseases, from the standpoint of cellular biology, which is now elevated to the dignity of a special science; also to provide instruction in brain pathology and allied subjects for the medical offices of State hospitals. Official bulletins representing the progress of the laboratory work and the clinical work of the State hospitals will be issued quarterly.

Amendment of Tennessee Pharmacy Law. Chapter 39 of the Acts of Tennessee of 1893, establishing a board of pharmacy, and regulating the practice of pharmacy, the sale of poisons, and prohibiting the adulteration of drugs, was amended in 1895, making the provisions thereof apply only to incorporate cities and towns, and taxing districts of the State, and providing that all persons brought within the provisions of the law, by these amendments, shall be entitled to registration without examination, on the same conditions as provided by the original act. Section 3 is amended by adding thereto that it shall be the duty of every registered pharmacist, or assistant pharmacist, upon changing his place of business from one town to another, or upon leaving the State, forthwith to notify by letter the secretary of the board of pharmacy of such change in location. It shall also be the duty of every registered pharmacist, or assistant pharmacist, to notify by letter the said secretary on or before the 30th day of June in each year, whether he or she will continue the practice of pharmacy at registered place of business. The secretary of the board shall notify by letter, to the address as appearing on his books, every registered pharmacist, or assistant pharmacist, who shall not have notified him as thus provided, that renewal of registration is required, and in case an answer enclosing the necessary fees shall not have been received by the secretary within thirty days from the date of such notice, such name shall be stricken from the register.

Statistics of Serotherapy in Diphtheria in Germany.—Prof. Behring delivered a recent address on this subject in which for the first time, he replied to the swarms of critics who have been attacking him the past year or so. He maintained that statistics prove the efficacy of his serum, and that the 60,000 deaths from diphtheria which the empire has averaged each year will be found to be reduced to 40,000, and a more general use of the serum would reduce this to one-third. Throughout the city of Berlin the fatality in diphtheria amounted to 30 per cent., but in the Contagious Hospital, where serum was promptly used, the mortality was only 20 per cent. In the same time in 1895, it was only 10.3 per cent. The mortality in the hospitals had always been much greater than outside heretofore. Last year the percentage of mortality in diphtheria cases in Berlin fell to 15 per cent. During this period the disease was not a mild form, but averaged more morbid symptoms than at any time since 1886. During the first three months of 1894, when the serum was not to be had, there were 363 deaths per 1,000, while the last three months, when everybody could get the serum, there were 198 deaths per 1,000. Summing up the figures, there were 10,312 diphtheria cases reported: 5,823 treated with serum, with a mortality of 9.6 per cent. In 4,479 cases it was not used, and the mortality was 14.7 per cent.

Use of the Blood of the Viper and Common Adder as an Antivenomous Substance. According to the *Medical Week*, Drs. Phisalix and Bertrand have addressed the French Academy of Sciences on the above subject. In their preceding papers they have shown that the blood of the viper and common adder contains toxic principles analogous to those of venom. The immunity

of these animals to their own venom they regard as the result of habituation. They have since carried out further experiments, the results of which suggest the possibility of another explanation. Having found that the natural immunity to adder poison enjoyed by the hedge-hog is due to the simultaneous existence in the blood of this animal of toxic and antitoxic substances, they have endeavored to ascertain whether the same is not true of the blood of the viper also. With this object in view, they subjected viper serum to a temperature of 58 degrees C. during fifteen minutes, and then injected it into the peritoneum of several guinea-pigs. Half a cubic centimeter of normal viper serum is sufficient to kill a guinea-pig, but several cubic centimeters of the heated serum determined no ill effect of any kind, which proves that the toxic substances normally contained in the serum had been destroyed. Dr. Calmette has already called attention to the fact that the blood of the naja tripudians, naja haje, rattlesnake and horned viper loses its toxic properties when heated for ten minutes at a temperature of 68 degrees C. Moreover, injection of heated serum immunizes the animal against the poison, as they have ascertained beyond question by experiment. The antitoxic power of this heated serum is considerable, for on several occasions an injection of a quarter of a cubic centimeter proved sufficient to immunize a guinea-pig against the lethal dose of poison; but this immunity was of short duration, passing off within a few days. Similar experiments with the blood of the common adder gave the same results, except that the antitoxic power in this case was somewhat inferior to that of viper's blood. In the viper and common adder therefore, as in animals which have been artificially vaccinated or immunized, antitoxic substances are produced by a defensive act of the organism, and it is possible that the immunity of these reptiles to their own venom is the result of auto-vaccination, as it were, rather than habituation. In any event, the existence in the blood of the viper and common adder of antivenomous substances is a point of great importance in respect of general physiology, because it proves that, in proportion as the cells of an organism secrete toxin an antagonistic reaction takes place, which results in the formation of a specific antitoxin.

Association of American Medical Colleges. Important Decision.—

OHIO MEDICAL UNIVERSITY.
COLUMBUS, OHIO, Dec. 22, 1895.

DR. BAYARD HOLMES, Sec'y Ass'n American Medical Colleges, Chicago, Illinois.

Dear Doctor:—In my duties as Dean of Medical Department Ohio Medical University, several questions have arisen from time to time on which I have not been able to find rulings in proceedings or constitution of the Association. In some of these cases prospective students may have interests at stake which in deserving cases I might not desire to ignore without first giving their cases careful consideration. In others the University would not desire to grant any concessions, no matter what personal merit there was in the case, without a certainty that they were permissible under the rules of the Association.

In view of these knotty problems I have desired to get opinions on questions that may arise again. Our sessions run from the middle of September until the latter part of May, being divided into full, winter and supplementary terms. Attendance on the latter term is not a requirement of the regular annual session, and commencement exercises are held at the close of the winter term in March. The work of the supplementary term is carried on by our regular faculty, and if a student matriculates for it he is required to carry a full quota of work, and in clinical studies he has unusually good advantages.

Under our plan of teaching (grading from daily recitations) record of non-attendance is complete. It has been our rule that sickness or other satisfactory cause can not excuse from more than 20 per cent. of session. In deserving cases, students of undoubted scholarship and work, the question arises, can "conditions of time" i.e., lack of the required 80 per cent. attendance of regular session, be removed by attendance upon this supplementary term, provided that their scholarship comes up in every way to the usual standards? In other words, can a man whose deficiency is one or two weeks time alone,

overcome this by two months in the supplementary term, or must he be held over for the regular required session of the following year?

We have a senior student who has been sick for eight weeks this fall with typhoid fever, and during this time was under the care of our staff in the University Hospital, and he raises the question whether, if his scholarship is proven worthy, he can not remove the limitations of lost time by two months in the supplementary term and be given his diploma at the end of that time.

Another question. A. is a student in the literary department of an institution and in January transfers to the medical department of the same school and, in July receives credit for first year's work, he having been in this school some two or three years and received the degree of B.S. Is such a student eligible to second year of a regular winter session college the September following, on passing examinations in the first year branches? A literal construction of the rule that no two courses shall be in the same twelvemonth leaves room for discussion as to its application in such a case.

We have a student who for sufficient reasons desired to take his course at the Ohio Medical University and applied a year ago this fall for admission to our junior class. He had in July completed his first course, but had been a student as stated above, possessed the B.S. degree. We declined to matriculate him as a candidate for the degree at the end of two sessions, and of his own election he agreed to enter and take the work, and allow the question of his eligibility for degree to come up later. That question has now arisen. He attended the regular session last year, including the supplementary term. He has been in the office of one of our busiest practitioners. His scholarship is unexcelled in the University, and in every way he has shown himself to be a capable man. This year he was chosen from a large class as assistant to hospital staff. Can he in accordance with the laws of the Association, be given the degree of M.D. at the close of the required session in March?

I regret to trouble you, but you will be able to give answers more briefly than I have been able to put the queries. Thanking you for your kindness, Very truly yours,

[Signed] J. E. BROWN, Dean.

ANSWER.

1. No student, present or prospective, can have any legitimate interest sufficient to require any college to violate the provisions of Sec. 5, Art. III, of the Constitution. The meaning of the word "sessions" as used in the second line of the second paragraph of the letter to which this is an answer, is ambiguous. If they "run from the middle of September until the latter part of May" the object of dividing into "Fall, Winter and Supplementary terms" is not apparent to the Council. Such subdivisions of annual courses must be regarded as irregular.

2. No other instruction, excepting that given under the regular annual courses, can be accepted as any part of the graded instruction provided for in Sec. 5, Art. III, of the Constitution.

It is assumed that a student of medicine continuously pursues the study from the beginning to the conclusion of his collegiate career. The work of any supplementary term can be regarded as additional facilities offered by the college conducting it, and it might be construed in the light of increased advantage to its students.

There is no rule of the Association which recognizes "grading from daily recitations." Intermediate examinations are provided for at the end of any regular session. Entrance examinations for advanced standing must be conducted at the beginning of the regular sessions. Intermediate studies can not be recognized as fulfilling the requirements of any portion of the annual courses provided for in the Constitution, as at first adopted, nor as amended to take effect in 1899 and thereafter.

A certain degree of discretion must be exercised by the Deans of colleges, but it can not be allowed that any college may, with impunity, disregard any of the provisions of the Constitution of the Association.

3. The time requirements of the Association are fundamental, and no amount of sickness can be accepted as an excuse for absence from college duties. It is the student's misfortune if ill health interrupt his studies; and, if he may be excused from two months of the six required for one annual course, he may be excused from an equal period in each of the succeeding years. The purpose of the time requirement, in connection with the graded system, is to secure a certain standard of scholarship, which would be impossible for those physically unable to pursue the course of study.

4. The requirements of Sec. 5, Art. III, of the Constitution

would be violated by permitting the student to receive credit for a second annual course of instruction beginning at any time of the same year in which his first course had begun. A student, therefore, beginning his collegiate training in an institution whose annual sessions begin in January can not be permitted to enter, the following September, an institution whose annual session begins at that time, or prior to the month of January. Colleges whose annual sessions begin in September can not receive a student in January, and give him credit for a full course of instruction terminating at any time prior to the end of the next ensuing session after the January admission.

5. The student referred to as having attended "the regular session last year," and, as having "been in the office of one of the busiest practitioners" can not be admitted to final examination for the degree until he has completed three courses of six months each, in three separate years, prior to 1899.

[Signed.] DUDLEY S. REYNOLDS, M.D.
STARLING LOVING, M.D.
VICTOR C. VAUGHAN, M.D.
JULIAN J. CHISOLM, M.D.
ALBERT R. BAKER, M.D.
J. H. ETHERIDGE, M.D.

International Medico-Military Statistics.—Dr. Myrdacz, Secretary of the International Committee on Uniformity of Medico-military Statistics of which Lieut.-Colonel John S. Billings, U. S. A., is chairman, has issued to the various governments a review of the state of the negotiations of the Committee to date. The statistical tables presented by the Committee for adoption are ten in number: I, report of examination of recruits; II and III, movements of sick by departments; IV, by corps of service and months; V, by larger garrisons and VI and VII, by important diseases; VIII, admissions of important diseases by corps and IX, by months; X, deaths according to years of service and age.

FRANCE declared Feb. 24, 1895, that her statistics would be changed to correspond with the plan proposed by the Committee, with the exception of her recruitment, which will not be included in her statement. No further communications were received since that date.

RUSSIA forwarded May 18, 1895, complete tables, agreeing very nearly with the Austria-Hungarian plan. The headings are in the Russian and French languages. Deviations from the plan consist in the following points:

1. The Sanitary Corps does not exist in Russia as a separate body, but is comprised in the "Troupes auxiliares."

2. In table VII the position for "Days lost by Sickness" has been omitted.

3. In table VI the same omission is made.

4. Table I is arranged by "Gouvernements," and as the recruitment is a part of the duties belonging to the Department of Interior, it follows that this table has first to be constructed by the medical branch of the War Department.

THE UNITED STATES OF AMERICA will annually forward hektographed tables to the Chief of the foreign Medical Departments, and expect an equal courtesy on the part of Austria-Hungary. As in America, the losses by "Disability," are considerably in excess of those by "Disease," the desire is expressed that in tables II, III, IV, VI and VII the losses by "Disability" should be stated separately. Table VIII brings the absolute figures. [The International statistical Tables for the calendar year 1894, were published in the last annual report of the Surgeon General of the army.—J. B. H.]

AUSTRIA-HUNGARY has adopted the blank forms submitted by the Secretary of the Committee. It is proposed to conform to them in the publication of the sanitary statistics for the year 1894.

ENGLAND forwarded Feb. 22, 1895, complete blank forms, which differ from those of the Austria-Hungary plan in the following points:

1. Positions 5-15 are not expressed in centimeters, but in feet and inches.

2. Position 18 is headed "Defective Vision," and position 19 "Heart Diseases," while the original table proposed respectively, "Myopia" and "Defective Heart" (vitium cordis organicum).

3. On tables II and III position "Treated in Quarters" is omitted, and the position for "Loss other than by Death" is subdivided into the positions "Sent Home" and "Discharged." The position "Days lost by Sickness," is substituted by "Constantly non-efficient from Sickness."

4. In table IV the number of patients treated in quarters is

omitted, and position for "Constantly Sick" is newly supplied.

5. Table V is omitted.

6. On table VI and VII the patients returned to duty are not given, and the "Days lost by Sickness" are substituted by the column "Average constantly Sick."

6. Tables VIII and IX are omitted.

BAVARIA, by a communication dated Jan. 26, 1895, has fully adopted the Austria-Hungarian plan, but desired that the position headed "Otherwise Disposed of" be subdivided into "Invalids" and "Unfit for Service."

DENMARK referring to the Austria-Hungarian plan, forwards May 26, 1895 the following remarks:

1. In table I conscripts of not less than 21 years of age are mentioned, while in Denmark conscripts from 18 to 20 years old are brought before the examining board. It is asked whether rejection for being "Under Height" are in all cases definite or only temporary. Positions 5 to 10 should contain not only those fit for service, but all who have been under treatment. The diagnosis "Physical Debility" should, by remarks, be clearly defined.

2. In reference table VI the question is asked how to count a patient who is first admitted to quarters, and afterwards for the same disease to hospital. In regard to tables II to IX, information is desired how to tabulate patients treated on account of attempted suicide or accidents, and who subsequently die.

As in Denmark only patients are treated in quarters whose complaints are of the most trivial character, which hardly warrant diagnosis, the reports will include none but hospital patients.

PRUSSIA has not yet forwarded her decision in regard to her adoption of the plan.

BELGIUM has not yet communicated her decision.

ITALY accepts the Austria-Hungarian plan with the following remarks:

1. It will be impossible to entirely conform to the plan prior to 1897. In the reports for 1895-1896 the tables will be partially used, as has already been done in the report for 1894, recently published.

2. An abundant and regular exchange of the completed tables is desired.

3. In table I the classification will be given by military divisions.

4. In tables II and III a column should be interpolated next to that headed "Deaths," giving the deaths occurring outside of sanitary establishments.

5. In addition to the Division Headquarters, only garrisons with a minimum strength of 1,000 will be given.

6. In tables VI and VII "Pleuritis" and "Ulcus molle" (Chancroid?) should be inserted.

7. In table X ratios instead of absolute numbers should be stated, and an additional column is required for deaths of soldiers under 20 years of age.

8. It would be desirable to have an understanding in regard to the manner of computing the mean strengths. In Italy the sum of the daily rations due to men actually with their colors, to those treated in sanitary establishments, and to those furloughed (less than three months) are, at the end of the year, divided by 365. Is the same practice observed in other armies?

9. The questions are asked whether the cases of men dying in sanitary establishments, after having been discharged from the army, are to be considered as deaths, or simply discharges? If a man, when under treatment, contracts a disease of an entirely different kind from that for which he was originally admitted, would his case constitute one or two admissions? If a man dies after a shorter or longer absence from his colors, should his case be included in the statistical report?

The following communications were received from governments not represented at the Committee meeting at Buda-Pesth:

Norway has appointed Capt. Dr. Trap-Jensen, of Christiania, as her representative on the Committee, but will furnish no other data than that in regard to recruitment, a regular army as such having no existence.

SPAIN appointed as her representative on the Committee, Dr. Joseph Reig Casco, of Madrid, who is attached to the military household of the Queen Regent.

HOLLAND will adopt the appendix to the Austria-Hungarian plan for her report of 1895. The following exceptions are taken:

1. Column "Otherwise Disposed of" should be subdivided into two columns headed respectively, (a) "Unfit for Service," and (b) "Otherwise Disposed of."

2. In tables VI and VII under "Gonorrhea" and "Syphilis" the original admissions only should be tabulated, omitting relapses and chronic cases.

3. Headings of tables and other writings should be in the Latin or French language, or one of these languages should be

employed to translate the terms used by the different nations.

4. A short description of the prevailing system of recruiting should be added, and the requirements for acceptance stated.

Health Officer of the 1st Class, W. H. L. Borgershoff, in charge of the military hospital at Middleburg, was appointed as representative on the Committee.

Practical Notes.

Sulphur as a Cure for Acne and Facial Eruptions.—Dr. Barrière, of Paris, has cured many cases of this nature that refused to yield to other measures. He used it alone or combined with general treatment. Its advantages are obvious and its efficacy is thoroughly established.—*Rev. Int. de Méd. et de Chir.*, Jan. 10, 1896.

The Kastorsky "Cure" for Diphtheria.—This cure is a 10 per cent. alcoholic solution of menthol, with which the fauces are sponged off. It is applied on a piece of cotton. Thirty-seven cases treated were cured, some with one application. Several cases also were treated where the diphtheritic angina was complicated with scarlatina.—*New York Correspondence Revista de Ciencias Med.*, Jan. 5, 1896.

Leucoma.—Dr. Germann noticed the peculiar triangle produced by a steel pen dipped in ink, with which one schoolboy had struck another in the cornea, and he has applied this observation in tattooing for leucoma with highly satisfactory results. Instead of the usual pointed lancing pencil he used one that produced a triangular mark, and accomplished the operation in less than a quarter of the usual time.—*St. Petersburg Med. Woch.*, Dec. 28, 1895.

Actinomycosis in the Lungs.—Heusser describes a case of this kind in the *Bert. klin. Wochensch.* which baffled diagnosis for a long while, the symptoms being typically characteristic of pleurisy, and later of tuberculosis, until the fungus actinomyces was found in the sputa. It shows the necessity of being a bacteriologist in order to diagnose successfully nowadays.—*Gaz. Méd. de Paris*, Jan. 11, 1896.

Preliminary Exploratory Operation.—Prof. Tansini, of Palermo, recently performed an exploratory operation for the purpose of diagnosing a renal trouble, which the *Gazzetta degli Ospedali e Cliniche*, of Jan. 11, 1896, commends as an innovation worthy of note. Instead of operating upon the diseased kidney he opened up the other one, thus learning the condition of the capsule, etc. Finding everything sound he sewed up the opening entirely, taking stitches in the capsule, the muscular tissue and the skin. Then he proceeded to perform nephrectomy with confidence, and the patient was soon restored to perfect health.

Intravenous Injection in Post-operative Sepsis.—Dr. Berlin, of Nice, recently had a case of violent septicemia following a vaginal hysterectomy, that showed the fatal symptoms of dyspnea, subnormal temperature, inflated and painful abdomen, etc. When death seemed imminent Dr. Berlin injected 600 g. of Hayem's artificial serum into the patient's veins, and followed it with 800 g. At first all symptoms grew worse and cyanosis soon followed, and twelve days after operation patient was discharged cured. (Case reported to the Soc. de Chir., and described in the Paris letter to the *Therapeutische Wochenschrift*, of Jan. 12, 1896.)

Cystic Formations at the End of the Optic Nerve.—Sachsaler describes, in the *Beiträge zur Augenheilkunde*, a case where small cysts formed at the level of the papilla of the optic nerve, situated below the vessels of the retina, resembling small knobs in appearance. The patient died of an intercurrent disease and the autopsy showed that these cysts were produced by a hyaline transformation occurring in the nerve cells, forming actual hyaline concretions. The absorption of these concretions produced the cysts. The walls of the vessels of the papilla showed also the results of a thickening process.—*Gazette Médicale de Paris*, Jan. 11, 1896.

Treatment of Night Sweats in Phthisis.—

R. Salicylic Acid	2 grams.
Distilled water	10 "
Alcohol	6 "
Neutral glycerin	4 "

This mixture is for subcutaneous injections. Inject before retiring 2 cubic centimeters for four or five days.—*Jour. de Méd. de Paris*, Jan. 12, 1896.

Cancer of the Supra-renal Capsule.—Stonkoventoff recently described a case of this kind that is worthy of note in some respects. The patient was a woman of 50 who began to have a cough, fever and intense pains in November, 1894. Lungs seemed affected, liver hypertrophied to some extent, and finally she died with every symptom of pulmonary trouble. The autopsy showed the origin of all this functional disturbance to have been a cancerous growth on the supra-renal capsule, which displaced the liver somewhat, but had not affected the kidney.—*Gaz. degli Osp. e Chir.*, Dec. 28, 1895.

Insufflating the Bowels with Boracic Acid.—Merkel, of Munich, has been treating some cases lately where gases have accumulated in the bowels, producing great discomfort, accompanied with constipation, according to Flatau's suggestion of insufflating the intestines with boracic acid. He has been successful, and although relapses occurred in several cases, they soon yielded to a permanent cure. He used each time 2 to 4 gms. boracic acid with which the intestines were insufflated as high as possible by means of a rubber tube and ball. The process was repeated two to six times a week for some time.—*Münchener Med. Wochenschrift*, 1895, No. 52.

The Disinfection of Tuberculous Sputa with Wood Vinegar.—As it is impossible in private life to use the methods of disinfection practiced on such a large scale in hospitals, and as it is important to have these germs killed, Dr. Goriansky has been conducting a series of experiments at St. Petersburg, the result which he announces is the discovery that wood vinegar, or pyroligneous acid, will kill that almost indestructible Koch bacillus, as it is found in sputa. Wood vinegar, we know, contains guaiacum, cresols and acetic acid. It probably owes much of its intense antiseptic action to the fact that the guaiacum is found in it in an acid solution, and also to the acetic acid it contains in considerable quantities.

Kobert's Cornutin.—This remedy has not proved reliable in a number of cases in Vienna (*Wien. klin. Wochens.*, Nos. 22 and 23, 1895), where it was used to control uterine hemorrhages due to atony of the muscles after confinement, and in other gynecologic troubles. In two cases where the desired result was finally obtained it was only temporary and the uterus soon relaxed again. The effect of ergotin is persistent, and in every way it is superior to cornutin. Some fowls experimented on with cornutin to ascertain its hemostatic value proved the superiority of freshly prepared ergot. No experiments were made with it in regard to producing labor.—*Les Nouv. Remèdes*, Jan. 8, 1896.

Puerperal Multiple Neuritis.—The *Lyon Méd.*, No. 51, reports a case of multiple neuritis accompanying childbirth. The first symptoms showed themselves during the last month of pregnancy, accompanied with frequent vomiting. There were pains, burning and tingling sensations in the limbs, which became very weak and emaciated, and after birth of child these symptoms increased, until the lower limbs became absolutely impotent, the arms relatively so. It required three months' treatment with hypodermic injections of ergotin, and electric baths for the lower limbs only, to restore them to health. The action of the bladder and rectum remained normal through it all. The cause did not seem to be any auto-infection, but rather the debility of patient, which affected her like marasmus or chlorosis, which are often complicated with multiple neuritis.—*Bull. Méd.*, Jan. 12, 1896.

Intestinal Antisepsis.—M. Huchard's paper delivered before the Société de Thérapie last month is an eloquent plea for the rational use of intestinal disinfecting washings. He has secured some magnificent results from them in cases of chlorosis and uremia, which he has completely cured in this way. He defines uremia, with Bouchard, as an intoxication of the system produced by the various poisons introduced into the system which the kidneys fail to eliminate. He introduced two liters of salted water at 40 degrees C. into the rectum, plugging the anus with cotton around the tube. With three liters the liquid floods the intestines almost the entire length, and six liters will penetrate even into the stomach, from which it has been withdrawn through the mouth, thus entirely reversing the order of nature, which is not to be commended. He predicts a great future for this safe, easy and reliable medication as its true value becomes better recognized.—*Rev. Int. de Méd. et de Chir.*, Jan. 10, 1896.

Lannelongue's method Applied to Vascular Tumor Invading Neck Face, Mouth and Tongue.—The *Bull. Méd.*, Jan. 12, 1896, describes the cure of a tumor of this kind on a woman of 28, following the course of the lower maxillary, and probably congenital, as patient could not remember when she did not have a bunch there. It was a soft, pulsating, vascular tumor, such as Dupuytren calls an arterial varix, and no operation was to be thought of, except as a last resort, ligature of the carotid. The pain and inconvenience of this immense excrescence were most distressing. Prof. Lannelongue used his sclerogenous treatment, viz., injections of 10 per cent. solution of chlorid of zinc, three or four drops at each puncture, injected in the surrounding tissues and in the tumor itself. Immediate relief ensued, and four sittings reduced the tumor to such an extent that no more were attempted. At present, three years have elapsed and the angioma has dwindled to size of a small nut, while a slow atrophic sclerosis has taken place throughout it, the surest sign of a permanent cure. (See this JOURNAL, Jan. 18, page 136.)

Castration to Relieve Hypertrophy of the Prostate Gland.—The last two numbers of the *Centralbl. für Chir.*, Jan. 4 and 11, 1896, contain each an account of a successful operation of this kind. One by Professor Bruns freed the patient from the catheter he had been compelled to use for six months. Professor Taisst writes to the *Klin. Chir.* in regard to this case, reviewing all the literature on the subject, and heartily endorsing double castration as the last and safest means of relief. He asserts that the disturbances of the psychic functions observed in some cases after castration, were due to previous causes, and not to the operation itself. The second case was treated by Dr. Roosing, of Copenhagen. A man of 85 had, for eleven years, never had one spontaneous discharge of urine, but had been compelled to use a catheter constantly. Operation became necessary as even smallest sized catheter caused pains and bleeding, and patient was wasting away from this and other complications. Two months after double castration patient was well and strong, with normal and natural urinations: the elasticity of the bladder almost completely recovered, and general health and spirits were restored in a remarkable degree.

Fatal Effects of Iodid of Potassium in a Case of Goitre.—A communication was read at the session of the Société de Thérapie, November 13, relating the death of a man who was being treated for a very large goitre, with four grams of iodid of potassium internally during the twenty-four hours, and an iodized ointment applied to the thyroideal region externally. The treatment relieved the patient materially, as in three weeks the goitre had sensibly decreased in size. But very soon after treatment commenced, besides the usual symptoms of rebellion against the medicine, there was repeated vomiting, tachycardia and trembling. The iodid was discontinued, but

the toxic symptoms persisted and grew worse until the patient died, a month from the time treatment began, with symptoms of strumipriva cachexia and exophthalmic goitre. The physician in charge attributes death of patient to the rapid atrophy of thyroideal substance, produced by the iodid. This and the experience of others testify that although iodid is of great efficacy in the treatment of goitre, yet those suffering from it are least able to stand it, on account of its effect in provoking changes in the glandular organs, as Reser and Lebert have shown.—*Rev. Int. de Méd. et de Chir.*, Jan. 10, 1896.

Asepsis in the Use of Catheters.—The *Przegląd Chir.* contains an article on the sterilization of bougies and catheters which the ordinary methods, dipping in antiseptic solutions, washing with hot suds, and even the use of sublimate, sulphuric acid and vapor from quicksilver, are far from accomplishing thoroughly. Some microorganisms are sure to be left in the instrument. Perfect sterilization can only be secured by exposing for an hour to air heated to 130 degrees C., or to a flow of steam for fifteen minutes. The author then describes an apparatus he has invented for this steaming process, and also commends highly Kutner's. Boiling water can be used for metal and Nélaton catheters. But soda or any irritating substance must not be added to the water, for fear some particle may lodge and inflame the membrane. The organs should be carefully bathed externally with sublimate, and the surrounding region. Nothing should be left undone to secure asepsis of the urinary passages, which is the most difficult part of the task, especially when there is inflammation, retention of the urine or hyperemia and lesion of the mucous membrane of the bladder. In injecting the sterilizing water care should be taken to keep the orifice open so that the liquid can run out again and not force its way into the bladder. Sterilized vaselin the author recommends to use on instruments. The catheter should be used every six hours in cases of retention, until it has completely passed away. This he considers a very important point.—*Centralbl. für Chir.*, Jan. 4, 1896.

Society Notes.

THE RUSSELL COUNTY MEDICAL SOCIETY held a regular meeting in Montgomery, Ala., January 22. The following officers were elected for the ensuing year: President, T. A. Johnson, Jernigan; Vice-President, W. B. Hendrick, Hurtsboro; Secretary and Treasurer, G. F. Hendrick, Crawford.—The Ramsey County, Minn., Medical Society held its annual meeting in St. Paul, January 27. The following officers were elected for the ensuing year: President, A. J. Gillette; Vice-President, G. E. Senkler; Secretary, C. R. Ball; Treasurer, O. S. Pine. The monthly meeting of the Binghamton, N. Y., Academy of Medicine was held January 21. At the annual meeting of the Denver and Arapahoe Medical Society the following officers were elected: President, Robert Levy; Vice-President, Edward Jackson; Secretary, S. D. Hopkins; Financial Secretary, F. P. Hershey; Treasurer, E. J. Rothwell.

Hospital Notes.

THE ANNUAL meeting of the Salem, Mass., Hospital Corporation was held January 22. The report shows 1,677 patients treated in all departments. The Brooklyn, N. Y., Israelite Hospital Association has plans under consideration for a new hospital for the Jews in the Eastern District. It has been resolved to locate the hospital in Queens County, near the city line of Brooklyn, and that the total running expenses shall not exceed \$400 a month. There are to be twenty-five beds in the building, and the privileges of the hospital will be extended to all, regardless of nationality or religion. A meeting was held in Indianapolis, January 22, to discuss the establishment of a State hospital with free and pay wards. A committee on organization was appointed. The sixth annual report of the Long Island Throat Hospital and Eye Infirmary shows that 4,909 patients were treated during the past year. At the annual meeting of the Board of Directors of the New York Post-Grad-

uate Medical School and Hospital, the following officers were elected for the ensuing year: President, D. B. St. John Roosa; Vice-President, Andrew H. Smith; Treasurer, Bache Emmet; Secretary, J. L. Skillin.—The new hospital presented to the city of Carlisle, Pa., by the widow of the late ex-Congressman, Lemuel Todd, was formally dedicated January 29.—The annual meeting of the contributors to the Allegheny General Hospital was held January 28. The report shows the number of patients treated since the establishment of the institution, in 1886, 11,430. Attention is called to the overcrowded condition of the hospital.—The annual meeting of the Brooklyn, N. Y., Hospital was held January 30. The officers were reelected.

DR. A. F. A. KING.—It was stated in this column, February 1, that Dr. A. F. A. King had resigned from Columbian College. It was Columbia Hospital, and not Columbian College, from which Professor King resigned.

Philadelphia Notes.

A FIRE occurred in the hospital of the Jefferson Medical College on the 28th ult., caused by the explosion of a partly empty barrel of alcohol in the drug department. The damage was slight, but the patients were badly scared.

THE MEDICAL CLUB held its annual meeting at the Hotel Bellevue on the 29th ult. Dr. Hobart A. Hare was reelected President, Dr. L. J. Deal, Secretary.

A NEW monthly medical journal has commenced its career in Philadelphia, the *Medical Council*, Dr. J. F. Taylor, editor. It is to be devoted to diseases of women and children, obstetrics and stirpiculture.

DR. WM. OSLER, of Johns Hopkins University, delivered a lecture by invitation before the James M. Anders Society of the students at the Medico-Chirurgical College, on January 21 "Pathology of Addison's Disease."

DR. T. G. MORTON was reelected President of the Academy of Surgery of Philadelphia.

St. Louis Notes.

REPORTS OF HEALTH OFFICE.—For the week ending January 25: Total number of deaths reported 177, compared with 187 for the preceding week and 173 for the corresponding period of last year. Births reported, 221. For the week ending February 1: Total number of deaths reported 174, compared with 165 for the corresponding period of 1895. Births reported 212. Contagious diseases reported during the week ending January 25: Diphtheria 68 cases, 9 deaths; croup 6 cases, 5 deaths; scarlatina 11 cases, 1 death; typhoid fever 5 cases, 1 death; cerebro-spinal fever 3 cases, 2 deaths; measles 30 cases, whooping cough 10 cases, smallpox 1 case. Reported during the week ending February 1: Diphtheria 56 cases, 8 deaths; croup 3 cases, 2 deaths; scarlatina 6 cases, 1 death; typhoid fever 2 cases, measles 17 cases, cerebro-spinal fever 1 case, 2 deaths; whooping cough 1 case, 1 death.

THE DUESTROW CASE.—On February 3 the jury rendered a verdict of murder in the first degree, after listening to testimony for three weeks. The defense was insanity, and the only chance for justice lay in the weight given to expert testimony. As is usual in cases of this kind, experts appeared for each side, with the result that the case was decided with but slight reference to the facts brought out by the medical testimony, and that expert medical testimony was again covered with popular discredit. The physicians, known as expert alienists, who testified to the prisoner's insanity were Drs. Bauduy, Bremer, Chaddock and Crandall; the experts testifying for the prosecution were Drs. Hughes, Mink and Norbury. With division of opinion among men of such repute it is no wonder that a jury of farmers should take the view that the prisoner's crime was an act of drunkenness as the simplest solution of the case, especially in view of the prejudice against the plea of insanity as an excuse for crime, and the particular prejudice in this case arising from the fact that the culprit's wealth has been regarded as a means, that would be used to obtain an acquittal.

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer for the week ended January 25 is as follows: Number of deaths (stillbirths not included) 112, death rate per 1,000 per annum 21.1, death rate per 1,000 per annum, corresponding week last year 17.8.

FOR THE EASTERN DISPENSARY.—The Commissioners have again recommended favorable action on the House bill "to authorize the purchase of the lot and building now rented by the Eastern Dispensary and Hospital."

MEDICAL SOCIETY.—At the Medical Society meeting held on the 29th ultimo, Dr. W. W. Johnston completed the report of the Committee on Public Health. Dr. Eliot read a paper on personal observations of smallpox patients at the City Hospital last year. Dr. McArdle read a paper entitled "Cod-liver Oil Both a Food and a Medicine."

TO INCREASE THE WATER SUPPLY.—By request of the District Commissioners, Mr. McMillan to-day introduced in the Senate a bill to amend an act, approved July 15, 1882, entitled "An act to increase the water supply of the city of Washington, and for other purposes." The bill empowers the Attorney General and Secretary of War to obtain all water rights at and in the vicinity of Great Falls, on the Potomac River. Within nine months from the approval of this bill the Attorney General and Secretary of War are required to make a written statement, specifying the lands they may deem necessary to take for the purposes of this act. The Court of Claims is authorized to appoint three persons to determine all controverted questions of fact arising in any suit that may be brought under the authority of this act.

FOR BETTER SEWERAGE.—A delegation of physicians composing the Legislative Committee of the Medical Society of the District appeared before a subcommittee of the District Committee for the purpose of recommending legislation by the House looking to increased sewerage facilities and improvement in the water supply.

TO REGULATE MEDICAL SCHOOLS.—The House committee has reported the bill to provide for the incorporation and regulation of medical schools and colleges. This is the bill prepared by the Commissioners, and provides that it shall be unlawful for any medical college claiming the authority, or actually conferring the degree of doctor of medicine, not incorporated by a special act of Congress, to conduct its business in the District of Columbia, unless such college shall be registered by the Commissioners of the District of Columbia and granted by them a written permit to commence or continue business in the District in compliance with the requirements of this act. Regulations are stipulated for issuing such licenses, and fines and punishments provided for violations of the law. The bill was amended to include dental colleges.

The deplorable ignorance of the lay public on the subject of vivisection, was very forcibly shown at the hearing granted last week by the Commissioners of the District, to those interested in Senate Bill 1552, entitled "A Bill for the further prevention of cruelty to animals in the District of Columbia." It was obvious that none of those who spoke in favor of its passage had the slightest conception of the subject under consideration, but it was apparent that sentiment and sympathy, born of impressions made by exaggerated anti-vivisection publications, actuated their misguided and deluded championship of the bill.

In the absence of knowledge of the subject, no one should chide these good-hearted men and women for the position they assume with respect to vivisection, and until those who are engaged in this branch of necessary scientific research explain to them how carefully, kindly and accurately their work is performed, together with the incalculable benefit obtained in saving human life and preventing the ravage of diseases, will the oft revived "fad," opposition to vivisection crop up.

The general government yearly makes large appropriations for the conduct of scientific prevention of diseases and death in man, beast and vegetation, and the valuable work done, with the more valuable and far reaching results consequently obtained by the departments of "Animal Industry," United States Marine-Hospital Service, Bureau of Medicine and Surgery, United States Army and United States Navy, and the laboratories of the different colleges and hospitals are sufficient to prove that vivisection is necessary, and that any restriction of its practice will seriously impede scientific research and higher education. Education of the masses, and particularly the misinformed opponents to this branch of research, and not acts of Congress, is what is necessary to silence objectors. The provisions and restrictions in the pending bill are sufficiently absurd and ridiculous to warrant its publication in full for criticism by the scientific world.

Prominent among those who presented unanswerable arguments against the passage of the Bill were: Drs. Samuel C. Busey, President of the Medical Society; Kleinschmidt, Magruder, Cook, Somers, and Woodward; Surgeon-General G. M. Sternberg, U. S. A.; J. J. Kinyoun, U. S. Marine-Hospital Service; Walter Reed, U. S. A. Medical Museum; D. E. Salmon, Chief Bureau Animal Industry; Dr. de Schweinitz, of the Bio-Chemie Laboratory; V. A. Moore, Pathologist; Wardell Stiles, Medico-Zoologist, and Dr. Schroeder, Director Experiment Station U. S. Department of Agriculture.

The Bill will never become a law, for Congress will appreciate the impropriety of retarding medical research and scientific investigations by the supervision of uninformed laymen.

IN THE SENATE OF THE UNITED STATES.

JANUARY 14, 1896.

Mr. McMillan introduced the following bill; which was read twice and referred to the Committee on the District of Columbia.

A BILL.

For the further prevention of cruelty to animals in the District of Columbia.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter no person shall perform on a living animal any experiment calculated to give pain to such animal, except subject to the provisions hereinafter prescribed. Any person performing, or taking part in performing, any experiment calculated to give pain, in contravention of this Act, shall be guilty of an offense against this Act, and shall, if it be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars, or to imprisonment for a period not exceeding six months.

SEC. 2. That the following restrictions are imposed by this Act with respect to the performance on any living animal of an experiment calculated to give pain to such animal; that is to say:

a. The experiment must be performed with a view to the advancement by *new discovery of physiologic knowledge*, or of knowledge which will be useful for saving or prolonging life or alleviating suffering; and

b. The experiment must be performed by a person holding such license from the Commissioners of the District of Columbia as is in this Act mentioned; and

c. The animal must, during the whole of the experiment, be completely under the influence of ether or chloroform to prevent the animal feeling pain; and

d. The animal must, if the pain is likely to continue after the effect of the anesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anesthetic which has been administered; and

e. No experiment shall be made upon any living creature calculated to give pain to such creature, in any of the public schools of the District of Columbia; provided as follows, that is to say:

1. Experiments may be performed under the foregoing provisions as to the use of anesthetics by a person giving illustrations of lectures in medical schools, hospitals, or colleges or elsewhere, on such certificate being given as in this Act hereinafter mentioned, that the proposed experiments are absolutely necessary for the due instruction of the persons to whom such

lectures are given, with a view to their acquiring physiologic knowledge or knowledge which will be useful to them for saving or prolonging life or alleviating suffering:

2. The substance known as urari or curare shall not for the purposes of this Act, be deemed to be an anesthetic: and

3. Notwithstanding anything this act contained, no experiment calculated to give pain shall be performed on a dog or cat, except upon such certificate being given as in this Act mentioned, stating, in addition to the statements hereinbefore required to be made in such certificate, that for reasons specified in the certificate the object of the experiment will be necessarily frustrated unless it is performed on an animal similar in constitution to a cat or dog, and no other animal is available for such experiment: and an experiment calculated to give pain shall not be performed on any horse, ass, or mule, except on such certificate being given as in this Act mentioned, that the object of the experiment will be necessarily frustrated unless it is performed on a horse, ass, or mule, and that no other animal is available for such purpose; and

4. Any exhibition to the general public, whether admission be on payment of money or gratuitous, of experiments on living animals, calculated to give pain, shall be illegal.

Any person performing or aiding in performing such experiment shall be deemed to be guilty of an offense against this Act, and shall, if it be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars or to imprisonment not exceeding six months; and any person publishing any notice of any such intended exhibition by advertisement in a newspaper, placard, or otherwise, shall be liable to a penalty not exceeding ten dollars.

A person punished for an offense under this section shall not for the same offense be punishable under any other section of this Act.

SEC. 3. That the Commissioners of the District may insert, as a condition of granting any license, a provision in such license that the place in which any such experiment is to be performed by the licensee is to be registered in such manner as the said Commissioners may from time to time by any general or special order direct: *Provided*, That every place for the performance of experiments for the purpose of instruction shall be approved by the said Commissioners, and shall be registered in such manner as the said Commissioners may from time to time by any general or special order direct.

SEC. 4. That the Commissioners of the District, upon application as hereinafter prescribed, may license any person whom they may think qualified to hold a license to perform experiments under this Act. A license granted by them may be for such time as they may think fit, and may be revoked by them on their being satisfied that such license ought to be revoked. There may be annexed to such license any condition which the said Commissioners may think expedient for the purpose of better carrying into effect the objects of this Act, but not inconsistent with the provisions thereof.

SEC. 5. That the Commissioners of the District may direct any person performing experiments under this Act from time to time to make reports to them of the result of such experiments, in such form and with such details as the said Commissioners may require.

SEC. 6. That the Commissioners of the District shall cause all registered places to be from time to time visited by inspectors without previous notice, for the purpose of securing compliance with the provisions of this Act, and shall appoint and authorize an agent of the Washington Humane Society to make such inspection, and may also appoint such special inspectors as they may think fit, either permanently or temporarily, who may be willing to act as such inspectors gratuitously.

SEC. 7. That any application for a license under this Act, and for a certificate to be given as in this Act mentioned, must be signed by three physicians duly licensed to practice and actually engaged in practicing medicine in the District of Columbia, and also by a professor of physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery in the medical department of any duly established and reliable school or college in the District of Columbia: *Provided*, That when any person applying for a certificate under this Act is himself one of the persons authorized to sign such certificate, the signature of some other of such persons shall be substituted for the signature of the applicant.

A certificate under this section may be given for such time or for such series of experiments as the persons signing the certificate may think expedient.

A copy of any certificate under this section shall be forwarded by the applicant to the Commissioners of the District

but shall not be available until one week after a copy has been so forwarded.

The Commissioners of the District may at any time disallow or suspend any certificate given under this section.

SEC. 8. That the powers conferred by this Act of granting a license or giving a certificate for the performance of an experiment on living animals may be exercised by an order in writing, under the hand of any judge of a court of record having criminal jurisdiction in the District, in a case where such judge is satisfied that it is essential for the purposes of justice in a criminal case to make such experiment.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from January 25, 1896, to January 31, 1896.

Capt. Benjamin Munday, Asst. Surgeon, is granted leave of absence for one month, on surgeon's certificate of disability, with permission to apply for an extension.

First Lieut. William H. Wilson, Asst. Surgeon, is relieved from duty at Ft. Leavenworth, Kan., and ordered to Ft. Bayard, N. M., for duty at that post.

First Lieut. Harry M. Hallock, Asst. Surgeon, is relieved from duty at Ft. Bayard, N. M., and ordered to Ft. Logan, Colo., for duty at that post.

Capt. Benjamin L. Ten Eyck, now at Columbus Bks., Ohio, is ordered to Ft. Niobrara, Neb., for temporary duty.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending February 1, 1896.

Asst. Surgeon A. B. Pusey, detached from the "Cincinnati" and ordered to the "Vermont."

Asst. Surgeon G. C. Hubbard, detached from the "Vermont" and ordered to the "Cincinnati."

Asst. Surgeon C. M. De Valin, ordered to the naval hospital, Philadelphia. Surgeon J. M. Steele, detached from the torpedo station and ordered to special duty on the "Independence."

Surgeon M. H. Simons, detached from special duty at Portsmouth, N. H., and ordered to the torpedo station.

Medical Inspector G. F. Winslow, detached from the "Philadelphia" and granted three months' leave.

Surgeon J. A. Hawke, detached from the "Baltimore" and ordered to the "Philadelphia" as fleet surgeon of the Pacific station.

Asst. Surgeon A. Farenholt, detached from the "Baltimore" and ordered to the "Monterey."

Change of Address.

Hosmer, A. J., from Ashland, Wis., to 1811 Landau Gasse 13, Vienna, Austria.

Kereher, John, from 112 E. 18th to 104 E. 18th St., (Suffield Flats) Chicago, Ill.

Lincoln, D. F., from Geneva, N. Y., to 73 Pinckney St., Boston, Mass.

Miller, De Laskie, from 2419 Michigan Ave. to Virginia Hotel, Chicago, Ill.

Owsley, W. T., from Glasgow to Eastern Kentucky Asylum for the Insane, Lexington, Ky.

Roseberry, B. S., from Lacon, Ill. to El Paso, Texas.

LETTERS RECEIVED.

American Publishers' Collection Agency, New York, N. Y.; Alma Sanitarium Co., Alma, Mich.; Arthur, W. H., Fort Myer, Va.; Atwater, W. O., Middletown, Conn.

Brayton, S. H., Evanston, Ill.; Barnes, Ira N., Decatur, Ill.; Batman, W. F., Lebanon, Ind.; Brown Advertising Agency, F. F., New York, N. Y.

Coelran, Jerome, Montgomery, Ala.; Caldwell, S. B., New York, N. Y.; Christian, E. P., Wyandotte, Mich.; Columbus Phaeton Co., The, Columbus, Ohio.

Dibble, L. A., Kansas City, Mo.; Davis, Geo. S., Detroit, Mich.; Drewry, Wm. Francis, Petersburg, Va.; Day, Francis C., Plymouth Meeting, Pa.; Dabney, J. G., Louisville, Ky.; Duke, B. F., Moss Point, Miss.

Elliott, W. H., Savannah, Ga.; Engelmann, Rosa, Chicago, Ill.; Evans, T. W., Madison, Wis.

Fletcher, M. H., Cincinnati, Ohio.

Gould, Geo. M., Philadelphia, Pa.; Graef & Co., Chas., New York, N. Y.; Green, Mary E., Charlotte, Mich.; Gittelson, S. J., Philadelphia, Pa.; Greene, Chas. L., St. Paul, Minn.

Holton, Henry D., Brattleboro', Vt.; Houston, Grant, Joliet, Ill.; Haven, O. D., Youngstown, Ohio.

Irwin, J. W., Louisville, Ky.

Jepson, S. L., Wheeling, W. Va.; Jackson, Edward, Denver, Col.; Judson, A. B., New York, N. Y.

Kelly, R., Portland, Ore.; Keech, J. S., Racine, Wis.; Keith, Wm., Chicago, Ill.; Kereher, John, Chicago, Ill.; Kuhn, C. F., Port Townsend, Wash.; King, A. F. A., Washington, D. C.

Lindley, Walter, Los Angeles, Cal.; Lord & Thomas, Chicago, Ill.; Lincoln, D. T., Boston, Mass.

McDonald, T. P., Virginia City, Nev.; McClintock, C. T., Ann Arbor, Mich.; Morison-Jewett Filtration Co., New York, N. Y.; Michael L., Ferndale, Cal.; Mass-ey, G. Betton, Philadelphia, Pa.; Miller, A. E., Washington, D. C.; Madden, John, Milwaukee, Wis.; Miller, De Laskie, Chicago, Ill.; Morse, Lyman D., Advertising Agency, New York, N. Y.

Orton, John J., Randolph, Ohio.

Pickford, E. F., Washington, D. C.; Power, H. D'Arcy, Sacramento, Cal.

Robinson, J. A., Chicago, Ill.; Rosenthal, Jacob, Chicago, Ill.; Roseberry, B. S., El Paso, Texas.

Sternberg, G. M., Washington, D. C.; Sharpe, E. C., Clifton City, Mo.; Simmons, C. J., New York, N. Y.; Seliger, E. & Co., New York, N. Y.

Tiller, F., Blue Earth City, Minn.; Taylor, C. F., Philadelphia, Pa.; Tucker, E. F., Portland, Ore.

Uley, H. M., Detroit, Mich.

Vincedge, W. W., Lafayette, Ind.

Warden, A. W., New York, N. Y.; Woodbury, Frank, Philadelphia, Pa.; Wilkinson, Mrs. H., Chicago, Ill.; Woodward, A. P., San Francisco, Cal.

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ADDRESSES.

THE PRESENT ATTITUDE OF PHYSICIANS AND MODERN MEDICINE TOWARD HOMEOPATHY.

Presidential Address of the Medical Society of the State of Pennsylvania,
at its Meeting, May 22, 1895.

BY JOHN B. ROBERTS, AM., M.D.
PHILADELPHIA, PA.

The important relation of the physician to the community makes it seem proper to discuss before this audience, in which there are many non-medical persons, a question which is very imperfectly understood by those outside of medical circles. The public at large does not understand the position assumed toward homeopathy and homeopathic doctors, by those physicians who decline to accept all sectarian designations. Surprise is not infrequently expressed at the unwillingness of a non-sectarian physician to meet a homeopathic neighbor in medical consultation, though the social relations of the two may be most cordial.

This paper is an endeavor to show the causes of this apparent anomaly. Its most important aim is to hasten the time when all honorable persons engaged in preventing, alleviating and curing disease will refuse to be designated by adjectives implying, or seeming to imply, that they do not adopt every means or method of action that scientific investigation proves to be valuable.

He who treats disease by electricity, only, is properly called an electropath; he who uses water alone in all affections, a hydropath. The doctor who adheres to the homeopathic law of Hahnemann in all cases, is in a similar way properly termed a homeopath; and he who treated all of his patients by the law of allopathy, if there ever has been such a law formulated, would be an allopath. No allopathists exist; though some doctors have been so called, but not originally by themselves.

It must be clear to the least intelligent, moreover, that he who does not adhere to the special methods of treatment giving him his name, at once loses his logical connection with the designation. In other words, a practitioner who uses water or electricity, and also medicinal remedies according to the homeopathic law is no longer a hydropath or electropath. It is his exclusiveness of treatment in the one instance which gives him his title. His rejection of exclusiveness and his adoption of other means of treating disease rob him of his right to the sectarian name. It is apparent, therefore, that he who uses, or is willing to use, all remedies and all methods, and who varies the size of his dose, the character of the remedy and its method of application with the exigencies of the disease is neither electropath, hydropath or homeopath, but something broader. It may

be said, in passing, that by reason of his broadness he is perhaps better prepared to cope with disease.

Such practitioners as conscientiously choose their remedies and doses in accordance with the results of study and of experience with diseased processes, might with propriety be termed selective or elective physicians. The term would be applicable whether their actions were determined by their personal study and experience alone, or by the study and experience of others added to theirs. No such descriptive adjective is required, however, and the term "physician" suffices as does that of "dentist" in the sister profession; for common sense demands that he who would undertake any physical or intellectual work, should avail himself of every honorable means of accomplishment.

As all know, a medical sect called "eclectics" exists. The derivation of the name would seem to indicate that they select from all forms of remedies. They had originally certain ideas, I believe, as to the noxious qualities of remedies derived from the mineral kingdom, and advocated the use of vegetable remedies only. At any rate, the college established in Ohio in 1832 was the result of a resolution adopted, in order "that the people of the West may avail themselves of the advantages resulting from a scientific knowledge of botanic medication."¹ At present, the eclectics have, I believe, no special objection to mineral remedies. Dr. John M. Scudder, Professor of Practice of Medicine in the Eclectic Medical Institute, Cincinnati, says, "the eclectic gives remedies because their effect is *opposite* to or opposed to the diseased action. They may be selected according to the law of similia, or by empiricism, or by their known influence upon function and structure, physiologically or pathologically. They hold that remedies contain a *force* which set free in the body, influences its functions (mode of motion), doing that which is necessary to bring it back to that normal condition we call health."²

It is possible that the term eclectic was originally taken as a sectarian designation to create in the public mind the impression that eclectic physicians did differently, and did better, than those simply called doctors or physicians. Other medical sects have apparently done this for the purpose of attracting public notice. In many instances their chosen title has now no logical or etymologic connection with their belief or practice.

In this address I do not intend to discuss eclectic medicine at length; nor the beliefs and doctrines of vitopathists, physio-medicals, Thompsonians, and other sects. So far as I know, homeopathy is the only "school" or "sect" of medical practice under whose banner are enrolled any considerable number of physicians of intelligence and education.

¹ What is Eclecticism? A. J. Collins, p. 10.

² The Essential Differences between the Three Schools of Medicine, pp. 8-9.

It may be serviceable to ask the questions, What is medicine? What is homeopathy? Webster's unabridged dictionary defines medicine, homeopathy and allopathy as follows:

Medicine: "That branch of science which relates to the prevention, cure or alleviation of the diseases of the human body."

Homeopathy: "The art of curing, founded on resemblances; the theory and its practice that disease is cured by remedies which produce on a healthy person effects similar to the symptoms of the complaint under which the patient suffers, the remedies being usually administered in minute doses."

Allopathy: "The employment of medicines in order to produce effects different from those resulting from disease: a term invented by Hahnemann to designate the ordinary practice as opposed to homeopathy."

The Century dictionary gives similar definitions. Thus:

Medicine: "The art of preventing, curing or alleviating diseases and remedying as far as possible the results of violence and accident."

Homeopathy: "The medical treatment of diseased conditions of the body by the administration of drugs which are capable of exciting in healthy persons symptoms similar to those of the morbid condition treated."

A note is then added which says:

"In practice, homeopathy is associated with the system of administering drugs in very small, often infinitesimal, doses."

Allopathy: "In medicine, a therapeutic method characterized by the use of agents producing effects different from the symptoms of the disease treated."

A note goes on to say:

"The name is incorrectly applied, in distinction from homeopathy, to the traditional school of medicine, which opposes the homeopathic theory."

Eclectic medicine is defined by the Century dictionary as:

"A medical theory and practice based upon selection of what is esteemed best in all systems; specifically, the medical system of a separately organized school of physicians in the United States, who make much of what they regard as specific remedies, largely or chiefly botanical."

By these lengthy quotations it will be seen that there is a radical difference between homeopathy and medicine, in that the former is more limited in its meaning. Homeopathy is a method of treating disease and not the name of a branch of human science. It appears in these standard dictionaries in much the same manner as does evaporation or distillation in relation to chemistry. They are not sciences, but methods or processes of the science of chemistry, which may or may not be used by the professed chemist.

It may be asserted that this deduction from dictionaries is unjust toward the adherents of homeopathy. I can only reply that I have no knowledge of any medical dictionary written by a homeopathic physician, and that the non professional authorities quoted, are standard works of reference, whose attitude toward medical topics is unknown to me.

Medicine then comprises the art of preventing and treating disease; and is founded on biology, anatomy, physiology, chemistry and physics. All physical and physiologic laws are correlated with it, and to all such laws must it be subordinate. Its facts are only established by careful and painstaking observation and research. Medical hypotheses and theories must be subjected to the same rigid scrutiny and heartless criticism as the hypotheses, theories and suggestions of the physicist. The rules of evidence must be as stringently applied in determining the truth of alleged medical facts as they are in the

courts to ascertain the guilt or innocence of the accused.

It is evident, then, that medicine is a science and art, and is not electropathy, homeopathy or allopathy. It is equally clear that physicians who claim to study and practice the science and art of medicine are not allopaths, homeopaths or electropaths. Unfortunately, the general public does not realize this; and the majority of medical men are called allopaths, simply because they are not homeopaths. The error has been perpetuated by homeopathic literature giving the name allopath to those physicians who are unwilling to be homeopaths and who refuse to be affiliated with any sect of medicine. Homeopaths often speak in a similar way of homeopathy as the new school of medicine and describe non-sectarian physicians as of the old school. The difficulty of making the public understand the distinction between physicians and homeopaths has unfortunately led many physicians to carelessly and tacitly accept the designations "allopath" and "old school." Such terms, however, are not true. Physicians do not subscribe to a law of contraries or dissimilars (allopathy) as the homeopaths do to a law of similars.

The science of medicine can not be a sect or school any more than the science and art of navigation or agriculture. Physicians (often incorrectly called "old school doctors") are willing to use, and are never prevented by any code of ethics or society regulation from using, any remedy or dose which seems to them individually to be worthy of confidence. Ipecacuanha is given in minute doses for vomiting by many physicians, belladonna is used by them in scarlet fever, and aconite in many instances of fever, while phosphorus, bryonia, arnica, nitro-glycerin, etc., are remedies often used.

These and all remedies are used by non-sectarian physicians because physiologic and chemic study or experience has shown them to be indicated. The homeopathic physician uses them because he believes they produce, in the well, symptoms similar to those with which his patient is afflicted. For example, the homeopathic doctor gives a dilution of ipecacuanha containing an exceedingly minute amount of the drug to relieve vomiting; because ipecacuanha in doses of several grains causes vomiting in the healthy. The method of employing ipecacuanha by the non-sectarian rests on an entirely different basis. He gives small doses of the drug—not exceedingly minute amounts—when his patient has nausea due to a catarrhal condition of the stomach and bowels; because science has taught him that small doses of ipecacuanha stimulate and render less viscid the secretion of the mucous membrane of the stomach, increase the secretion of bile by the liver and promote digestion. His use of ipecacuanha has no relation or connection with the fact that larger doses cause vomiting. In some instances the drug employed is called by a name different from that adopted by the homeopaths, because physicians use the name adopted by the United States Pharmacopoeia, the official guide in such matters published every ten years by a convention composed of delegates from the United States army, navy and marine-hospital service, the medical colleges and societies of the Union.

Again, physicians who are not homeopaths prescribe medicine in the form of powders, and at times put a few drops of a strong tincture, or a small pellet or tablet, into a tumbler partly filled with water, and

direct a teaspoonful to be taken at definite intervals. These methods which seem to the public to be inseparably connected with homeopathy, are also used, therefore, by non-sectarian doctors.

Medicine requires its votaries to examine into the hypotheses and theory of drug action and the causation of disease, and to accept as true only those statements which can stand the test of accurate scientific investigation. Many are the theories and beliefs that have been over-turned by the searching criticism thus given.

Medicine is ever ready to receive with open arms that which promises increased power against disease; but before it is accepted as truth it must show that it can stand the rigid test of modern science. The assertion of no man, or body of men, however eminent or revered, is accepted as final. Truth can not be predicated upon the statement of a few. The fact is only provisionally accepted until the accumulated proof of many diverse investigators and observers makes its truthfulness almost a certainty.

The public doubtless remembers the rejection of the Brown-Séquard elixir of life and the tuberculosis cure of the renowned Koch. The eminence of these men gave unusual importance to their assertions, but did not stay the critical study which showed the error of their beliefs. On the other hand, the germ theory of disease propounded by Koch has constantly been adding to the number of its converts, until now it is accepted by the major part of the medical world.

This review shows that non-sectarian medicine does not prohibit a physician holding views different from those of his fellows on questions of drugs and treatment. Its only demand is that its followers be catholic; that is, broad and open to conviction in all directions; that they approach all subjects in a truly scientific and humanitarian spirit. For this very reason, however, it does, from its essential nature as a science, prohibit that sort of exclusiveness which says that only one law or dogma can be true and correct.

He who says that "so and so" is the only universal law, at once reveals an unscientific spirit and mind, and precludes the personal investigation and observation which is necessary to make him a rational follower of scientific medicine. I may perhaps make myself clearer by an illustration. A civil engineer who believes and acts on the belief that the only and universal method of bridging a river is by the erection of wooden truss bridges is not a rational and scientific civil engineer. He is a "wooden-truss bridge builder," if you choose, but he is not and can not be, a scientific civil engineer, because the experience and observation of the great mass of competent observers show that streams may be bridged by truss bridges of iron, suspension bridges of wire and bridges with stone arches.

It was this exclusiveness in the methods of treatment proposed by Hahnemann, and adopted by his immediate followers, under the name homeopathy, that separated the homeopaths from the ranks of those who believed, and who still believe, in the use of any and all methods *proved* to be curative. Non-sectarian physicians hold to no exclusive dogma or doctrine in therapeutics, and believe that Hahnemann was in error in his opinions that "like cures like" and that drugs are increased in power by trituration and shaking. They believe that the doses advocated

by him were so infinitesimally small that they are inert. Dr. H. B. Hemenway says³ that he has several times examined low dilutions, not high dilutions, of *mercurius vivus* prepared by one of the most reliable homeopathic drug firms in the country, without finding the slightest trace of mercury.

In other words, they believe that experience and scientific investigation have shown and do show, that the cures attributed to these exceedingly small doses are instances of erroneous observation, that the cures occurred in fact without any curative effect being exerted by the drugs. They believe that it is contrary to the lessons of the science of medicine and of collateral sciences that 150 cases of true scarlet fever could be treated without a death by medicines of the two hundredth and higher homeopathic potencies exclusively.⁴ They doubt the accuracy of the observations of Dr. William Ray of England who in a cholera epidemic "had splendid success" with the two hundredth potency of camphor.⁵ They feel hesitancy in accepting as true, the statement that common table salt can be so changed by the homeopathic method of trituration and administration that it "will cure more cases of intermittent fever than any other known remedy." Yet a homeopathic author says: "With the thirtieth dilution I have cured several hundred cases with this drug alone."⁶

Without presuming to question the honesty of opinion of these authors, non-sectarian doctors believe that knowledge, possessed by the general public, is sufficient to cause distrust in the scientific accuracy of these observations and statements.

Much of the evidence given by Hahnemann and his early followers on the law of similars (*similia similibus curantur*, as he puts it) is open to the same criticism as to accuracy. Until rigid scientific investigation proves the truth of Hahnemann's law of similars and his doctrine of potentization and dynamization of drugs in almost infinitesimal doses, the physician who believes in the scientific character of medicine is compelled by logical reasoning to class Hahnemannism and homeopathy with Brunonism, Bronssaisism, Humoralism, Solidism, and the other systems, schools or sects of medicine, which have long fallen under the ruthless knife of scientific research. These were also speculative and founded on the deductive system of reasoning.

If the truth of Hahnemann's propositions are ever scientifically demonstrated, they will accept them as heartily as many of them do. Dr. Koch's recent demonstration of the connection of consumption with the tubercle bacillus, and as most of the world does Jenner's assertion that vaccination protects from smallpox.

An apparent demonstration of the erroneous character of Hahnemann's teaching is the fact that many physicians who are classed as homeopaths do not believe in the small doses advocated so strenuously by Hahnemann, nor in the universality of the homeopathic law of similars. I call these gentlemen homeopaths because they teach in homeopathic colleges and belong to homeopathic societies; and thereby accept the designation.

It is not to be wondered at, then, that physicians at large can not accept homeopathy, when even Hahne-

³ JOURNAL AMERICAN MEDICAL ASSOCIATION, March 17, 1894, p. 371.

⁴ A. Lippe in Cincinnati Medical Advance, 1876, vol. III, p. 544, quoted by E. H. Berridge in Homeopathy Vindicated, p. 18.

⁵ Homeopathy Vindicated, E. H. Berridge, p. 16.

⁶ Burt's Physiologia Materia Medica, p. 632, quoted by Hemenway, JOURNAL AMERICAN MEDICAL ASSOCIATION, March 17, 1894, p. 367.

mann's avowed followers give evidence in their practice and writings of their defection from his teachings.

Two years ago I gave in an address⁷ evidence of this defection of homeopathic physicians from the doctrines of Hahnemann. At this time I shall only record the statement of Dr. Jabez P. Dake, a high authority in the homeopathic school, made in 1894 at the meeting of the American Institute of Homeopathy. In an article entitled, "What the Homeopath should know of Drugs,"⁸ he says:

"We can not imagine a physician who is entirely limited to the homeopathic use of drugs." In speaking of the symptoms produced by drugs, detailed, by the votaries of homeopathy, after "provings," he says: "It is a lamentable fact, shown indisputably by the higher medical criticism, that the sources of impurity, the gateways to the realms of imagination, misapprehension, and even fraud, were not all shut while the drug pictures were being taken. Applying all the rules of evidence to the witnesses whose testimony constitute our materia medica, we must realize that very few of them have come up to the standard requiring the 'the truth, the whole truth, and nothing but the truth,' concerning drug effects."

It is this aspect of the case which prevents the members of this society and other non-sectarian physicians believing in the scientific accuracy of many of the observations recorded in homeopathic works.

If homeopaths themselves do not believe in the general accuracy of the statements in Hahnemann's "Materia Medica Pura," Jahr's "Manual" the "Encyclopædia of Pure Materia Medica" and the "Cyclopædia of Drug Pathogenesis," it is not surprising that others can not bring themselves to believe in the universality or infallibility of the homeopathic law.

Samuel Hahnemann was born in Germany in the year 1755 and died in 1843. He founded the homeopathic school of medicine, which is the only school, system or sect of medicine of any importance at the present time. The vitapathist, vita-chemical, physio-medical, eclectic and Christian science schools are less important. The adherents and quasi-adherents of homeopathy probably exceed in numbers the adherents of all the other sects of medicine taken together. This is partly due to the circumstance that many practitioners who are classed with homeopaths are really practitioners of rational or scientific medicine, with a belief in the truth of some, but not all, of Hahnemann's teachings. They are the subject of bitter denunciation by those who still accept homeopathy in its entirety.

Dr. John C. Morgan⁹ complains greatly of the prevalent neglect in teaching homeopathy in homeopathic colleges. He says that some instruction is given to the freshman classes; but that "if the second, third and post-graduate years had been planned for this obliteration of Hahnemannism the result could scarcely be more complete."

This inattention to homeopathy in the colleges of that school seems to be due to the fact that the great mass of their teachers have little faith in the principles insisted upon by Hahnemann. They have apparently seen the defect of the homeopathic law, but are not yet willing to disavow a belief in its infallibility and universality.

Haller, who died in 1777, when Hahnemann was still a young man, may be said to be the father of the modern science of medicine. He rejected all theorizing on medical topics and all attempts to find laws of treatment or found systems or schools of medicine. He argued that rational or scientific medicine could only be reached by exact and critical study of anatomy, physiology, pathology, and the effects of remedial agents on the functions of the body.

The claim that Hahnemann first formally enunciated the doctrine that remedies should be studied by administration to healthy persons seems to be untrue, as Haller preceded him in this assertion. Hahnemann is said to have divined or discovered the homeopathic law of similars, as it is called, about 1790. It was probably not entirely new.¹⁰

It has been truly said¹¹ that rational or scientific medicine began its life when Albrecht von Haller recognized the fact that "the laws of nature are not things which we can evolve by any speculative method. On the contrary, we have to discover them in the facts; we have to test them by repeated observations and experiments. In proportion only as they hold good under a constantly increasing number of cases, and in the greater delicacy in the means of observation does our confidence in their trustworthiness rise."

Hahnemann's first doctrine was the so-called law of Nature "*similia similibus curantur*"—like things are cured by like things—which he describes as a "law until the present time, although it has on all occasions formed the basis of every visible cure."¹²

This law of similars is the basis of his system which he called homeopathy from two Greek words, signifying "similar" and "suffering" or "disease." It is strange that while he in some places speaks of the law being first taught by himself, he, in other parts of the Organon, admits it was not without previous advocates.

The second doctrine of Hahnemann's system is that dilution of drugs increases their curative power. The potentization or dynamization of drugs, as this increase of power in diminishing quantities is called, is accomplished by taking one part of sulphur, for example, and rubbing or triturating it with ninety-nine parts by weight of sugar of milk. This is the first trituration, designated the first potency. One part of this sulphur mixture is then triturated in a similar manner with ninety-nine parts of sugar of milk, constituting the second trituration or potency. This process may be continued indefinitely, though Hahnemann considered that the best results were obtained, and the most "dynamic power" developed in the thirtieth potency or attenuation.

In the case of liquids, such as tincture of aconite, two drops of the "mother tincture," made of equal parts of expressed juice and alcohol, were mixed and shaken up with ninety-eight drops of alcohol to make the first potency, and successive additions of ninety-nine drops of alcohol were made to one drop of this first potency in a manner similar to that used with solid drugs.

It was necessary, according to Hahnemann, "not to rub or shake the drugs too much, or they might become too strong." He says: "Homeopathic medicines acquire, at each division or dilution, a new

⁷ Points of Similarity between us and Homeopathic Physicians. JOURNAL AMERICAN MEDICAL ASSOCIATION, May 27, 1902.

⁸ The Hahnemannian Monthly, July, 1894, p. 410.

⁹ The Study of Homeopathy, etc. Trans. World's Homeopathic Congress, Chicago, 1894.

¹⁰ Homeopathy, by Thos. W. Blatchford, p. 7.

¹¹ W. H. Walsburn, Medical and Surgical Reporter, July 11, 1891, p. 52.

¹² Hahnemann's Organon, p. 88.

degree of power by the rubbing or shaking they undergo, a means of developing the inherent virtues of medicines that was unknown until my time, and which is so energetic that latterly I have been forced to reduce the number of shakes to two, of which I formerly prescribed ten to each dilution."¹³

In the American Homeopathic Pharmacopœia of 1886, those interested will find detailed accounts of the various methods of preparing homeopathic remedies. The decimal scale of potentiation, introduced by Dr. Constantine Hering and now a good deal used, will also be found there described. Hering's decimal scale is distinguished from Hahnemann's centesimal scale by placing an *x* after the number of the potency; thus, "2*x* potency."

In order that liquids should not be shaken too much and made too strong, Hahnemann directed that, after the dilution was made to the potency desired, small globules of sugar of milk should be saturated with the solution. These would have the desired curative power, which would not accidentally be increased by shaking. The shaking is best performed by moving the arm from above downward; and if properly performed, imparts active medicinal virtue to substances usually regarded as entirely or almost inert. Pure carbon, flint, table salt and similar substances are by proper dilution made powerful curative remedies.

The belief of the author of homeopathy in his system is shown by these words: "The most violent pleuritic fever, with all its attending alarming symptoms, is cured in the space of twenty-four hours at the farthest, . . . by giving one globule of sugar impregnated with the juice of aconite of the decillionth (thirtieth) degree of dilution."

In cases of overloaded stomach "the patient should 'smell once' a globule of sugar the size of a mustard seed, impregnated with the thirtieth dilution of pulsatilla," and be "infallibly cured in the space of two hours."

Hahnemann's next "great truth, which remained concealed from all my predecessors and contemporaries," is that all diseases, except two, owe their origin to a "chronic miasm" which had descended through many generations of men from the itch (psora). His statement is:¹⁴ "This psora is the sole, true and fundamental cause that produces all the other countless forms of disease which, under the name of nervous debility, hysteria, hemiplegia, hypochondriasis, insanity, melancholy, idiocy, madness, epilepsy and spasms of all kinds, softening of the bones, or rickets, scoliosis and kyphosis, caries, cancer, fungus, hematodes, pseudo-morphæ of all kinds, gravel, gout, hemorrhoids, jaundice and cyanosis, dropsy, amenorrhea, gastrorrhagia, epistaxis, hemoptysis, hematuria, metrorrhagia, asthma and phthisis ulcerosa, impotency and sterility, deafness, cataract and amaurosis, paralysis, loss of sense, pains of every kind, etc., appear in our pathology as so many peculiar, distinct and independent diseases."

Another of the principles of homeopathy was that no two medicines should be administered at the same time. A single drug in an infinitely small dose is the only medication allowable.

Some homeopaths believe that in chronic diseases a single dose of a homeopathic remedy may cure. Dr. J. C. Morgan, for example, asserts that "Some-

times, as in tumors, a single dose, once in thirty days, as of sepia or hepar sulph., has done¹⁵ good 'alterative work.'"

The desire to obtain "similars" has led some homeopathic physicians to employ unusual remedies from the animal kingdom. Dr. Morgan in the paper above quoted makes this assertion: "Dr. Samuel Freedley informed me of his curing himself of an 'old man's ulcer' of the leg by tarantula cubensis. I reasoned that an animal so low represents degraded human tissue, and is homologous with low disease changes. Hence I have used cimex with benefit in ulcer of the rectum. . . ." The tarantula cubensis is a large spider of the West Indies; the cimex is the well-known bedbug.

The American Homeopathic Pharmacopœia published in 1883 by Boericke & Tafel shows¹⁶ that the cimex or bedbug is made for homeopathic practitioners as follows: "The live insect, crushed, is covered with five parts by weight of alcohol. Having poured the mixture into a well stoppered bottle, it is allowed to remain eight days in a dark cool place, being shaken twice a day. The tincture is then poured off, strained and filtered. Amount of drug powder one-tenth. Dilutions must be prepared as directed under Class IV."

The medicine called by homeopaths "blatta Americana" is prepared from the great American cockroach. In this case "the live animal is crushed and triturated, as directed under Class IX."¹⁷ In preparing "mephitis" one part by weight of the characteristic fluid expelled by the polecat or skunk is dissolved in ninety-nine parts by weight of alcohol.¹⁸ Variolinum is prepared by Boericke & Tafel for homeopathic uses¹⁹ by triturating the contents of a ripe smallpox pustule as directed under Class VIII. Psorinum was introduced as a medicine by Dr. Constantine Hering,²⁰ who says: "I collected the pus from the itch pustule of a young and otherwise healthy negro. . . . I opened all the mature, unscratched pustules for several days in succession, and collected the pus in a vial of alcohol. After shaking it well and allowing it to stand, I began my provings with the tincture on the healthy. . . . I administered it to the sick with good results, and sometimes witnessed aggravations."

Dr. Samuel Swan, who deals in homeopathic remedies in high potencies in New York, says in his catalogue:²¹ "In order that all should have the benefit of high potencies, the plan of sending grafts has been adopted; if a graft is put in a vial of any size and the vial filled with unmedicated pellets and corked, the whole will be medicated in half an hour." He indicates on the same page of this catalogue that when a vial of medicine is nearly emptied, the physician can fill it up with unmedicated pellets, which will become medicated by being in company with the pellets previously contained in it; thus presumably acting in a manner similar to the grafts spoken of in the paragraph quoted above. He says: "You will not have to purchase the remedy a second time."

Among the remedies advertised are: "Pus from rectal abscess." "Pus from caries of os calcis." "Pus

¹⁵ The Study of Homeopathy, etc., Trans. World's Homeopathic Congress, 1893. Reprint, p. 45.

¹⁶ P. 175.

¹⁷ American Homeopathic Pharmacopœia, 1883, p. 123.

¹⁸ Idem, p. 307.

¹⁹ Idem, p. 449.

²⁰ Idem, p. 380.

²¹ Catalogue of morbid products, nosodes and other remedies, in high potencies. Second edition, 1886, p. 31.

¹³ Organon, p. 205.

¹⁴ Organon, p. 122.

from septic abscess" (p. 21). "Vomito; blood from a yellow fever patient while moribund." "Sal cerebri; salt secreted profusely from a gentleman's scalp, with the perspiration, and on drying it was crystallized so heavily his head looked frosted" (p. 30). "Pediculus capitis," "Pediculus corporis, from Boston" (p. 20). "Tinien syphilitica, syphilitic patient with tinea capitis" (p. 25). "Luna (moonlight)" (p. 16). "Helios, the sun" (p. 13). "Omnia" (p. 29).

I do not know the standing of Dr. Swan as a homeopathic pharmacist, but the fact that his catalogue has reached its second edition would seem to indicate that he is patronized by homeopathic physicians. He does not state in what diseases "moonlight" or "pediculus corporis" (body louse) "from Boston" are employed by homeopaths.

To determine for what diseases the several drugs are cuative, it was, of course, necessary to find out what symptoms the drug produced in a healthy human being. Therefore an infinitesimal dose of the substance to be proved was taken by a healthy person, preferably a physician, who then noted, once, twice or thrice a day, the sensations and occurrences he found in himself for a period of several days. These symptoms, called the pathogenesis of the drug, were recorded in catalogue form. Each drug so proved has many pages of symptoms recorded.

The real homeopathic physician, who has a sick man to treat, looks over this list of drug symptoms, and administers an infinitesimal dose of a single drug which is found in the table to produce symptoms "similar" to those presented by the patient. For example, a drug which has produced symptoms pertaining to the head is to be given to a patient presenting "similar" but not "identical" head symptoms.

Dr. Berridge, an ardent homeopath, relates²³ a case of congestion of the brain, and condemns the homeopathic doctor who stopped giving arnica because, as he said, "he did not believe it acted on the head more than on the big toe." The argument of Dr. Berridge is that the doctor was too ignorant to know that "Allen's Encyclopedia gives seven symptoms of arnica belonging to the big toe and nearly one hundred belonging to the head."

I mention this to show the reader how homeopathy undertakes to cure disease. The changes in the fluids and the alterations in the tissues of the body are not to be investigated for the purpose of discovering the cause of the patient's disease. His symptoms are to be noted and then a search made among the lists of "proved" drugs for one that induces similar symptoms. A recent paper published in the *Hahnemannian Monthly*, February, 1894, by Dr. Joseph C. Guernsey is entitled, "Symptoms, the Basis of Homeopathic Prescribing," and illustrates the method I have described.

The skill which makes one homeopath better than the other, lies in "selecting the remedy" or "*similimum*" which most nearly simulates the symptoms. The remedy whose drug effect corresponds most nearly with the greatest number of disease-effects in the patient is believed to be the most certain cure. Herein lies the difference between the successful and the unsuccessful homeopathic physician, according to the doctrine of homeopathy.

Many devices have been employed by homeopaths to aid in "selecting the remedy" from the multitudinous lists of symptoms found in their text-books.

Boenninghausen's "Therapeutic Pocket-Book," Jahr's "Symptomen-Codex" and "Repertories" are the refuge of the true Hahnemannian. Dr. Morgan, for example, tells us²⁴ that he once sought a remedy for a case of intermittent fever, with chill beginning on the right side. Taking Jahr's "Symptomen-Codex," he examined the "fever" rubric of every drug, and found under Rhus tox., "the left side of the body felt hot, and the right side cold," etc. Examining for the other symptoms, pain, etc., this drug was found to have all of them; and Rhus tox. was then known to be the remedy. The same author describes the "numerical method" of finding the remedy thus: "Its most salient expression is found in Dr. W. J. Guernsey's "Boenninghausen." In this the rubrics of the "Therapeutic Pocket-Book" are printed upon separate long strips of stiff paper, with the rank of each drug thereunder, 1, 2, 3, 4, in numerals. Selecting the slips containing the various symptoms, they are placed side by side upon a table; then each drug, beginning with those of highest rank, is counted by adding all its printed numerals together. The one having the highest number is held to be the *similimum*, irrespective of the claims of keynotes, etc.

Homeopathy, therefore, lays no stress upon the importance of the study of physiology and pathology. Hahnemann says: "I can not comprehend how it is possible for physicians to imagine that they ought to search the interior of the human economy."

Some doctors, still calling themselves homeopaths, reject many of these doctrines of Hahnemann; but in so doing seem to be no longer homeopaths.

There are still in the ranks of homeopathy, however, those who believe in the universality of the law of similars and the potentiation of drugs by trituration and shaking. E. W. Berridge, for instance, shows by the following words his belief that the homeopathic law of similars is unfailing: "We, however, never give medicines for the cure of disease on any other law than that of similars, and have never any occasion to do so."²⁵ The statements in this quotation are Dr. Berridge's, not mine, and show the earnestness with which he makes the assertion that the law of similars is in his mind a universal therapeutic law.

Dr. Neidhard uses the words,²⁶ "If this fundamental law can be overthrown, then homeopathy, as a science, is as good as lost. If it is not a universal law of cure that will shorten the natural course of diseases, that will mitigate more permanently the pains of disease than any other method of cure, it will not deserve our respect nor our study." He says also that from the time of Hippocrates, and, as far as any records are left from the beginning of all times, all true cures of diseases were always performed according to the homeopathic law.²⁶

He, on page 7, illustrates the working of this law of similars by citing the case of two ladies who were entirely exempt from seasickness at sea because they were previously subject to chronic sick headache with nausea and vomiting. The same author (p. 10) shows his belief in infinitesimal doses by reporting the account of a number of men who escaped cholera during an epidemic because they were engaged in making and selling copper articles. Copper,

²³ Loc. cit.

²⁴ Homeopathy Vindicated, Liverpool, 1879, p. 38.

²⁵ Universality of the Homeopathic Law of Cure, by Charles Neidhard, M.D., Philadelphia, 1871, p. 1.

²⁶ Idem, p. 5.

it must be recollected, is believed by the homeopathic school to be a medicine of superior efficiency in cholera.

Dr. Neidhard likewise administers (p. 10) small doses of rattlesnake venom to destroy the appetite for liquor, because "whisky in large quantities is a well-known frontiersman's remedy for the bite of the rattlesnake and is often successful." Further illustrations or proofs of the universality of the law of similars are given by the same author as follows (Id. p. 12). "A friend throwing some flowers, withered by a hot July sun, into a basin of warm water found them, some hours after, to his astonishment, as fresh as ever, completely revived."

"The best thief catchers and detectives are those who formerly have been engaged in the same business—that is, have been thieves."

"Disappointed love can cause consumption and rheumatism, but when you have it, it may also cure it—a true homeopathic cure" (Id. p. 13).

The homeopathic law is, according to Dr. Neidhard (p. 21), operative in education. He says: "A vicious boy who pokes his umbrella into everybody's side is cured by letting him stand in a corner with an immense umbrella over his head until he is tired."

Dr. J. C. Guernsey says: ²⁷ "If a remedy fails to act, after giving it in a potency sufficiently high to warrant a fair trial, we may make up our minds that we have not found the *similimum*, i. e., we must blame ourselves and not the law *similia similibus curantur*."

Dr. J. H. McClelland says: ²⁸ "In the homeopathic law, internal medicine has reached finality."

The *Organon*, a homeopathic journal of Liverpool, England, published some years ago (April, 1878) a "Declaration of Homeopathic Principles," signed by nearly one hundred and fifty homeopathic physicians, nearly all of whom were practicing in America. The first essential point of the homeopathic doctrine is given thus: "The cure of the sick is most easily, mildly and permanently effected by medicines that are themselves capable of producing in a healthy person morbid symptoms similar to those in the sick." Another essential point is: "Local treatment of all kinds in *non-surgical* cases is not only unnecessary, but is apt to change the location of the disease and induce dangerous complications, and never *permanently* cures."

The non-sectarian doctor does not understand the position of these homeopathic physicians on the subject of the numerous skin diseases that are so quickly cured by mild local measures. They are certainly cured permanently, and just as certainly are not surgical cases.

The above declaration appears to have been prepared by Dr. Adolph Lippe, of Philadelphia, who states that among homeopathic physicians "the departure from Hahnemann's teaching have rapidly multiplied." (Reprint, p. 5 and 7.) Hence the necessity for the preparation and publication of the "Declaration of Homeopathic Principles"; for in his opinion: "We must be governed by *infallible principles* and not by the *opinions of fallible men*." Dr. Lippe goes on to show that homeopathy allows no deviation from the homeopathic law, and indicates that the homeopathic physicians and homeopathic societies that approve of such liberality are not truly homeopathic.

Dr. James B. Bell, President of the International Hahnemannian Association, in his address delivered in June, 1892, said: ²⁹ "Our society numbers in active living members about one hundred and fifty, and it would be a generous estimate, I think, to double that number, as representing in the whole world all those who may called true Hahnemannians, or who are becoming such. If we have patients going to other cities, especially in the West and South, how rarely can we recommend a physician to them, and if the patients are going to Europe or England, we know of but five or six men in the great cities to whom we can safely intrust them."

Until the recent establishment in the United States of medical examining and licensing boards it was practically impossible to determine the relative numerical strength of the homeopathic profession. In many States, all physicians have to pass a medical examination before being given a license to practice. Homeopathic physicians have insisted upon having a separate examination, and it thus has become possible to compare accurately the numbers of non-sectarian and homeopathic practitioners. In New York during 1892, 1893 and 1894, 713 applicants for license appeared for examination before the non-sectarian board of examiners, 80 applicants before the homeopathic board and 15 before the eclectic board. ³⁰ In Pennsylvania during the year ending March 1, 1895, there were 331 non-sectarian applicants, 56 homeopathic applicants and 12 eclectic applicants. ³¹ The Illinois State Board of Health shows in its Report on Medical Education of 1894, that in 1893 there were graduated from the medical colleges of the United States and Canada 425 homeopathic physicians and 4,975 non-sectarian physicians. The number willing to graduate from homeopathic schools would seem by these figures to be about one-eleventh of those graduating from the non-sectarian schools. If the President of the International Hahnemannian Association, quoted above, is accurate in his statement, the relative proportion of real followers of Hahnemann is much less.

The attitude of modern medicine and its votaries to homeopathy and homeopathic physicians will be readily understood after this survey of the principles of homeopathy based on the writings of Hahnemann and his disciples. Non-sectarian physicians believe it is a duty to the patient that the doctor shall use every means of cure which seem to hold out a prospect of benefit. To limit himself to "similars," or to decline to use "local treatment of all kinds in non-surgical cases" because it "never permanently cures" seems to such physicians unjust in the one case and not in accord with practical experience in the other. To subscribe to a law of "similars," a law of "dis-similars" or to any other dogma of treatment and say that it is "infallible" and "universal" appears to him unscientific and a step sure to lead to harm to the sick man. He feels that he must have the whole world of science, medical and collateral, from which to draw; that he must have a right to use any remedy in any dose or form that seems to him good; and that he similarly must have a right to decline to prescribe according to any law if he have no faith in the law.

The refusal of most non-sectarian physicians to meet homeopathic physicians in consultation over

²⁹ The Homeopathic Physician, Philadelphia, August, 1892.

³⁰ New York Medical Record, May 4, 1895.

³¹ Compiled from statement received from Medical Council of Pennsylvania.

²⁷ Hahnemannian Monthly, February, 1894, p. 82.

²⁸ Jubilee Address before American Institute of Homeopathy, 1894, p. 47.

cases of disease, is based on the *exclusiveness* of homeopathy. So long as the homeopathist believes in the exclusive dogma that "like cures like" and is therefore debarred from using remedies and methods and doses which do not conform to that law, the non-sectarian physician feels unwilling to consult with him, because the homeopathic doctor would be prevented from using any and every drug and method. Hence, the hands of the non-sectarian doctor would be tied and the consultation would not give the patient all the advantages that ought to be at his service.

This is the position that has long been taken by the AMERICAN MEDICAL ASSOCIATION, the representative of the non-sectarian medical profession of the United States, and its affiliated State medical societies and county medical societies. The Code of Medical Ethics of the AMERICAN MEDICAL ASSOCIATION in Art. IV, Sec. I, says:

"But no one can be considered as a regular practitioner or a fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology and organic chemistry."

The following explanatory statement was adopted by the ASSOCIATION about twelve years ago:

WHEREAS, Persistent misrepresentations have been and still are being made concerning certain provisions of the Code of Ethics of this ASSOCIATION, by which many in the community, and some even in the ranks of the profession, are led to believe those provisions exclude persons from professional recognition simply because of differences of opinions or doctrines, therefore

1. *Resolved*, That clause first, of Art. IV, in the National Code of Medical Ethics, is not to be interpreted as excluding from professional fellowship, on the ground of differences in doctrine or belief, those who in other respects are entitled to be members of the regular medical profession. Neither is there any other article or clause of the said Code of Ethics that interferes with the exercise of the most perfect liberty of individual opinion and practice.

2. *Resolved*, That it constitutes a voluntary disconnection or withdrawal from the medical profession proper, to assume a name indicating to the public a sectarian or exclusive system of practice, or to belong to an association or party antagonistic to the general medical profession.

3. *Resolved*, That there is no provision in the National Code of Medical Ethics in any wise inconsistent with the broadest dictates of humanity, and that the article of the Code which relates to consultations can not be correctly interpreted as interdicting, under any circumstances, the rendering of professional services whenever there is a pressing or immediate need of them. On the contrary, to meet the emergencies occasioned by disease or accident, and to give a helping hand to the distressed without unnecessary delay, is a duty fully enjoined on every member of the profession, both by the letter and the spirit of the entire Code.

As soon as a homeopathic physician asserts that he is willing to give any drug in any dose and to use any method of treating disease that holds out a reasonable prospect of benefit, and states that he is not bound to practice *exclusively* according to the homeopathic law of similars, he becomes eligible for membership in the AMERICAN MEDICAL ASSOCIATION, and the State and county societies connected with it. There are thus at the present time, quite a number of physicians connected with the AMERICAN MEDICAL ASSOCIATION and its constituent societies, who previously were considered and considered themselves to be homeopaths. As will be readily understood from the Section from the Code of Ethics, above quoted, such gentlemen are no longer considered undesirable physicians to meet in consultation.

As has been stated in the earlier part of this paper, a very large proportion of the graduates of homeopathic colleges no longer believe in the infallibility of the law similars, and do not restrict their practice

to treating diseases according to its principles. All such physicians become eligible for membership in the AMERICAN MEDICAL ASSOCIATION and in the society which I now address, by the simple statement that they do not believe in the infallibility of Hahnemann's law, and who constitute, according to Dr. Bell, a very small proportion of the physicians considered by the public to be homeopathists, would not be eligible to membership in the AMERICAN MEDICAL ASSOCIATION, or similar organizations of physicians, because they believe and practice according to an exclusive dogma.

Those graduates of homeopathic colleges and members of homeopathic societies, who admit that the law of similars is sometimes fallible, seem to be unwilling to publicly assert their modified belief in Hahnemann's teachings. By permitting themselves to be called homeopathic physicians by the public, though really not practicing according to Hahnemann's law (except in a proportion of their cases) they seem to be using the name "homeopathist" for the purpose of making the public believe that they are in some indefinite way different from all other physicians; and that they possess powers different from those possessed by physicians who do not accept the designation, "homeopathist." Non-sectarian physicians look upon this assumption of a special title as derogatory to the votaries of any science.

This is the reason that homeopathists are sometimes referred to as doctors who assume a sort of trade-mark for the revenue that may be derived from such a designation. Hence, many non-sectarian physicians contend that a man graduated from a homeopathic college, or publicly professing to practice homeopathy, should not be considered worthy of being met in professional consultation unless he publicly disclaims the title "homeopathist," and asserts that he is willing to practice by other methods as well as those prescribed by Hahnemann.

Dr. Solomon Solis-Cohen states³² his position thus: "If, however, one whose personal character fits him for membership in this society, but who had formerly professed homeopathy, becomes convinced of his mistake, and desires to join the ranks of scientific medicine, he should be freely received; provided only that he repudiates any sectarian designation and gives to the censors satisfactory evidence of his professional attainments. More than this we ought not to ask. Less than this we can not honorably accept."

A considerable proportion of the non-sectarian profession, however, is of the opinion that it is unreasonable to expect men who have been associated with homeopathic colleges and societies to make such a public disclaimer. They think it should be sufficient for such gentlemen to show by their actions that they do not believe in the infallibility of Hahnemann's law; that the very fact that they use methods of treatment founded on anatomy, chemistry, physiology and pathology, should be sufficient to entitle them to join the AMERICAN MEDICAL ASSOCIATION and similar professional organizations.

This is the view of a recent correspondent of the *Medical News*, whose name I do not know, who says: "If they were allowed to come into the regular societies without going down on their knees and confessing that they have been sinners, and being forced to renounce their previous faith, they would

soon after admission stop preaching homeopathy, as they became accustomed to their new positions, with that gradual change of mind that good fellowship produces. The majority of them now do not practice homeopathy, but they are forced to preach it in self-defense."³³

The attitude of physicians and modern medicine to homeopathy, then, is that assumed by these two classes of non-sectarian physicians, namely, those who insist that the homeopathist must make a formal public disclaimer of exclusiveness; and those who think it sufficient that he should simply indicate in any way that he is willing to treat patients by any drug, dose or method, that seems to him to be worthy of confidence in the treatment of disease.

The New York State Medical Society has publicly proclaimed itself of the opinion that a physician should be free to consult with any other doctor who seems to him personally to be worthy and likely to be of service in the treatment of the patient under consideration. This action caused the formation of a new State medical organization by those non-sectarian doctors of New York, who believed that homeopathists should make a formal disclaimer before becoming eligible for professional consultation. This society is called the New York Medical Association. No action similar to that of the New York State Medical Society has been taken by any other State medical society or by the AMERICAN MEDICAL ASSOCIATION; but a considerable proportion of the membership of these organizations seem to believe that the action of the New York State Medical Society should be followed; I do not know of any member of the AMERICAN MEDICAL ASSOCIATION refusing professional recognition to members of the New York State Medical Society since it took the step mentioned. It is probable that in a few years the world will see most physicians consulting with those homeopathic graduates, who are willing to treat patients by any and all drugs, doses and methods, without demanding of a formal recantation of their former belief in the exclusiveness and infallibility of Hahnemann's law of "similars."

Much of the instruction received by students in homeopathic colleges at the present time is identical with that given in non-sectarian medical schools. That this is well known is evident from the fact that the Association of American Medical Colleges has passed by-laws permitting those who have received instruction in homeopathic schools to advanced standing in the colleges belonging to the Association³⁴.

The Woman's Medical School of the Northwestern University, at Chicago, admits to the senior class graduates of homeopathic and eclectic medical colleges who "have taken considerable post-graduate work³⁵ on the same terms as graduates of non-sectarian medical colleges. This action is especially significant, because Dr. N. S. Davis, an ex-president of the AMERICAN MEDICAL ASSOCIATION, is one of the Trustees of the University; and two members of the Faculty (Drs. D. W. Graham and E. Fletcher Ingals) are Trustees of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

³³ Medical News, March 30, 1895.

³⁴ Bulletin American Academy of Medicine, August 1894 p. 532.

³⁵ Circular of Information for 1894-95, p. 11.

MEDICAL ASSOCIATIONS AND IDEALS.

Retiring President's Address before the Denver and Arapahoe Medical Association.

BY J. N. HALL, M.D.

PROFESSOR OF MATERIA MEDICA, THERAPEUTICS AND CLINICAL MEDICINE
IN THE UNIVERSITY OF COLORADO.
DENVER, COLO.

In retiring from the chair I wish to thank the members of this society, for myself and my brother officers, for the cordial support which has been accorded us during the year. As the custom of the society requires that the President shall make some remarks upon laying down the gavel, I shall ask you to consider with me the relations of physicians to medical societies, their duties toward them and the advantages to be derived from membership in them. The function of the medical school is to teach anatomy, pathology, medicine and surgery, and the other branches which go to make up a physician's education. But the graduate, with this knowledge, is not all that a physician should be, for there are many things yet for him to learn before he can become a polished member of the profession. Where the medical school leaves off the medical society should begin, that the young practitioner may absorb, may imbibe from his fellows the things which the school can not teach—the traditions, the ethics, the etiquette, the high ideals which make our profession, not a trade, but a liberal profession, which has come to us in its present shape because enriched by the labors of our predecessors for more than two thousand years. If the physician is to add anything to the knowledge of his guild, and he can not pay the debt he owes to the profession unless he does, he must have high ideals. As the stream does not flow higher than its origin so, in our craft, good work can not come unless the inspiration is drawn from a high source.

If you note in your morning paper that, in Montana, or Alabama, or Maine, a horse has trotted a mile in two minutes and ten seconds, you may wager with almost absolute certainty of winning, that there flows in his veins the blood of Darley's Arabian, or the Byerly Turk, or the Godolphin Arabian, for the reason that no horse ever trotted a mile in that time unless he sprang from the great English thoroughbred race, which, in turn, sprang from the sources indicated. Nurtured for two hundred years by the most skillful breeders of England, this race has given origin to the fast horses of every country where modern civilization holds sway.

In analogous manner we may trace the origin of every great discovery in medicine. We will mention, however, but two examples. When a student I used to wonder how it happened that Jenner, a country physician, gave us his immortal discovery. When I learned that he had been a favorite pupil of the great John Hunter, and had, for some years, resided in the teacher's house, the matter was plain. Who could have studied under this famous physician, surgeon and naturalist without becoming imbued with his zeal to do something for the benefit of the profession to which he belonged, and for humanity, which was his charge? I wondered also how it happened that the first ovariectomy should have been performed away out on the western frontier, remote from medical centers, in the wilds of Kentucky; how it could be that the great European schools had no part in it, and that New York and Philadelphia equally lagged

behind. But when I learned that McDowell had received his degree in Edinburgh, and had studied under old John Bell, who by his own personal force had built up under the adverse conditions of those times, a great school of anatomy and surgery, the mists cleared away. It became plain then how there arose on the border of an unknown wilderness the man with the requisite anatomic knowledge, the technical skill and, above all, the magnificent courage to do this operation, and, what was more, to defy the howling mob without, who threatened him with death in the event of a fatal result, while the sheriff waited to arrest him if he escaped from the mob. What finer example could be quoted of loyalty to the highest ideals, under the most trying circumstances?

All leaders of men, in all times, have benefited by the knowledge that high ideals were needed for great works. One of the best illustrations may be drawn from the history of our mother country. When Cromwell saw his irregular troops scatter before the king's cavalry at the battle of Edgemoor, he told Hampden "that decayed serving men and tapsters . . . could never encounter gentlemen and persons of quality." And did he then enlist men with broader shoulders or with thicker loins to fight the king's regular troops? No! He took advantage of the gloomy, religious fanaticism of that age, and gathered about him men who could lead a prayer meeting, or advance into battle singing psalms or storm a redoubt in the silent hours of night with equal ability. He led them to believe that in fighting the king's army they fought, not only for their country, but for their religion and their God; and these men, the Ironsides, became the finest body of troops the world knew, for they were never defeated in battle. Marston Moor and Naseby testify to the wisdom of their great organizer and leader.

But, you say, this was religion, and has no bearing upon our subject. But it has, for it makes no difference what the motive may be, so long as it is present. An equally striking example I can give from our own history. Ten years ago I examined a soldier for a pension, and drew from him this story: "He had been captured, after being wounded, with that battalion of Federal infantry which was sent into Cumberland Gap, to prevent the passage of hostile troops through that important thoroughfare. The Confederates, realizing its importance, had sent a heavy force into the gap from each end, and, after a hard day's fighting surrender became inevitable. The Federal troops were commanded by a major of the regular army, a West Pointer, who had grown up in the service, full of the etiquette and traditions of army life, and whose hair, as Scott tells us of Marmion's

* Was grizzled here and there,
But more from toll than age."

"As the Federal firing ceased a Confederate captain, accompanied by a cavalryman, dashed up and demanded the major's sword, the trooper meantime covering the major's breast with his carbine. Looking by the weapon's grim muzzle and observing the rank of his would-be captor, the Union officer said: 'Captain, I am a major in the regular army, and by the living God, sir, I will not surrender to my inferior in rank.' And the captain, marking the character of the man he had to deal with, replied: 'That's all right, major. I'll send for a proper person to receive your sword,' and he dispatched the trooper with

instructions to bring up the colonel of his regiment, to whom the sword was gracefully delivered."

And are we, the members of the medical profession, less susceptible to the influence of high ideals than this soldier who, his breast covered by a musket, the trigger pressed by a hostile cavalryman, faced death rather than yield one point in the etiquette of his profession? Are we less influenced by the traditions which come down to us concerning our proper mode of life than other men? Can anyone gainsay that the members of this society, or of our State society, do better work because they feel that they stand upon an equal footing with the best men in our profession in this State?

Did you ever study why it was that some physicians fail to attend the meetings of the medical societies? Perhaps it begins in carelessness or laziness, but sooner or later such men are likely to get so far behind their brethren that they do not attend because they are painfully conscious of the fact and fear to appear at a disadvantage. Such men remind me of a certain little boy who went to the great metropolis with his father. He was cautioned not to talk with the street arabs, because, being from the country, he would show his ignorance, and they would think him a fool. Finally, after asking him many questions without receiving any answer, one of his tormentors said: "Why, he must be a fool." And Freddy, bursting into tears, said to his father: "There, dad, I didn't say a word, but they found out I was a fool anyhow."

Further, the physician who does not associate with his fellows runs great risk of falling into one of two errors. Either he becomes an egotist because he fails to see the good work that others are doing, or, if of a timid nature, and faithful in his work, from knowing his own weaknesses so well, he feels that he is immeasurably behind his brothers in the profession. One can not see where he stands in the race unless he sees both those in front of him and those in the rear.

Let us, then, support warmly our medical societies. Let us inculcate into the minds of the younger men all that is best of the sacred inheritance which has come down to us from the earliest times, that they may know the debt they owe to the profession, and be led to attempt to add something to our store of knowledge, as an acknowledgement of the immensity of the debt. Let us instill into them ideals so high that they shall make of our occupation, not a mere trade, but what it should be, a liberal profession, and, I thank God, the noblest profession it is given to the sons of men to follow.

ORIGINAL ARTICLES.

MENSURATION OF THE DEFORMITY OF HIP DISEASE.

Presented at the Ninth Session of the American Orthopedic Association, Chicago, 1895.

BY A. B. JUDSON, M.D.

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NEW YORK.

The object of the present paper is to facilitate methods of recognizing, measuring and recording the degrees of deformity of hip disease. A great advance in the study of this subject was made in 1877 by our

Corresponding Member, Mr. Howard Marsh. I reproduce, in Figs. 1-5, the original figures with which he illustrated his first lecture on hip disease at the London Hospital for Sick Children. These figures, modified in various ways, have reappeared many times in the literature of this subject, and to one clinically familiar with these deformities they do not require explanation. Mr. Marsh's lecture contains a complete exposition of the mechanics of the deformity of hip disease, and it will not be easy to add anything to what he has said.¹ I have, however, constructed the movable models represented in Figs. 6-10, in order to make this difficult subject more easy of comprehension.

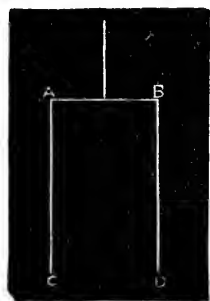


FIGURE 1.

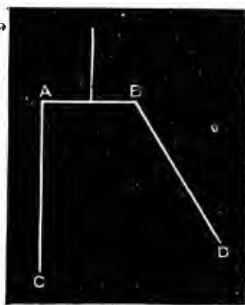


FIGURE 2.

As seasoned practitioners we appreciate at a glance the clinical significance of abduction or adduction when combined with fixation. Abduction means apparent lengthening and adduction, apparent shortening. Abduction and lengthening, adduction and shortening, flexion and lordosis, are to us mentally interchangeable terms, but it may not have occurred to us all that these factors of deformity may be easily measured and recorded, and that we may thus better appreciate the importance of affording relief and the merits of whatever method we may adopt to remove or prevent deformity. The dolls, in Figs. 6 and 7, were arranged and photographed several years ago. They show graphically the degrees of motion and deformity, but they can not, from the immobility of

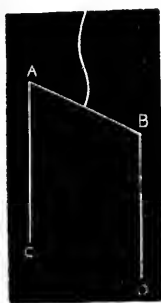


FIGURE 3.



FIGURE 4.



FIGURE 5.

their vertebral joints, show the effect of the disease on the length of the limb or the curve of the spine. These effects are, however, shown in Figs. 8-10, in which figures cut out of press-board take the place of dolls, and are so put together that they exhibit motion, and also the arrest of motion, not only at the hip, but also at the vertebral joints.

The figures explain themselves to a certain extent. The joints are made of eyelets not pressed too hard with the "eyelet-set," and loosely screwed to the background at V in the full figure, and at H in the profile. The piece representing the thorax in the profile is reinforced at the back by a thin piece of brass, as

the edges of the press-board were found to wear out against the four screws which act as guides. The spring clip is a "scarf-retainer." The apparatus is easily made, and is useful in class demonstration.

To show the effect of lateral deviation with fixation.—The full figure is first arranged symmetrically as in Fig. 8. The clip applied at A binds together the piece representing the pelvis and that representing the trunk, and thus prevents motion in the vertebral

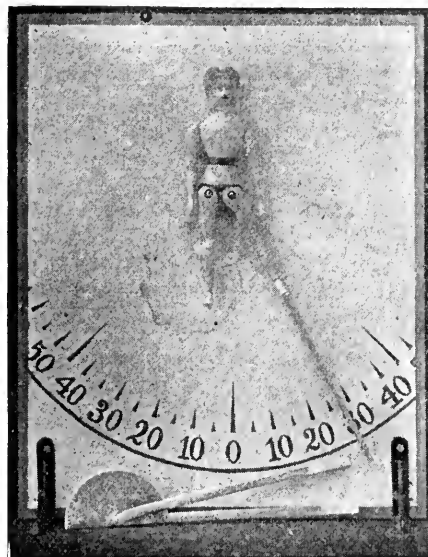


FIGURE 6.

joints, at V, while motion at the hip joint is free. The limb is then drawn into adduction, as in Fig. 9, and the clip is removed from A, releasing the vertebral joints, and applied at B, where it fixes the hip joint, at H, by binding together the pieces representing the pelvis and the femur. When an attempt is then made to restore symmetry or to make the limbs pa-

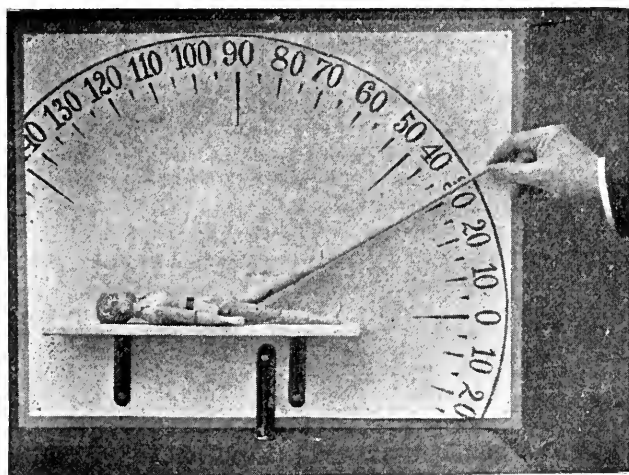


FIGURE 7.

rallel, the figure exhibits tilting of the pelvis and apparent shortening, as in Fig. 10. In like manner, abduction and fixation may be made to produce apparent lengthening. A fortunate result is that in which the patient recovers with enough apparent lengthening to annul the real shortening caused by loss of bone or unequal growth.

To show the effect of flexion with fixation.—The cuts may be turned sideways so as to present the profile recumbent. The clip applied at A, as in Fig. 8, binds

¹ British Medical Journal, July, 14, 1877, pp. 37-39.

together the pieces representing the pelvis and the trunk, and thus prevents motion in the vertebral joints, V V, while motion at the hip, at H, is free. The limb is then raised in flexion, as in Fig. 9, and the clip is moved from A to B, releasing the vertebral joints, and fixing the hip joint. When an attempt is then made to reduce flexion or lower the limb to the table, the result is lordosis, as in Fig. 10.

It is interesting to note, by observing the transverse dotted lines, that the patient's height is in-

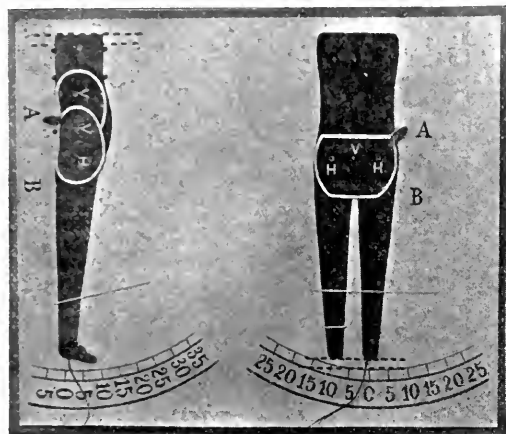


FIGURE 8.

creased by either adduction or abduction, and decreased by flexion when either is combined with fixation. The height is diminished in lateral curvature of the spine by the sigmoid curve, in Pott's disease by kyphosis, and in hip disease by lordosis. The deformity of hip disease may readily and with sufficient accuracy be measured by the use of the goniometer, two forms of which are shown in Figs. 6 and 9. This instrument is simple in construction and may well be in frequent clinical use. The one shown in Fig. 9 is made by attaching arms to a protractor.

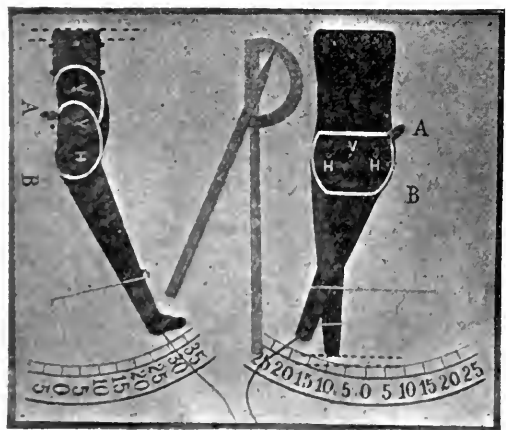


FIGURE 9.

To measure adduction or abduction.—The limb is slowly moved in the direction of adduction and abduction alternately until, after repeated trials, it is seen that when it is held at a certain point in the arc of lateral motion the iliac spines are at right angles with the axis of the trunk. One arm of the goniometer is then held parallel with a line connecting the iliac spines. If the table is against the wall of the room, it is convenient to see that the iliac spines are at right angles with the wall, and then the arm of

the goniometer may be directed point blank at the wall. The other arm is then made to coincide with a line parallel, as near as may be, with the axis of the limb, which may, for this purpose, be considered to extend from the middle of Poupart's ligament to the middle of the heel. If the axis of the thigh only is considered, the incidental presence of genu valgum or varum would impair the value of the observation. The degrees may then be counted on the scale of the protractor.

To measure flexion.—With one hand the limb is slowly raised and lowered until, after repeated trials, it is found that, when the limb is held at a certain point, the lumbar spines press gently on the fingers of the other hand placed under the back. One arm of the goniometer is then held horizontally by the hand released from under the back while the other arm is made to coincide, as near as may be, with a line parallel with the axis of the mass of the limb. The degrees then read off on the inner scale of the protractor are degrees of flexion. Although its determinations are, from the nature of the case, only

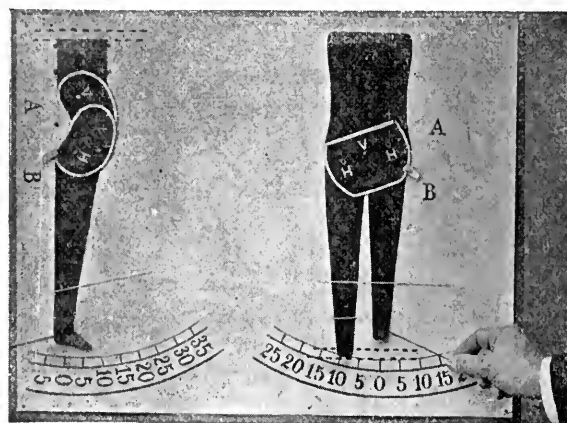


FIGURE 10.

approximate, the goniometer is an instrument of precision, and easily makes itself useful in practice.

Writers on this subject have usually viewed deformity as the result of immobilization of the hip joint. The figures and models referred to in this article have been constructed with that view. As a matter of fact, however, few cases present absolutely immovable joints at any stage. There is almost always considerable motion. In the acute stage the joint, which at the first glance appears to be motionless, is found to yield through an arc of many degrees in response to gentle force rightly applied. Later in the course of the disease many cases show wide and free passive motion in different directions, and the point at which motion is arrested often varies from day to day. And even in after life the position of the limb is subject to considerable variation. The use of the goniometer facilitates recognition of these phenomena. Further observation in this direction may add to our knowledge and to the efficiency of treatment.

Artificial Larynx. At a recent meeting of a medical association in Berlin, Glück presented two patients with artificial larynx he had treated during the year. One, a middle-aged man, could speak naturally and distinctly although the entire larynx had been removed. *Therapeutische Wochenschrift*, January 18.

NORMAL MIND.

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CHICAGO.

PREFACE.

The scope of this article is little more than a suggestive outline of the subject in a fragmentary form. While some of my positions may be regarded as neither proven or self-evident, I am persuaded their correctness will become manifest on a careful consideration. At a later date I expect to deal more fully with some of the points under other headings. I have treated the question by contrast which will give a more accurate view than could otherwise result.

DEFINITION.

By the term normal mind I mean the prompt and coördinate action of all the mental faculties coexisting with pacific disposition or temper. It has no reference to knowledge in the numerical sense, nor capacity in the geometrical sense, but simply that state of mind which enables the individual to do his best in any given relation.

GENERAL ASPECT.

Of ten business or professional men selected at random, at least eight would commonly be regarded as normal in the sense of being representative of the community standard of free agency. But these eight will differ one from another to such an extent that each may meet his opposite in views and disposition in one way or another, and yet the faculties of perception, reason and will may be regarded in all as in good working order. Between the common types of different races and nations the same condition exists, a condition which, barring the difference of language, precludes harmonious action on any question of common interest, without a wasteful expenditure of both time and energy. This is evidence that the common normal is not the complete, and that perception, reason and will are somehow defective. But as there is naturally no essential difference between man and man viewed from both psychologic and physiologic standpoints, this difference must be due to difference in ideas and habits, and as every act not naturally instinctive is originally the product of an idea, the question of cause is resolved into: What ideas conduce to the really normal mind or approximately perfect?

When we consider the nature of ideas, it is evident they are not only true or false, but vary in importance or value as measured by their utility as means to an end—the scope of their application to final purpose, whatever that may be. Ideas of purpose being both the product of elaboration and motive to acts are either conservative of energy, or have an opposite effect, directly or indirectly. But as tone of brain is the equivalent of tone of mind, owing to mutual dependence, it is evident that a false purpose will induce a dissipation of energy which will reduce the intellectual range by its enfeebling effect. Thus the question arises, what ideas of final purpose are in harmony with nature that we may live to the best advantage—be serene in mind—coördinate with natural or necessary environment. To this end we might take the characters of great men who have been universally loved and respected, and find their actuating principles, which have done far more for our well-being than have pills and powders. We would find, on

careful analysis, that the dispositions of egotism, malice and fear were seldom, if ever, manifested as they rarely existed.

EVOLUTION OF CHARACTER.

When we consider mind as an entity, the question of its environment begins at the germinal stage of life—the relationship of the chromatic (Weismann) elements to the differentiating entity of the protoplasmic nidus or environment, and which entity is finally manifested as mind. Excluding maternal accidents, the formative forces prevail under prenatal laws with the minima of impediments. At birth, the new environment with its stimuli to the senses, gives mental motions to a potential basis which is gradually cradled, so to speak, into manifest consciousness. The cosmic conditions, as ever present factors in the molding of the infant mind, pave the way for the apprehension of those great and everlasting impressions or intuitions which later dawn upon the reason and stir the powers to still greater action. Thus that eternal monitor, the conscience, is evolved alike in all human beings. Though as unalterable as the fixed laws of nature, of which it is the exclusive product, conscience may be perverted or clouded by criminal career or criminal influence—crimes against truth, justice and economy. For the same reason that conscience is a fixed quality—the product of the fixed laws or operations of nature, and therefore of necessary experience—the inherent disposition against all aberrant conditions, physical and mental, is to assume the normal, a result that will always ensue if the evils of inherited bent and environment are not too strong for the healthy remnant. Otherwise “the weakest must go the wall,”—the wall of dissolution.

The infant mind is *passive*, receiving every impression with positive effect, and as the evil habits and conditions which contributed to its protoplasmic impress, or hereditary defect, may still rule the nursery, it is evident that mental restriction must follow with conscience crowded out of notice, or pointing in vain. Heredity, as the cumulative effect of all experiences cosmic, racial and ancestral, must necessarily give the child a bearing toward its external environment (trans-somatic) which will vary with the differences of transmitted impress, and consequently inclination and intuition will have different bents. Indeed, so powerful is transmitted bent that not uncommonly a child of criminal ancestry, though systematically educated under good influences, will revert to the criminal class, just as sometimes the young Indian from college does to his racial habits. Of course, the civilizing influences have only been *conforming* in effect, *not reforming*. Such disposition is due to the irksomeness of inaptness, a sort of intuitive leaning having a potential basis. Thus by early training, the natural, the necessary intuitions of the mind may be displaced by purely selfish ideas and criminal character be formed, such as the character of the burglar or the political or commercial knave. It is such cases that must be “born anew”—radically changed in views—before they can be brought in harmony with natural economy—with the great final purpose of nature which can only be correctly apprehended, even in part, by the normal mind—the fully free.

The stage of infancy is ruled by instinct and intuition almost entirely in the acquisitive form. At first ideas associated by suggestion gradually dispose the mind to analysis, then synthesis, and the faculties of

recollection, judgment and reason slowly evolved in due order. The experiences of all children, naturally treated, are essentially the same, so that when they arrive at the age of reason, instinct and intuition lose their official importance and questions of conservative interest arise for rational consideration. Later on the question of final purpose dawns upon the youthful mind, and though it can not be logically solved by it, experiences and intuitions have given sufficient assurance that certain things are right until intelligence makes duty and purpose more definite and distinct. Here, I may observe that the child of the country—of pastoral surroundings—being freer from artificial distraction than the child of a metrop-

olis, is more profoundly imbued with the results of cosmic impressions, and thus later in life is more likely to acquire prophetic insight. Thus the untutored mind of the peasant, as illustrated in the "Cotter's Saturday Night," may evince great wisdom and peace because of living in line with a final purpose in harmony with intuition and *common-sense*.

STATES OF MIND.

Self-possession is the essential characteristic of the normal mind. It is the condition of the greatest freedom of the will and power of attention with which it is commensurate. The power of discernment and the power of choice are at their highest degrees, and are at all times ruled by fundamental prin-

SKELETON No. 1.

SYNOPTIC ANALYSIS OF THE COGNITIVE FACULTIES.

(In the order of their evolution.)

ACQUISITIVE.
(Perception.)*Internal Perception.*

Consciousness of Self through contrast with externals in translation—Perception proper.

External Perception.

Consciousness of externals through their effect on the senses—Sensation.

CONSERVATIVE.

(Memory.)

Sub-conscious ideational coherence by the law of Association operating in inverse ratio to the time, space and causal distance between things (ideas). It is the "heart" or storehouse of the intellect.

REPRESENTATIVE.

(Imagination.)

Suggestion.

The involuntary return of ideas to consciousness through natural or association affinity. (Common to all animals).

Recollection.

The voluntary reproduction of ideas to consciousness according to individual habit or system. (Exclusively human.)

ELABORATIVE.

(Relational.)

Analysis.

Separation by affinities or qualities or structural relation.

Synthesis.

Conjoining by affinities or qualities or structural relation.

Judgment.

Affirming a similarity or dissimilarity between two things.

Reason.

The comparison of two things with each other through a third.

Intuition.

The sub-conscious action of the mind in a new and conscious relation bearing a concept.

Instinct.

The inherent faculty of lower and undeveloped organizations operating in lieu of reason or experience for conservative ends.

REGULATIVE.

(Reason and Will.)

Common sense—*a priori* or First Principles—the product of necessary or common experience—in action with new relations.

NOTES.—(1) A mental faculty is an inter-dependent mode of activity.

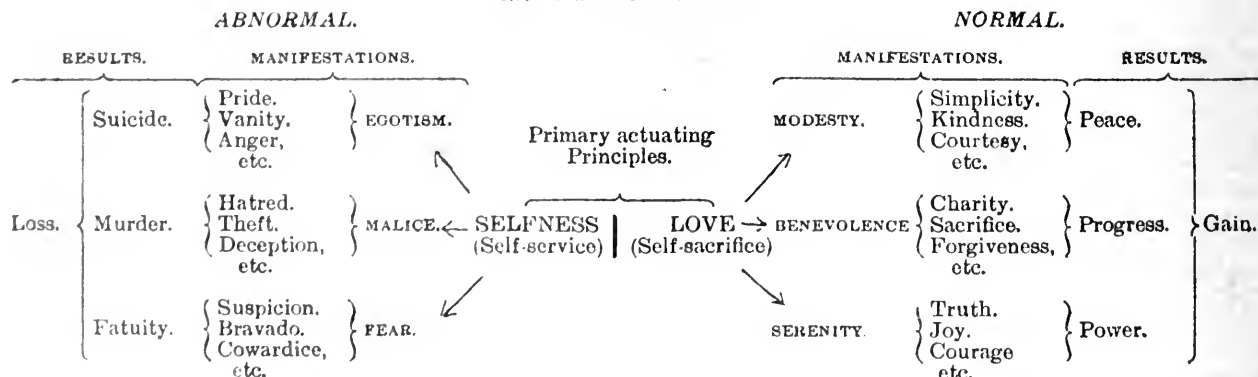
(2) *Active* Attention or the power of voluntary direction and exclusion is a measure of the freedom or power of the Will; the Will is dependent on Reason and Reason on the efficiency of the subsidiary faculties.

(3) The mind being ever active is always in a new relation.

(4) Instinct is the first manifestation of mind, Intuition the later and Reason the last or highest.

SKELETON No. 2.

MORAL DISPOSITIONS.



NOTES.—(1) Few, if any, individuals are exclusively the one or the other, but usually vacillate between the two principles owing to weakness. The one may wear the appearance of the other and thus have failure or success accordingly, viewed from the standpoint of fundamental principles.

(2) By *suicide* I mean either a violent or slow process of self-destruction. By *murder* I mean either a violent or slow process of destruction to others. By *fatuity* I mean that state of mind which has such a mixture of both these dispositions that more stupor than impulse results.

THE PHILOSOPHY OF DEGENERATION.

OR CAUSATIONAL ANALYSIS OF MIND FAULT.

Premise.—The power of Discernment with the power of Choice implies commensurate personal responsibility, therefore degradation has primarily a *moral* cause and finally a *mental* result, or reduced capacity for enjoyment.

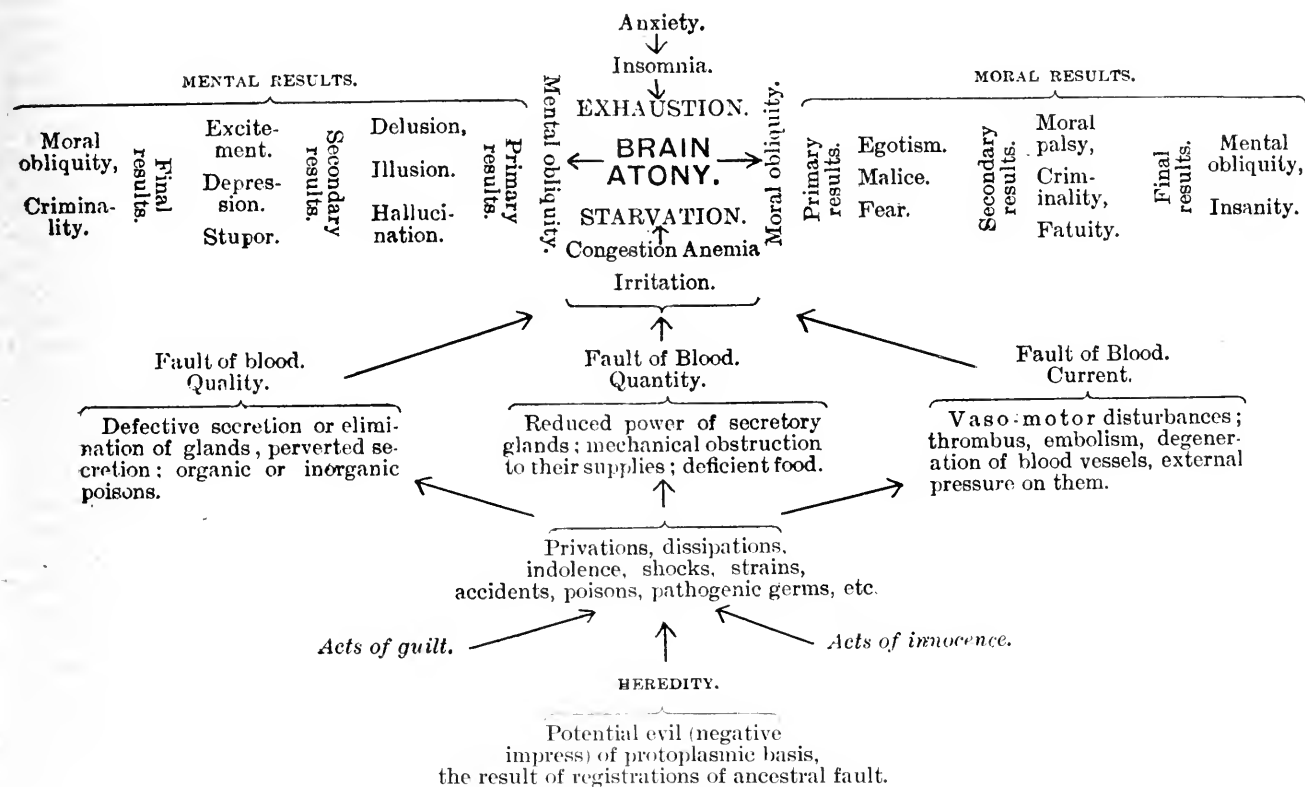
MENTAL ASPECT.

Moral Fault.

Def.—Any condition against our best welfare or final purpose.

Acts of guilt.
Shame,
Remorse, Despair, etc.
Fear.

Acts of innocence.
Defeat,
Loss, Injustice, etc.
Grief.



PHYSICAL ASPECT.

[Result of moral fault.]

- NOTES.—(1) Brain atony is any condition of brain which does not balance with the normal or fixed forces of nature and is relative to individual capacity.
(2) Causes and effects operate in a circle and run parallel to each other.
(3) Insomnia is deficiency of brain *rest* in any degree.

ciples. Full self-possession contains no egotism, malice, or fear, for it is the necessary product of logical living. The great and self-evident fact that the highest good to self is dependent on the attainment of the same by others is an ever-ruling principle of it, with the sense of duty from the dictates of conscience. One of the first great impressions which naturally comes to the human mind is the sense of absolute dependence—the law of gravitation, so to speak, in the psychologic world. Following this, the fact of inherited environment with its many and varied misfortunes, whether of wealth or poverty, gives basis to charity, which when logically exercised, works for harmony and efficiency along all progressive lines. Thus we gather guiding principles which with growing knowledge lead to a fuller recognition of our relationship to time, eternity and an infinite personality, and while we perceive our

high dignity in natural economy, we carry the conviction of self-insignificance. Witness the modesty, the magnanimity and the self-sacrifice of true greatness.

But these great and guiding principles which work for harmony and evolution may be stifled in their birth by the inculcation of morbid or false teaching and example, and thus the selfish character develop with egotism, malice and fear as necessary conditions.

A typical case of undiluted selfish character came under my notice in the New York city workhouse. He was a man about 30 years of age, and by occupation a burglar. He had served several times in the penitentiary, but was committed to the workhouse for one year on a minor offense. As prisoners were allowed more liberty during their last month's service, I engaged him to shave me in my room that I might have the opportunity of finding the roots of his

character. He was an unusually nice looking, shapely and clever fellow, facts that seemed incompatible with his history of early and continued crime. After discussing all sorts of questions with him at different times, the fact was revealed that he firmly held the belief there was no future state, and that it was reasonable to get everything *now*, no matter about the rights of others who possessed whatever he wanted. Thus all his niceness was policy.

Egotism as the "I am" what I am actually not, is quite a different thing from the positiveness of decision, the assertion of a truth, or heroic action. It is an exhibition of personal importance with disrespect for others without just cause, and arises from a selfish disposition to be esteemed more than our merit, with a delusional basis. It is very common and conspicuous among the insane and is essentially an abnormal product.

Malice, as the disposition to injure others purely for the sake of inflicting pain or antagonism, or in some cowardly indirect method of "getting even," is quite a different thing from punishment for a wrong, which, though it may be ineffectual, is curative in its tendency. It springs directly from selfishness as an attitude for its own protection along its selected lines, and with no disposition to apologetic considerations.

Fear is the product of uncertainty—a necessary condition of selfishness and comes from the obscurity which necessarily more or less exists in all abnormal states of mind and acts therefrom, whether of guilt or disease. To live in the light of fundamental principles (common sense) is to have such a telescopic view of life that consistent action can bring no fears. Not to so live is to live in shade or obscurity, so that acts must carry with them more or less uncertainty of result and fears arise. The innocent in view of the final result in the light of final purpose can have no fears. The fear of childhood is the fear of imperfect understanding and is as transient as the cause. Fear from guilty acts is the fear of conscious desert of punishment and has reference to unknown remote results with indefinite persistence.

Grief as the effect of unavoidable or unintentional evils has a disturbing action on the mind because of the element of uncertainty of result or personal responsibility and is therefore a form or degree of anxiety. It is frequently associated with personal misgivings of our own real or fancied delinquency in relation to the object and is thereby mingled with fear of a harsher nature akin to that of guilt.

Anger like fear works to the disadvantage of the subject and consequently is not a normal state of mind. It is precluded by a clear and full view of the whole situation and its relations, with complete self-possession—conditions depending on a full acting brain. Anger is a *product* of all abnormal dispositions of mind and brain, though not always manifested and while in its nature it is a symptom of imperfection it is the least aberrant of all abnormal dispositions of the mind. It is simply a disturbance of temper or co-ordinate mental action. Complete immunity for it would imply absolute perfection—a somatic impossibility.

Love is the outflow of the sense or realization of mutual dependence, mutual need of reciprocity. It is therefore the normal product of instinct, intuition and reason and thus it may have many forms according to whether instinct, intuition or reason predominate in serving the cause. Love begotten of intuition

is the most intense, that of reason is the most lasting. It is the assurance of harmony and coördination with nature and is the root of all conservation of energy in the line of true advance. It is the sacrifice of present personal gratifications which are in conflict with evolutionary ends.

Sociability.—Man normally has a social disposition which in childhood is general or promiscuous just as talents carry with them a desire for their use. As years increase this disposition becomes more and more select for specific purpose of mutual advantage and for that purpose systematic exclusiveness is required for the attainment of a particular end, otherwise there would be dissipation of energy. Thus while sociability is normally a product of love it can be claimed only by the fitness of means to an end and therefore an exclusiveness may result manifested as an eccentricity. Difference in habits from the conventional (eccentricity) due to exclusiveness for a rational purpose indicates intensity of character above the common, but otherwise eccentricity is a symptom of degeneration.

BRAIN RELATION.

The theory has been advanced that mind is a function of brain in the same sense that bile is a function of liver.

1. Were this a fact a portion of brain would represent a quantum of mind just as a portion of gland is a measure of its secretory product, which is not the case, for almost the whole of either hemisphere of the brain may be destroyed and yet the mind remain intact though it loses in its power of endurance for work. This fact demonstrates that mind is *supra*-material and is in no sense the elaboration of brain, but is only *conditioned* by a *product* of its cellular action—a product akin to electric energy, and which makes motor and sensory action possible. This cellular product bears much the same relationship to the nervous system as does electricity to the telegraph. The possibilities of the mind are therefore conditioned by everything that contributes directly or indirectly to the supply of brain energy and the integrity of its specialized centers which are probably as numerous as are the specialized organs of the body or their functional requirements.

2. The fact that the size of the brain and the number of the cortical cells are almost completed in the child, which is not true of any permanent gland, is also a fact against the analogy.

3. That the function of brain, aside from its being the location of communicating centers, is simply the production of an energy subservient to mental activity and organic life is strongly supported by such facts as that the brain of the *monk* monkey is much simpler in its convolutional form than many of the larger quadrumanas of inferior intelligence and it is even much simpler than that of so stupid a creature as the sheep. The cerebral convolutions of some monkeys as the *howler* are about as few and simple as a frog's. The clever beaver has a cerebrum devoid of any convolutions whatever, while our congener the hog which seldom has more than one and the same idea in life, is well supplied with convolutions. Thus the evidence is that while convolutional complexity is a matter of economy of space for increasing energy it is not necessarily in proportion to intrinsic intellectual eminence and that mass, proportion and complexity of brain convolutions are a measure of the

power of endurance, of energy production, rather than intellectual eminence.

4. The fact that histologic elements of the cerebral cortex of all vertebrates are much the same and also much the same in all parts of the cortex, is in favor of the energy theory.

5. The fact that excepting (possibly) alcoholic and traumatic insanities, the pathology and morbid anatomy of almost all forms of mental aberration are essentially the same.

6. Lastly but not least of importance as bearing on brain function, is the fact that mind has unlimited growth which no secretion of a gland has not even the energy produced by brain.

There is no such condition as disease of the mind pure and simple, for all mental fault and ideational error imply an abnormal state of the brain inherited or acquired, otherwise *perpetual* chaos would result. For the same reason that matter is indestructible, mind is immortal, and for the reason that precisely the same result can only take place when all the conditions are precisely the same as before, character can not be changed post-mortem, in any way possible ante-mortem.

THE FACULTIES.

By perception, reason and will we commonly include all of mental action. The one can not exist without the other, but they embrace distinctive modes of mental process, as seen in the accompanying analytic table.

The *acquisitive faculty* is the power the mind has of receiving impressions through the peripheral system and translating them into ideas. So keen can this power become that disciplined observers can accurately note hundreds of objects in a room by a glance on passing its door and afterward describe every detail which was within view. In my own experience in early student days, I acquired the faculty of reading a whole line at a glance, or about as quickly as I now ordinarily do a word. That the mind is also constantly receiving impressions which are not consciously perceived at the time is evidenced by somnambulistic feats and the doings of persons pre-occupied. The case of an ordinary female servant who in the delirium of fever repeated whole passages of Greek and Hebrew which had been recited within her hearing years before, and which she neither understood nor gave attention to at the time of hearing them, goes to show that nothing can impinge upon the senses without becoming a mental acquisition, though impressions at the time may pass unrecognized.

The *conservative faculty*, or the power of holding impressions or ideas subconsciously for future use, preserves all experiences and thoughts, classified according to one relationship or another, and therefore made more or less available for use when needed.

The *representative faculty* is commonly known as memory, but is properly the power of the mind to reproduce ideas from memory. It is either voluntary or involuntary, but in man usually both, and in the purely voluntary form is exclusively a human faculty. Voluntary reproduction, strictly speaking, is a process of exclusion in favor of certain lines of association. This faculty habitually exercised can perform wonders compared to the degree in which it commonly exists. Indeed, some persons can instantly recall almost any forgotten experiences. When a lad

of 16 years at Edinburgh wading through the ponderous tomes of Turner and Liebig's chemistry, I systematically tested my recollection after four or five hours' consecutive study, covering forty to fifty pages of new matter, and found that at times I could not only recall many of the ideas but also the page and setting containing them in pictorial representation. This faculty improved by practicing the careful re-tracing of thoughts by sequence. The faculties of perception and recollection show what a mass of mental material exists subconsciously, only to be brought in view when the mind is fully emancipated from somatic conditions. Later on when a student in London, I practiced as an experiment for a number of weeks the habit of daily reviewing my experiences in minute detail, beginning with the last sensation or thought. Between 5 and 6 p.m. I would comfortably recline upon a sofa and close my eyes. At first the task required considerable effort to connect all the perceptions of a day, but I soon acquired the power of reviewing the experiences (subconscious perceptions) of many months within a space of time less than an hour. I found that by *directing* my attention to a given point and then holding it *passively*, ideas would instantly cluster about the central one by the natural law of association—suggestion. I would have a pictorial representation in natural order and seemed to again experience something of the original feelings that accompanied them. The review seemed complete, although some fields of experience required more effort than others to complete them. But the most remarkable revelation was the rapidity with which I sometimes could cover a large territory—many thousands of perceptions—within a few moments. It was mostly by *suggestion* and only partly by *recollection*.

The faculty of *Recollection*, depending as it does upon a conventional system or predetermined line of association of ideas by the individual, is one of the latest evolved and highest faculties of the intellect, so that when degenerative changes of the brain take place, it is one of the first to weaken. For example, a person may be able to speak and write numerals to some extent, because they represent the simplest kind of natural relationship—an evolutionary order or systematic proportion of one quality—while the same person may forget the alphabet, which is an *artificial association of different qualities*.

The *Elaborative faculty* is the power of the mind to relate things according to purpose or plan. Its highest form is *Reason*, which calls in service every mental process. Reason is largely dependent on the faculty of recollection—the faculty of recalling anything *wished* through a system preëstablished by the individual. This enables reason to advance beyond intuition and also produce certainty for surmise. Reason pure and simple is the last and most complex faculty evolved, and as the creature of self-discipline it is the first faculty to weaken in most brain degenerations. This is why fixed delusions usually appear long before the simpler faculties show any marked enfeeblement. I doubt if reason, strictly speaking, is possessed by any other creature than man.

The *regulative faculty* is the presidential power of the intellect, but with no more power of action than is delegated by its constituents, the subsidiary faculties. Its strength of action (the will) depends upon the relative efficiency of all the mental faculties governed by fundamental or first principles discerned

by intuition and reason from necessary or universal experiences and known as *common sense* (not common notions). They are the principles that work for harmony and evolution.

Instinct is the expression of elaborative efforts of organization and parts for conservative ends. There are three principal forms: 1. Cosmical instinct, or the instinct of *first acts*, such as the sucking of the babe, or the pecking of chicks—for the *preservation of the individual*. 2. The instinct of *sexual attraction*—for the *preservation of the species*. 3. The instinct of *preponderating talent* or the desire to exercise an inherited power—to the *advantage of the species* for final purpose (evolutionary end). As a propensity, instinct is the first manifestation of subconscious elaborative action, which is a necessary condition of growth and experience.

Intuition is also a subconscious action of the mind, but bearing a *concept* as a product, instead of a *propensity*. It is a faculty common to all the higher animals and is often mistaken for reason in them. It is the power of the natural or poetic mind as distinguished from the *logical*. If the state of the mind is normal and the related subconscious data are correct, intuition must be accurate when pronounced. Such a condition is only approximately attainable. But our great motive ideas are mostly intuitional, more or less, as few minds can consciously calculate to a conclusion with all the data involved even in everyday problems. Women, who commonly live more *naturally* than men, possess it in a higher degree, and in those who are well informed and conditioned it is more reliable than the exercise of reason in the imperfect form so common.

Attention.—The power of attention is the power of the will and is the first condition required for the appreciation of an object by the perceptive faculties. If it equals the measure of scrutiny and if the measure of scrutiny equals the nature and number of ideas engaged and the order in which we bring them to bear on the object, together with the manner in which the object is exhibited then the impression or notion received of the object will accord with the measure of attention given it. In mental fault the attention is weakened and the subject is more or less passive, as in infancy, so that perception is incomplete. Attention is given more to the *pro* side than the *con* side of the thing presented or the quality suggested and if the favoring circumstances remain undiminished, complete subjection (hypnotism) will result. Arrest of attention is palsy of the will which is subjectivity of the mind.

Emotion is a normal condition, but in its manifestation is inversely proportional to intellectual range. It is the product of suggestion on subconscious factors in the mind in accord with the law of the association of ideas. In normal mind it can be controlled by the power of the will to exclude or substitute ideas as directed. Emotion is most profound in the intellectual but least manifest as there is less physiologic excitement, because of greater self-possession which is equivalent to a higher tone of the nervous system. It is most manifest in those who have a *poetic* habit of mind rather than a *scientific*—systematic or logical, and thus they are more or less subjective to external direction. The subjective state of mind is equivalent to passive attention or the taking cognizance of nothing but evidence of support and thus hypnotism or mesmerism may be induced by an exclusive direction

of attention instituted by a second person. Voluntary exclusive direction of attention to a *negative* object will induce auto-hypnotism. Ordinary manifested emotion is largely an expression of confusion and weakness. No one can be hypnotized without assisting and many can not resist. It is this rendering an audience subjective, or gaining passive attention by *direction* or control that is the secret of the orator's success. Emotion (feeling) is largely the product of the actual state of the bodily organs which are more or less influenced by thought. Pain or misery, like hunger, is the expression of a need, and the feeling of well-being is the expression of satisfied claims for physiologic requirements. Perversions of different organs have different effects or suggestions on the mind by their sensory influence. The different mental effects of drugs is thus probably due to their action on one or other of the various vegetative organs by the selective affinities of their different cell elements which each possesses, rather than on any direct action on the brain.

NORMAL DECADENCE.

Dotage or second childhood is commonly regarded as the normal terminal of old age. But as over all other organs the brain is much the least affected by general waste or starvation, it would appear that the mind should retain its powers much beyond those of the bodily frame. As a step toward the solution of the question as to the normal disposition of the mind in advanced age to recur to early experiences I communicated with a number of distinguished persons advanced in years in regard to their personal experiences, and who have most kindly replied to my inquiry. I here present the experiences of two men and two women who, at the date of writing me, were in good health and actively engaged in one way or another.

From Mrs. Elizabeth Cady Stanton, now over 80 years of age, and at present preparing her reminiscences, I glean the fact that her mind is strong and active with a vivid memory. She says: "I love to think over the joys and sorrows of my childhood and girlhood, and to see myself in pictures as I looked then." She thinks "there is an immense advantage in doing this as it makes us more sympathetic with the young, more tender with their trials, and more desirous to make them happy. I would feign save childhood from suffering what I did from restrictions." But her opinion is that "with a vivid, keen memory, all persons must more or less dwell in the past. Those who retain an active interest in the questions and reforms of their day, would, on the other hand, be more occupied with the living present."

Miss Francis Willard, 56 years of age, President of the National W. C. T. U., says: "I have observed for some time past that I was growing inclined to think of that which had been of especial interest to me in my childhood and youth. The same tendency was clearly manifested in my dear mother who was with me until the 88th year of her age, and who retained every faculty until the end. So far as my observation goes, this tendency is strongly marked in all people who are known to me. The more years, the more backward looking over, though they may be profoundly interested in and preoccupied by current affairs."

The Hon. Joseph Medill, editor Chicago Tribune and President of the Chicago Press Club, 73 years of age, says: "I can discover no further change in the

action of my mind than can be accounted for by experience, further study on many topics, and wider observation of men and things. The most marked change is that memory of the more recent occurrences seems weaker, less accurate, especially in dates, names and sequences of events. My mind recurs to youthful events and dwells on pleasurable or painful matters which then took place, the memory being quite vivid and accurate of things which happened in my teens or the first decade thereafter. I believe this is the experience of most elderly persons. My judgment or reasoning powers do not seem to be impaired with advancing years, though I can not think or conclude as rapidly as in past years, but consume more time in arriving at fixed conclusions."

Ex-Governor Oglesby, thrice governor of Illinois, now 72 years of age, writes me: "I can not say that my mind recurs more frequently to early experiences in advancing age than it did formerly in younger years. As a matter of fact, I have always delighted in reflection upon and remembrances of my childhood days. I suppose this is quite common with all rational beings."

It is thus evident that the normal dispositions of the mind in advanced age are retrospective and contemplative. Early experiences are the more profound and enduring in their influences on life as "the child is father to the man" and they sink to obscurity by the calls of an ever changing environment of necessity and ambition, until, finally, the pinnacle of experience is reached and historic contemplation begins. The acquisitive faculty wanes with the decline of the sensory and motor powers, and things of recent date become less impressive. Thus, the disposition to retrospection is born of the growing retirement from the daily cares of active combat and the punctuation points of early life which lie at the basis of all character, press forward for the consideration of the wisdom that comes with maturity of decadence as a blessing to rising generations. But the process of degeneration as differing from normal decadence must play a part, though ever so slight, for it is not to be presumed that heredity and environment will leave any individual untainted with the effects of their evils. Also, the highest type of the individual through strain of ambition, may forget the inexorable exactions of nature and thus trespass the conservative limits.

It thus would seem that dotage is not a normal or necessary condition of old age, but a product of degeneration as differing from normal or necessary decline, when at last the servile mechanism of the mind fails to furnish the degree of energy requisite for coöperative labor, time and space cease to be factors in the evolution of the individual and the veil of mystery—the occasion of all effort—remains as ever, to solicit the attention of the living and spur the strong to thought and conquest.

SUMMARY—THREE PRINCIPAL POINTS.

1. That mind is a distinct entity in which there is no heredity, otherwise endless chaos would result. Heredity is exclusively protoplasmic.

2. That for the same reason there can be no *disease* of mind pure and simple, but that wrong ideas in action necessarily induce disease of the brain, and as one evil begets another, disease of the brain begets wrong ideas, which may become fixed against reason—insanely delusional.

3. That the normal state of mind is self-possession and peace, which is the result of self-sacrifice for a satisfying final purpose.

103 State Street.

THE TREATMENT OF NASAL CATARRH IN THE LONDON CENTRAL THROAT, NOSE AND EAR HOSPITAL.

BY FAYETTE CLAY EWING, M.D.

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ST. LOUIS, MO.

It occurred to the writer that the treatment of the several forms of nasal catarrh pursued in the Central Hospital would prove interesting to many of the readers of the JOURNAL.¹ Five varieties are recognized, viz: Acute, chronic, hypertrophic, chronic atrophic, croupous and caseous. The first of these presents few cases in hospital practice, and the last two are so rare as to be regarded as clinical curiosities.

Acute.—Since patients with this form of rhinitis rarely consult a physician until the acute stage has passed, little is attempted except prophylaxis. This includes abundant open air, exercise under restrictions, and hygienic dress. Light wool next the skin and variable weights of over-garments. Heavy garments indoors are specially cautioned against. No agent is more relied upon for its hardening effect than the morning sponge bath with cold water. This should be taken in a warm room, and supplemented by vigorous rubbing with several towels, the last of which should be a coarse crash. When these rules are observed the most delicate person will suffer no ill effects from the bath. Among drugs the first place is given menthol as a prophylactic, and also a modifying agent when the affection is once set up. Cushman's menthol inhaler is recommended to be carried in the pocket, and used frequently during the day as a hardener of the mucous membrane. Menthol is germicidal, and stimulates the capillaries to contraction, thereby relieving obstruction. Cocain, though accomplishing this result much more rapidly, is never prescribed for the purpose, since it produces, after a few applications, dilatation of the vessels, setting up the trouble it originally palliated, and further, there is always danger of the cocain habit being established. During the second stage a mixture composed of camphor, opium and belladonna, in stimulating doses, is advised to be taken between meals.

R. Tr. opii aa gtt. v. 30
Tr. belladonnæ ad 3 i. 30
Aquæ camphoræ

Misce.

A mixture of menthol and powdered spermaceti, in proportion of 15 grains to the ounce, is frequently used for the same purpose, as a snuff. Quinin is without honor, but Dover's powder is serviceable if the first symptoms of the rhinitis are discernible in the evening.

Chronic Hypertrophic.—The usual symptoms of this disease are nasal obstruction, accompanied by discharge anteriorly and posteriorly. In slight cases where there is very little obstruction a powder is prescribed composed of:

¹ Excepting one, the Central Hospital is the largest institution in the world devoted to diseases of the throat, nose and ear, having over 40,000 visits annually.

R. Potassium chlorat.	
Sodii biborat.	
Sodii bicarb.	āā 3ss. 15
Sacch. alb.	3 i. 30

A teaspoonful (level) to be dissolved in half a tumbler of tepid water, and injected along the floor of the nostrils night and morning. After using, the nose must be blown, without holding it. As an accompaniment of this an ointment composed of ol. eucalypti gtt. xx, vaselin 3i is ordered, a little to be introduced into the nostrils after the wash. This treatment is not considered energetic enough to fulfill the requirements in the severe cases. Here, operative measures are demanded. When the tissues are permanently thickened, the condition is cured in one of three ways, viz., by the application of caustics, the use of the wire snare, hot or cold, or by the galvanocautery. Of caustics chromic acid has superseded all others. The hypertrophied turbinate is thoroughly cocaineized by the introduction into the nostril of a pledget of cotton soaked in a 10 per cent. solution of cocain. This causes complete anesthesia and shrinkage of all intumescent tissue that might otherwise interfere with the application of the probe to the spot diseased. After the cotton is removed the surface is wiped dry through a speculum with a cotton carrier. A flat probe, with the chromic acid fused on one side only, is then introduced and pressed against the selected spot. One side of the probe is kept clean so as to avoid touching the septum. Should this accident occur there is danger that a bridge may be formed between the septum and turbinate, and a probe is passed at intervals until the healing is complete. A few minutes after the application the acid is neutralized by an injection of a saturated solution of bicarbonate of soda and water. The slough is removed, in a few days, with the forceps, and a little of the pulv. potass. chlorat. compound is blown in. Of wire snares, no particular pattern takes precedence, the main object being to have one that will allow the hand to work out of line of the operator's vision. Cases in which the turbinates have undergone a kind of polypoid degeneration in front, or project largely into the naso-pharynx behind, blocking the choanæ, are regarded as desirable for the snare. These posterior hypertrophies often require great dexterity to encircle them with the wire and catch a hold. The method pursued is to pass the wire loop through the anterior nares along the floor, then with finger introduced through the mouth into the post-nasal chamber and by touch get the loop into position. When the galvanocautery is used it is never heated beyond cherry, else bleeding may occur. The same method described above for cocaineizing is followed. Flat or pointed burners are preferred, and the point should be thrust into the thickened tissue several times, according to indications. The same care is exercised to prevent touching the septum that was noted in describing the application of chromic acid. The spokeshave of one of the surgeons (Mr. Carmalt Jones), is not so largely employed as the acid, snare and cautery. The shave is a useful instrument in dextrous hands, but those less experienced find it hard to regulate the amount of tissue that may be taken off, the eye not being invoked.

Chronic Atrophic.—Most patients who apply for treatment in this affection do so because of the disgusting odor which makes them offensive in com-

pany. Cleanliness is the basis of all treatment. Crusts are immediately removed, and this is followed by a thorough washing with some antiseptic solution such as Dobell's. The removal of crusts is facilitated by the packing of the nasal passages full of cotton wool, which irritates the lining membrane and produces an abundant flow of secretion, loosening the scabs and enabling them to be removed by the forceps. A coarse spray of Dobell's solution follows, the nose-piece fitting tightly in one nostril, and from hand-ball pressure the stream runs in and comes out of the other nostril. When the crusts are adherent to the posterior parts a bent nozzle is passed through the mouth into the post-nasal chamber, and the spray thrown forward. The patient is then ordered to keep the nose clean by using the spray at home. Sometimes the pulv. potass. chlorat. compound is prescribed instead of Dobell's. An oily spray follows the wash the ones commonly advised being:

R. Menthol.	5ss.	2
Ol. Olive.	3i.	30
Misce.	Or	
R. Ol. eucalypti	gtt. xx.	120
Iodol.	grs. v.	30
Vaselin.	3i.	30
Misce.		

This treatment is not expected to effect a cure, but is given to render the nose free from odor and keep the patient from being offensive to those with whom he comes in contact. There is another form of treatment of these cases pursued by some of the surgeons connected with this hospital, and believed by them to be absolutely curative. The principle is to create irritation of the mucous membrane sufficient to change the atrophic process. Several plans are followed, but sometimes it is necessary to take the patient into the hospital in order to have the directions carried out. The generally adopted plan is to make the patient, nightly, stuff the nostrils with iodoform wool, after using the spray. One side is packed at a time, the stuffing alternating. He is made to sleep with it in place if possible. Another way is to paint the entire lining membrane, after cleansing, with a 10 per cent. solution of trichloroacetic acid, or with diluted tincture of iodine 1 to 7. Still another way is to take a small roll of canthos paper, and after the usual washing, a piece of the paper is cut an inch square, and made into a roll and introduced into the nostril, only one side being treated at a time. This is left in place as long as the patient can stand it, which is about twenty minutes. This treatment, and the ones by painting, are repeated every two weeks, but must be prolonged to accomplish good results, and continual spraying is required to prevent relapse. Constitutional treatment is directed in all forms of catarrh, but is considered secondary to local measures. Since the mental state of all victims of atrophic rhinitis demands stimulation, they are encouraged in every way possible and urged to persevere in their treatment.

Caseous.—This is an obstinate and rare affection in which cheesy and putty-like masses block the choanæ. The caseous accumulation fills up the sphenoidal sinus at times and is generally considered as due to caries of the ethmoid bone, but little is positively known of its pathology. The masses are carefully scraped out, and the sphenoidal and ethmoidal cells curetted, when this can be accomplished. The coarse spray is used persistently, and hygienic

and general constitutional measures prescribed. The disease is regarded as curable if properly and persistently treated.

Croupous.—In its relationship to diphtheritic rhinitis this disease holds a subsidiary position corresponding to that of membranous croup in the larynx. The treatment is rather tedious, since the membrane is very adherent. Alkaline washes are followed by forceps, and an oily spray. Sometimes the nostrils are provided with a lightly carded pledget of menthol wool, 5 to 10 per cent. Tonics and a change of air are often required.

VAGINAL OVARIOTOMY.

BY JOHN MADDEN, M.D.

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Dr. T. G. Thomas, of New York, performed the first systematic vaginal ovariectomy in February of 1870. Before undertaking the operation he prepared himself by operating eight times upon the cadaver. He placed his patient in the knee-elbow position, secured by the apparatus of Bozeman. He passed a rectal bougie into the bowels for a distance of five inches "to prevent all possibility of the rectum falling into the line of incision," lifted up the perineum and posterior wall with a Sims speculum, seized the fornix vaginae between the rectum and cervix with a tenaculum, and, with a pair of long-handled scissors, made a longitudinal incision into the cul-de-sac "with one stroke." The tumor was then seized with a tenaculum, three small cysts ruptured and their contents evacuated, whereupon it was easily drawn into the vagina. The patient was now placed in the dorsal decubitus, the pedicle of tumor ligated with a double-silk ligature, cut off and the stump returned to the abdominal cavity. The incision was closed with a single wire suture.

Dr. Robert Battey performed the operation first in 1874, and in 1877 (Trans. Am. Gyn. Soc.) successful cases were reported by Drs. Gilmore, of Mobile, Clifton E. Wing, of Boston, and Goodell, of Philadelphia. In reporting his case Dr. Goodell mentioned a successful vaginal ovariectomy by Dr. R. Davis, of Wilkes-Barre, Pa.

In all of the cases here quoted the operation was done for the removal of an enlarged ovary, and are not examples of Battey's operation, which was introduced at this time. After the introduction of Battey's operation, however, a number of operators removed the ovaries per vaginam; but it is not possible to separate the cases belonging to each class.

In Europe vaginal ovariectomy never received any favorable recognition. Whether Hegar, following in the footsteps of Battey, selected the vaginal route for the performance of any of his cases of castration is not recorded. That he did so, is not likely. Olshausen in 1886 (Krank. des Ovar.), remarked that the operation had "never met with favor in Europe and seems to be quite generally abandoned in America, its fatherland." He quotes Mignon of having collected, up to that time, the literature of 113 cases. These cases, however, include all operations in which the ovaries were removed through the vaginal vault, including those in which destructive inflammatory and suppurative diseases had existed. Since 1887 this mode of operating seems to have been quite completely abandoned; for a careful search through a good deal of gynecologic literature published during the inter-

vening eight or nine years failed to discover the record of a single case,¹ and modern text-books dismiss the subject with a half-dozen lines. The complete abandonment of this method of operating is due more, perhaps, to the development of aseptic methods than to any other cause. Fifteen or twenty years ago an abdominal section was not made without hesitation and any method looking to an avoidance of wounding the abdominal peritoneum was looked upon with favor. At the present time the abdominal section has reached a degree of favor little short of an apotheosis. There can scarcely be any doubt, however, that in many cases the vaginal route is preferable to the abdominal. Certainly the operation is too valuable to be cast aside.

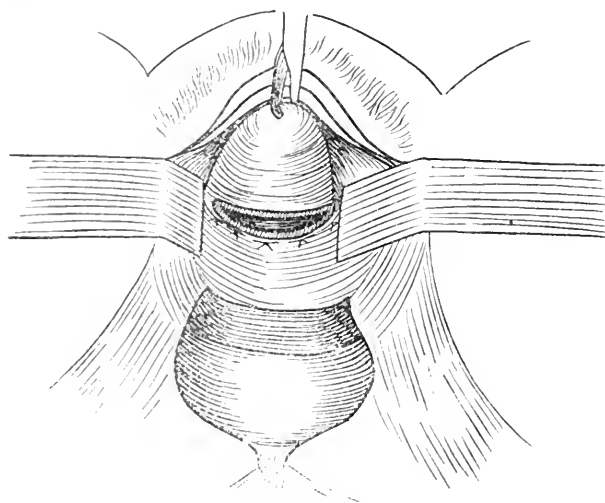
On the 8th of December last I operated through the vagina for the removal of a cystic ovary, and wish to contribute a description of the operation to the scant literature which now exists upon that subject. The patient was 42 years old, of a nervous temperament, poorly nourished, and gave a history of pelvic disturbance extending over a period of fifteen years. An examination disclosed the presence of a tumor occupying the left side of the pelvis, its lowest part reaching about the level of the internal os. There was no evidence of previous salpingitis, nor attachment of the tumor to surrounding parts; for when the patient was placed in the knee-elbow position the tumor escaped from the pelvic cavity entirely. The pelvis was roomy and the uterus freely movable; but the choice of method was influenced not a little by a lack of faith in being able to have strictly aseptic methods observed in the hospital which the patient had selected. After making the usual preparations, the patient was put in the lithotomy position, the vagina again thoroughly washed out, first with a 1:1,000 bichlorid solution, then with sterilized water, and the uterus exposed by means of perineal and vaginal retractors. The lower lip of the uterus was then seized with a pair of strong bullet-forceps, drawn down to the vulva and given to an assistant to hold. In the same hand the assistant held the nozzle of a fountain syringe filled with sterilized water, to which had been added bichlorid of mercury, 1:5,000, and chlorid of sodium, 6:1,000, for continuous irrigation. A transverse incision was now made through the lowest part of the cul-de-sac, close to the uterus. The incision was begun with the scalpel and made large enough, at first, only to allow the insertion of the index finger tip. The bleeding of the afferent uterine vessels was stilled by the introduction of a stitch. The incision was enlarged with a pair of blunt-pointed scissors, a stitch being taken each time to prevent hemorrhage (Fig. 1), before the tissue was cut. The method adopted is almost exactly like that used by Martin for vaginal extirpation of the uterus, whence this illustration is taken.

After making the incision about 2½ inches long, the finger was introduced into the pelvic cavity and the tumor found to be entirely free of adhesions. The tumor was now seized with a pair of volcellum for-

¹ Since this was written my attention has been called to a case reported by Staude, of Hamburg (Monatsschrift für Geburtshilfe und Gynäkologie, Bd. II, Heft 4). In this case the tumor was not discovered until labor had begun, when it was felt crowding the posterior wall of the vagina forward. Unable to push it up, Staude opened it, allowing the escape of considerable fluid. He then drew the tumor into the vagina and ligated it together with the tube; but the labor pains came on with such strength and rapidly that he was obliged to finish the operation after the child was born. He closed the incision with a catgut suture. The patient made an uninterrupted recovery.

ceps, drawn down, two of the cysts ruptured and their contents evacuated, when the tumor was easily drawn into the vagina. The pedicle was ligated, cut off and returned to the abdominal cavity. The pelvis was thoroughly washed out with sterilized water, the incision was left open, several strips of iodoform gauze were put in for the purpose of absorbing whatever moisture might be left, and the vagina was also filled with the same material. The tumor, after being in alcohol several weeks, now measures $6\frac{1}{2}$ inches in lesser and $9\frac{3}{4}$ in greater circumference. The time occupied in the operation was a little less than thirty minutes, and there was absolutely no shock following it. A profuse uterine hemorrhage, however, occurred on the third day after the operation, and on the fourth day there began septic disturbance, resulting in the formation of a pelvic abscess which apparently began in the pedicle stump, and made the convalescence tedious. The point of infection, however, was easily reached and the abscess thoroughly drained through the vaginal incision.

The employment of the vaginal route for the removal of ovarian tumors certainly has great



INCISION INTO CUL-DE-SAC.

limitations. A large tumor can not be removed in this way, especially if it be solid. Dr. Thomas would limit it to cases in which the tumor was "not larger than the head of a child a year old," but this must necessarily depend upon the peculiarities of each individual case. It is obvious that a simple cyst filled with serum only might be easily removed, while a multilocular cyst containing much semi-solid matter and connective tissue, though comparatively small, could not be removed in this way. Firm adhesions, too, especially between the tumor and the intestines, would make the operation impracticable.

The ovaries are not as easily accessible through the vaginal vault as they are through an abdominal incision, and if the soft parts be rigid and the pelvis narrow, these conditions may make the operation difficult; but if the uterus be freely movable the difficulties are not insurmountable. Furthermore, this method of operating can be abandoned for the abdominal route at any time during its progress, should it be thought for any reason to be impossible to complete; for the vaginal incision does not add to the gravity of the abdominal operation. It may, indeed, serve a useful purpose in permitting perfect

drainage. The advantages of the vaginal operation are, first of all, that it is not followed by shock. The short, simple incision, involving only the thin septum between the vaginal vault and floor of the cul-de-sac, produces little or no impression upon the nervous system, while the abdominal incision is often followed by profound nervous depression. The operation leaves no sensitive scar and there seems to be no danger of subsequent hernia. Upon this latter point I wish to quote Dr. Leopold Landau, of Berlin. He told me (in October of 1893) that that he had made over 200 vaginal hysterectomies with clamps and that he had never had a prolapsus of the intestines and had never seen the operation followed by a hernia. Furthermore, septic infection is certainly more dangerous where there is a large abdominal wound to become involved; aside from the fact that the abdominal peritoneum is much less tolerant of septic invasion, and much more speedily and frequently terminates in death than when only that of the pelvis is involved; and lastly, the point of infection is easily reached through the vaginal incision if suppuration does take place. Of the recorded cases which I have been able to find, none have terminated fatally. Olshausen (*Krank. des Ovar.*), in his discussion of this operation, states that Mignon collected from literature 113 cases, with 77 recoveries. As these cases embraced all kinds of conditions, some of profound inflammatory and suppurative disease, they should not be discussed under the head of vaginal ovariectomy. To sum up, the writer believes that in the case of a small, non-adherent tumor of the ovary with a normally mobile uterus, the vaginal route should be selected for its removal.

63 and 64 Sentinel Building, Milwaukee.

THE SANITARY INSPECTION OF FACTORIES.

Read before the New Jersey Sanitary Association at their Twenty-first Annual Meeting held at Atlantic City, N. J., Dec. 6 and 7, 1895.

BY O. W. BRAYMER, A.M., M.D., PH.D.

President of the Camden City Medical Society; Member of the American Medical Association; Fellow of the American Academy of Medicine; Fellow of the Military Order of Surgeons of New Jersey; Member of the District Medical Society of Camden County, the Medical Society of New Jersey, the New Jersey Sanitary Association, Etc.

CAMDEN, N. J.

While a study of the legislative enactments on factory inspection, as found in the labor laws of our States and Territories, teaches us that our legislators and health authorities have not entirely neglected the subject of sanitary inspection (since in a few of our manufacturing States there are laws good so far as they go), yet it is very evident that no great effort has been made to improve the sanitary and hygienic environments of the workingman, and create the best possible conditions for his health and work; conditions which conform to the scientific knowledge of our age. It would appear that nothing had been done beyond what necessity had enforced. No scientific knowledge of sanitation seems to have been promulgated among our factory owners and the working people of our country.

It is true that laws have been enacted regulating the age at which children can be employed in mills of various character, yet from going through these mills and looking at those working therein, we feel doubtful as to whether these laws are being lived up to. It is also true that the working hours of men, women and children have been established by law; also ventilation, water-closets, and accidents from

machinery have been considered, and recently in New York State a very good law has been enforced regulating the sanitation, of bakeries both to promote health and cleanliness among the employes and also to give the public a better and purer article of food. It is also a fact that several of our States have factory inspectors, yet after reading the laws governing the same, and noting the amount of compensation allowed for the work, we are, very doubtful whether much good is being accomplished. We can see in all this nothing especially to better the sanitary conditions of the workman, or the public. About all the functions these inspectors have, is to order the rules of the department posted in the factories, and in some few instances, when complaints have been made, they may make an effort to remedy the existing wrong. This is not the kind of law we want; it is not the kind of legislation that protects the workingman and shield him from the diseases of his occupation and frees the masses from the danger of filthy products sent upon the market, or the contaminated air which comes from poorly managed factories.

We have a great problem to solve when taking up a subject of this character, and it is impossible in the short time allotted to me to do more than give you a few scattered ideas in reference to the solution.

Statistics show that one-fourth the deaths in Great Britain occur from pulmonary consumption, the majority of which can be traced to the breathing of dust-laden or impure air. Some foreign countries have taken up this subject in a more rational way than ours. They have made it a national question, and to-day we can point to England, France and Germany as having very good laws, the enforcement of which has done much to benefit the workingman and the public. We also are pleased to know that the medical profession, especially in these three countries, has taken a great interest in the subject of factory sanitation, and some most excellent works, describing the diseases of different occupations, have been published. In looking over the laws of our States, I was impressed with what seemed to be a fact, viz., that notwithstanding considerable had been accomplished concerning the inspection of factories, very little, if anything had been done to establish an inspection and regulation of a true sanitary or hygienic nature. While there are laws bearing on the subject they are only of a general character and do not cover the ground in a way to do much good. For example they take up the subject of guarding against accident by machinery and fire. These are naturally to be guarded against by the mill owner for personal reasons; legislation is not needed, since any such accident would cause more or less loss of time and money to him, and further annoyance might be anticipated from suits for damage, etc.

In the case of injury and disease from unhygienic conditions this will not hold true, because it does not interest the average capitalist to correct these things. In the majority of instances he overlooks them entirely and when disease overtakes his workmen they are allowed to drop out and fresh hands are taken on without any or little thought concerning the cause of the disease or how it might have been prevented.

The details which enter into the regulation of sanitation in a factory, to the average employer, only interest him in so far as they have to do with the amount of salable products put on the market from

his place of business. Sanitary science may have little to do with this, but may have everything to do with the health of the workmen. The capitalist's motto reads, "The maximum gain for the minimum expenditure." The life of the workingman is of little importance in his sight. In looking over the last census report of the United States, we find that over five millions of our population, ten years of age and over, are employed in factories; of these about 80 per cent. are males and the balance females. A vast army of citizens who go to make this country stand high in the list of nations as a manufacturing people! Yet very little has been done to furnish protection, by sanitary regulations; little care has been taken to guard these millions from their unseen yet deadly foes, the bacilli of disease, that are cutting them down with a greater force than would the missiles of a battlefield in times of war. Can we, as sanitarians, be idle and see this havoc go on? Should we not take hold of this subject and with one mighty, united effort strive to protect this hard working host of humanity? We must remember that these millions of beings do not only represent themselves, but they are an illustration, a reflection of future populations; and they determine what the health and status in society shall be of subsequent generations; their children and their children's children.

That unsanitary and unhealthy occupations do cause degenerations in whole communities and produce a stunted and poorly developed people both mentally and physically is no visionary thought. It has been proven by many investigators and as an example let us cite the English manufacturing district, where competent authority states that of 2,000 children, who were working in the mills, only 341 were well developed, and scarcely sixteen of the whole lot could be called handsome, and these latter were most every one of them not natives of the colony but girls imported from Ireland. What would the progeny of such a population be? Certainly no better mentally or physically. These unsanitary conditions in factories and among factory people not only cause a lessening of health and intellect but also lessen the amount and quality of goods produced; and in large manufacturing districts, this would be even more marked than it is, were it not for the fact that new material is being constantly taken in, from the country and neighboring locations, which raises the percentage of health and consequently lowers the rate of defect.

In all the factories visited by me some attempt seems to have been made to favor sanitation, yet it lacked that system which follows wisely enacted and righteously enforced law. It wants more science at the fountain head to give life to the stream. Especially is this true, with reference to water closets, ventilations, cleansing of floors and walls, drinking water and the personal hygiene of the workers. Improvements in machinery and method of manufacturing have done much to benefit the workman. Electric lighting has caused a great sanitary gain; not only because it gives better illumination, but also because it lessens the danger from fire and explosion, and the atmosphere is not impregnated with the products of combustion and it also reduces that oppressive heat which originally was one of the results of illumination by means of oil or gas.

We all realize that it is very important that ventilation be looked after and in no factory should there

be less than 250 cubic feet of air space for each individual workman; yet so far as I know, only two of our states have such a clause in their factory laws. Then it must be considered that with all the ventilation known to science, there are many kinds of industries where a certain amount of danger from dust still exists as in flour and rag mills, pottery polishing and china scouring factories, etc. In all such factories employees ought to be compelled by law to wear respirators and at the same time every effort should be made to devise means to carry off the dust.

Then again, this sanitary inspection has not only to do with the people employed in the mill, but, as inferred before, the surrounding population; the inhabitants living near the place of manufacturing should be protected. Places where old fats and hides are being utilized, and chemical works are continually annoying certain of our committees by various forms of offensive odors more or less deleterious, coming from their midst, should be compelled to regulate the amount of stench thrown off into the air. The steps which England has taken, and the results, have proven that many of the causes of air pollution can be removed.

But when such legislation is obtained, unless there is a proper head to enforce the law it is of little or no avail. It must not be inferred that sanitary inspection would tend to restrict the manufacture of chemicals and like substances. Good laws would only set a limit to the amount of obnoxious gas to be discharged into the atmosphere, and in England it has been proven that the enforcement of the alkali act has not only benefited the workingman and those living in the neighborhood, but it has caused improved methods of manufacturing to be invented and materials to be saved. We must have the aid of the powerful hand of the law if we hope to accomplish anything in this line. One of the first laws of nature is self preservation and Blackstone says "no human laws are of any validity if contrary to the laws of nature." We contend that it is in accordance with nature's law to create and enforce sanitary legislation. Our fellow men and ourselves must be protected.

Many are the instances of filthy customs allowed in factories which need our attention. As an example let us cite the moistening of cigar ends and wrappers with saliva—a detestable habit which should be prohibited. Again, tenement house or sweat shop clothing must be closely guarded and the employees and work rooms kept clean, and all goods coming from such factories should be labeled so that the dealer and consumer might protect themselves. That bakeries be kept clean is of the highest importance since we believe that in this occupation there is a great danger of becoming diseased. The very thought of filth and carelessness allowed in some of our bake shops is enough to create disease. Strict legislation should be enforced to compel this class of workers to be clean both in person and in their work.

Capital secures legislation to protect its interests regardless of the conditions of the workmen employed, while at the same time very often the only capital possessed by the workingman is his health and strength. Certainly the State owes the employees as much protection as the employers. Desire for increased wealth on the part of the owner of factories often causes a reduction of the working force, and an attempt to reduce breathing space may be made, to curtail the extra expense of building. In some in-

stances the workers remaining will not complain if their wages are not reduced. They may be ignorant of the danger that lurks about them, they may not understand nature's laws, which condemn in no mild words over exertion and poorly ventilated rooms; yet their health is at stake and it is for this reason that sanitary science should interfere and save these beings from an untimely death. If you take the time to look up the statistics on this subject you will find that there is a very great increase of lung disease among those people who work in factories, nearly or quite 100 per cent. more than among those working in agricultural districts. Observation shows that mineral and metallic dusts are the most dangerous and one reason why the evil effects of breathing dust-laden air is not more apparent to workmen is because they are slow in action. Yet the effect is in the end deadly. The inhalation of dusts, mineral, metallic and organic not only cause fatal lung disease, but offensive and poisonous gases, sudden changes from hot to cold or vice versa, will cause disease, and often death. Such diseases, if not fatal, rob a man of health and strength and thereby lessen his chances of self-support; and since they are in the majority of instances avoidable, it seem criminals for our authorities to allow them to go on without a greater effort for their prevention. It is not only the individual but the community and state that loses in allowing such evils to exist.

These subjects require the careful attention of our legislators and health authorities and every possible effort should be put forth to bring about the needed change. Naturally the question arises: How can this be accomplished? Let me answer: Educate the masses; teach sanitary science to the child and when he becomes a man he will put his knowledge to good use. When the public becomes more enlightened concerning sanitary science; when our school authorities are awakened to the fact that hygiene and sanitation, both of the individual and the community, are among the most important foundations of learning that can be instilled into the youthful mind; and when they learn that it is for the interest of every one that these subjects be taught in our public schools and colleges, and that this instruction be given not by one who has little or no idea of the science, but by competent medical men, appointed by each school commission, then will a demand for better sanitation in factories be exacted.

To know how to read, write and cipher is not enough for that child who has to leave school at 12 years of age and go forth to earn its living. He should also have a fair knowledge of self-preservation, as unfolded by sanitary law, physiology and hygiene. Our people are filled with a false modesty from which they must be purged. Every child, both male and female, should at the age of puberty be taught the important laws of life and procreation and be shown how to escape the ills which befall those who live unclean lives and be guarded against the sins of immorality. The time is coming when laborers will strike for hygienic surroundings as well as for money. They will learn that "health means wealth" and act accordingly. We, as sanitarians, must look deep into this subject of sanitary legislation. No matter what elaborate laws may exist on the statute books, unless there is a well-organized system for their enforcement, by a carefully chosen board of sanitary inspectors; men selected for their

ability as sanitarians, not for political prestige; men versed in medicine and sanitary science, not politicians, principally interested in drawing their salary; unless these particulars are looked after, we say our purpose for a betterment of the workmen in our factories will not be accomplished. These laws must be broader and take in a greater scope than any ever enacted in this country heretofore.

It is not sufficient that machinery be so guarded that injury will be prevented; it is not enough that fire escapes be provided and water closets and good drainage be established. All these things are essential for the welfare of the workers in the factory, yet thousands of other subjects are crying for our attention. These urinals and closets must be well lighted, ventilated and disinfected. This disinfection should be done daily after the room has been thoroughly scrubbed. These closets should be arranged separately and in different parts of the building for the two sexes. Investigation has shown that notwithstanding these matters are looked after in a measure in most factories, yet this attempt is only a poor excuse for doing an important work. The stench emanating from most of these places leads us to believe that no powerful hand directed by a sanitary mind is superintending the cleansing and disinfection of these places. Instead of a factory inspector with power to employ deputies, as the law provides now in different States, we want a sanitary inspector, a thoroughly educated and competent man, who will have a deputy in every district, who will look into the workings of the factories; have a keen insight and observe the wrong, and will enforce the law.

Not only the mill itself and the owner should be kept on the right track, but the habits of life of the workmen must be looked into, and where disease is being contracted because of ignorance, the people should be brought to light. Among the important necessities of every factory is a good, pure supply of drinking water, and each employee should own and be compelled to use a drinking vessel. The miscellaneous use of a common drinking cup is often the cause of the spread of disease, not only in factories but in our schools and places of public assembly. The fact that our churches are adopting individual communion cups has been a great step in promoting sanitation. It shows that our people are interesting themselves in the right direction. There should be wash rooms in every factory, so that employees could change or adjust their clothing and wash their hands and faces. Indeed where the work is very dirty, not only should a place be set aside where those who are compelled to carry their dinner could eat with comfort, but baths should be provided, so that the body could be cleansed before going home. Seats should be provided so that especially females could sit down when not actively engaged.

When one goes into a factory, as we have done not long since, and observes the tobacco juice and corruption being expectorated on the floors, and then notes the poor ventilation, he will be even more impressed, as I was, with the fact that cuspidors should be provided, filled with some antiseptic fluid, and a rigid rule enforced, compelling the same to be used. These receptacles should be cleansed daily. Such a procedure would prevent the spread of many diseases, the germs of which are contained in this filthy sputa, and are carried in the air when dried. Our legislators should feel that without reference to

profit or loss, the first thing in every factory should be, to see that as great a chance as possible be given the employe to maintain his health. It may be claimed that it is not practicable for our government to take hold of this subject. Such a protest would appear *feeble*. Other countries have enacted good laws and have kept them in force. Our own government looks after its different departments and protects her citizens from wrong in every land of the earth. Why not some such attention to the health of the people. When we look at the increased death rate from lung and other preventable diseases arising from badly regulated factories we think of that line which runs:

"Hark, from the tomb a doleful sound, mine ears attend the cry."

Thousands, yes, tens of thousands of our fellow citizens are yearly going down to untimely graves simply because our factories are not properly looked after by sanitarians. Let us apply the remedy and prevent this premature decay. Educate the people; begin in the public schools and in a few generations we shall have a population of sanitarians, create a Department of Public Health, and let its power and influence be felt in every city and hamlet of this broad land. Elect men to office, both National and State, who understand the principles of sanitary science. Then with a public backing them that demand such laws, they will be able to see the necessity and will have the courage to enforce sanitary legislation.

THE RELATION OF ADENOID VEGETATIONS TO IRREGULARITIES OF THE TEETH AND ASSOCIATE PARTS.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY GEO. F. EAMES, M.D.

BOSTON, MASS.

Your attention is invited to a few preliminary statements as indicating my position in relation to the subject of which I am to speak.

1. While mouth-breathing is usually attendant upon adenoid growths, this is not *always* the case, while, on the other hand, mouth-breathing may exist without the presence of adenoids, or it may be due to a chronic hypertrophy of the turbinated bodies, or some septal deformity.

2. The adenoid growth rarely fills the pharyngeal space so as to obstruct breathing, but mouth-breathing results from irritation which it produces.

3. Mouth-breathing does not produce adenoid vegetations.

4. Mouth-breathing does not cause irregularities of the teeth.

5. I have examined many cases presenting deformed arches and irregular teeth, in which no adenoids existed.

It is argued by G. MacDonald, that nasal stenosis is a constant factor in post-nasal growths, and that this being the case, "as long as respiration is conducted through the nose, there is, of a physical necessity, a diminution in the barometric pressure behind the seat of stenosis. This inevitably results in more or less overfilling of the blood-vessels which, in its turn, leads to hypernutrition and hypertrophy." It is obvious, that when the diaphragm is depressed, the mouth closed, and the nose partially closed, there is more or less suction produced which would invite

blood in extra amounts to the pharyngeal region, but according to my observations, patients breathe through the mouth, both by instinct and force of habit, even when it is possible to breathe through the nose. The swollen turbinates, with their rich supply of nerves, readily convey a sense of suffocation to the brain, and the mouth is immediately opened. I have repeatedly found children breathing through the mouth, and upon request to breathe through the nose, they have been able to do so, but as soon as their attention was drawn in another direction, the mouth opened and mouth-breathing was continued. Moreover, the mouth opens so readily, upon so little provocation from the nasal irritation and stenosis, that it does not seem possible that sufficient "diminution of the barometric pressure" can be produced in the pharyngeal vault to cause a growth of tissue. Again, if this be true, we ask why the growths are so often pedunculated, while the pressure is exerted equally in all directions. This view also necessitates nasal stenosis to begin with, but it is generally understood that the enlarged turbinates are the result, not the cause of adenoids, and observation shows that the nasal obstruction gradually disappears after the removal of the growth. Again, this will not account for the congenital growths, and those in infants whose oral respiration has only been established a few weeks or months; and still again, those cases of nasal stenosis of long standing in which there is no adenoid hypertrophy. If it is true that this "diminution of barometric pressure" acts also to increase the size of the faucial tonsils, how shall we account for many cases of post-nasal adenoids, in which the faucial tonsils are normal? Their growth and development is acknowledged to be on the same principle, they have physiologic limitations in common, and it would seem reasonable to assign a cause common to both. It has been said that adenoid growths in the pharyngeal vault cause irregularities of the teeth. I do not believe this to be the case, but rather that the dental irregularities are only another expression of the same cause that operates to produce the adenoid growth; in other words, there is one cause common to both, yet this cause may not be able in all cases to produce both. The bone developing vital movement may be strong and active by inheritance, while the lymphatic glandular system is weak. Deformities of the hard palate, forming the dental arch, are frequently associated with adenoid growths, but not always, as many would give us to understand. There are various reasons given concerning the origin of these irregularities. For instance, it is said that a so-called high arch, or V-shaped arch is a diagnostic sign of adenoids in the pharyngeal vault. The late Dr. F. H. Hooper in his pamphlet on "Mechanical Effects of Adenoid Vegetations" says, "The hard palate, from the constant atmospheric pressure within the mouth, is pushed upward." It is difficult to see how there can be a constant pressure within the mouth while it is open and the air is free to move either in or out. The air must be confined in a given space, and a force exerted, in order that pressure in any direction be made. Therefore we can not believe that this deformity of the arch is due to atmospheric pressure caused by nasal stenosis.

The theory of David accounts for the deformity of the hard palate in persons suffering from nasal stenosis, by a partial vacuum produced in the nasal cavities and upper pharynx by the act of swallowing.

The atmospheric pressure remaining the same in the mouth, its roof is pushed upward. It is difficult also to reconcile this theory with the writer's view of the case. In the first place, it must be a rare case in which the nasal stenosis is so perfect that a partial vacuum should be produced behind it. It is well known that in the act of swallowing, the tongue presses forcibly against the roof of the mouth from before backward, the soft palate is slightly raised, as the bolus of the food passes it, the posterior pillars of the soft palate then contract on either side of the uvula, forming a nearly perfect valve which, with the application of the posterior wall of the pharynx to the superior surface of the soft palate, forms a successful barrier, protecting the posterior nares. The necessity of this, as well as proof of this function, is shown in cases of paralysis of the soft palate, in which liquids swallowed regurgitate into the nose. Now, the act of swallowing is momentary, and the muscles contract firmly, and it does not seem possible for this temporary diaphragm to be so pulled downward as to cause partial vacuum in the nasal cavities; moreover, immediately after swallowing there is a reaction, the breath being held during deglutition, it is expelled with some force through the nose, or into the nasal cavities, the mouth being closed in the act of swallowing. If the air does not find exit through the nose, the mouth does not open until after considerable pressure has been exerted in the upper pharynx and the nose. This may be demonstrated by occluding the nose with the thumb and finger, and performing the act of deglutition. Again, if deformities of the hard palate are caused by the withdrawal of atmospheric pressure on one side, and maintaining it on the other, it would seem that as the pressure bears on all parts equally, the palatine arch should be pressed upward equally high in all directions. This is not the case always, for example, model 1, shows the case of Mr. C. aged about 39 years, with a large adenoid growth in the pharyngeal vault, but one side of the hard palate is much higher than the other side.

It is said that mouth breathing necessitates a constant dropping of the lower jaw which, in so doing, causes pressure of the masseter and other muscles upon the buccal surfaces of the upper teeth and consequent flattening of the lateral alveolar arches, and the projecting forward of the cuspids and incisors. I can not believe that the dropping of the lower jaw produces pressure on the teeth in the superior maxilla. The lower jaw is approximated to the upper teeth principally by the masseter, temporal, and internal pterygoid muscles, and when the jaw drops by the relaxation of these muscles, and with it other muscles and tissues of the face, unless the mouth be open to the fullest extent by the action of the platysma myoides, digastric and other muscles, the tissues of the cheek are not put upon the stretch; in fact the finger can be easily passed in between the teeth and jaw without being sensible of any pressure upon it, provided the mouth is not opened widely; moreover it seems reasonable to conclude that the jaw is held suspended, not by the cheeks, but by the masseter and accessory muscles. The cheeks cover the jaws and teeth loosely, with tissue to spare, and will, as a rule, admit of the jaws being opened to a considerable extent without separating the lips, or stretching the cheeks, which is the case during sleep; therefore when the lower jaw relaxes sufficiently to let the air in

through the mouth, it can not put the tissues of the cheeks on the stretch, or draw them tightly against the teeth. Both observation and experiment will show that it is only necessary to open the lips slightly, in order to allow sufficient air to pass in by the mouth, and that all the tissues concerned are in a relaxed condition while the mouth-breathing is going on. In order to demonstrate this, I have made a number of experiments to determine the pressure of tissues and muscles against the teeth. The device which I have found most successful, is one which I take pleasure in passing around for your inspection. The instrument will explain itself. At first I intended for the little pointer to make a tracing, but I find that unnecessary, for the pointer may be observed while the mouth is being opened. The use of this apparatus confirms my views as above expressed. Moreover, the anatomy of the parts involved bear the same testimony upon careful observation and study. Notice the fact that a straight line drawn from point of origin to insertion of these muscles, would not touch the teeth. A profile view shows the fact that the masseter extends no farther forward than the second molar, while the other muscles concerned do not come as far forward as this. It has been suggested privately by several prominent gentlemen here present, that this demonstration was unnecessary, that it is absurd to suppose that the pressure of the cheek causes a narrow arch; but the others have differed from me publicly, and I then made a vow that I would make a demonstration upon which my opinion would either stand or fall, and I think I have now done it, and that my opinions as expressed, have been substantiated.

Bazin is quoted as advancing the idea that the weight of the tongue in the roof of the mouth would tend to expand the lower jaw beyond its normal limits. I would suggest, however, that if weight is the expanding force, how can it press laterally, since gravity would carry the tongue downward into the floor of the mouth, which would rather draw the sides of the jaw together than otherwise. But if it be the muscular force of the tongue, then it is easier to see how the teeth might be pushed outward. But here is a case, Model 2, Mrs. H., aged 30, with a history of mouth-breathing from infancy, with a marked contraction of the lower jaw, the bicuspid closing entirely inside their would-be antagonists. The nasal breathing is fairly free at the time, yet mouth-breathing is continued, partly from habit, and partly from a mild chronic, nasal catarrh. There are no adenoid growths or enlarged tonsils; there may have been in early life, but the one thing to be noted is, the habitual mouth-breathing did not expand the lower teeth in this case. Dr. Henri Chatellier, of Paris, calls attention to the bones of the head and face, consequent upon obstructed nasal respiration. He points out that the air cavities, as the frontal, sphenoidal, ethmoidal and maxillary sinuses being normally in communication with the air, cease to develop when the circulation of air through the nose is interfered with, and hence dimensions of the face are altered. The only article on this subject, written by a practicing dentist, which in any sensible degree reaches the truth and demonstrates it, is by Dr. E. S. Talbot, of Chicago. I believe the ideas which he thus expresses, to be based upon a correct principle. Dr. Talbot says: "There are many cases of contracted arches where mouth-breathing does not exist, there

are also many cases of normal arches where it is present." I have cases, seen by a number of competent witnesses, to show that the above statement is entirely correct.

I now wish to present two cases, both having marked adenoid growths and consequent nasal stenosis and mouth-breathing, but the dental arches present a striking contrast; models 3 and 4. Model 3 represents J. H., aged 13 years, upon whom I operated Nov. 4, 1893, removing a large quantity of adenoid tissue. In this case there was defective speech, the usual dullness and deafness. After the operation, the first improvement was shown in the hearing in two weeks, the speech was slightly better in four weeks, and the nasal stenosis is decidedly lessened. The marked feature in this case is the broad and regular dental arch. The other case, E. F., model 4, aged 9 years, was operated upon a week later. The symptoms were about the same as in the case just described with the exception that there was very little deafness. Compare the dental arch with No. 3, narrow and deformed arch.

Marked adenoid growths are sure to produce mouth-breathing and more or less nasal stenosis, but irregularities of the teeth, and deformities of the arch are not at all certain to follow as a consequence, but are rather companions, due to a common cause. Dr. Talbot further says that in most cases, the cause of these deformities is an arrest of development of the bones of the nose, and this produces mouth-breathing. While there may be an arrest of development of the bones of the nose, I would call attention to the fact that the opposite condition exists as to the turbinated bodies, which are hypertrophied.

As long ago as 1879 there appeared a paper in the *Philadelphia Medical Times*, by Prof. Harrison Allen, in which he says: "Inasmuch as the face is the result of the lateral visceral half arches joining the median structures, projected from the front of the brain-case, it follows that if there is want of harmony between the two genetic movements, errors of symmetry will readily occur." Explanation may thus be given of asymmetry of the nasal chambers, the external nose, the two halves of either of the dental arches, entirely apart from the acquired defects in the same localities. Applying this hypothesis to practice, Dr. Allen had recognized a well-defined group of cases in which the nasal chambers remained, from birth, partially or entirely occluded. Also that cases of obstinate nasal catarrh in children from 7 to 18 years of age, in whom the upper permanent incisors were overlapping and convergent, the two halves of the upper dental arch more or less V-shaped, the tonsils tumid, the roof of the mouth with a high narrow vault, the cause was deep lying and congenital, and affected all the structures of the face. Dr. Allen has frequently noted the way in which the dental arch was narrowed and elevated in adults, in whom no history of either adenoid disease or nasal obstruction was given. It should be noticed also that the upper incisors approach the vertical position, sometimes overlapping, in many cases of adenoid disease, while in thumb-suckers these teeth protrude from the mouth.

In a clinical lecture delivered before the First District Dental Society of New York, Dr. Allen describes a case which is instructive, showing the possibility of the Hutchinsonian, or an allied deformation of the teeth, occurring without a history of syphilis or scar-

latina. that oral respiration was established as early as the fifth year, due to a large adenoid growth, that the teeth were congenitally deformed, that this congenital deformation could hardly be caused by oral respiration established at the fifth year. The following is a description and remarks concerning the above case as given by Dr. Allen:

"A lad in his tenth year lately came under my observation for difficulty arising from oral respiration. He was the son of respectable parents. The father denied the taint of syphilis, and did not exhibit, upon examination, any sign of the disease. The child's mother died of phthisis a short time after his birth, and he had been brought up most carefully and intelligently by a nurse who is acquainted with his clinical history from the time he was born. The child has always been delicate, especially in the functions of digestion and assimilation of food, but there was entire absence of the ordinary signs of syphilis. There was no deformation on the top of the head (which has been described as natiform). There were no fissures in the skin at the nostril or at the angles of the mouth, no cloudiness of the cornea, no traces of previous eruption of the skin, nor evidence of periosteal disease. At the fifth year it was observed that oral respiration became established and there was also a disposition to take cold easily. Examination of the pharynx revealed the presence of a large adenoid growth pendant from the roof. The palatal arch was high and narrow, the obstruction to nasal respiration was absolute. The nasal septum was irregular, apparently due to enormous thickenings of the maxillary crests. The teeth presented all the characters of the Hutchinsonian deformity, excepting only that the lateral incisor teeth were not pegged. After the removal of the adenoid growth, nasal respiration was reestablished. Now what, in all probability, has been the order of events in this case? The clinical condition which brought the child under my care was not announced until the fifth year. Evidently this was not the first factor. So far as the shapes of the teeth are concerned, they must have arisen at a period certainly not later than at the time when the enamel organs and the dentine bodies were being adapted one to the other. In a word the shapes of the teeth as seen at the tenth year, were congenitally deformed.

"In the next place, the maxilla, especially in the alveolar region, must have been changed by the presence of these mal-formed teeth. It is scarcely likely that the establishment of oral respiration at a period so late as the fifth year should cause an elevation and narrowing of the palatal arch and hyperostosis of the maxillary crests. If this position be accepted, a narrowed, high, palatal arch, with thickening alveolar processes, would be just as apt to arise because of prenatal forces (the same which caused the deformation of the teeth) as to be created by the establishment of oral respiration."

We have leaned too much toward the faulty function last named, in attempting to explain this deformation, and not enough, at least in my judgment, to causes which are in operation at the time the teeth are being developed in the maxilla.

Gentlemen, the evidence is all in. I only wish to call your attention to other models which I pass around; they are all cases in which large adenoids were present. You will notice that a number of these casts show a fairly well-formed arch. I may say, also,

that I have operated upon many other cases, removing a large quantity of adenoid tissue, in which the arches were well-formed. I make this statement to show what has not been shown before, to my knowledge, namely, that a large number of adenoid cases present well-formed dental arches.

ECTOPIC GESTATION—REPORT OF A CASE.

Read before the Champaign County Medical Society, Sept. 18, 1895.

BY JOHN LAUGHLIN, M.D.

RANTOUL, ILL.

My reasons for reporting this case are because of many extraordinary conditions that maintained in its ten months' history and the remarkable recovery, the completeness of which was demonstrated by an operation for a complication.

Mrs. E. N., aged 36, the mother of four children, the youngest 4 years of age; no miscarriages. Her menstruation began in her sixteenth year. The flow was abundant and it came about every three weeks. Twelve years ago the menstruation disappeared for four months. A tumor came in the right lumbar region and it was aspirated of a large amount of offensive material by Dr. McClure, now deceased.

Her health continued fair until the fall of 1893. She said her menstrual periods were a little more prolonged and painful than common and a physician was consulted. In November, while going to church, she had a sudden attack of abdominal pain accompanied by weakness. After stopping at a relative's house for a few hours she returned home and afterward suffered from painful and irregular menstruation as before. I first saw the patient June 28, 1894. She complained of pelvic pain and menorrhagia. Urination was painful and frequent. The pulse and temperature were normal. The abdomen was tympanitic. There was a badly lacerated perineum and a bilateral laceration of the cervix. The uterus was enlarged, retroverted, fixed and, with the surrounding organs, so exquisitely tender as to prohibit a thorough examination. My diagnosis was endometritis with pelvic peritonitis. After a few days' treatment these symptoms subsided, and I did not see the case again until July 15.

The same conditions were present except that menstruation had ceased, and it did not reappear until near the end of her sickness. There was also retention of urine, and from that time till convalescence it was drawn with a catheter two or more times a day. Urinary analysis showed nothing abnormal. August 4, the amount of urine began to diminish, and for four weeks not more than from one to six ounces was passed a day. Some days there was complete suppression. A painful fluctuating tumor came in the right lumbar region, gradually increasing to four or five inches in diameter.

My colleague, Dr. J. C. Harmon, and Dr. S. M. Wylie, of Paxton, Ill., were called in consultation. Our united opinion was that we had a hydronephrosis due to occlusion of the ureter either by calculi or by pressure of a tumor. And since the patient said that certain small hard objects had been passed with the urine, we thought probably the former was the true cause.

Through the month of September the history continued as follows: On the first there passed from the bowel a pint or more of liquid containing blood, mucus, pus and portions of the mucous membrane of

the bowel. On the afternoon of the third a messenger reported her suffering great pain and very weak. A catheter was passed and two pints of urine drawn, and in four hours a total of five pints. It contained considerable pus and blood and was very offensive. The tumor was very much reduced in size. The diagnosis of hydronephrosis was confirmed, but the cause was yet in the dark. Two hard grayish masses the size of peas were assisted out of the urethra on the eleventh. They had the appearance of phosphatic calculi and were so considered at the time. No more were passed until some time in October, and then without the covering of urinary sediments that were on the first ones. They looked like the ends of the long bones of a stewed chicken. Then they followed in large numbers, each separate one following the same painful course from the region of the kidney to the bladder just as is usual in the passage of urinary calculi.

Dr. Wylie was again called in consultation October 31. The questions for us to decide were whether the case was one of dermoid cyst or ectopic gestation, and whether or not an operation was advisable. The history of the case, the absence of hair, teeth and nails and the great number of bones excluded the probability of a dermoid.

To do an abdominal section with the urine almost completely suppressed, with very little vitality left in the patient and with symptoms indicating an opening into the ureter and possibly into the bowel, seemed to offer no chance of recovery. Besides, a careful examination revealing no considerable tumor, we hoped a spontaneous recovery might soon take place.

Through the month of November each day's report was about the same. There was intense pain for several hours before each bone would drop into the bladder. Sometimes two or more would seem to be passing at one time. The patient could locate each one and pretty accurately predict when it would reach the bladder. The urine, always small in amount and often entirely suppressed, was taken with the catheter. As soon as the bones engaged in the urethra they were carefully fished out with the tissue forceps. On the twenty-eighth the abdomen became tympanitic and sensitive to touch, with pain particularly on the left side. The next day in several copious evacuations of the bowels there was passed liquid, blood, mucus and pieces of mucous membrane of the bowel.

The first three days of December showed marked amelioration of all symptoms. No bones were passed. Pain and tympanites decreased and the patient rested well. From the fourth to the eighth, pelvic pain and tympanites again increased, accompanied by nausea, vomiting and a slight rise in temperature. These symptoms again subsided and the remainder of the month was comparatively easy. No bones were passed. Symptoms of hypostatic congestion of the lungs that had threatened her for a month improved greatly. She slept fairly well and gained perceptibly in flesh and strength. The last three days of December and the first three days of January she passed her urine unassisted—the only time during her entire sickness.

But these hopeful signs were soon dispelled. January 4 two bones were passed accompanied by great pain. Retention of urine was followed by complete suppression; tympanites and pain increased; the cough returned; nausea and vomiting were more or less constant. Dyspnea became so marked that death

was daily expected. These symptoms continued practically the same during the entire month.

February was an easier month for my patient. On the first day I dilated the urethra expecting to find some large pieces of bone in the bladder. But in this I was disappointed, finding only a few small particles. Except being small and the walls thickened the bladder was normal. After this the bones came faster and easier. The urine was drawn with the catheter and in very small amounts. The most marked feature was obstinate constipation, the bowels moving only five times in the month, viz., the seventh, thirteenth, fifteenth, nineteenth, and twenty-eighth.

In March the bones came thicker and faster, the urethra being packed with four or five pieces at every visit, which was usually four or five times a day. The urine became more abundant. Constipation continued, the last passage for the month being on the seventeenth. A free movement was obtained on April 3. Three slight passages the twenty-eighth, the day of the operation, and a good movement the thirtieth. April was ushered in by the reappearance of menstruation, which lasted seven days. The last bone was passed on the ninth. All outward symptoms subsided one after another except obstruction of bowels. Finally peritonitis became general with pain and great tympanites; nausea and vomiting was more or less constant. The temperature range was 99 to 101.

Having despaired of the bowels moving I recommended an operation April 16. The consent of the relatives was not obtained until ten days later, when Dr. D. A. K. Steele, of Chicago, was called. Making an incision in the median line of the abdomen, loops of intestine were brought up and the fecal masses carefully broken down. The obstruction was in the large bowel and was due to fecal impaction. Remains of the ectopic gestation were sought for but practically found wanting. There were no adhesions. A small tab of healthy tissue about two inches in diameter and half an inch thick was attached to the right and back portion of the bladder.

On the right ovary was a cystic tumor about the size of a walnut and two smaller ones on the broad ligament. The ovary was tied off and removed in the usual way. The recovery was uneventful and convalescence rapid. The bowels moved freely the third day after the operation. To-day my patient is in good flesh and fair health. She is doing most of the housework for a family of six.

In conclusion, I suppose this patient conceived near the first of October, 1893; that the pregnancy was in the right Fallopian tube and that the tube ruptured in November; the embryo escaping into the broad ligament, continued to grow for perhaps six months and died, becoming a foreign body. Pressure symptoms supervened, followed by infection, ulceration and discharge of the contents of the sac into the bladder and out through the urethra. She was confined to her bed ten months. From the passage of the first bone to the last one was seven months less two days. During most of this time she suffered intense pain. No record was kept of the amount of morphin given hypodermically, but three hundred grains would be a fair estimate. The habit, if in reality there was any habit, was broken up by the sudden withdrawal of the drug the day following the operation. There was no menstrual flow from June 28, 1893, to April 1, 1894. Both before and since, the flow has been copious and comes about every three weeks.

There was total suppression of urine for ten days at two different times. In February the total amount passed was 128 ounces—an average of four and a half ounces daily. The bowels moved only five times in February and only once from March 17 to April 28, *i. e.*, once in forty-two days. The amount of bone passed was five ounces by weight and more than a thousand pieces by actual count. I have them here in an eight-ounce salt mouth bottle and they fill it to the neck. They will be passed around immediately for your inspection.

NINE YEARS OF DIPHTHERIA;

INCLUDING ONE YEAR'S EXPERIENCE WITH ANTITOXIN,
CALLING ATTENTION TO EFFECTS PRODUCED IN
DISEASES AND MORBID CONDITIONS OTHER THAN
DIPHTHERIA.

Read at the Forty-eighth Semi-Annual Meeting of the Mitchell District
Medical Society at Bloomington, Ind., Dec. 27, 1895.

BY H. T. DALGLEISH, M.D.

VEVAY, IND.

While using the serum treatment during the past year, both as a curative and as a preventive agent in a series of nearly three hundred cases, some very startling results, not so far referred to by any of the writers upon the subject of antitoxin, or at least if described by any other observer such description has not come to my notice. In these days of our entrance into a new era of medicine every new result from the use of a serum is worthy of close study and publication to the world for use. We who believe in the serum-therapy are going to be given a stubborn battle by our brother practitioners who refuse to see any good results from any serum, and who classify all such products in the same category as Koch's tuberculin; they also seem to think it a sacred duty to preach dire death and damnation against all who have the temerity to use such a remedy. The expression "refuse to see" is used advisedly, for if you ask a physician who opposes the use of antitoxin why he so opposes, the answer will usually be, that Koch's lymph was a failure and this is *just like it*, and then when further questioned as to the source of such remarkable information concerning the identity of the products, he will confess that he has neither used the remedy nor even taken the trouble to read the medical journal reports from those who have used it, but simply shuts his eyes and blindly refuses to see anything but adverse reports, and no matter how absurd or patently untruthful those reports may be, accepts every word and gloats over such an article as a personal triumph. I have brought upon my own head some such pet names as murderer and poisoner, so I say to all such brother physicians as see the dawn of the new day in which "the serum-therapy" and the principle there involved, will be the basis from which all diseases will be attacked; watch your cases closely; study them carefully and report any and all unusual or previously unnoted results, for one apparently trivial feature in a case may be, by directing attention to it, the means of saving many lives. No symptom is so unimportant but that it should be noted, no person so humble but may instruct the greatest. The results of experiments now being made in various laboratories in preparing and using a serum for almost every known disease, only partial reports of such having been made public, make it certain that in days to come medical history will have but two divisions, *the ante-serum* and *the post-*

serum periods. Serum-therapy is the logical result of the germ theory of disease causation, which is only in turn a microscopic demonstration of the doctrine of the survival of the fittest.

In October, 1886, diphtheria appeared in a mild form in Vevay and from that date to the present time there has never been six consecutive months within which I have not treated cases of the disease; the months of September, October and November have in every year produced the largest number of cases, except the past year. In December, 1894, the disease appeared in its most malignant form and has continued ever since. The disease has varied in virulence very greatly in different years; during September and October of one year I treated 123 cases without a death, the cases being all in a mild form with no tendency to invade the larynx; on the other hand during November and December of 1892 five cases treated all proved fatal, the larynx being invaded in each case, so-called membranous croup, a term, by the way, which is rapidly disappearing and the more sensible one of *laryngeal diphtheria* used in its stead, the location of the diphtheritic deposit being the only distinction. I never could understand how anyone could believe that there was any pathologic difference between diphtheria and so-called membranous croup, for in a large majority of cases the deposit begins on the tonsils and extends downward into the larynx, occasionally beginning in the larynx, and spreading upward into the pharynx. It would have been just as sensible to contend that in those cases where the deposit extended from the pharynx into the nasal cavities that the disease essentially differed in its pathologic character. Now, happily, the discovery of the Löffler-Klebs bacillus has forever settled the controversy. When I first began practice the very general treatment of diphtheria was by whisky administered in very large doses internally, and a mixture of Monsel's solution and glycerin applied locally; some advocated also the administration internally of very large doses of tinct. ferric chlorid, the very general belief being that the disease was at first local, and if the deposit was removed early in the disease the system would remain unaffected, the reverse we now know to be the fact; the deposit is the local manifestation of general toxemia, as a chancre is a local manifestation of a poisoned system. Before treating a dozen cases of the disease I noted that however often the deposit was removed so long as fever and other systemic symptoms were present the deposit rapidly returned, but upon the subsidence of the fever and disappearance of other symptoms of infection, the deposit, or false membrane exfoliated without any local treatment. And from that time to the present I have never used any local treatment whatever with the object of removing the false membrane, but solely with the view of rendering or keeping the deposit aseptic. My treatment until the discovery of antitoxin has been the tincture of iodine in dilute alcohol. For an adult one drop of tinct. iodine to thirty drops of alcohol with enough water added to make a tablespoonful swallowed slowly every hour, and the dose of both iodine and alcohol diminished in proportion to the age of the patient. In all but the malignant type of the disease it acts like magic; its great advantage over all other remedies being that it will be retained when all other remedies as well as food are rejected by the stomach.

Since Jan. 1, 1895, I have treated fifty-seven cases of diphtheria varying from the most malignant to moderately severe cases, none having been mild. Antitoxin was used in all cases; there were two deaths with fifty-five recoveries, a mortality of less than 4 per cent. During the same time I have made over two hundred inoculations as a preventive measure; not one of those inoculated have taken the disease. Quite a large number of those inoculated had been exposed to malignant cases, and in several instances where a case occurred and the whole family had been exposed, but some members having declined to be inoculated, some of those so declining contracted the disease, while all of those inoculated escaped. Nine persons were inoculated after prodromal symptoms were present and well marked, and in all such cases all of these symptoms had entirely disappeared within thirty-six hours. When inoculating as a preventive measure I have uniformly given 200 antitoxin units (Behring) and repeated the same at the end of three months. As a curative measure, when the disease was well established, the dose has varied greatly, being governed by the duration, age of the patient and by the severity of case as indicated by the symptoms, as follows: Where the membrane was still confined to the tonsils and the temperature not exceeding 102 degrees F. I have uniformly given 400 units, watched results and if at the end of twenty-four hours there was an improvement as indicated by subsidence of fever and no extension of membrane, given 200 additional units, and in such cases uniformly nothing more was required. But if at the end of twenty-four hours there was no improvement, the case remaining unchanged, 400 additional units was given and repeated each twenty-four hours until cured. If after first giving the 400 in such cases, at the end of twelve hours, when I always make my second visit, I found the symptoms worse I gave from 600 to 1,500 units additional according to the apparent severity, I then visit my patient every six hours, administering 200 units at each visit until improvement is manifest.

If on first seeing my patient the false membrane has invaded either the larynx or post-nares, or the terrible stench indicates that the streptococci have been absorbed and that in addition to the toxic effect of the bacilli diphtheriæ, I have a case of septicæmia to fight, I administer from 1,500 to 4,000 units at once and then give from 200 to 1,000 additional every six hours until improvement, and I have never yet treated a single case that there was not improvement. The two cases in which there was a fatal result both died after my visits had ceased and they apparently were safely convalescent. One, who, contrary to my instructions, had been allowed to go out in the yard and spend the afternoon reviewing a circus parade, died that night from heart failure, not paralysis. The other died from heart clot. Both had been of the most malignant type, having in addition to involvement of both nares and larynx the additional feature of septicæmia. In both case the false membrane had readily disappeared from all points, after which I had a long, stubborn battle with the septicæmia (due to the streptococci) which left them extremely enemic. Both cases were far advanced in the disease before treatment was begun, the glands being greatly swollen when first seen (the cervical lymphatic glands). One recovery was a case primarily of laryngeal diphtheria, the membrane extending on the third day to the tonsils.

Summing up, my conclusions are as follows: In average cases when seen early, give from 400 to 600 units and repeat at intervals of from six to twenty-four hours. In malignant septic cases or where the larynx is involved, give from 1,500 to 4,500 at the initial dose and repeat with from 200 to 600 every six hours and give stimulants. When the nares are involved use an antiseptic wash every two to four hours.

So far as the membrane or diphtheritic deposit is concerned the greatest danger from it is the streptococci and the staphylococci contained in the superficial layers and which if absorbed add to your case, which is primarily a poisoning of the blood with a toxin generated by the Löffler-Klebs bacilli, either from their life activity or as a product of their decomposition after death. The additional element of ordinary septicæmia, the danger of absorption, is much greater from the larynx than from the pharynx, and greatest of all from the nasal cavities, they being so difficult to cleanse, and the danger of absorption from the nares continues for weeks if the antiseptic douche is not continued for some days after the membrane has disappeared. Paralysis after diphtheria is nearly always due to pus absorption, hence the necessity for keeping the superficial layers of the deposit which contain the pyogenic bacteria aseptic. Paralysis after cases treated with antitoxin is slight and rare. The bacilli diphtheriæ are burrowed in the mucous membrane and the diphtheritic deposit or false membrane is thrown up as the crawfish chimney is thrown up by the crustacean as he burrows in the ground. When the underlying bacteria die the deposit exfoliates. The exhaustion following even mild cases of diphtheria not treated with serum is entirely wanting after the serum treatment, most patients expressing themselves as being *stronger and more vigorous after recovery than before contracting the disease*. In addition to the preceding remarkable fact, the following additional surprising results were noted as a consequence of serum inoculations: Some were made as a preventive measure and part were purely experimental, being made by me with the consent of parents. A child 13 months old was weak and undeveloped, having been bottle-fed and had never taken any form of nourishment without also taking a digestive ferment with the food or after. It had also suffered from birth almost constantly with diarrhea and vomiting. This child along with the other members of the family was inoculated with serum as a preventive; since twenty-four hours after the inoculation it has never taken a dose of medicine, has not had diarrhea and rapidly gained in weight. The father called my attention to the fact about a month after the administration of the serum, and while on my way home from his house I met a lady who is the mother of a child with the same history, and which had been inoculated a few days before the first case; the mother called my attention to the child and stated that the results had been identical with the other. Since then I have inoculated a considerable number of children with the object of improving their nutrition and digestion and the results have been magic in every case. A tuberculous patient has been greatly benefited since being inoculated as a preventive of diphtheria. Two paralytics treated at their own request by serum injections have improved in weight and strength in paralyzed muscles. Two cases of melancholia treated by me for want of some

better thing to do in their cases, have shown improvement; but these as well as the former two are not trustworthy, as the results may be purely from a psychic cause.

The most satisfactory results of all in this class has been in two little boys born of tuberculous parents, and since birth have been subject to ulceration and pus formation in various portions of their bodies, so-called scrofulous children. One is six, the other is eleven years of age; both were thin, pale and anemic; both have grown fleshy and much stronger, the color of the skin entirely different; in short, an entire change in their nutrition.

BACTERIOLOGY.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY S. A. HOPKINS, M.D.

BOSTON.

(Concluded from page 275.)

In connection with diphtheria, certain important work has been done at the Harvard Bacteriologic Laboratory, and as I myself have been engaged in that work, it might interest you if I describe in brief what has been accomplished. The Board of Health of the City of Boston has turned over to Dr. Ernst and his associates the work of making examinations in suspected cases of diphtheria, and of preparing the antitoxin for its treatment. The following method has been adopted and has proved eminently successful in examinations for this disease:

Boxes are provided containing two tubes of culture media. Usually blood serum or hydrocele fluid is used, agar-agar if they are not to be obtained. These boxes also contain a platinum wire, and they are to be procured at the college or from drug stores which are scattered throughout the city. When a suspected case presents itself the physician procures one of these boxes and proceeds to the house of the patient. After sterilizing the wire, he places it along the edge of or into the deeper portion of the false membrane of the throat. He then draws it lightly over the surface of the culture media in the tube, and the box is sent to the laboratory. There the culture is allowed to grow over night in an incubator kept at the temperature of the body. The method of its growth is noted, and cover-glass preparations are made and submitted to the microscope. In twenty-four hours or even less time the physician receives his report and is able to make a diagnosis. Occasionally a second or even a third culture may be necessary, as the fact of the bacillus not appearing in the culture is negative evidence only, and may be due to a technical mistake or lack of care in inoculating the culture media. After the patient has recovered, or after apparent recovery, cultures should still be made at frequent intervals, and not until two or more negative cultures have been obtained should the patient be allowed to come in contact with others. Frequently the bacillus appears several weeks after apparent recovery. It is expected that the antitoxin treatment will be introduced to go hand in hand with this work of the board of health, and to that end both the State Board and the Board of Health of the City of Boston have made arrangements for the production of antitoxin from horses.

The preparation of antitoxin is exceedingly interesting. It is known that certain animals can be

immunized against certain diseases, and upon this assumption rests the foundation of serum-therapy. This immunity may be produced in several ways; one is by inoculation of a different disease of a milder type, as in the familiar example of vaccination; another is in attempted cultures of the same disease, producing the disease in a mild form; still another is by inoculating with the poisonous products resulting from the growth of the bacteria, the tuberculin, which is the toxin of tuberculosis; a fourth is by an antitoxin produced in the system as a result of the action of a toxin. When such a poison or toxin is inoculated into susceptible animals, a peculiar cell action, about which our knowledge is limited, takes place, which results in the production of an antidote for that poison.

In diphtheria, the Klebs-Löffler bacillus is found in the throat; we do not expect to find it in the blood. Its presence then in the throat does not necessarily produce death. It does, however produce a poison, a toxin which, entering into the blood, may result in death if the cell action is not active enough to produce something in the nature of an antitoxin which will overcome the effects of the poison. I do not want to convey the impression that a simple chemic antidote for poison is produced in the blood, for it is probable that this is not the case, but that certain changes in the tissue cells, possibly some leucocyte action, enters into the process as well; but for the sake of simplicity we speak of it in this way as an antidote to the poison. If, therefore, the cellular action is sufficient, an antidote is produced which overcomes the poison, and the patient recovers. It is for the purpose of supplying this antidote artificially that we prepare the antitoxin from horses. Horses are selected because they are easily immunized and the immunity can be carried to a very high degree. They are usually healthy animals, are easily handled, and a large quantity of blood can be taken from them without serious injury, which blood contains a large proportion of serum. The steps of the process are somewhat as follows:

We first make a virulent culture from some severe case of diphtheria. It is, however, a fact well known in the laboratory that the most virulent cultures do not always come from the severest cases. We have to determine the degree of virulence by experiments. This is done by inoculating a small quantity of bouillon, and allowing the bacillus to develop in this for twenty-four or forty-eight hours. The bouillon is the ordinary beef bouillon with 2 per cent. of peptone and a small quantity of salts added. Microscopic tests are then made to determine if the culture is pure, and if it is found not to be contaminated, experimental inoculations are now begun upon guineapigs, and if it is found to kill in forty-eight hours a guineapig of 500 grams with a dose of .5 c.c. the culture is assumed to be virulent. An autopsy, however, is made to confirm, and if it is then ascertained that the guineapig died from this cause, we feel sure that the culture is virulent. The cultures increase in virulence as they pass through the animals.

The next step is the inoculation of large quantities of bouillon in flasks of appropriate size with this virulent culture, and these flasks are placed in an incubator kept at the temperature of the body, and the bacteria are allowed to grow and develop for a month or six weeks. By passing a current of filtered air over the bouillon in which the organ-

isms are growing, the process may be shortened, and in three weeks, if everything has been favorable, we may have a toxin which is of sufficient strength for inoculation. The bouillon is taken from the flasks and carefully tested to see if there are any organisms except the Klebs-Löffler, and if no contamination is shown, it is filtered through a porcelain filter, a modification of the Chamberland candle, suggested by the brilliant Japanese scientist Kitasato, and it is then ready for the inoculation of horses. Before inoculation, however, its strength is tested on guinea-pigs. A normal toxin is one that will kill a guinea-pig of 500 grams by a dose of .1 c.c. in forty-eight hours or less. Toxin of this strength requires great care in handling it, and in the first injections into the horses a small percentage of Gram's iodine solution is usually added to reduce its irritant properties. Injections having once been begun are carried on at intervals of a few days, gradually increasing the doses, until at the end of two months an injection of 50 c.c. of a normal toxin can be made without the horse suffering any ill effects beyond a certain febrile reaction. This failure to react under increasing doses indicates that immunity is becoming complete, and at the end of a period of not less than eighty days, usually a much longer period is required, if the injections have been successful, there should be a very considerable amount of immunity, and at this time the jugular vein may be opened and a certain quantity of blood taken from the horse.

From the serum of the blood thus taken the antitoxin is prepared, and its preventive and antitoxin power is determined upon guinea-pigs by finding what percentage of antitoxin will be required to overcome a fatal dose of the normal toxin. For practical use this power should not be less than 1-50,000 and if 1-100,000 can be obtained, so much the better; that is to say, 1-100,000 of antitoxin in a guinea-pig should prevent fatal results from the inoculation of an amount of toxin which would ordinarily kill in forty-eight hours, that is 1-10 c.c. of toxin will kill 500 grams of guinea-pig; 1 c.c. or ten times as much will kill 5,000 grams in the same time. Now if 1-10 c.c. of antitoxin will render inert 1 c.c. of toxin it is an antitoxin of the strength of 1-50,000; if it is double that strength it is an antitoxin of 1-100,000. Do I make myself understood? It is possible to produce it even stronger.

To indicate what has already been done by this method of treatment, I would refer you to the reports of the Hospital des Enfants Malades in Paris, where the reduction of mortality in the diphtheria wards has been from 60 per cent. to 24 per cent. Later advices from Paris would seem to show a still greater improvement. At the City Hospital in Boston the treatment by antitoxin was begun December 9, and the period from which I take the following figures was from that date, December 9, to about January 22. At that time, as you know, the antitoxin was very hard to get. It was not to be obtained in large quantities, and was very expensive for hospital work; moreover the antitoxin power of the serum was not as great as it should have been. Manufacturers who had been tempted by the high prices had put material on the market before it was ready for use.

Notwithstanding these drawbacks, of sixty-nine cases treated only eleven died. This is a percentage of about sixteen, and during the corresponding period of the previous year the death rate was 52 per cent.,

and that is the usual hospital death rate from diphtheria. It should also be remembered that only the severe cases were treated by antitoxin on account of the expense. Of the eleven patients that died the average length of time which had elapsed since the beginning of the disease until they were treated was 5.2 days, so long a period that in some cases the patients were almost moribund when they entered the hospital. Some of the cases were complicated by other diseases, one patient dying with scarlet fever four weeks after apparent recovery from diphtheria, one dying from pneumonia, and so on. Without elaborating this subject, if these results are to be corroborated by further and wider experiments, it would seem that in antitoxin we have a remedy that in uncomplicated cases which are treated early and in sufficient doses will prove almost unfailing. But more important than this is the fact that through this agency we seem destined to acquire a new system of therapeutics. The door is open for further investigation, and it is impossible to predict how many diseases may answer to treatment on similar lines.

If I have perchance exhausted your patience in thus enumerating some of the results accomplished by bacteriology, I have done so under the impression that to no class of specialists is the subject fraught with greater interest than to dentists. The mouth is teeming with bacteria and is indeed a hot-bed perfectly adapted for their production and development. Not one of the necessary conditions is wanting. We find the exact temperature best suited to the growth of most varieties, we have the moist condition, free access of oxygen, and we have in the broken down epithelial cells and in the particles of food, which even the greatest care can not remove, a perfect soil for their development. Investigations in this field teem with the possibilities of brilliant discoveries that may serve to revolutionize our whole practice, and render to our suffering patients inestimable services. The field is one that is almost uncultivated, and scientific work in this direction can not fail in producing wonderful results.

Even the brilliant work of Miller, Vingal, Black and others has been but a beginning, an important beginning I grant, which will make the work of studying these forms easier for you and for others who may attempt their study, and we shall have daily occasion to be grateful to these pioneers for the difficult work which they have performed. The tendency has been, however, to cover too much ground, and the incompleteness of the work is best described in Miller's own words: "I myself have made the mistake, which I think others have made, of attempting the impracticable task of examining all the species which I have isolated instead of concentrating my attention upon individual cases and studying them thoroughly." This certainly has been the tendency, and in but few cases has the work been carried out to its ultimate completion. To illustrate my meaning better, certain chromogenic or color-producing forms probably account for certain discolorations of the healthy teeth and for the pigmentation of carious dentine, but in the present state of our knowledge, we can go little further than the mere statement of the proposition, although it is a subject of vital interest to us. Work upon the fermentative power of certain mouth bacteria seems to point to the conclusion that some of the digestive processes are dependent upon the presence

of bacteria. Yet we are still in the dark as to what forms perform these important functions.

In connection with diseased pulps, we have a great deal to learn. It is no reflection on our intelligence to say that probably not two men in ten would use exactly the same methods in treating the same conditions presented by a diseased pulp. I am convinced that through applied bacteriology we shall be able to differentiate between the various conditions, and to treat them with uniform success. One of these conditions has recently occupied my attention, and I hope in time to offer some definite results. It sometimes happens that a dead tooth which has given no trouble for years sets up an active inflammation a short time after it is opened. This has been accounted for by saying that the entrance of air laden with bacteria produces the trouble. Miller demonstrates that a liter of air contains such a small number of bacteria that this explanation is unsatisfactory, and he disposes of the matter by asserting that it must be due to the carelessness of the operator in forcing putrid matter through the foramen apicale or in introducing infection by means of unclean instruments. I think these charges may be unfair, and I think the explanation will be found in the fact that certain facultative anaerobic bacteria become aerobic and develop rapidly under the new conditions which the increase of oxygen furnishes. Spore formation, I am inclined to think, may also account for certain conditions which now seem very puzzling. But this is a digression. In the greater subject of caries of the teeth such careful bacteriologic work has been done that we have no longer any doubt as to the causes of dental caries. Black in his "American System of Dentistry," Vol. i, says; "That herein lies the true explanation of the etiology of dental caries there is no longer a reasonable doubt." My own opinion is that he has not put the matter too strongly, and that we but waste time in pursuing other theories. Much remains to be done, however, in the way of differentiation and classification of the various phenomena of this disease, and it presents an inviting field for the investigator.

Miller describes the process of caries as a chemico-parasitic one, and divides it into two stages, the first being the destruction of the enamel by acids. The destruction of the enamel is chiefly due to lactic acid, which we have learned is brought about by the action of bacteria, several forms being probably engaged in the work, and saccharin and starchy foods being the important media for their development.

The second stage, the destruction of the dentine, is now pretty generally accepted as being due to bacteria, but to what specific forms these changes are due is still a matter of conjecture. Our present knowledge seems to point to the fact that the so-called *leptothrix buccalis* is not to be considered as one of these forms. Miller calls particular attention to five different kinds, four of which are cocci forms, and one a bacillus or spirillum. All have the general property of fermenting carbo-hydrates and of producing lactic acid. Galippe and Vignal have isolated six varieties, five of which are bacilli and the sixth a large coccus.

A puzzling discrepancy you will at once see exists between the results of these brilliant workers. In the October number of the *Centralblatt*, Dr. Carl Jung gives the results of important work that he has done in the same direction. He has isolated ten dif-

ferent varieties, eight of which are rod-shaped forms and the other two cocci. He has made use of a variety of culture media, and has advanced our knowledge of this subject a little further in the unknown field, but he concludes by saying that although one or another kind of bacteria may take part in a particular measure in the various forms under which caries appears, it must be proved by more advanced research. To this I would add that further researches must be made along the lines which Koch has laid down as applying to all pathogenic forms, and which I repeat: 1. The organism must be constantly present. 2. Pure cultures must be made. 3. These must be able to reproduce the disease. The first two conditions have been in a measure fulfilled in caries, although much still remains to be done in the way of devising new culture media. To fulfill the third condition, a most interesting field for experimentation is opened to us. Before we can determine the specific factors in caries, we must first fulfill the third of Koch's laws and produce the disease by pure cultures of the bacteria that we find to be constantly present. Such work presents obstacles but no insurmountable barriers, and it can be carried out upon lines somewhat as follows: A certain number of freshly extracted teeth must be obtained and covered with paraffine, wax, or other suitable material, leaving exposed only such portion as we wish to have acted upon. One of these, previously sterilized, is placed in a mixture of bread and saliva in a test tube, plugged with cotton and carefully sterilized. Into this is then introduced a pure culture of one of the organisms, and the culture is allowed to grow at the temperature of the body for several months. The experiment is varied by selecting teeth of all kinds, by boring into some and exposing different portions, by varying the kind of organism used, and by mixing the cultures in some of the tubes. This work has never yet been carried out to its ultimate completion, but the work is now in progress, and I refer to it in order that others may be encouraged to take it up. From what I have seen, I believe that when this Association holds its next annual meeting we shall know the specific work performed by the various organisms that take part in the destruction of the human teeth, and shall be able to differentiate between one form of caries and another. When this is accomplished, we shall be far on the road leading to the discovery of more suitable prophylactic and curative measures than we now possess.

I have taken so much of your time already that I will not stop to point out the bacteriologic aspect of pyorrhea alveolaris and other baffling diseases of the mouth, nor can I more than hint at the possibility of the saliva becoming pathogenic under certain conditions, but all these are burning questions which we have got to solve if we would elevate the profession and make it what it should be, an important branch of medicine.

Throughout this paper I have purposely avoided any reference to the treatment of diseased conditions and to practical operations, for as I said in the beginning, no class of men are more alive to the practical affairs of their profession than the dentists of America. It has been my object rather to stimulate your interest in bacteriologic work, and perchance to induce others to make further progress in the direction that I have pointed out. If I shall have succeeded in this, I shall feel that my labor has not been in vain.

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SATURDAY, FEBRUARY 15, 1896.

EUGENE FIELD.

In an eloquent tribute to the memory of the late EUGENE FIELD, the *Medical Mirror* of St Louis, says:

EUGENE FIELD had promised to furnish the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, a special poem descriptive of the doctor's life. It was the intention to have had it liberally illustrated and FIELD was planning in his mind the play of the lines. Indeed he had expressed great enthusiasm in the work, feeling that it was an opportunity for him to delineate the doctor as he had met him and as he knew him an ever faithful and devoted friend of his patients. By association and general equipment he was in good form to have presented a product which would have marked an epoch for the medical profession in a literary way, and we venture the opinion that the subject was one so filled with interest and general attractiveness that the work which was being planned so enthusiastically would have been the literary cap-sheaf of his life, one arousing the interest and the appreciation of the entire medical world. So that his sudden and untimely death was more than ever a calamity to the lovers of true sentiment.

The plan as outlined by MR. FIELD was to take for his type some middle-aged practitioner engaged in family practice, and follow him in his rounds on a Christmas morning. The child patient surrounded with every luxury; the child in less favored circumstances, and the poor sick child amid its pathetic surroundings, were each to have their say to the good doctor as he traveled on his errand of mercy from house to house, and that EUGENE FIELD, better than any poet then living, could have voiced the tender Christmas prattlings of the infant clientelage, every one who has read the productions of the child's poet must admit. And so the loss of EUGENE FIELD

was a direct and personal loss to the medical profession.

The article as outlined above, was intended to appear in the Christmas number of this JOURNAL, and to several friends he mentioned thoughts and expressions that he intended to have his sick children use, but man proposes, God disposes.

TREATMENT FOR PHTHISIS PULMONALIS.

In a very interesting article,¹ DR. CYRUS EDSON, of New York, states that during a study of phenol, made in the early part of 1895, he was very much struck by the observations of STADLER, MERCK, BRIEGER, SALKOWSKI and others, to the effect that phenol could be found in the urine of man the horse, and the cow, and that during health it is a normal constituent of the urine, and during disease the per cent. is enormously increased. He is of opinion that the high temperature of fever may arise from the poisoning of the nerve-centers by such products, and that if this be true, the increased secretion of phenol by the system during disease is an evidence of the *vis medicatrix naturæ*. This led to the proposition: "If nature herself provides phenol during disease, then it can not be possible she will not tolerate the administration of the agent in effective dosage," and yet the fact that effective dosage was believed to cause poisonous symptoms, seemed to be against its use. It is apparent that phenol being the only known antiseptic agent, except cresol, of which the amount in the system is increased during disease, it would be best to select that for experimental purposes, and the problem of DR. EDSON is to find the form of solution of phenol which nature would tolerate. It is to be remembered that creosote is not phenol, but has it as one of its constituents, and that the two substances are therefore not identical. In the opinion of DR. EDSON, the success of the creosote treatment depends mainly on the presence of the phenol. After a long line of experimental work in the laboratory, he has produced a fluid which he uses in his formulated treatment of phthisis, which DR. HENRY A. MOTT speaks of as "aseptolin," and which term DR. EDSON adopts. The fluid is a chemically pure solution of pilocarpin-phenyl-hydroxid. He added the pilocarpin for two reasons: First, "to induce leucocytosis: second, to stimulate glandular activity." It also accomplishes a third purpose, for it is an expectorant and stimulant of secretion of very considerable power. It causes a certain increase in the amount of water separated from the blood in the lung cells. This is shown by the fact that there is an increase of watery vapor carried off by the breath of a person taking it. After a short study of pilocarpin, he further says: "From what has been said, it will be apparent to all chemists that the fluid is a hydrophenol, containing a definite

¹ Medical Record, Feb. 8, 1896.

amount of the new pilocarpin compound. The solution prepared in my laboratory is a colorless fluid, strongly refracting light, having the characteristic odor and taste of phenol. Injected under the skin, it causes a sharp, burning pain, not so severe as that following an injection of bichlorid of mercury in solution.

"In the great majority of cases the injection is not followed by any local irritation whatever. . . . Though I have given over one thousand injections, and some of them very large ones, viz: single injections of 350 minims each, I have not seen a single abscess resulting therefrom, and nodulation in only two cases: one of these was on my own person, following an injection of 250 minims for experimental purposes. No reaction, such as follows the administration of tuberculin, is observed after the injection of properly prepared pilocarpin-phenyl-hydroxid solution, nor is there any visible physiologic action following an injection of 250 minims, given to a man weighing 150 pounds, except that the urine passed subsequently reacted strongly to tests made to ascertain the presence of phenol, and traces of phenol were noted in the condensed vapor of the breath, and in the contents of the stomach drawn off through the esophageal tube within three hours of injection." He recommends a dose of fifty to seventy minims daily to commence with, given in the abdominal parietes in a single injection. This dose should be increased ten minims daily, until 100 or 120 minims is reached. With these injections, he injects daily, or in some cases every other day, according to the severity of the case. He gives inhalations delivered from a spray. The most efficient of these sprays he has found in a 10 per cent. solution of iodoform in ether. The object of the spray, he says, "is to assist in clearing the larynx and bronchi of infective material contained in their secretions." Where this spray is not tolerated by patients, he uses a carbolic acid spray for a few times, after which the iodoform and ether can be used in most cases. Not only does he regard this as a useful treatment in phthisis, but in malaria as well. It will be noticed that Dr. Edson does not herald this as a "cure," but simply submits this treatment to the profession, and we are inclined to believe that the startling announcements in the papers, like the notice of a bill agent, with which this new treatment was heralded, was due rather to the enterprise of our distinguished contemporary, than to any desire on the part of Dr. Edson to place himself in a false light before the profession. He has experimented sufficiently to make it clear that he has produced a useful method. Whether or not it may reach the dignity of a specific, he very properly leaves the profession to decide after a careful trial of the remedy.

We will reproduce the article in full next week.

THE ITALIAN SCHOOL OF CRIMINAL ANTHROPOLOGY.

It is so common for men to dislike what is or seems absolutely new that we are not surprised that the Italian school of criminal anthropology—the so-called positivist school—should have so many enemies. For the teaching is so novel, so sweeping, so unpleasantly tinctured with fatalism, that it is naturally very obnoxious to the optimists of religion and science. But we imagine that much that is felt by excellent men on this subject is prejudice (if the word be not too severe) springing from a superficial knowledge of the works of the Italians themselves and their coadjutors in France and Germany. It will doubtless surprise those who have no other notion of this science than what an acquaintance with the least discreet of authors¹ affords, to be told that among those who have studied it with conviction are not only many of the most elegant of contemporary writers, but also many of the most learned and profound.² It is, therefore, amusing to hear that the investigations of the Italian school are mere exhibitions of morbid curiosity, or as Dr. SPITZKA says: the "pseudo-anthropology is dead just about three years." A competent critic has pronounced a very different opinion, *apropos* of the recent publication of the fifth edition of PROF. LOMBROSO's chief work "*L'Uomo Delinquente*." "In fine, whatever we may think of the value of all these details, all these documents taken by themselves, the least that can be said of them as a whole they confirm beyond any possible doubt the thesis of M. LOMBROSO. Everybody, or nearly everybody, to-day is agreed on this point—that the criminal is an abnormal individual, malformed mentally and physically—for to every mental anomaly should correspond a physical *par dégénérescence héréditaire ou par déchéance acquise*."³ Even Dr. BAER, the most prominent and the least fair-minded opponent of PROF. LOMBROSO, admits that the criminal, *i. e.*, the habitual offender "who is apparently born such" bears "many signs of physical and mental imperfection," but these signs he goes on to say are neither singly nor as a whole so constant and essential as to make the criminal a type distinct from the rest of his nationality. We resist the temptation to examine the logical structure of this sentence. The habitual and born criminals are not necessarily identical; and it is usual for anthropologists to draw a distinction of more or less lucidity between them. But we pass to another point of view. It is well known that many anthropologists have attempted to show that in the case of

¹ Dr. Max Nordau's "Degeneration."

² See Taine's letter to Prof. Lombroso, *Archiv. di Psichiatria*, Fasc. v, 1887; Darwin: *The Emotions in Man and Animals*; Delzett-Newwin: *Ueber Sittliche Dispositionen*, Gray, 1892 (in this work is an excellent criticism on the older investigations of Galton and De Candolle); Spencer: *Sociology*; Du Camp: *Rev. des Deux Mondes*, 1869; Gautier: *Le Monde des Prisons*, in *Archives d'Anthropologie Crim.*, 1888; "Gyp," (an admirable study of the so-called Decadents); Dostiewsky: *Le maison des morts*, etc. by Garofolo, *Criminologia*, p. 79; *Quarterly Review*, October, 1891.

³ *Rev. Scientifique*, October, 1895.

born criminals the phenomena of the criminal instinct are identical with the obliquities of moral insanity. A fierce outburst of polemic rage followed the publication of this doctrine. Those who disbelieved in the existence of moral insanity, and those who were averse to reading PROF. LOMBROSO's works in the original were the most *embêtés*. It is simply necessary in this and in other cases where controversy grows wicked to read the passage that has provoked all the sound and fury. "It was objected with reason against the fusion, I attempted to prove in the first volume, of the born criminal with the *pazzi morali*, that the number of these is too small. It is certainly true; but if the born criminal and *fou moral* are the same it is inevitable that not many should be found in asylums. Nor is it possible to draw a comparison between the two; since identical things are more naturally summarized than compared. But there is a point of contact between them much easier to define, and incomparably more important, in a vaster field, in epilepsy, which reunites and founds together the one and the other group into the same grand family."⁴

If the reader will refer to the fifth Italian edition of "L'Uomo Delinquente" or to the second French edition, he will find an extraordinary amount of documentary, biologic and statistical evidence to support these views. The number of criminals studied reaches nearly six thousand, as against 968 examined by DR. BAER. The reader will find, too, if he desires in good faith to make the acquaintance of an ingenious work, a learning, eloquence, fecundity, humanity, the great merits of which we should not "haggle about," as the writer in the *Revue Scientifique* says. A perusal of this work, too, will dispel a common error, namely, that an excessive value is placed upon such phenomena as the *signes de dégénérescence*. The doctrine of degeneration, says KURELLA,⁵ "is imperatively in need of revision." On this point practically all observers, LOMBROSO⁶ among them, are agreed. It is significant, however, that the *signes de dégénérescence* are exceedingly common in epileptics,⁷ so common, indeed, as to be fairly constant. But as in criminals they are much less constant an appearance, it is impossible by means of them alone to constitute a type. Their importance it is impossible to deny.⁸ An authority competent as DR. MOEBIUS,⁹ makes the diagnosis of neuropathy in the appearance of even one sign, as, for instance, the Morelian ear; and any anthropologist may easily verify the observation for himself that such an imperfection is never as LOMBROSO truly says, disassociated from "*profondi quasi morali*;" or at least from distinct oddities of disposition.

It is not to be forgotten that the industry of the Italians has revealed to us a large number of signs which materially assist to establish a type, that we may call physiognomic¹⁰ and certain traits, or "*penchants au crime*," that DR. MARRO has excellently described in his treatise, "*I Caratteri dei Delinquenti*." We extract from the preface of this work a passage which we think ought to be a red eye-opener for the blind optimists who see in criminal anthropology no balance, no moderation nor judgment, but only a desire to make the venture of Icarus. The following passage shows anything but the sweeping indiscretions with which the positive school is charged: "I have included the inclination to excesses (in Baccho) among the characteristics of criminals, who are more addicted to them than normal people. My own observations on this subject are in complete accord with those of other students, so that there can be no doubt about their value. With all that, I do not see in inebriety a disposition inseparable from crime, nor do I in the least attribute to alcohol a power absolutely compelling evil."

This passage is quite admirable as an example of the ability to see two sides of a question. And such moderate views abound in the works of LOMBROSO and his pupils, as any accurate knowledge of their writings will show. It is a proof of how uncommon the power to judge coolly is even among scientific men, that MARRO's work, thoroughly judicious in tone throughout, has not been unattacked by partial critics. Contrast the above from MARRO with the following: "The criminal has absolutely no especial specific (sic) formation,"¹¹ and "crime, on the whole, is only a relative conception; it exists only in relation to place and time."¹² Again; "whoever," says DR. BAER, "knows extensively the criminal classes, their characteristics, their appetites and aberrations, will acknowledge that such traits and uglinesses as LOMBROSO ascribes to them in such prodigious amount (sic) are not common, perhaps not commoner than among the better classes, the non-criminal portion of the population." The truth is that in opposition to this assertion we have an overwhelming amount of evidence not only from gifted observers like GAUTIER, DICKENS, DOSTOIEVSKY, MOREAU, but from trained observers like MAUDSLEY, CLOUSTON, KURELLA, GAROFALO, CASPER, KRAFFT-EBING, and even NICOLSON¹³—no believer in "criminalists." Indeed, such is the weight of authority on this point that GAROFALO is not putting it too strongly when he says: "We consider so much as solidly established that, as regards the shape and proportion of the head, the criminal is monstrous and anomalous

¹⁰ For an admirable use of these signs, see Casper. *Vierteljahrsschrift f. gen. Med.*, 1854.

¹¹ Baer: *Der Verbrecher*, p. 334.

¹² Féré, cit., Baer. Dr. Spitzka says that Baer's critique has remained unchallenged. The truth is "*Der Verbrecher*" is nothing but a tissue of dogmatic assertions. It has remained unchallenged because as Prof. Lombroso says, "*Si combatte coll' armi non coll' ombra!*"

¹³ *Journal of Mental Science*, October, 1895.

⁴ *L'Uomo delinquente*, vol. II, p. 1.

⁵ *Naturgeschichte des Verbrechers*, p. 259.

⁶ Cf. *L'Uomo delinquente*; terza ed.

⁷ *L'Uomo delinquente*, vol. II.

⁸ Magnan: *Recherches sur les centres nerveux*, pp. 256-8.

⁹ *Diagnostik*, p. 246.

in a larger number of cases than the normal man; and the greater criminals, the assassins, much oftener than the lesser. . . . Each of the three great varieties of evil-doers, the murderers, homicides and thieves has an especial physiognomy, with well-known traits and easily recognizable."¹⁴ He remarks that he was able to distinguish the murderers from the thieves in a prison, by the peculiar cold, filmy, immovable glance that is characteristic of habitual homicides,¹⁵ whereas the thieves have a mobile, elusive look.¹⁶

All this may seem fanciful and absurd to many readers. We can understand it, for the power of observing profoundly is not given to all men, and it is, perhaps, fortunately so. But in such studies as these it is absolutely essential to observe calmly and sharply, to be on one's guard against the *idola specus*, that spurious blindness of specialists, who see in everything some reference to their pet subject. We assure our readers, however, that criminal anthropology is a study that will repay any one who approaches it in a liberal spirit. It is not of such recent growth as some seem to imagine, but imbibed life from the earliest springs of psychiatry.¹⁷ It can not be called "dead," it is very much alive, as the writer in the *Revue Scientifique* could show, a writer who represents much more nearly than Dr. BAER the opinions of modern Europe.

THE ROENTGEN RAYS.

The general interest in the recent discovery of PROF. ROENTGEN, the details of which now fill the daily press and which were at first received with incredulity by the public as probably a scientific hoax, seems to call for some notice in the JOURNAL. Its medical or surgical possibilities which are already the subject of experiments in this country and Europe make this mention the more timely and appropriate in a purely medical publication.

In regard to the scientific question as to whether the results obtained by experimenters are due to the previously recognized cathode rays or to a new form of radiation as PROF. ROENTGEN suggests we can of course express no opinion; it is a matter to be decided by physicists. The fact that we have, however, a force, for that is what it may be called, that will act on the sensitive chemicals of the photographic plate through flesh, cartilage, skin, and other tissues of the animal body, is enough to be fertile of practical suggestions to any thinking physician or surgeon. The further fact that these rays go directly through prisms and lenses without modification or change of course, adds to their possibilities in a medical point

of view; it insures the accuracy of the image from distortion by refractive power of the different solids and fluids of the body. The further fact that in a general way only the density of the medium penetrated seems to affect them is suggestive of practical medical and surgical possibilities, it hints at future valuable physiologic revelations as well as diagnostic aids. It is only a hint, however, and whether it is to be ever realized to any extent is perhaps open to serious question. As regards its therapeutic possibilities which have already become the plaything of the popular imagination, they may be left to future investigation: they are not in a stage as yet for medical opinions to pass on the question of even their existence. There will doubtless be an extensive advertisement of cathode ray baths, X ray treatments, etc., but it is to be hoped that any active exploitations of these will, until the matter is more elucidated by accurate scientific researches, be confined to the irregulars who have no standing in the regular medical profession.

The real utility of the discovery has so far been demonstrated to a limited extent in the field of surgery. A few accounts have appeared in the lay press of needles, bullets, etc., having been detected lodged in the tissues, and some light has been thrown on pathologic diagnosis in one or two cases. In France M. LANNELONGUE believes he has been able to show by this method that in a femur affected with osteomyelitis the destruction of bone progresses from the center to the periphery rather than in the opposite direction as had been previously held. When it is considered that the discovery is as yet only a few weeks old, and that students all over the civilized world are laboring to investigate it and to perfect the methods of its application, it may not be unreasonable to hope for much more important results in the near or remote future. At present, however, the limitations of the methods are too great and the medical nature of the discovery is, as yet, a largely unknown quantity. Its surgical utility in certain ways has probably been sufficiently indicated by what has been already done, but enthusiasm as to its future should be tempered by a scientific spirit of moderation that proves all things before building its faith upon them.

THE COMPOSITION OF EXPIRED AIR AND ITS EFFECTS UPON ANIMAL LIFE.

In May, 1893, a grant was made from the Hodgkins Fund of the Smithsonian Institute to Drs. JOHN S. BILLINGS and S. WEIR MITCHELL, "for the purpose of conducting an investigation into the nature of the peculiar substances of organic origin contained in the air expired by human beings, with especial reference to the practical application of the results obtained to problems of ventilation for inhabited rooms." With this object in view, a scheme of experimentation was

¹⁴ Criminologia, p. 75.

¹⁵ See Casper, loc. cit., Kurella, p. 132.

¹⁶ Garofalo, p. 70.

¹⁷ For proof of this statement see Krafft-Ebing's early works; Beltracchi, Zur Erkennung und richtigen forensischen Beurtheilung krankhafter Gemüths-Zustände, Erlangen, 1867. References in this work to the prison work of the French alienists.

prepared by Drs. BILLINGS and MITCHELL, which scheme was carried out in the laboratory of hygiene of the University of Pennsylvania, by Dr. D. H. BERGEY. The results of the conjoint labor of these investigators has been published in the shape of a memoir which forms a fasciculus¹ in the series of "Contributions to Knowledge" issued from time to time by the Smithsonian Institute.

After reviewing the existing literature upon the subject of the effects of expired air, the results obtained from a series of new experiments are presented and commented upon. These experiments had various points in view: To determine whether expired air contains microorganisms; how much ammonia, albuminoid and oxidizable material there may be present in expired air; the effects of inoculating animals with the moisture condensed from the exhaled breath; the effects of confining various animals in glass jars, etc. These are some of the problems that the authors tried to solve.

The results obtained in this research indicate that in air expired by mice, sparrows, rabbits, guinea-pigs, or men, there is no peculiar organic poison or agent of disease. The injurious effects of such air seemed to be due entirely to the diminution of oxygen, or increase of carbonic acid, or to a combination of both these factors. In ordinary quiet respiration, no bacteria are contained in the air expired. Coughing or sneezing may throw out bacteria or other particles. The small amount of ammonia and oxidizable matter recovered from the condensed moisture of human breath appears to come from the decomposition of organic material constantly taking place in the mouth and pharynx. This fact received strong support by the differences in the amount of such matters in the air exhaled through a tracheal fistula and in that expired in the ordinary manner. The air of inhabited rooms, hospital wards, and similar places, is contaminated from many sources besides the air of expiration; the most important contaminations are in the form of minute particles of dust. The greater part of ammonia in the air of a hospital ward was shown to be connected with dust particles which could be removed by filtration. In this dust were also found microorganisms and among these some of the bacteria of inflammation and suppuration.

Experiments in which animals were made to breathe air vitiated by the products of expiration, or in which injections were made with fluids condensed from expired air, make it improbable that there is any peculiar volatile poisonous matter in the air expired by healthy beings, other than carbonic acid. It is well to recollect, however, that the results of such experiments may be applicable only in part to man. The effects of reduction of oxygen and of increase of carbonic acid to a certain degree appear to be the same

in artificial mixtures as in air in which the change of proportion of these gases has been produced by respiration. Habit may enable an animal to live in an atmosphere in which, by gradual change, the amount of oxygen has become so low and that of carbonic acid so high that a similar animal brought from the fresh air into it dies almost at once. A continuance of an immunity like this was noted for the first time in some of these experiments, especially in certain mice but this normal or artificial immunity is rare and the conditions upon which such a continuance of immunity depends are not understood. It was found that an excessively high or low temperature has marked effect in the causing of asphyxia by diminution of oxygen and increase of carbonic acid. At high temperature the respiratory centers are affected, where evaporation is checked from skin and mucous surfaces by the saturation of the air with moisture; at low temperature the consumption of oxygen increases and the demand for it becomes more urgent.

The proportion of increase of carbonic acid and of diminution of oxygen that exists in badly ventilated churches, schools, and theaters, is not sufficient to account for the discomfort which such conditions produce in many persons. There is no evidence that such an amount of change in the normal proportions of these gases has any influence upon the increase of disease and death rates which statistics show to exist among persons living in crowded and unventilated rooms. Consumption and pneumonia are the most prevalent diseases among persons living and working in unventilated rooms and these diseases are caused by specific bacteria that are adherent to particles of dust which are inhaled. The special liability of such rooms to become infected with specific germs of disease accounts for the frequency of these diseases in persons occupying crowded barracks or tenement-house rooms. Impure atmospheres may, however, affect the vitality and the bactericidal powers of cells and fluids and thus act as predisposing causes of infection. Exact scientific evidence upon these questions is lacking. The discomfort produced by crowded, ill-ventilated rooms in persons not accustomed to them is due not to excess of carbonic acid, nor to bacteria, nor, in most cases, to dusts of any kind. The two great causes of such discomfort, though not the only ones, are excessive temperature and unpleasant odors. The cause of the unpleasant musty odor of the crowded room is unknown; it may, in part, be due to volatile products of decomposition in the expired air of persons having decayed teeth, foul mouths or certain digestive disorders, and, in part, to volatile fatty acids in the cutaneous excretions and in clothing soiled with the latter. These odors may produce nausea and other disagreeable sensations in susceptible persons, but most men soon become susceptible to them.

"The results of this research, taken in connection

¹ Smithsonian Contributions to Knowledge, 989, Hodgkins Fund, Washington, D. C., 1895.

with other recent researches, indicate that some of the theories upon which modern systems of ventilation are based are either without foundation or doubtful, and that the problem of securing comfort and health in inhabited rooms require consideration of the best methods of preventing or disposing of dusts of various kinds, of properly regulating temperature and moisture, and of preventing the entrance of poisonous gases like carbonic oxid derived from heating and lighting apparatus, rather than upon simply diluting the air to a certain standard of proportion of carbonic acid present."

CORRESPONDENCE.

Typhoid Fever Treatment.

FRASER, MICH., Feb. 4, 1896.

To the Editor:—Many of the conflicting reports of Woodbridge's treatment of typhoid fever would give results similar to those obtained by Dr. Woodbridge if they would use capsules instead of tablets. Take a bottle of tablets that has been carried in your rig some time, use your tablets all out: what have you left in your bottle? About one-eighth of your tablets in powder form. I have used in fifteen cases the Woodbridge treatment and have not lost a case that I have seen in the first ten days of the sickness. The following is the record of a unique case: Mr. A. H., age 43 years. Seen Nov. 23, 1895, 3 P.M.; temperature 103.5; this continued within less than $\frac{1}{2}$ degree day and night until December 2, when he lost about three to four quarts of blood from bowel. Temperature 97 to 99 for two days; then three days of 102.5 to 103; the next day 100, then reached normal on fifth day after hemorrhage, the eighteenth day of fever. His wife and two daughters had the same (typhoid) fever; wife was sick about three weeks, daughters about fifteen or sixteen days. In conclusion would suggest: 1. Do not use tablets. 2. Capsule the medicine for the solution, leave it in a vial with a dropper and empty capsules to be used. If temperature is high I reduce temperature with acetanilid. Respectfully,

F. GROVER, M.D.,

Health Officer, Fraser, and Physician to the Poor of Erin Township.

Montana Has a State Board of Examiners.

MISSOULA, MONT., Feb. 6, 1896.

To the Editor: In your issue of February 1, in an article by Dr. C. E. Farnum, "A Suggestion that National Legislation Provide for a Medical Examining Board to Confer a Special Degree of Medicine and Surgery," he omits the State of Montana as one requiring an examination for a license from all applicants in the list of States given by him. Montana has a board appointed by the governor which requires *all applicants* to pass a satisfactory examination in all branches before they are allowed to practice and this is rigorously enforced by the board, with the result that it has kept out a host of quacks and half prepared men whose sole claim to the title M.D. consisted of a diploma. This law has also been in force for the last four years or more. Please give this notice.

Very truly yours, J. J. BUCKLEY, M.D.

Climate for Bright's Disease.

CHICAGO, Feb. 8, 1896.

To the Editor. Noticing the inquiry of Dr. Godfrey of Camden, N. J., regarding a climate for Bright's disease, I would say that, theoretically, if it be admitted, as it very generally is, that Bright's disease is primarily a nervous affection,

that the most favorable conditions from a climatic standpoint are those least stimulating to the nervous and circulatory systems. These conditions combined with soft water afford almost complete immunity from the disease among the residents of such regions. The low altitude, humid atmosphere and soft artesian water of the long-leaf pine region extending across southern Louisiana from, beginning about fifty miles north of New Orleans, to near the southern line of Mississippi, covers the above qualifications as perfectly as any region it has been my fortune to find in my study of the resorts of our country. I found in that region Bright's disease almost an unknown quantity, and I am satisfied that it will sustain the prediction that it will become very popular as a resort for kidney, skin and nervous diseases in general. There is a good hotel at Hammond, the largest town in the region, fifty-two miles from New Orleans.

A. F. MCKAY, M.D.,

Cor. Sec. World's Congress of Medico-Climatology.

Cure for Hiccough.

WASHINGTON, D. C., Feb. 3, 1896.

To the Editor:—I have found the following method a positive cure for hiccough without the use of drugs. Immediately after the paroxysm of hiccough, close the mouth and inflate the lungs to their utmost capacity by breathing the air in through the nose; then hold the breath as long as possible; when finally compelled to expel the air from the lungs we do so and to our astonishment find that we are no longer troubled with hiccough. Once usually suffices, but it may be necessary to repeat the process the second time for the reason that during the first trial at thorough inflation of the lungs there may come a slight spasm of the glottis, when we find it necessary to quickly exhale. Immediately after this sudden exhalation take a long, full breath (mouth closed) and hold it from twenty to thirty seconds. There will be positively no hiccough after such a procedure, provided the hiccough be not a symptom of some grave disease. I refer to the ordinary cases of hiccough which we see frequently in persons otherwise in good health.

W. L. ROBINS, M.D.

PUBLIC HEALTH.

Typhus in St. Petersburg.—The St. Petersburg *Med. Wochenschr.*, of January 4, reports that the epidemic of typhus there shows no signs of abating: 1,700 cases had been reported to December 21.

Decrease of Mortality Alleged to be Due to Antitoxin.—M. Monod reported at the last meeting of the Académie de Médecine, that since the introduction of antitoxin into France the mortality had decreased 65.6 per cent. He estimated that it had already saved 15,000 lives to the country.—*Gazette Méd. de Liège*, January 9.

Medical Maritime Regulations. The new sanitary maritime regulations in Italy are commended as the most modern type of improved sanitary precautions. Among them is the rule that every vessel with 150 persons on board, starting for a long voyage, must carry a physician, and two, if the passengers and crew number 1,200. The vessel owners are to apply for physicians for this purpose to certain officials who keep a register of experienced men who have been practicing at least two years since they graduated. *Semaine Médicale*, January 8.

Success of the Berlin Sanitary System. The system of sewers in Berlin is no better than elsewhere, perhaps, but the way in which their contents are carried to a distance and spread out on land owned by the city, to be purified and rendered innocuous, while serving to fertilize the ground, is becoming the admiration and envy of other municipalities. The fertilized plains bring in an income to the city, and also give employment

to the inmates of the penitentiaries, etc. There is no unpleasant odor from them, and no complaints from persons living on and near them. Among other establishments, a military school stands in the midst of these fields and the health of 800 pupils is a convincing proof of the success of the purifying process. Those interested in sanitary questions in Paris are urging the authorities there to introduce the same system, for which the conditions are far more favorable than at Berlin.—*Journal d'Hygiène*, January 2.

On the Use of Sea Water for Street Cleaning and Sewer Flushing.—According to the *American Medical Review*, January, the experiment of using sea water for sanitary purposes will soon be tried.

"The recent formation of a company in London for supplying sea water for the purpose of flushing the sewers, recalls the suggestion made by Dr. Stephen Smith, of New York, many years ago, that the streets of this city could be cleaned economically and thoroughly by that method, and incidentally the sewers would be flushed at the same time. It was pointed out to us that New York is admirably located for securing the water from the North and East rivers at comparatively small expense to the city. That part of Dr. Smith's paper seemed worthy of serious consideration, and as the question of supply of fresh water is certain to become a vital one in a few years, it will be well for our authorities to carefully observe the operations of this new London company."

An Epidemic of Measles.—The Connecticut State Board of Health *Bulletin* reports that an extensive epidemic of measles is prevailing in Westport. The public schools have been closed, but the disorder seems to have gained a general prevalence throughout the town. It is more difficult to take precautions against its spread than in other diseases, because it is more contagious than most others, and because it is contagious even before it has advanced enough to be diagnosed. It is contagious in the incipient stage, before it can be recognized as measles. No deaths have yet occurred from it, and in general it is not a fatal disease of itself. Still it is a disease much to be dreaded, because the subjects of it are rendered much more susceptible to other diseases. The children who have it recover from the disease itself, but many of them do not regain their former health, and it has been often observed that the measles was the starting point of some other disease which eventually proved fatal.

Facts from French Statistics Concerning Habitations.—The Société Française de Hygiène has been collecting statistics in regard to the dwelling houses throughout the country, and we notice that of the 9,233,725 houses in the land, 190,521 have but one opening, and 1,724,215 have only two. This means that a whole family, with its domestic animals, occupies the one-roomed cottage, and among the Alps all are housed together for six months at a time. In many villages the stables are on the ground floor and the family rooms above. In others, the stables are used as a dormitory. This was once supposed to be one of the causes of goitre, but these statistics show that there was less goitre in these communities than in others. More than half of the houses in France are owned by the occupants (5,460,355). In some districts all the liquid household refuse is given to the pigs, even including the accumulations of the night. Entire communities were found where everyone was old; the young had forsaken them for the cities. Other towns have been entirely abandoned, like the village on the Avre, whose waters were diverted to supply the city of Paris. The railroads have built up new towns, always an improvement on the older settlements, and the fishing villages along the coast are improving and prospering with the money the summer visitors leave there.—*Journal d'Hygiène*, January 2.

Smallpox in the South.—Although there have been numerous cases of variola in Louisiana, Arkansas and Tennessee, there has been a remarkably low death rate from that cause. The *Bulletin* of the Board of Health of the State last named, for

January 20, describes the course of the epidemic in two infected counties, as follows:

In Tennessee during the period from Dec. 15, 1895, to Jan. 15, 1896, there has been no case of smallpox reported outside of Memphis and Shelby County.

In Shelby County, during this period, Dr. F. S. Raymond, County Health Officer, reports in all twenty-three cases; colored, eighteen; white, five. In nearly every instance the origin of the above cases could be traced to points in Arkansas or Mississippi. In some few instances the disease was contracted from exposure to cases heretofore reported.

In the city of Memphis, during the same period, Dr. J. J. McGowan, Secretary of the City Board of Health, reports twenty-nine cases and four suspects; of these cases there were twenty-seven colored and two white, and with but few exceptions, resulting from exposure to cases hitherto reported. Thus making a total of fifty-two cases in all.

In dealing with the above cases the usual precautions were observed; all smallpox patients were removed to the pesthouse promptly, premises disinfected and a general vaccination of those unprotected was enforced.

In the counties of Lauderdale and Crockett the spread of the disease has been restricted, no new cases having been reported, and all those stricken with this disease are reported convalescing.

Sanitary Exhibition at Nashville in 1896.—The last *Bulletin* of the Tennessee State Board of Health contains a notice of the proposed elaborate exposition of sanitary appliances that is to be made at the Nashville Centennial and International Fair. The *Bulletin* says:

Beginning September 1 of this year and continuing one hundred days there will be opened in Nashville an International Exposition, which, in this country, will have been unsurpassed in its character and proportions only by the Columbian Exposition of 1893 at Chicago. The directors of "the Tennessee Centennial and International Exposition" have paid the profession the high compliment of establishing, as one of its important subdivisions, the "Department of Hygiene, Medicine and Sanitary Appliances." This, we believe, is the first time in similar undertakings in this country, that medicine, in its comprehensive significance, has had a distinct and separate department, co-equal with other leading departments, assigned it. Naturally then, as a consequence it is but reasonable to expect that the profession of our own country at least will be quick to extend its sympathy, and where possible, its active support and assistance in furthering, so far as it may, the object sought in rendering this feature a striking object-lesson of the progress made in the science and art of medicine and hygiene through the century now drawing to a close. Elsewhere in this issue will be found the organization of this department, and also the classification adopted, indicating somewhat the character and scope of exhibit contemplated in the "Section A—Hygiene, Sanitary Devices and Appliances."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, January 25 to February 1, 8 cases, 4 deaths.

Michigan: Detroit, January 25 to February 1, smallpox reported.

Tennessee: Memphis, January 1 to 31, 44 cases.

Wisconsin: Mukwonago, February 6, 1 case; Waukesha, February 6, 1 case.

SMALLPOX—FOREIGN.

Cairo, January 1 to 7, 1 death.

Cardiff, January 11 to 18, 5 cases.

Dublin, January 11 to 25, 2 cases, 1 death.

Glasgow, January 11 to 18, 4 cases.

Odessa, January 11 to 18, 3 cases, 2 deaths.

Prague, January 11 to 18, 22 cases.

Rio de Janeiro, December 28 to January 4, 28 deaths.

Rotterdam, January 18 to 25, 1 case.

CHOLERA—FOREIGN.

Calcutta, December 21 to 28, 33 deaths.

YELLOW FEVER—FOREIGN.

Ceara, December 24 to 31, 4 deaths.

Rio de Janeiro, December 28 to January 4, 76 deaths.

Sagua la Grande, January 18 to 25, 8 cases.

Tuxpan, January 11 to 25, 4 deaths.

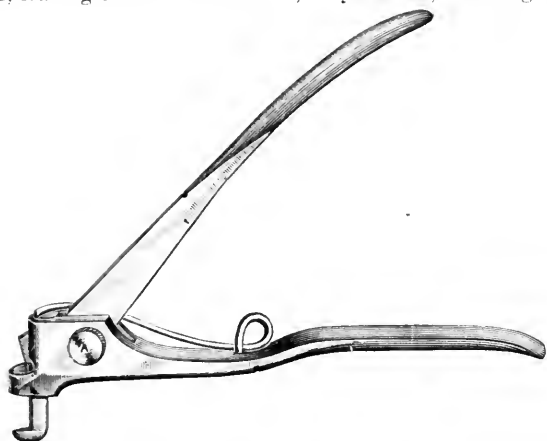
NEW INSTRUMENTS.

A NEW BONE CUTTING FORCEPS.

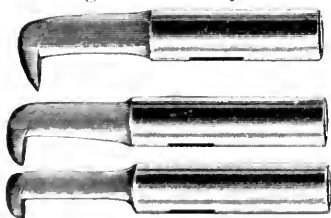
BY ALLEN DEVILBISS, M.D.

TOLEDO, OHIO.

When operating on the skull, after the first opening is made, if with a trephine, it need not be more than $\frac{3}{8}$ of an inch in diameter to admit the lower jaw of the forceps. A slot $\frac{1}{8}$ of an inch wide, and as long as necessary, can be cut out, and its direction changed so as to follow the line of fracture, or cut out a piece of any size or shape. Three sides of a small or large piece, leaving the tissue attached, may be cut, breaking back



the portion left, thus making a trap-door operation of a piece so small that we would be compelled to cut away with any other forceps now used. The jaws move parallel with each other. The lower one is small enough to enter the opening in the upper one, carrying the piece cut off out, and leaving the edge smooth and even to rest on the dura. It is an aseptic instrument, as its parts can be separated from each other by removing the thumb screw A. The leverage is such that it requires much less power to use it as compared with other biting forceps, there being no difficulty in biting through the



thickest portions of the skull or rib. The stem of the lower jaw gauges the amount to be cut out each time. Side bites can be taken so that the direction of the slot may be changed without materially increasing its width. After the slot is cut an inch or so long, it is best to take a side bite out, so that the lower jaw will pass in easily and not take the time to go back to the place of beginning. There are two interchangeable jaws, one cuts deeper and wider than the other. The smallest one should be used when the bone is charnated, or when a narrow slot is desired.

BOOK NOTICES.

American Climates and Resorts. Reprint from July, 1893 to July, 1895. Comprising Proceedings of the World's Congress of Medico-Climatology, held in Chicago May 29 to June 3, 1893. 4to, cl., pp. 298. A. F. MCKAY, M.D., Editor.

This is, as stated on the title page, the reprint of the monthly publication for the period stated. Hereafter, Dr. McKay states, the annual will bear this name, while the monthly journal will be entitled *Journal of Diagnosis and Climatology*. Subscribers to the monthly will receive the annual reprint volume at the end of the year.

Sentiments of patriotism, of humanity, and not less, of native thrift indicate that Americans should develop their own resorts, instead of encouraging the annual hegira to Europe, which not only retards the improvement of our own establishments, but sends millions of dollars abroad that might well be retained. The proprietors of our own resorts have heretofore depended too much upon their unrivaled climate, and too little upon the personal comforts of their guests. The remaining at home of thousands of valetudinarians, with their dollars, is largely due to lack of information. Such publications as these are therefore to be encouraged in every way by all good citizens, not less than by the medical profession.

The book under consideration is handsomely illustrated, interesting and instructive.

NECROLOGY.

ADOLPH KIRSTEN, M.D., of Jersey City, N. J., died January 23. He was born in Germany in 1824; came to this country when a young man. He was graduated by the University of the City of New York in 1869; he practiced in Poughkeepsie and Albany for a few years, and in 1857 settled in Jersey City. He took an active interest in local affairs, and was at different times Coroner, member of the Board of Freeholders, and alderman. A widow and six children survive him.

ANNE NEWS, M.D., formerly of New York City and lately of Newport, R. I., died at the latter city on February 7, after an illness of several weeks. She was graduated in medicine in 1872, at the University of Michigan, and began practicing in Newport about twenty-five years ago, continuing until she went abroad, where she studied for two years in Heidelberg, and with Charcot in Paris. Returning to this country, she practiced in New York, and did much work in the hospital there. She then returned to Newport. She was one of the organizing members of the Newport Medical Society.

COLONEL H. ERNEST GOODMAN, Emeritus Professor of Surgery in the Medico-Chirurgical College, Philadelphia, died of heart failure on January 3, while in a train near Philadelphia, on his way to visit a patient. He had been in his usual good health, apparently, up to the moment when he was taken ill. Dr. Goodman was born in Speedwell, Pa., in 1836, and was graduated in 1859 by the University of Pennsylvania. With five brothers he served with distinction during the Civil War, and retired with the rank of Brevet Colonel. Since then he has been prominent in the Councils of the Loyal Legion, of which he was an officer of high rank. During the administration of Governor Geary Dr. Goodman was Surgeon General of the State, and subsequently was port physician. He was Surgeon to the Wills' Eye Hospital for more than twenty years, and for several years was engaged in teaching as a member of the faculty at the Medico-Chirurgical College, where he held the Chair of Professor of Orthopedic and Clinical Surgery. He was a member of the AMERICAN MEDICAL ASSOCIATION, a Fellow of the College of Physicians of Philadelphia, and also of other societies. He was very social in his tastes, and was a member of the Union League, Saginaw Club, Meade Post, Union Veteran Association and similar bodies. He married the widow of Governor Geary, who survives him, and had no children. He especially devoted himself to ophthalmic surgery, but had not contributed much to medical literature.

JOHN VAN NESS, M.D., a veteran physician of Brooklyn died suddenly from angina pectoris in the 78th year of his age. He was a native of Northville, N. Y., the son of General and Congressman Henry Van Ness. The *Brooklyn Medical Journal*, February, furnishes the following data concerning the life of a very worthy and useful practitioner:

He received his early education in the district schools and at the Academy of Northville, and then, a young man, came to

this city, and was made a teacher in the old Brooklyn Institute at a time when it numbered among its pupils many who to-day enjoy considerable distinction in various walks of life.

In 1838 he married Charlotte Rebecca Adams, of Norwich, Conn., by whom he had five children, two of whom survive him.

In 1839 he commenced the study of medicine under the supervision of Dr. Purcell Cook, of this city, and attended medical lectures at the New York University from 1843 until 1846, when he opened an office at the corner of Pearl and Tillary streets, and engaged in the practice of medicine.

Meeting with considerable success, he relinquished his position in the Brooklyn Institute, and devoted his whole attention to his new calling.

In 1852, the Medical Society of the County of Kings conferred on him a license to practice medicine in accordance with the power with which it had been vested by legislative enactment, and in 1867 the regents of the University of the State of New York conferred on him the degree of "Doctor in Medicine" on the recommendation of the Medical Society of the State of New York.

CORNELIUS GEORGE COMEGYS, M.D., at Cincinnati, Ohio, February 10, in the eightieth year of his age. He joined the Association in 1884. Extended notice will appear next week.

MISCELLANY.

The New Photography.—A Roentgen photograph enabled the surgeon to locate and remove a glass splinter that was causing trouble in the joint of a middle finger. Case exhibited at the *Verein für innere Medizin*, Berlin, January 20.

Definition of Rape in Oregon.—The criminal code of Oregon, with regard to rape, was materially changed in 1895, so that now section 1733 provides that if any person over the age of sixteen years shall carnally know any female child under the age of sixteen years, or any person shall forcibly ravish any female, such person shall be deemed guilty of rape.

Government Monopoly of Quinin in Italy.—The deaths from malaria in Italy average 16,000 a year, and in order to prevent this mortality and bring quinin within the reach of the poor and facilitate its sale in the 3,000 hamlets where there is no apothecary, the Italian parliament is considering a proposition to make the sale of quinin a government monopoly, so that it can be bought in sealed packages at the rate of 2 cents per gm. at the groceries and tobacco shops.

"A Cry from Macedonia 'Come and Help Us!'"—We clip the following from our aged contemporary, the *Medical Record*:

Boycotted.—Our esteemed contemporary, the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, has a copious supply of news from numerous minor medical centers, but religiously excludes everything pertaining to the city of New York. The isolation is depressing. Is the JOURNAL preparing to move? If so we call its attention to a pleasant town situated on an island lying off the coast of Hoboken.

Bequests to Charitable Societies.—The will of Martin Brimmer, of Boston, Mass., gives \$10,000 to the Boston Child's Aid Society. It provides that after the death of his wife one-half of his interest in the "Old Corner Book Store" property shall go to the Museum of Fine Arts, \$20,000 shall go the Massachusetts General Hospital, and \$50,000 to Harvard College.—The will of Mrs. Eliza D. Harbeck, the widow of John H. Harbeck, of New York city, leaves a considerable residuary estate to the following named three public charities, one-third part to each, namely: To the Chapin Home for Aged Men and Women, the Peabody Home for Aged Men and Women, and to the Society for the Prevention of Cruelty to Animals.

Two Oregon Laws for the Insane.—In its 1895 legislation, the legislative assembly of the State of Oregon provided for the building of a branch insane asylum on the lands selected and purchased by that State, at Union, in Union County. It also enacted that in case of the discharge or death of any person

committed to the insane asylum, the superintendent of the asylum shall at once notify the county court of the county from which such person was committed of such discharge or death, and the date and cause thereof. The county court, upon such notification, is to at once enter in the journal of commitments an order showing the discharge or death of such person, and if the superintendent of the asylum shall report any person so committed and discharged as cured, the entry of such order shall be prima facie evidence of the removal of all legal disability arising from an adjudication of insanity.

One Authentic Cure of Leprosy.—Dr. Goldschmidt, of Madeira, describes in the *Bulletin Médical*, Dec. 18, 1895, a case of leprosy cured with euophen (isobutylorthocresolidid), the only case on record, he believes. The patient showed leprosy patches on the face and limbs, which he treated with a solution of 5 grams pure euophen to 95 grams olive oil. This was rubbed into the leprosy patches with brisk friction twice a day, ten minutes at a time, for four years. It was also applied on cotton at night, with tampons for the nostrils all the time. The leprosy patches disappeared and in some places the skin healed to look normal, in others there are scars, but there is not a trace now of leprosy nor of the leprosy bacillus. The lepers' hospital at Funchal dates from the fifteenth century, when convicts and lepers were transported from Portugal and is the only one of its kind yet in the kingdom. The poverty and insufficient food of the natives favor the development of leprosy, especially as the use of the bath is unknown. Dr. Goldschmidt has published a work on leprosy and has tried every remedy without success, until this case cited above.

Tennessee's Board of State Charities.—In 1895 a Board of State Charities was created in Tennessee, the same to consist of six persons, to be appointed by the governor, not more than four of whom shall be from the same political party, and no one of whom shall be less than 30 years of age. Three years is the regular term of service. No compensation is to be allowed. The board is to investigate the whole system of public charities and correctional institutions of the State, examine into the condition and management thereof, especially of prisons, jails, infirmaries, public hospitals and asylums, and the officers in charge of all such institutions shall furnish to the board, on their request, such information and statistics as they require, and all plans for new jails and public infirmaries and hospitals shall, before the adoption of the same by the county or city authorities, be submitted to said board for suggestions and criticism. The governor may, at any time, in his discretion, order an investigation by the board, or a committee thereof, of the management of any penal, reformatory or charitable institution of the State.

Dislocation of the Spine and Consequent Hyperpyrexia.—A woman of 40 was brought to the hospital at Schaerbeek, who had fallen backward in the course of her work, from a height of 1½ meters, striking a solid horizontal bar about the region of the kidneys. Health previously was invariably fine. The fall produced a luxation between the sixth and seventh cervical vertebrae, showing the spinal marrow, as the autopsy disclosed a complete diastasis of the two vertebrae. The lower limbs and muscles of trunk were completely paralyzed, pulse 120, respiration exclusively diaphragmatic. The unusual feature of the case was the sudden and excessive rise of temperature. One-half hour after accident it was 36.5 degrees C. In twelve hours it was 39 degrees, and in twenty-four hours it rose to 43 degrees, when death ensued. Dr. Lambotte, who described the case in the *Presse Méd. Belge*, No. 50, draws the conclusion from it that there must be some nerve center in the region of the sixth or seventh vertebra which acts with great energy to control or modify the temperature of the organism. Destroyed by some lesion this center ceases to act as moderator of the temperature, which then rises unchecked, as is proved

by the hyperpyrexia following this accident so immediately and to such an excessive extent. No possible infection could have occurred in this case and consequently it proves that fever is not necessarily of microbial origin, but may result from some lesion of a caloric nerve center. — *Bulletin Méd.*, Jan. 12, 1896.

The "Surgeon's House" at Pompeii. The *Medical Press and Circular* has made the following condensed statement regarding the recent article of Prof. Nicholas Senn on his medico-historic researches in Southern Italy:

"Nearly two thousand years have elapsed since the Pompeian surgeons practised their art in their ill-fated town, and yet many objects of interest to the surgeon have since then been brought to light during the vast excavations undertaken for the purpose of exposing the ruins of Pompeii. In an interesting paper on this subject in the last number of the *Philadelphia Medical News* Dr. N. Senn gives a description of a recent visit that he made to the ruins of Pompeii and the Naples Museum, and enters fully into the account of what he saw in the nature of Pompeian surgical instruments. The instruments were found in a house which has been called the "Surgeon's House." They are made of bronze, and some of them show a high degree of workmanship. Some of them indicate also the destructive effect of heat and oxidation, while others are in a careful state of excellent preservation. Careful search was made among the instruments for traces of needles or any appliance which would indicate that at that time wounds were sutured. But nothing of the kind was found. The collection, moreover, did not contain any saws, trephines, chisels, or instruments for operations upon bones. Again, with the exception of the specula and catheters, it is curious to note that the instruments were of a diminutive size in comparison with those of less remote and more modern times. Judging from his instruments, the Pompeian surgeon plainly confined his 'cutting' operation to bleeding, cupping, extraction of foreign bodies, and the opening of abscesses. Dr. Senn concludes his paper by pointing out that the surgeon of Pompeii must have been a man of means and good social position: the position of his house in the most aristocratic part of the city, and its capaciousness, both testify to this fact. A liberal income, therefore, probably rewarded his labors and placed him in a position to enjoy the luxuries of life, which seem to have been the main object in life of the mass of the Pompeian people before the destruction of their city."

Practice of Medicine in West Virginia. Chapter seven. There shall be a "State Board of Health in this State consisting of two physicians residing in each Congressional district thereof, who shall be graduates of reputable medical colleges and who shall have practiced medicine for not less than ten years continuously; they shall be appointed by the governor and shall hold their office for the term of four years unless sooner removed. . . . who may practice medicine in this State, all such persons as shall be legally entitled to practice medicine in this State at the time of the passage of this act. All such persons as shall pass an examination before the State Board of Health and shall receive certificates from the said board to that effect as hereinafter provided. . . . Examinations to be practical, written and oral and not less than three to be held during the year. . . . The President and Secretary to sign and issue certificates to all who successfully pass the examination, and such certificates shall be deemed license to practice in this State. No applicant for license to practice medicine in this State shall be rejected because of his or her adherence to any particular school or theory of medicine. The State Board shall call to their assistance, in the examination of any applicant who professes the homeopathic or eclectic school of medicine, a homeopathic or eclectic physician duly licensed or qualified to practice medicine in this State." . . . The members of the State Board of Health are as follows: W. P. Ewing, M.D., Charleston, President; N. D. Baker, M.D., Martinsburg, Secretary; J. B. Walkinshaw, A.M., M.D., Wellsburg; L. D. Wilson, M.D., Wheeling; G. P. Dailey, M.D., Romney; W. C. Beard, M.D., Alderson; H. R. Barbee, M.D., Pt. Pleasant. Next examination at Clarksburg, on April 28, 29 and 30, 1896.

Changes in Oregon Pharmacy Law. The Oregon legislative assembly in 1895 made a number of changes in the law which it passed

in 1891, to regulate the practice of pharmacy and sale of poisons. First of all, that portion of Section 1, allowing persons other than registered pharmacists to compound or dispense the prescriptions of physicians, or to retail or dispense poisons for medical use, as an aid to and under the supervision of a registered pharmacist "or registered physician," has been changed by omitting the three words put in quotation marks. Section 7 is amended, requiring an assistant or clerk in pharmacy, in order to become registered as a registered pharmacist thereunder, to be of good moral character, to be of the age of 18 years, to be examined by the board of pharmacy, to pay a fee of \$5.50 a year thereafter for a renewal of his certificate. Section 8 is amended requiring every registered pharmacist during the time he continues the practice of his profession in the State to annually and on such date as the board of pharmacy may determine, pay to the secretary of the board a fee of \$1, for which he shall receive a renewal of his registration. Section 10, relating to the retail of poisons, is amended by naming a number of them, and preparations made from them, for greater certainty as to the scope of the law, which is better on this point than the law of some older States. Not only is the principal of the store which violates this section liable to a fine therefor, but the "owner, manager and principal," is now the more comprehensive designation used. But it is provided that nothing herein contained shall apply to the dispensing of physicians' prescriptions of any of the poisons aforesaid. Section 11 is amended, after excepting from the provisions of this act, the manufacture or sale of proprietary or patent medicines, by striking out the words "nor prevent shop-keepers from dealing in and selling the commonly used medicines and poisons, if such poisons and medicines are properly labeled." All actions for the recovery of penalties are to be prosecuted by the district attorney of the proper county, upon the relation of himself, or any member of the board, and all penalties collected are to inure, one-half to the board of pharmacy, and the remainder to the county treasurer for the use of the school fund.

Suicide as a Fraud upon Insurers.—Willful self-destruction by the insured, when he is sane, the United States circuit court of appeals brands as a fraud upon the insurer, whether the purpose to commit the act is formed before or after the policy is taken. It is a fundamental condition of the contract of life insurance, even if the policy be silent on the subject, the court holds, that the insured, while in a sound mental condition, will not voluntarily destroy his life. In the cases brought to the court's attention, where suicide, during sanity, was held not to be a valid defense, it says the policy was issued for the benefit of some other person, or an independent interest, by assignment or otherwise, had been acquired by a third person. Not one of the decisions, it thinks, gives countenance to the idea that the personal representatives of the insured can recover where the latter, while sane, deliberately commits suicide for the purpose of compelling payment of the insurance money to his estate, though the policy contain no provision with respect to suicide. But this precise question, it would seem, was not involved or decided in any case prior to the present one, of *Ritter vs. Mutual Life Insurance Company of New York*, decided Dec. 2, 1895. And here the court holds that in such case there can be no recovery, as to sanction one would be to reward fraud and wrong-doing. Some interest also attaches to the instruction which was given to the jury, that if one who intentionally kills himself when his reasoning faculties are so far impaired by insanity that he is unable to understand the moral character of his act, even if he does understand its physical nature, consequence and effect, such self-destruction will not of itself prevent recovery upon the policies. Care, it was suggested, must be exercised not to misunderstand the term "moral character of his act," as intended to be used. The domain of metaphysics was not to be entered. If the insured understood what he was doing, and the consequences of his act or acts to himself as well as to others, in other words, if he

understood, as a man of sound mind would, the consequences to follow from his contemplated suicide, to himself, his character, his family and others, and was able to comprehend the wrongfulness of what he was about to do, as a sane man would, then he was to be regarded as sane; otherwise, he was not. It is held there was no error in this charge or explanation.

Burden of Proof as to Sanity.—No, most decidedly *no*. That is practically the answer which the supreme court of the United States gave Dec. 16, 1895, to the important question: "If it appears that the deceased was killed by the accused under circumstances which, nothing else appearing, made a case of murder, can the jury properly return a verdict of the offense charged if, upon the whole evidence, from whatever side it comes, they have a reasonable doubt whether, at the time of killing, the accused was mentally competent to distinguish between right and wrong, or to understand the nature of the act he was committing?" This was a case styled *Davis vs. United States*, which originated in the western district of Arkansas. In other words, the supreme court here set aside a conviction of murder, was based on the idea that the defense of insanity made could not avail the accused unless it appeared affirmatively to the reasonable satisfaction of the jury that he was not criminally responsible for his acts. Now "to make a complete crime cognizable by human laws, there must be both a will and an act." The plea of not guilty controverts the existence of every fact essential to constitute the crime charged. Upon that plea the accused may stand, shielded by the presumption of his innocence, until it appears that he is guilty; and his guilt can not, in the very nature of things, be regarded as proved, if the jury entertain a reasonable doubt from all the evidence whether he was legally capable of committing crime. On principle, therefore, the supreme court holds that the burden of proving that the accused belongs to a class capable of committing crime rests upon those who affirm that he has committed it. The burden of proof is on the prosecution from the beginning to the end of the trial and applies to every element necessary to constitute the crime. Giving to the prosecution, where the defense is insanity, the benefit in the way of proof of the presumption in favor of sanity, which is a disputable presumption, the vital question, from the time a plea of not guilty is entertained until the return of the verdict, is whether upon all the evidence, by whatever side adduced, guilt is established beyond reasonable doubt. If it is not, the accused is entitled to an acquittal. Such, in brief, is the position taken by our highest court, with no dissenting voice. But, before leaving the case, Mr. Justice Harlan says that it seems to him that undue stress is placed in some of the cases upon the fact that in prosecutions for murder the defense of insanity is frequently resorted to, and is sustained by the evidence of ingenious experts whose theories are difficult to be met and overcome, so that often the most atrocious characters often go unpunished, and the public safety is thereby endangered. But the possibility of such results, the court says, must always attend any system devised to ascertain and punish crime, and ought not to induce the courts to depart from principles fundamental in criminal law, and the recognition and enforcement of which are demanded by every consideration of humanity and justice.

The Pineal Eye.—The pineal gland, by reason of its impaired median condition, its situation at the entrance of the cerebral cavities and its ribbon-like peduncles have always excited the curiosity of observers, and without knowing its structure they have attributed the most dissimilar functions to it. Galen, combating the opinions of his predecessors, who believed it to be a door for the mind, asserted that it only served to join the two veins which he described in the choroid plexus. The celebrated philosopher, René Descartes, located the seat of the soul here. For he said the rest of the brain is bilateral, and we have two hands, two eyes, etc., while we have only a single

perception of the same thing at one time. Now, there must be a place where the two impressions we get from the double organs of our senses were joined in one before reaching the soul. As the pineal gland answers the requirements it must be the principal seat of the soul. Margendie believed it to be the valve regulating the flow of the cerebro-spinal fluid. While these theories are very interesting we are more concerned at present in the question whether this "gland" has any connection with a median impaired eye of a far distant ancestor. More recent anatomic studies have shown that this organ exists in all vertebrates, occurring with annoying persistence from man through the series of vertebrate brains down almost to that miserable travesty, the lancelet. It is more developed in fishes and reptiles than in mammals, it appears at an early period in man (about the fifth week) and arises in the same fashion in all animals, as an epithelial invagination from the thalamencephalon, the brain which gives rise to the optic tracts and to the middle ventricle. As far back as 1868 Leudig recognized the sensorial nature of this organ and called it the "frontal organ" and Götte showed it to be identical with the epiphysis. Rabl-Rückhard in 1882 advanced the hypothesis that it might be a visual organ, or one for a thermic sense belonging to animals of past geologic epochs. In 1886 Dr. Graaf discovered a crystalline and vitreous in the epiphysis of lizards, and his discovery has been confirmed and extended by Baldwin Spencer. Early in the development of the vertebrate brain a median hollow diverticulum juts out from the roof of the thalamencephalon. It is generally found persistent through life as a long tube, but sometimes the distal end becomes lobular and consists of a number of follicles. In man and other mammals these follicles become more or less solid forming the pineal gland. Among lizards we find this body presenting all the characteristics of an eye. In this group the pineal eye is most completely developed in the *Hatteria* or *sphenodon*, an almost extinct lizard of New Zealand. Here we have an optic vesicle, a crystalline lens, a retina and an optic nerve, the interior of the vesicle filled with transparent tissue, the vesicle is situated in a median foramen in the parietal bone, outside the cranial cavity, and covered only by the skin, through which it may be recognized by a modified scale without pigment, easily distinguished from the rest of the dermal covering. In other genera of lizards the eyes become more and more rudimentary until in *seps*, *anguis*, etc., the nerve does not connect with the eye. This eye should be present in forms lower than the reptilia, the amphibia and fishes. While it is present in the extinct amphibia its existence in fishes is yet uncertain. Dean¹ thought that in *dinichthys*, a fossil fish from the Devonian, a median opening in the head enclosed a pineal eye, but in a more recent work² he abandons this view. In bird and mammals the epiphysis is completely degenerated and inside the skull. Its function in ancestral vertebrates is supposed to have been to allow the possessor to look up while lying partly buried in mud or sand, and as the paired eyes developed, this degenerated. In man the epithelial vesicle ramifies into tubes, the connective tissue capsule surrounding these strangles them so to speak, and closes them off into independent cavities. The degeneration of the organ is manifested not only by the cystic formation and by the pigmentary infiltration, but also by the almost constant presence of calcareous concretions in the gland itself, its peduncles or in the neighboring choroid plexus (Charpui). There is no essential difference between the pineal gland of man and that of the anthropoid apes. So then, we have a structure whose functioning in extinct saurians and some of their descendants of the present day, has degenerated and retreated within the skull, and its origin or purpose would be a mystery were it not for the light afforded by comparative anatomy and embryology. If the pineal

¹ N. Y. Rept. on Fisheries, 1891, p. 310.
² Fishes, Living and Extinct, 1895, p. 55.

gland and eye arises singly from the train it will modify some of our ideas concerning the origin of the paired eyes. The latter are by most modern biologists believed to be derived through evolution from the segmental sense organs of invertebrates. Organs for the perception of the senses are divided into lower and higher. In the former are the tactile sense organs and in the higher those for vision, olfaction, audition, and gustation. It will be noticed that these higher organs are all situated in depressions specially provided for them in the head. It has been found that though the gulf between tactile and visual impressions is great, it has been bridged by some of the annelids (leeches, etc.). In these organisms we find pure tactile cells at one end of the body, and pure visual cells at the other with a mixture of the two in the middle, or we may have all the tactile cells changed into visual. While search is being made for confirmation of this hypothesis in other classes of animals, the pineal eye presents a grave objection to this view, for the segmented sense organs are all double and if the pineal gland proves to be of single origin, two of these segmented organs must have coalesced to form it. At this juncture Loey comes to the rescue. This author³ from a study of shark embryos believes that in addition to the two optic vesicles for the paired eyes, two pairs of accessory vesicles appear at an early stage of development. This requires further study and if confirmed would go to prove that the pineal eye was paired also. In this connection it may be noted that the chitons, or coat of mail shells, possess numerous ocelli on their shells, a fact discovered in 1884 by the lamented Mosely. One species *Corephium aculeatum* has over 12,000. In some genera the eyes are scattered about irregularly over the shell, in others they are arranged symmetrically, the latter form is looked upon as being a later development from the earlier irregular distribution. At the present writing while waiting further investigations we have strong reasons for believing that our primitive hermaphrodite gill-bearing ancestors had eyes in the "back of their heads" as the proverb says.

Practical Notes.

Purgatives and Milk as Antiseptics.—Experiments recently made on the antiseptic action of purgatives show that it is temporary although thorough while it lasts. But a continuous diet of milk produces almost absolute asepsis of the alimentary canal slowly and progressively, which lasts as long as the lacteal régime is kept up.—From paper read before the Société de Biologie, and reviewed in the *Gazette Méd. de Paris*, January 4.

Ozone in Whooping Cough. The *Bulletin Médical* of January 8, reports twenty-two cases of whooping cough treated with inhalations of ozone. It acted immediately in diminishing the frequency, the length and severity of paroxysms; it shortened the course of the disease remarkably and the general health improved at once, although the cases treated were all severely attacked.

Instantaneous Process for Sterilizing Cotton. An absolutely aseptic tampon can be made of any piece of cotton by twisting it on a stick or toothpick and dipping it into an alcoholic saturated solution of boracic acid for a moment. Applying a light to it the alcohol burns out, while the boracic acid prevents the cotton from burning. Five seconds are enough: as soon as the flame turns green it is extinguished. The cotton is still white, dry, scarcely warm, but absolutely sterilized. *Gazette Méd. de Liège*, January 2.

Method of Inserting Artificial Ureter. Boari, of Ferrara, writes to the *Policlinico*, No. 19, 1895, reviewing all the cases recorded of artificial ureters, and describing his experiments with dogs, and successful operations in two clinical cases. He uses a button similar to the Murphy button, to which is fastened a tube that is introduced and fastened in the ureter. The intestine is opened with a lengthwise slit, through which the

button is inserted. The membrane of the intestine and the ureter can be sewed together for security. In one case the operation was performed for tuberculosis of the bladder, and in the other, on account of a large vesico-vaginal fistula, with destruction of the ureter. The button was evacuated in eight to twelve days.—*Centralbl. für Chir.*, January 4.

Thioform in Surgery and Dermatology.—The tendency in modern surgery is to keep the diseased parts as dry as possible, and for this purpose thioform is highly recommended by Dr. Buck, of Ghent, to use in connection with iodoform, which it does not supplant but supplement. He uses it as a powder, either pure or combined with an equal part of boracic acid. He has also administered it internally in cases of enteritis, in doses of 2 grams for an adult and $\frac{1}{2}$ to 1 gram for a child. Its constipating and antiseptic effect was manifested in each case. The *Gazette Méd. de Liège* of January 23, devotes considerable space to his study of thioform, which he asserts is of great value in gastro-intestinal disturbances as well.

Primary Sarcoma of the Pleura.—A Russian surgeon writes to the *Deutsch. med. Wochen.*, of January 23, reviewing the only five cases of this kind on record known to him, and describing in detail another that occurred in his own practice. A young man of 23 came to him suffering from pain and oppression in the pleural region, and other symptoms plainly indicating pleurisy with effusion, but still differing from it by the enlargement of the thorax, persistence of dullness on percussion with every change of position, and especially by the cachexia and radiating pains. Death ensued from sudden asphyxia and the autopsy confirmed the diagnosis of primary sarcoma of the pleura. It weighed about seven pounds, had grown to the spine and posterior thoracic wall, and was round-celled. A noticeable fact in these cases is the youth of patients.

A New Intestinal Button.—A new anastomotic button for intestinal operations was recently exhibited at the Soc. de Chirurgie de Paris, by Dr. Chaput, which he asserts is an improvement on the Murphy button. It is made of pure tin, in the shape of an elliptical ring, the hole in the center being 5 mm. wide and 30 long. The side view shows a circular groove, 1 c. wide and 8 mm. deep. The rims of the groove are cut in three places, and are thin enough so they can be pressed together with the fingers. There are four different kinds made, for the four principal kinds of operations where it is needed. It has given excellent results in several cases where it has been used, notably in cancer of the stomach and transverse colon and also in stenosis of the pylorus, although in one case the two buttons used have not been evacuated.—*Gazette Médic. de Liège*, January 9.

Erysipelas Serum as Treatment for Cancer.—Prof. Kopfstein treated fifteen cases of malignant cancer with serum of his own make and found that unpleasant symptoms were produced in every case with no alleviation of the disease. (*Wien. klin. Rundschau*, Nos. 33 and 34.) The *Centralbl. f. Chir.*, Jan. 11, 1896, commenting on Kopfstein's article remarks that his experiences prove nothing for or against the Emmerich serum, as Kopfstein took his from an animal after one injection, while Emmerich and Scholl produced a chronic state of infection by repeated injections, before they took the serum. In the same magazine a case of cancer of the breast five years in development, is described by Dr. Schüler, who treated it with the Emmerich-Scholl serum, after lancing. The patient improved from the first and the abnormal growth nearly entirely disappeared, while patient, a woman of 47, gained fourteen pounds. This may possibly have been some cancerous tumor and not a true carcinoma, judging from author's description.

Cutting and Tying the Vas Deferens for Hypertrophy of the Prostate. Chalot, of Toulouse, and Isnardi, of Turin, have each performed successful operations for senile dysuria this last year by tying the vas deferens and cutting it instead of castrating.

Isnardi writes to the *Therapeutische Wochenschrift* of January 12, describing his operations in detail. He claims that this is enough in most cases, but if castration is found necessary, it is a preliminary that much facilitates the latter. His method is to cut the vas deferens, tie the stump ends and insert them in the incision so that as it heals they will grow into it. The atrophy produced will be much speedier and more radical if the plexus spermaticus is cut, and a slight inflammation of the spermatic cord produced. He believes that neurotomy will in time be found such an important factor in producing atrophy that it will be proved sufficient alone. Chalot exposes 2 cm. of the vas deferens and applies two ligatures of fine silk, $1\frac{1}{2}$ cm. apart and then cuts it between them. His operations are described in the *Revue Internationale* of January 10. One performed in February 1895 reduced the prostate gland to half its size, while the genital functions were not disturbed.

Abdominal Massage to Relieve Habitual Constipation.—Dr. Kümmmerling uses the following process of massage for this purpose which is far more efficient than the usual process. Massage lasting fifteen minutes, well done, is sure to produce an easy and abundant evacuation. The patient is placed on his right side and the operator picks up with his thumb and index of each hand the skin and the subcutaneous tissue at the level of the iliac spine. This makes the intestine directly accessible to the other fingers, and he manipulates it with them, always pressing from above downward, and with the ends of his fingers, for five minutes. Then the patient is turned on his left side and the process is repeated on the cecum and the ascending colon, only in the opposite direction, from below upward. This leaves only the small intestine and the transverse colon to be massaged, for which the patient is placed in the decubitus genupectoral position, as this relaxes the abdominal walls and brings the intestines closer into the hand of the operator. *Sem. Méd.*, Dec. 5, 1895.

Method of Preparing Bone Marrow for the Treatment of Pernicious Anemia.—Dr. Alfred Barre, of Leeds, England, offers in the *British Medical Journal*, the following suggestions as to the preparation of bone-marrow: "Three ounces of fresh bone-marrow (as much red as possible) are made into a paste with port wine, one ounce; gelatin, five drachms. A little care is required in making the paste, to keep the gelatin and the marrow sufficiently fluid for them to be thoroughly mixed. The gelatin should be soaked in sufficient water to soften it, and then should be melted with the glycerin, the mixture being kept in a mortar previously made hot with boiling water, while in another mortar, made hot in a similar manner, the marrow and wine are mixed. Then the contents of the two mortars should be thoroughly incorporated and allowed to set." The hospital meat-purveyor seems to have no difficulty in supplying the marrow free from spicules of bone. To some patients the mixture of glycerin, or the mixture of glycerin and marrow fat, is distasteful. For some of these, the objectionable taste is to be overcome by the addition of a small quantity of water at the time of the exhibition of the remedy.

Eruptions Following the Use of Quinin. (Idiosyncrasies.)—The extensive experience of Dr. Dubergé, former physician in chief to the French navy, gives importance to his article on quinin, reviewed in the *Gazette Méd. de Liège*, of January 2. He considers its action on the heart pernicious and its use contra-indicated in affections where the heart needs all its energy and activity. Amblyopia is also produced very rarely by quinin, it develops rapidly and may result in complete blindness. Deafness follows its use in very rare cases, but the transient effect soon passes off. It may also affect the brain, but this is never an important trouble. It may produce gastro-intestinal disturbances, vomiting and diarrhea that are sometimes fatal. It has also affected the genito-urinary organs, producing pain, oliguria, retention of urine, albuminuria, hematuria, menstrual

troubles and abortion. He concludes his list of possible evils due to use of quinin with eruptions, which he says are either simple erythema or eczema. It is a coincidence that the *Annales de Derm. et de Syph.*, December, 1895, contains a detailed description of a case of extensive bullous erythematous eruption that appeared every time patient took quinin and vanished as soon as it was discontinued, as was demonstrated by repeated experiments. Patient had been syphilitic in years past and the eruption was treated for syphilis a long while. When it was traced to use of quinin, cure resulted immediately.

Subcutaneous Injections of Sublimate as Cure for Cerebro-Spinal Meningitis.—An Italian, Dr. Dazio, suggested this treatment, and with it Dr. Consalvi, of Casoli, has recently treated successfully nine cases occurring in an epidemic of influenza. (*Sem. Méd.*, Jan. 15, 1896.) The quantity of sublimate injected varied from .005 millig. to .01 centig., according to age of patients, which were from 14 months to 19 years. He made at first one injection in twenty-four hours, and later one in forty-eight. One case alone proved fatal, a girl of 7 died after first showing temporary improvement after injection. In other cases vomiting ceased after second injection, followed by disappearance of other symptoms, except the muscular rigidity. This persisted until after the sixth to eighth injection in some cases. The injections restricted the disease to a moderate intermittent fever with slight headache. The sublimate produced no disturbance except in two cases, one a girl of 14 had a slight attack of mercurial stomatitis after tenth injection, and another girl of 7 a bloody diarrhea after the fifth, but both soon passed away. Besides the sublimate, Dr. Consalvi used leeches, ice, frequent purgations with calomel, and bromid or morphin to quiet the patient. As recovery progressed he gave them iodid of potassium to expel the mercury from the system and favor the absorption of the meningitic exudations.

Thyroid Extract Successfully Used in Stupor, and in Ichthyosis.—The *Montreal Medical Journal* contains references to two new uses for thyroid extract, or thyroid feeding. One of these uses was the subject of a paper before the Canadian Medical Association by Dr. Charles Kirk Clarke, medical superintendent of the Rockwood Asylum for the Insane at Kingston. "He stated that he had observed, as others had done before, the effects of acute disease on these cases of stupor, how that it benefited many, in some cases effecting a complete cure. In the first case reported in his paper the patient was almost a hopeless dement. Upon the administration of the thyroid extract improvement began and gradually progressed until the cure seemed to be almost complete, when suddenly the patient, without apparent cause, relapsed back into his former condition. In other cases, however, the writer reported the effects to be well marked, a permanent cure resulting. The doses given went as high as 20 grains." Dr. W. E. Deeks has reported to the Montreal Medico-Chirurgical Society a case of ichthyosis for the relief of which thyroid extract was employed. The remarks of Dr. F. J. Shepherd, made in the discussion of the paper, indicated the propriety of having the case continuously under observation. He said: "Ichthyosis is of course a congenital affection, or at any rate comes on soon after birth. If this case was cured by thyroid extract it is certainly remarkable, and another triumph is added to the many now claimed for this wonderful remedy. Cure of ichthyosis is almost unknown, though temporary amelioration may always be obtained by the daily use of soap tinctures followed by the rubbing in of any fatty matter. The case is well worth reporting and following up, and Dr. Deeks should, if possible, bring her before the society, or report the progress of the case after several months have elapsed."

Behring on Serotherapy. For the first time Professor Behring has replied to the critics of antitoxin and supports the efficacy of this discovery by innumerable statistics. (*Deutsch. Med.*

Woch., 1895, No. 38). He claims that even statistics do not do it justice, as it is used in perhaps the more desperate cases, and the mortality percentage is therefore higher than it should be in proportion. But even allowing for countless errors the percentage is a great gain over the past. The mortality in Berlin in 1895, sank to 15 per cent., two-thirds less than it had averaged during the seventeen years preceding, while the character of the diphtheria was more serious than at any time since 1886. Of 10,312 cases, 5,833 were treated with serum, with a loss of 9.6 per cent. while 4,479 cases treated without it, showed a mortality of 14.7 per cent. The percentage fell to 10.3 per cent. in the Contagious Disease Institute, where the serum was exclusively used.

He asserts that the question now is: Shall it be used to secure immunity? For this purpose he recommends one-half of a regular dose. He says the works can now supply 100,000 doses a month, which barely keeps pace with the demand from Europe and America. Improved methods have enabled the dose to be concentrated from 5 c.c into 1 c.c. He regrets that the specific for tuberculosis is not yet all that was hoped for it, but congratulates Ransom on his cholera serum and Knorr on his for tetanus. *Centralbl. für Chir.*, January 11.

Low Death Rate in Typhoid Fever Treated by the Cold Bath.—Dr. William Osler has recently given before the Canadian Medical Association the result of five years experience with this form of treatment. He stated that when the patient's temperature rose above 102.5 F. he was placed in a bath of 70 F. every third hour. To patients with heart weakness strychnin and alcohol in small doses were given, particularly after the bath. Milk, broths and egg albumin constituted the diet. Three hundred and fifty-six cases had come under treatment in the hospital, with twenty-five deaths. The mortality was 7.02 per cent. of all cases, and 6.3 per cent. of bath cases. It was to be remembered that hospitals were usually given the worst cases. In certain cases the baths were contra-indicated—as where the temperature did not rise to 102.5 in very mild cases, in cases markedly asthenic: and where serious complications were present, as hemorrhage, perforation, etc. So that the Brandt method had not been strictly followed. The beneficial effect was not wholly due to the antipyretic action, but to the general tonic effect. Although not in favor of the treatment at one time, he had become an advocate of it, having seen its good effects in his own cases, as well as in those of the large hospitals in other portions of the globe. From statistics gathered it gave better results than any other form of treatment.

Dr. Muir, of Truro, N. S., referred to annual epidemics of typhoid he had experienced following river freshets. He pointed out the difficulties of carrying out the cold bath treatment in private practice, of the opposition of the patient's friends, and of the danger to the medical man's reputation if serious results followed the cold baths. He condemned the use of the ordinary antipyretics. His watchword was, watch the pulse, not the temperature. The speaker said that most of his patients died from bowel complications. To avoid constipation he used small doses of Rochelle salts, and for an antipyretic, alcohol. His death rate was 8.1 in 159 cases.

Urticaria and Jaundice Associated with Ptomaine Poisoning. In the London Post Graduate course, conducted by Mr. Jonathan Hutchinson, as reported for the *Medical Press*, that teacher brought before the class the following case of partridge poisoning, or poisoning after partridge. Partridge poisoning, as observed in this country and in Canada, is seldom referred to by English writers: "The patient was a man, aged about 35, who came with the following history: About fourteen days ago he ate some cold, over kept partridge. In the course of a few hours afterward, he felt sick and unwell. For three days the sickness continued, and then the attack of urticaria supervened. The attack was an unusually severe one, all the patches

were salmon-tinted, and for a week no improvement could be noted. At the end of that time, however, the patches began to disappear, and when this occurred, the patient quickly became deeply jaundiced. The skin was now stained a deep yellow, and the urine was discolored from the presence of bile. A point of much interest in this case was the association of urticaria with the jaundice. It was worthy of note that inflammation of joints sometimes occurred in connection with urticaria. The probability was that when this was the case the patients were the subjects of inherited gout. An instance of this kind had recently come under Mr. Hutchinson's notice. The patient, who was suffering from urticaria, complained of some inflammation of his knee-joint. He was aged 35, and Mr. Hutchinson found tophi on his ears—not ordinary tophi, calcareous, containing some deposit of urate of soda, but more of a fleshy character. The patient's brother had been shown, at a former demonstration, suffering from Dupuytren's contraction of the ring and little finger of the left hand. Although the contraction was attributed by this patient to a severe dog-bite of the hand, there was, on the other hand, very little doubt that the deformity was more largely due to inherited gout."

Neuritis During and After Typhoid Fever.—In the Johns Hopkins Hospital Reports, Vol. v, No. 6-9, 1895, Professor Osler gives an account of the cases of neuritis during and after typhoid fever that have come under observation during the six years ending May 15, 1895. The cases may be grouped into instances of local neuritis and of wide-spread, diffuse, multiple neuritis. Among 389 cases of typhoid fever under treatment there were four with well-defined symptoms of a local neuritis. In two the neuritis developed during the height of the fever. In Case 1, severe neuralgic pains in the arms with great tenderness of the muscles developed in the second week; there was numbness of the hands, no arthritis and no sensitiveness of the nerve trunks; the patient recovered without washing. In the second case there developed severe pains in the right arms and legs in the third week; the arm improved rapidly, but the pain in the leg became agonizing; there was great sensitiveness in the muscles with erythema nodosum; recovery took place after ten days. In two cases the neuritis developed after the subsidence of the fever. In the first case there was pain in the left leg, sensitiveness in the nerve trunks and soreness in the tibialis anticus; the recovery was quite rapid. In the second case the onset of convalescence was marked by the development of soreness and pains in the limbs, especially the arms; "pins and needles" in the left foot and swelling with tenderness in the left arm; the improvement was gradual and recovery took place without atrophy. Osler then describes the clinical features of four cases of multiple neuritis following typhoid fever in which there was a rapid or gradual development of paralysis of the legs or of both arms and legs. In such cases the differential diagnosis lies between peripheral neuritis and anterior poliomyelitis and this is often difficult. The following are some of the more important points: The mode of onset is very much more rapid, as a rule, in myelitis. In poliomyelitis the sensory symptoms are subsidiary, whereas in polyneuritis there is more or less pain, or sensations of numbness and tingling. The atrophy is more rapid in the central lesion. The gradual recovery of the faradic irritability of the muscles is a point which favors the diagnosis of neuritis. The most important of all points is the subsequent history, because complete recovery is almost the rule in multiple neuritis. The prognosis is consequently in the main good. In treatment persistent massage is very important; medicines are of doubtful utility; from twelve to eighteen months time is the essential factor.

Osler also calls attention to a very interesting and distressing affection which he thinks should be classed as a neuritis, namely the tender toes of typhoid fever. Handford, quoted in Rose and Bury on "Peripheral Neuritis" (London, 1893), says in describing this feature: "For some weeks past there has been tenderness of the toes of both feet, so that the toe nails could not be cut on account of the pain it caused in the nail bed and in the pulp at the end of the toes. In three other

cases recently I have met with this condition of pain in the toes and in one of them in the arms also. In one instance the tenderness of the feet was so great that they had to be protected from the pressure of the bed clothes by a cradle. But in none of them was it followed by muscular wasting or definite loss of sensation so far as I could detect." Osler does not think that this condition is an effect of the cold water treatment. The treatment of such tender toes is not very satisfactory. Hot cocain solution or cotton wool seems to give most relief.

Hospital Notes.

THE TWENTY-SEVENTH ANNUAL REPORT of the Children's Hospital of Boston, has just been issued. The Board of Managers justly claim great success for the institution and in its relation to the city of Boston they assert that "Our own hospital offers the example of hundreds of children and young persons, moving about among us, with the hope and the certainty of continued life and the power adequately to meet the world, in place of that invalidism which seems to be the heritage of so many of the human race. It is thought best to make this statement at this time in order that the patrons of the hospital may recognize the importance of, and may be tolerant of, the demands made on them to carry out the good work.

"We can point to the fact that the presence of cases of club-foot and crooked backs and lame legs is noticeably less on our streets than it was twenty years ago; we can show that the children of to-day in our midst are stronger and better able to cope with the roughness of life; we can make evident that this improvement is due, partly to our own hospital, partly to the advanced intelligence of physicians who have studied in our own and similar institutions and are spreading over the land the newer lights of medical knowledge."

In regard to antitoxin in diphtheria, the report, while stating that as a rule contagious cases are not admitted to the hospital yet epidemics in the institution have apparently been stopped by its use, and they invite attention to Dr. Morrill's report of that subject, in the *Boston Med. and Surg. Journal*.

Detroit Notes.

THE WAYNE COUNTY Medical Society at its regular meeting Thursday, February 6, listened to a very interesting paper by Dr. W. R. Henderson entitled, "Rupture of the Uterus."

AT THE REGULAR MEETING of the Detroit Medical and Library Association Monday, February 3, Dr. T. A. McGraw read a paper entitled, "Fistula of the Large Intestines."

HEALTH OFFICE REPORT for week ending Feb. 8, 1896: Deaths under 5 years 32, total 79. Births, male 56; female 54, total 110. Contagious diseases: Diphtheria, last report 21, new cases 6, recovered 19, died 1, now sick 7; scarlet fever, last report 22, new cases 5, recovered 7, died none, now sick 20; smallpox, last report none, new cases 2, recovered none, died none, now sick 2.

Atlanta Notes.

THE RESIDENT MEMBERSHIP OF THE AMERICAN MEDICAL ASSOCIATION here in our city is not near as large as it should be, so that we trust the meeting next May will be able to awaken more interest among the southern physicians and thus add an increased membership from this section of our States. However, Atlanta has always been equal to every emergency, and the medical fraternity of our city will see that the visitors here next May shall be well cared for. The Local Committee of Arrangements have already been selected and are now actively engaged in perfecting all the details relative to the next annual meeting.

THE ATLANTA SOCIETY OF MEDICINE held its annual meeting for the election of officers on the second Tuesday evening in January. The following officers were elected for the ensuing year: President, Dr. R. R. Kime; Vice-President, Dr. W. A. Crowe; Secretary, Dr. W. L. Champion; Corresponding Secretary, Dr. Dunbar Roy.

AT A RECENT MEETING of the Faculty of the Southern Medical College some changes were made in that body on account

of the recent death of the President, Dr. Thomas S. Powell. Dr. Wm. Perrin Nicolson, who was formerly Dean, was elected President, and Dr. Jas. B. Baird, recently elected to the chair of Practice of Medicine, was made Dean. Dr. Dunbar Roy was made Secretary of the Faculty. Dr. W. A. Crowe was elected to fill the chair of Obstetrics for the unexpired term of this session.

DR. C. D. HURT has been elected Visiting Physician to the Grady Hospital in place of Dr. J. S. Todd, resigned.

DR. J. C. OLMSTED has been appointed by the Governor as a member of the "Allopathic" Board of State Medical Examiners, *vice* Dr. Jas. B. Baird, who was made ineligible to that position by accepting a professorship in one of the State medical colleges.

DR. C. M. DRAKE, late of Knoxville, has been appointed Chief Surgeon to the Southern Railway System. Dr. Drake will remove to Atlanta and make this his headquarters since it is the central point of this railway system.

DR. DUNBAR ROY has been appointed Oculist and Aurist, and Dr. W. Jarnagin Local Surgeon to the Southern Road.

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer for the week ended February 1 is as follows: Number of deaths (stillbirths not included), white 52, colored 49, total 101; death rate per 1,000 per annum, white 14.4, colored 28.3, total 19.0; death rate per 1,000 per annum for the corresponding week last year, 17.3. A decline of over 9 per cent. took place in the total mortality of the District during the past week. The number of deaths reported at the Health Department was 101 as compared with 112 in the previous week. There were 39 deaths from lung maladies, of which 12 were from consumption and 16 from pneumonia. But one death from typhoid fever was reported and one from scarlet fever. A fall of seven occurred in the mortality among children under 5 years of age. The annual death rate was 19.0 as against 21.1 by the last report and 17.3 for the corresponding week of last year.

RECRUITS TO THE AMBULANCE CORPS.—The Ambulance Corps of the District Guard, at its meeting last week, elected to membership William M. Johnson, Jr., G. V. Stockslayer, W. T. Rawlings, H. D. Miller and W. E. Cook. Since the corps has been under its present command it has taken a new life, and many applications are presented at every meeting.

SIDE ARMS FOR THE HOSPITAL CORPS.—The Secretary of War has ordered that side arms shall not be issued to members of the U. S. Army Hospital Corps, except when they are serving in Indian wars or are left with wounded under circumstances which justify the expectation that their rights as non-combatants will not be recognized.

POLICE AND CONTAGIOUS DISEASES.—The Commissioners have amended the manual of the police department by adding to paragraph 162 of the same the following:

"No member of the police department in whose family there exists a case of diphtheria, scarlet fever or smallpox will be permitted in any way to come in contact with the patient suffering with the disease, or those in attendance upon such patient, except that it shall be shown, upon a certificate of the attending physician, to the satisfaction of the surgeon of the police department in that district, that the presence of such member is imperatively demanded at home, in which event leave of absence shall be issued to him by the surgeon of his district, in accordance with the law governing sickness in the police department. This rule permits members to visit their homes for meals, but for no other purpose. Clothing and other personal effects of a member which have been subjected to infection by the proximity of the patient must undergo thorough disinfection before being again used. When a policeman has been in direct contact with the patient, or in the patient's room, such policeman must be thoroughly cleansed by bath and sponging with some disinfecting solution, to be prescribed by the surgeon of his district, and must robe himself thoroughly throughout in clothing that has not been subjected to infection, or that has been thoroughly disinfected, before he may return to the station house."

MEDICAL PRACTICE BILL REPORTED TO THE HOUSE.—Mr. Babcock has submitted to the House a report on the bill to regulate the practice of medicine and surgery in the District, which was ordered reported by the committee last Wednesday. The report says that the committee finds that in consequence of the enactment of medical practice laws in forty-three States and Territories the District has become a rendezvous for those who, from lack of proper qualifications, are forbidden in nearly all States and Territories, and that a uniform grade of qualification for medical practice will elevate the standard of medical education. The report says there are five medical schools without uniform standard of curriculum or qualification for the degree of doctor of medicine. There are also three medical societies, each authorized to license men to practice medicine in the District, upon the presentation of such diploma as the applicant may offer. Under the existing law five men can obtain a charter authorizing them to confer the degree of doctor of medicine to any person, and a representative of one such institution admitted to the committee that it had no building or provisions of any kind to teach medicine in any of its branches. The report strongly urges the passage of the bill.

THE FORTIETH ANNUAL REPORT OF ST. ELIZABETH'S ASYLUM.—Dr. W. W. Godding has transmitted his annual report of the Government Hospital for the Insane, to the Secretary of the Interior, for the year ending June 30, 1895. It shows that 2,052 patients were under treatment during the hospital year. There remained June 30, 1894, 1,681 patients, and there were admitted during the year 371 patients. Of the whole number under treatment, 1,570 were males, and 482 were females. There were discharged as recovered, 98; as improved, 72; as unimproved, 1, and 179 died, leaving under treatment June 30, 1895, 1,702 patients, 1,318 males and 384 females. Of the 179 deaths at the institution during the year, the principal causes were cardiac valvular disease, of which 18 died; general paralysis, 14; organic disease of the brain, 27; phthisis, 18. The duration of mental disease of those who died ranged from two weeks to forty-four years.

The report shows that 9,586 cases have been treated since the opening of St. Elizabeth Hospital, in 1855. The nativity of these cases treated shows that the District of Columbia leads in the native born with 1,158 cases, and Ireland in the foreign born, with 1,681 cases, followed by 1,155 cases of German birth. The report says: "The number of admissions, 371, an average of more than one a day, has never been exceeded within the hospital history, except during the last two years of the war, while the whole number under treatment, 2,052, is in excess of that of any previous year, and that the daily average number is nearly 50 more than ever before. The recoveries 98, just 28 per cent. of the discharges, makes a favorable showing which the chronic character of the great proportion of cases is taken into account. The deaths were 179, showing a mortality of 10.73 per cent. on the average number, and 8.72 per cent. of the whole number under treatment. Ninety-three of the deaths were of soldiers and sailors."

The report then comments on "the abortive attempts of the United States government to fill the Eastern Branch flats," and says this is the probable cause of more than one-half the sickness occurring at St. Elizabeth.

Of the latest addition to St. Elizabeth's, the large domain below Oxen Hill, and known as Godding Croft, the report says: "The sixth group, the agricultural one, is a colony at Godding Croft for chronic cases; harmless workmen, who, having a home with home comforts, are content. The nucleus of such a colony is already established. At Godding Croft there are sixty acres of the finest garden soil that exists anywhere within the nearly 800 acres of this government ground. Here are 25 acres of hillside, well adapted to vineyards and orchards; 60 acres of corn and grass land, with more than 100 acres of woodland and pasturage. The estimates for the fiscal year ending June 30, 1895, amount in all to \$412,400."

MEDICAL SOCIETY. At the meeting of the Society held on the 5th inst., Dr. Wellington read the essay of the evening, entitled "Castration for Hypertrophy of the Prostate Gland." Dr. Acker reported a case of typhoid fever and presented the specimen. Dr. H. L. E. Johnson reported three successful cases of abdominal section, two for ovarian tumor and one myomectomy. The specimens were presented. The report of the committee on "transactions publication" was read but its

consideration was postponed for one week. The Society unanimously endorsed the House bill to regulate the practice of medicine in the District.

WASHINGTON OBSTETRICAL AND GYNCOLOGICAL SOCIETY.—The 240th meeting of the Society was held on the 7th inst. Dr. Bovee read a paper on "Anterior Colpotomy and reported seven cases. Dr. H. L. E. Johnson reported a successful case of myomectomy. Dr. Stone presented three specimens from operation for pus tubes. The paper and cases brought a lengthy and interesting discussion.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from February 1, 1895, to January 7, 1896.

Capt. William O. Owen, Jr., Asst. Surgeon U. S. A., leave of absence granted on surgeon's certificate of disability is extended one month on account of sickness.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending February 8, 1896.

P. A. Surgeon C. H. T. Lowndes, detached from marine rendezvous, San Francisco, and granted one month's leave.

Asst. Surgeon C. P. Bagge, detached from the "Vermont" and ordered to the marine rendezvous, San Francisco, Cal.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the sixteen days ended January 31, 1896.

P. A. Surgeon C. E. Banks, to proceed from Washington, D. C., to Boston, Mass., for temporary duty, Jan. 31, 1896.

P. A. Surgeon W. J. Pettus, to assume temporary command of Service at Norfolk, Va., Jan. 31, 1896.

P. A. Surgeon G. M. Guiteras, to proceed from Gulf Quarantine to Mobile, Ala., for temporary duty, Jan. 18, 1896. To rejoin station at Gulf Quarantine, Jan. 31, 1896.

Asst. Surgeon W. J. Stewart, granted leave of absence for ten days, Jan. 27, 1896. Ordered to examination for promotion, Jan. 31, 1896.

Asst. Surgeon E. K. Sprague, granted leave of absence for twenty days, Jan. 23, 1896.

Asst. Surgeon Emil Prochazka, to proceed from Detroit, Mich., to Chicago, Ill., for temporary duty, Jan. 31, 1896.

Asst. Surgeon H. W. Wickes, upon completion of temporary duty at Memphis, Tenn., to return to his station at New Orleans, La., Jan. 17, 1896.

BOARD CONVENED.

Board convened to meet in New York City for the physical examination of a candidate for appointment in revenue cutter service, Surgeon W. A. Wheeler, chairman, and Asst. Surgeon H. S. Cumming, recorder, Jan. 29, 1896.

Change of Address.

Coolidge, F. S., from 2207 Prairie Ave., to 2632 Prairie Ave., Chicago, Ill.

Gihon, A. L., from 16 W. 31st St. to 8 W. 127th St., New York, N. Y.

Minar, E. G., from Bay City, Mich., to Mannsville, Jefferson Co., N. Y.

Price, M. F., from Los Angeles to Indio, Riverside Co., Cal.

Tillier, F., from St. Paul to Blue Earth City, Minn.

LETTERS RECEIVED.

Alma Sanitarium Co., Alma, Mich.; Ayer, N. W., & Son, Philadelphia, Pa.

Bischoff, L. F., New York, N. Y.; Beck, H., New York, N. Y.; Brown, F. F., Advertising Agency, New York, N. Y.; Blake, C. E., & Co., Chicago, Ill.; Bellevue Place Co., Batavia, Ill.; Bell, H. S., Kearney, Neb.

Chloride of Silver Dry Cell Battery Co., Baltimore, Md.; Cullen, G. L., Cincinnati, Ohio; Connor, H. J., West Superior, Wis.; Cutter, John A., New York, N. Y.; Cone, A., New York, N. Y.; Chamberlin, W. A., St. Charles, Minn.

Demaree, O. B., Benson, Ky.; Dodge, W. T., Big Rapids, Mich.; Dodds, Robt., Chicago, Ill.; Drake, F. A., St. Paul, Minn.; Drew, C., Jacksonville, Fla.; Doliber-Goodale Co., Boston, Mass.; Deming, H. H., Chicago, Ill.; Davenport, Nora Soule, Chicago, Ill.; De Lee, J. B., Chicago, Ill.; Duncan, A. M., Bucyrus, Ohio.

Eastman, Thos. B., (2) Indianapolis, Ind.; Edsall, D. L., Philadelphia, Pa.; Engelmann, Rosn, Chicago, Ill.; Fitzgerald, G. A., Evergreen, W. Va.

Fisher, G. A., Chicago, Ill.; Ford, Chas., New York, N. Y.; Foster, C. W., Woodford, Me.

Hanson, Z. P., Chicago, Ill.; Hummel, A. L., Advertising Agency, New York, N. Y.; Hollingsworth, H. W., St. Louis, Mo.; Hektoen, Ludwig, Chicago, Ill.; Howle, W. P., Oran, Mo.; Hammon, G. M., Chicago, Ill.; Henderson, Geo. S., Holcomb, Ill.

Johnson, O. M., Water Valley, Ky.; Johnson, H. L. E., Washington, D. C.; Laplace, Ernest, Philadelphia, Pa.; Lewis, Geo. W., Fremont, N. C.

Larkin, O. E., Chicago, Ill.; Lamb, D. H., Owosso, Mich.

Minar, E. G., Mannsville, N. Y.; Mitchell, A. B., Washington, D. C.; Martin, W. D., Sparta, Pa.; Mundell, J. H., Washington, D. C.; Magee, W. H., Duluth, Minn.; Montgomery, E. E., (2) Philadelphia, Pa.; McCambridge, T. H., (2) Germantown, Ill.; McGarvey, J. F., Lorain, Ohio.

North, Lucian G., Tecumseh, Mich.; Neer, H. C., Park Ridge, N. J.; Newton, Geo. W., Chicago, Ill.

O'Connor, F. R., Brooklyn, N. Y.

Palme, Enoch, Springfield, Ill.; Payne, Geo. F., Atlanta, Ga.; Price, M. F., Indio, Cal.; Prosh, B., Chicago, Ill.; Pendleton, G. W., Idaho Falls, Idaho; Porter, E. E., Westboro, Mass.; Parke, Davis & Co., Detroit, Mich.; Posey, Chas. M., (2) Chicago, Ill.

Rowley, Frances, Dallas, Tex.; Robert, Hubert L., Toronto, Can.; Rymer, W. A., Pennsboro, W. Va.; Riek, L., Westphalia, Kan.; Reed, A., Austin, Ill.

Smith, E. P., Boston, Mass.; Smith, E. B., Detroit, Mich.; Smith, C. J., Pendleton, Ore.; Shaw, J. B., Joliet, Ill.; Shumway, F. P., Boston, Mass.; Savage, G. C., Nashville, Tenn.; Steiger, E., & Co., New York, N. Y.; Siefert, C. F., New York, N. Y.

Thornton, J. H., Lansing, Iowa.

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ADDRESS.

PRESIDENT'S ADDRESS.

Delivered at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY C. K. COLE, M.D.

CHIEF SURGEON MONTANA CENTRAL RAILWAY.
HELENA, MONT.

Fellows of the American Academy of Railway Surgeons:—I congratulate you, and through you the railway hospital service of the country, upon the evidences of success and prosperity attained by your association in the short space of one year. A year ago the need of such an association as this Academy was by many doubted, by a few urgently denied, and by those few the proposition to effect an organization was violently opposed. For the most part it is fair to assume that the opposition, whether merely passive or as in certain instances quite active, reflected the honest sentiments of those who were equally desirous in the interests of railway surgery, as were those of us who felt the time ripe for the consummation of what had long been considered desirable, if not an actual necessity. No stronger justification of the wisdom of the undertaking and no better vindication of the motives which prompted the promoters, could be desired, than the events which have transpired touching the interests of the Academy during the past eighteen months, and I may add no greater inspiration is needed to a continuation of honest, loyal work in the future along the lines governing this association than a glance at the splendid scientific program for this meeting, and the additional fact that 85 per cent. of the Fellows of the Academy are present to participate in our proceedings.

Gentlemen, while these are matters for congratulation, and calculated to stir us with enthusiasm in behalf of our organization, let us not take a narrow conception of our work, which, as Fellows of the Academy, is necessarily national in its character. Let us rather seek by individual effort to promote a proper spirit of competition, remembering that as individuals and also as a society we will be carefully and accurately judged by public opinion, as well as by our own consciences, than which no higher or more impartial court ever found a verdict.

In this era of verbosity in medical literature it is often extremely difficult even with those of large experience, as well as extensive personal acquaintance, to select the really good from that which is mediocre in what is written. An important function of this Academy is to seek to establish a standard in the literature of railway surgery in America. I undertake to say that if each gentleman in affiliation with the Academy would give the same painstaking attention to what he writes for publication as he does to his ordinary professional duties, never lending himself to the popular idea of writing frequent lengthy and often empty arti-

cles for print, the literature of the Academy would in a few years be recognized as trustworthy and authoritative in matters pertaining to railway surgery, and its Fellows would be credited with having established an institution worthy of commemoration. The erstwhile mooted question as to establishing railway surgery as a specialty requiring special aptitude, special training and special facilities for work, is rapidly being settled, and it is safe to predict that in the near future, railway surgery as a specialty will be firmly established in the minds of not only the medical profession generally, but of also those distinguished laymen who have to do with the building and management of our great railways. Specialism in railway surgery does not consist in the use of certain apparatus, instruments, dressings, etc., nor does it consist in the possession of any peculiar technical knowledge not necessary to the general surgeon, for we are all governed by well-established surgical laws, and the application of certain cardinal principles is the same, whether in railway, military or other emergency surgery. It can not, however, be denied that in matters of organization and equipment, including transportation of patients, and many other details peculiar to railway surgery, special qualifications are essential to the best success. The general or chief surgeon of a road must have certain mental characteristics, not the least important of which is executive ability of a high order, together with a judicial instinct which will enable him under all circumstances to be fair and impartial to all concerned. He must, moreover, command the respect and confidence of his *confidères* generally and especially of his local surgeons, many of whom will be found to be his superior in point of operative ability, and each of whom should be a reputable practitioner in the best sense of the term.

I trust I may be forgiven the apparent, if not the real egotism of assuming to inflict so much parental advice, and beg in extenuation to say that the impulse is born of a deep feeling of interest in the present and future welfare of this association. We are making history, and it depends upon ourselves whether the future shall reveal the wisdom or unwisdom of our actions. This Academy is no longer an experiment with an uncertain future but an assured fact, and if we carefully observe the tenets of our organization there can be no doubt as to the ultimate result of our labors.

Generally speaking, the medical press throughout the country have been kind and courteous to us. The same may be said of the management of our various railways, which have almost without exception commended the general scheme of our organization, and especially the distinctive features of a strictly limited membership, with rigid scrutiny as to the qualification and standing of every applicant for fellowship.

I desire to express thanks to my associates in office especially, and to each of you for the very efficient

service rendered during the past year. For myself, the honor of having served as your first President is sufficient recompense for whatever effort the filling the position has cost.

ORIGINAL ARTICLES.

WHAT SHOULD EXCLUDE APPLICANTS FROM RAILWAY SERVICE?

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY JOHN E. OWENS, M.D.

Chief Surgeon Chicago and Northwestern and Illinois Central Railways.

CHICAGO, ILL.

It is a matter of practical interest to determine what should and what should not exclude applicants from railway service.

The formulation of any set of rules intended to govern examinations presupposes the adoption of a working basis, and the classification of the applicants for service.

So far as disabling diseases are concerned, it will not be necessary to mention those which are so disabling as to discourage the sufferer from following any pursuit. Others, again, are more or less insidious in their progress and for a time do not furnish symptoms which make the patient aware of their existence. Certain conditions interfere with the healing of wounds, impede recovery, entail an undue loss of time, and become aggravated by the injuries which are received in the line of duty. It would be useless to enumerate all the diseases which would disable the applicant. From a medical standpoint the following will perhaps be sufficient to turn the attention of the medical examiners in the right direction: Diabetes, cancer in all its forms and in all localities, chronic diarrhea, the presence of gallstones, chronic inflammations, hemoptysis, tuberculosis, asthma, organic cardiac disease, evidences of organic disease of the brain and its meninges and of the spinal cord.

From a surgical standpoint the following should exclude the applicant from service: Necrosis, ulcerations in any region, scrofula, bubo, malignant tumors, phlebitis, varicose veins, aneurysm, acute and chronic periostitis, synovitis, arthritis, floating cartilages, old depressed fractures of the skull, or any fracture followed by head symptoms, suppurative ear diseases, antero-posterior spinal curvature, severe injuries of the back, recurring appendicitis, abdominal hernias, acute and chronic cystitis, acute gonorrhea, epididymitis, enlarged testicle, certain visual defects and deafness.

INSTRUCTIONS GOVERNING SURGEONS IN CONDUCTING EXAMINATIONS OF APPLICANTS FOR EMPLOYMENT ON RAILROADS.

When making application for service, engineers, firemen, agents, operators, conductors, brakemen, engine dispatchers, train baggagemen, station baggagemen, crossing flagmen, switchmen, switch tenders and signalmen must be examined for color perception, hearing, and for visual and other physical defects.

Examining surgeons are requested to select a time and place at which they will conduct examinations, and to notify the proper officer.

Examinations are to be conducted in a well-lighted room at least twenty-two feet in length. In testing visual acuteness, only one applicant should be present

in the room at a time. In testing color perception and hearing, any number of applicants may be present, but must maintain silence.

Examining surgeons are provided with the following articles to be used in making examinations:

1. Two cards of test type (Snellen's). (One for illiterates.)

2. A set of wools for testing color perception.

Applicants will bring with them application forms *in duplicate* on which will be found a blank certificate, to be filled out and signed by the examining surgeon.

EXAMINATIONS IN VISUAL ACUTENESS.

The card of test types should be fastened in a good light to a wall, the bottom of a card being about five feet from the floor.

A distance of twenty feet should then be measured off on the floor at a right angle to the plane of the card. Applicants are then to be admitted singly and instructed to read the card from above downward without assistance. In cases of defective vision, after testing vision for both eyes, each eye should be tested separately. The last five letters read correctly are to be recorded in the report.

Examiners are reminded that the normal-eyed should read at twenty feet the line marked 6 m.

EXAMINATION IN COLOR PERCEPTION.

Examiners are furnished with a set of colored wools, lettered A, B, and C, and numbered from 1 to 40. These wools are divided into three groups, distinguished as follows:

Group A, containing the light green skein A, the green shades numbered 2, 4, 6, 8, 10, 12, 14, 16, 18 and 20, and the gray confusion colors numbered 1, 3, 5, 7, 9, 11, 13, 15, 17 and 19.

Group B, containing the pink or purple skein B, the pink or purple shades numbered 22, 24, 26, 28 and 30, and the blue confusion colors numbered 21, 23, 25, 27 and 29.

Group C, containing the red skein C, the red shades numbered 32, 34, 36, 38 and 40, and the brown confusion colors numbered 31, 33, 35, 37 and 39.

MANNER OF USING THE WOOLS.

Mix the forty skeins thoroughly and throw them on a table in a good light; select skein A, and, placing it about twelve inches distant from the pile of wools, instruct the applicant to pick out the different shades of the same color.

The examiner, having satisfied himself of the ability or inability of the applicant to select the proper skeins, should record the numbers of the skeins selected and return them to the pile. The examiner should then place the skeins B and C successively near the pile of wools, to be treated in the same manner.

In testing for defects in color perception, examining surgeons may be guided by the following brief suggestions:

1. Any number of applicants may watch the test in operation, provided they maintain silence. In case an applicant fails to comprehend the test, he may be directed to step aside and watch another applicant select the skeins, or in the absence of another applicant the surgeon may himself make the selection. This method is valuable in case of color blindness, as the applicant is convinced against his will that the test is a fair one.

2. Do not under any circumstances call the color of a skein. All tests in which the applicant is requested

to name colors or shades are incorrect. The object of the test is to discover whether the applicant can properly classify shades of primary colors, and it is important after he thoroughly understands what is expected of him not to render him any assistance.

3. It is well, if necessary, to explain the difference between colors and shades, for example: Blue, green, red, are colors. Light blue, dark blue, pea green, Venetian red, are shades of these colors.

The examiner should watch the applicant closely and note any hesitancy in selecting the skeins, especially when he appears undecided whether or not to select a confusion color. Should he evince a strong tendency to select any confusion color, even if he does not actually select it, the number of the color should be recorded. Those who are defective in color sense, either select the confusion colors or want to do so.

4. Recollect, however, that blue is not a confusion color for green but only for pink (purple). It must be borne in mind that many men, not particularly ignorant in other matters, find it difficult to distinguish between light shades of blue and green, or between red and orange. This defect is one merely of education. It is the result of color ignorance, but not of color blindness, and should not reject a candidate. In case such ignorance is manifested, it may be well to call the applicant's attention to the fact that he is not well posted in colors.

5. In case of color blindness, the applicant usually adopts one of two courses. He may boldly and rapidly select a number of skeins at random, throwing them down with a great show of confidence, or he will laboriously study over the skeins, carefully selecting a few of the correct colors, and a few—often not more than one—of the confusion colors, always hesitating and usually selecting shades of nearly the same intensity in color and confusion of colors, for example: light green, light gray, light purple and light blue.

The infirmity of applicants adopting the first course is usually easy to detect, but it is often difficult to distinguish between a man who is hesitating and vacillating on account of lack of purpose or color ignorance, and one who does so on account of actual deficiency in color perception. In these latter cases it is well to instruct the applicant not to handle the wool until he has determined what skein he wishes to select. The applicant may also be permitted to watch another while making the test.

6. In case more than one applicant is present during the examination the wools should be frequently mixed, and other applicants should stand far enough from the table to be unable to read the numbers on the skeins, or the skeins may be arranged with the numbers turned down.

Inasmuch as the duties for the different railway employes are widely different, the requirements for efficient service would likewise vary. It would therefore be judicious to formulate the following classification:

In the first class, or those with normal hearing, color sense and visual power, are included the following: Engineers, firemen, engine dispatchers, brakemen, signalmen, conductors and train baggagemen.

In the second class, in which normal color sense and normal hearing are demanded, and also perfect visual power in one eye, while the other might attain to only 20-40 of the standard, or 20-30 visual power in both eyes, or both of which may be made so by the use of glasses, are included switchmen, switch

tenders, agents, operators, station baggagemen and crossing flagmen, or gatemen.

PHYSICAL DEFECTS.

1. Applicants with trachoma or other inflammatory conditions of the eyes, or with chronic discharges from the ear, are disqualified.

2. Hernia, varicose veins of both legs, or very marked varicosity of veins in one leg, phlebitis, skin diseases—especially eczema, or even a strong tendency to it, loss of entire thumb or loss of two fingers of one hand, disqualify the first class, and station baggagemen, switchmen and switch tenders in the second class, while crossing flagmen, agents and operators may be accepted with hernia and also with loss of thumb or loss of two or more fingers of one hand.

3. Unmistakable evidence of chronic alcoholism disqualifies both classes.

4. Acute gonorrhea and the primary and secondary manifestations of syphilis, traumatic and pathologic bubo, disqualify both classes as long as the symptoms are apparent.

5. Orchitis, epididymitis, malignant tumors, recurring appendicitis, old depressed fractures of the skull, or any fracture followed by head symptoms; spinal injuries, epilepsy, antero-posterior curvature, severe injuries of the back, tuberculosis, marked scrofulous cachexia, aneurysm, necrosis, acute and chronic periostitis, acute and chronic cystitis, disqualify both classes. Agents, operators and crossing flagmen may be accepted with antero-posterior curvature without symptoms.

6. While synovitis, arthritis, floating cartilages and impaired mobility of joints disqualify the first class, and switchmen, switch tenders and station baggagemen in the second class, the latter need not exclude agents and operators, provided inflammation has long since subsided and the affected joints be free from pain.

7. From a medical standpoint, diabetes, chronic rheumatism and gout, chronic diarrhea, chronic hepatic disorders attended with jaundice, are disabling in their nature; hepatic, cardiac or renal dropsies, asthma, hemoptysis, valvular disease of the heart, angina pectoris, evidences of organic disease of brain or spinal cord, insolation, inveterate neuralgia of the larger nerves, disqualify both classes, while crossing flagmen may be accepted with a moderate amount of chronic rheumatism.

8. Under the head of disqualifying defects, surgeons will be careful to note any physical defects that would impair the usefulness of the applicant, that would be more or less aggravated by the service, or would contribute to the prolongation of disability in case of injury.

9. In order to prevent fraud in subsequent claims for personal injury, a careful record must be made in the proper place of physical defects which do not impair the usefulness of the applicant, that would not be aggravated by the service, or would not contribute to the prolongation of disability in case of injury.

10. In case the applicant does not show evidence of having been vaccinated since attaining to adult years, he should be vaccinated.

After making the test of vision, color perception, hearing and examination for physical defects, the examination surgeon will fill out and sign in duplicate the blank certificate found on the application blanks.

One of these is sent to the Division Superintendent or Master Mechanic, and the other to the Chief Surgeon. The fee for making such examination will be paid by the company unless the applicant is accepted as an employé, in which case the amount of the fee is deducted from his wages. The certificate referred to is as follows:

SURGEON'S CERTIFICATE.

(Here follows a list of stations where examinations may be made.)

The following is the report of the result of my examination of Mr.

1. When placed at a distance of twenty feet from the test types, the last five letters read correctly by the applicant are: Right eye. : left eye. : both eyes.

2. A. The applicant selects skeins numbered as follows, as being the same color as test skein A: B. The following as being of the same color as test skein B: C. The following as being of the same color as test skein C:

3. The applicant hears the tick of a watch with the right ear at inches: with the left ear at inches. For ordinary conversation at a distance of twenty feet, the hearing is impaired.

I hereby certify that, having examined the visual power, color perception and sense of hearing of the applicant, I find him $\left\{ \begin{array}{l} \text{qualified} \\ \text{disqualified} \end{array} \right\}$ to fill the position of

I also certify that there is evidence of his having been successfully vaccinated, that he is not suffering from any disease or disability, nor does he manifest any evidence of an abuse of intoxicating liquors.

Disqualifying defects : defects that do not disqualify (Signed.) Surgeon.
Dated at 189

In presenting this paper, my desire is to formulate a tentative working basis for the purpose named. In all probability its practical working will suggest useful changes, and I am glad to avail myself of this opportunity for conference with the able Fellows here present, and hope that they will make important suggestions.

DISCUSSION.

DR. WEBB J. KELLY. I was very much interested in the paper of Dr. Owens, probably on account of the fact that in Ohio the railways have to a certain extent evaded the law. The law compels them to have the test for color blindness made, and it has been the custom of some roads—I will not say all—to select some one of the trainmasters to make the examination. The doctor in his paper calls attention to one point that impressed me very much, and I think the management of railways should have their attention called to it, namely, not designating what color they are to select as a color, giving it the name. As the doctor says, the test color is placed on the table and then the parties to be examined are asked to select the colors that match it. I have known instances that have come up on one of the roads I represent in which an employé would be examined for color blindness, and he would be asked to pick out all the greens in the bunch, and in that way the examiner would get the man confused. Were he to take the original green and ask the man to match it, I have no doubt the man would have done it correctly. I think this an important point in the doctor's paper to which we should call the attention of the management of our roads where they do not have a regularly employed surgeon to make these examinations.

DR. F. K. AINSWORTH. There is very much to commend in the paper of Dr. Owens and very little to criticise. I would ask the doctor what he does in the case of crippled employes? For instance, a man is employed in some branch of the railway service who has not had an examination for color perception, etc., who has lost a leg or some other member, and the company is anxious to do something for him—what can be done in such case? Under the rules of Dr. Owens that man could not become a flagman. It is becoming a question what to do with

the crippled employes of our railroads. We have filled the positions of flagmen with these men, or in some cases with old engineers who are unable to do anything else.

In regard to the test for color perception, the doctor's rules are the same practically as ours, and I will only speak of one point that seems of great value. I have many times had men fail in the color test when made by the worsteds. Of course, in many instances I believe it was due largely to ignorance of colors, while in others it was attributable in greater or less degree to color blindness. These men, if given low surface flags, can pick them out every time without making any errors. They can pick them out in a dark room. If a man recognizes smoky lights without error, I should think it would be safe enough to put him on duty even if he had failed in distinguishing the wools.

DR. D. S. FAIRCHILD.—Beginning with this month I have examined two hundred men under the regulations which have been adopted by Dr. Owens, and I have been astonished at the number of men who could not come up to the standard. Out of fifty-one men examined, twenty-four of them had either defective vision, defective hearing, or had large abdominal rings. Now, I have been making a note of all those cases in which there were large addominal rings. While these men are not disqualified, as far as the railway service is concerned, it is quite possible that some time in the future difficulty will develop. It not infrequently happens that an injured man, either a switchman or brakeman, comes into our office and says he was hurt in consequence of trying to climb on a moving train. The round of the ladder gave way, he fell, and hernia followed. Now, it is quite possible that such a man had weak abdominal walls previous to this time, that the hernial rings were large, and that in consequence hernia was developed and the railway company has to pay for an injury which they ought not to pay for. I do not know what regulations Dr. Owens makes in regard to the acceptance of candidates who have such abdominal rings. To my mind, in a certain sense it would be disqualifying evidence. I have observed that men over 30 years of age, in a large percentage of the cases examined, had defective vision, and that 20-30 was about as far as they could see with both eyes. I find also in a number of instances that vision in one eye would be 20-30 or 20-40, or in both eyes 20-20.

In regard to the color test, I have observed a good deal of ignorance on this subject, and if the applicants were required to name the colors there would be many that would be considered color blind. To mention color does away with the element of ignorance. The candidate on being asked to select the skeins at once says he has been engaged in the kind of work that enables him to learn different colors. Not a few clerks in a drygoods store fail in naming certain colors. He has to simply select two colors and all shades of those colors, and in this way he is able to determine what belongs to the reds and the greens and avoid putting in any combination colors with them. Out of fifty-one cases examined, I found one candidate color blind, and one with a fully developed direct inguinal hernia with an extremely large external ring on either side, which would permit of the introduction of two fingers. I found one case of mitral insufficiency with compensatory hypertrophy. In this case the condition would not disqualify him for employment now, but of course the compensatory hypertrophy would be against him sooner or later. On our road the superintendent is required to have all applicants undergo this examination. When the slack time came last year and year before, instead of laying these men off for a period of time, they were discharged, but were obliged to seek re-employment under the same rules that new or recent applicants would have to observe. These men have all been examined, and I think it is the intention of our superintendent, so far as he has jurisdiction over the matter, not to employ any men over 30 years of age unless they come up to a high standard, and as previously stated, I have

observed that those men who are over 30 years of age have some defect of vision.

There is another point in regard to hearing. We find men in the engineering department—I mean the locomotive engineering department—employed as either firemen or otherwise, in the machine shops, who have defective hearing so far as the watch is concerned. In some cases they can hear a watch tick only eight or ten inches, in one case I recall only four inches, and in another the man could only hear the watch tick two inches distant from one ear, and not at all with the other ear; yet the hearing at a distance did not seem to be materially defective. I requested this last candidate to have a specialist examine his ears and determine whether or not there was any disease of the organ. The aurist returned a written report saying that there was no disease of the ear, and that the watch test was not a fair one in this case; that he could hear easily at a distance of twenty feet, whereas he could not hear the watch at all with one ear, and with the other only a distance of two inches. The opportunity of making these examinations has revealed to me a risk which railway companies have taken heretofore in employing men in this capacity, so far as their physical condition of hearing and seeing is concerned.

DR. OWENS (closing the discussion)—This matter of examining applicants for the railway service is an exceedingly important one, and I might say that an examiner is not made in a day. When I first took the matter up, it took me some three months to investigate it, before I felt justified in doing this important work. Now, we have examiners on our roads who do not really know how to examine these men. Perhaps I ought to be ashamed to say it. I know they will be able to do it after a while. The reports come to me and I pass on them. If there is anything wrong we rectify it in some way. How can we get our examiners to thoroughly examine these applicants? In the first place the matter must be thoroughly studied. I have recently come in contact with the report of a committee of the Royal Society of London on this subject. It takes the subject up in all its relations, criticising the methods of the Board of Trade which seem to be so very defective that they were not accepted at all. It is one of the most valuable pamphlets on the subject that I know of. Then there is a book just issued, the "Dalton Lectures," which treats of the subject of color blindness. There are various text-books on diseases of the eye that one may pick up, but they do not go into the subject of color blindness to a sufficient extent to enable the examiner to do his work well. I intend to get a number of these reports and will have the surgeons connected with our roads procure them through us.

It is said that applicants who have made some mistakes with worsteds are able to name the colors of the flags and the lanterns correctly. The question is whether a man who makes mistakes with worsteds and does not in the case of flags and lanterns should be accepted. That throws into the examination the naming of colors which is a defective method. On the Illinois Central Road the examinations were made first with worsteds, and then Mr. Jeffrey ordered that the examinations be repeated, and the applicants were examined with flags and lamps. I was timid as to the efficiency of the latter method. My assistant, Dr. Allport, of the Illinois Central Road, has examined many applicants with flags and lanterns, as well as with worsteds. The conclusion has been reached that men who are color blind with worsteds will make mistakes with flags and lanterns.

Forty Thousand Acres of Land for Insane Asylum.—One of the acts of the South Dakota Legislature in 1895 was to appropriate and set apart for the use and benefit of the Northern Hospital for the insane, forty thousand acres of the land granted to that State for "other educational and charitable purposes."

APPENDICITIS; PROTEAN TYPES.

Read before Jackson County Medical Society at Kansas City, Aug. 22, 1895.

BY A. H. CORDIER, M.D.

Lecturer on Abdominal Surgery Kansas City Medical College; Vice-President American Association of Obstetricians and Gynecologists.
KANSAS CITY, MO.

To the members of the Jackson County Medical Society a paper on appendicitis may, on first thought, seem a trite topic for discussion, yet when the many phases of this treacherous disease are called to mind we at once realize that it is a topic the importance of which demands oft repeated discussions, that a more unanimous opinion of the pathology of the disease may be obtained, and its proper treatment better understood. In the face of our more advanced and modern pathologic knowledge we yet have conscientious practitioners who claim that they have never seen a case of appendicitis, and another class also exists, that admit having cases, but claim the ability to cure them, denying the probability of a death from the disease. A still more liberal class may be found that is willing to meet the surgeon halfway and become associated with him in the case, waiting and watching for the so-called operation indications to spring up. It is just this delay, too often, that results in the signing of a death certificate. A few days ago a very intelligent, thoughtful professional gentleman (a minister) met me on the street, and referring to a late case of appendicitis upon which I operated said, "I am glad to hear that one case of appendicitis has recovered after an operation." It has crept into the minds of not only the laymen but of the profession, in many instances, that the mortality from this operation is high. This deduction is in part correct, but thanks to the converting evidence of the post-mortem and operating tables the deaths from delayed surgery are of less frequent occurrence than formerly. If any one disbelieves in the advisability of operating in appendicitis in almost every case, he will quickly change his views if present at a number of operations, or if he witnesses a few post-mortems on patients dead from the disease. I do not believe that every patient with a pain in the region of the appendix should be subjected to laparotomy, but I do think that when the diagnosis of appendicitis has been made, if every case was operated upon by a skilled surgeon, the mortality from the operation and the disease would be almost *nil*. A great and dangerous mistake is often made in waiting for the operation indications, as they are usually called, to spring up in these cases. Every case of appendicitis is symptomatically an individual, and the surgeon or physician who looks for a stereotyped case will hunt a long time before the case will be found that exactly tallies in its manifestations with a book description. A large and varied experience engenders the best judgment in correctly interpreting the manifestations of the protean types of this pathology; not only experience in seeing the cases from a practitioner's point of view, but from the surgical and pathologic.

A bright but decidedly conservative practitioner once told me, as I was making preparations to operate on an appendicular abscess, that if the subject was his child he should not be operated on, but after witnessing an operation that revealed a large amount of stinking pus, and a gangrenous appendix, he at once turned over a new leaf, and I have since operated upon three cases for him, with success in all four cases.

In the catarrhal form of the disease a symptomatic transient lull is often noticed, but sooner or later a recurrence of greater or less severity supervenes, and the sufferings and dangers incident to a relapse are repeated. In this form of the disease the mucous membrane of the appendix is primarily influenced, the subsequent attack invading more and more deeply the muscular and other structures of the appendix, thickening its walls, cutting off the proper blood supply by these interstitial infiltrations, obstructing the proximal end of the canal at Gerlach's valve, and inducing an extra amount of secretion into the distal portion; this in turn becomes infected usually with the bacterium coli, and a simple catarrhal change is converted into a septic purulent one, to be followed by local (perforation) or general (gangrene) death of the organ. It has been the exception, not the rule, that I have found a foreign body in the appendix. In one case I found an orange seed, in another a peanut kernel, and in another a piece of chewing gum.

This inflammatory change is prone to attack the subserous tissue and lead to an abundance of exudation, the first step nature takes to protect the general peritoneum. This inflammatory edema extends to the surrounding peritoneum, agglutinates the surfaces, and thus adhesions are formed, nature's barrier. If there is only one attack, and if that spell stops short of suppuration, the veil-like adhesions are absorbed. If the case was a catarrhal one the changed walls of the appendix approach the normal again, and the appendix may get entirely well, or more likely be ignited at some future time, or number of times, ultimately proving fatal.

A fecal concretion is often the cause of a perforation or gangrene of the appendix. The inflammatory forerunners are protective processes and are not of a truly septic character in the initial stage, and it is to this fact that we must attribute the prophylactic building of these barriers. A truly septic peritonitis rapidly spreading is not preceded by these limiting sentinels, consequently is rarely limited. A perforated appendix, liberating large quantities of septic matter into the peritoneal cavity, unless removed quickly, and followed by the most careful toilet, inaugurates a fatal form of peritonitis. They die, if not saved by surgery, as quickly as by a perforated gunshot injury to the intestines.

In a case of appendicitis, primary or recurrent, can we tell whether a perforation is going to take place or not? I say no. Can a large per cent. of the cases be looked upon as dangerous from the time a diagnosis is made? Yes. Have we a remedy in the list of drugs for which any one has claimed that it will prevent or cure an appendicitis when once developed? No. Is the mortality from the operation, when done timely, high? No. In what class of cases of appendicitis is the mortality following an operation highest? In cases where hot stupes and large doses of morphia have been used, and delays countenanced. Is the operation safe and easy for any one to perform? No. I know of no operation in the domain of abdominal surgery that requires more surgical skill and knowledge than that of appendicectomy. When to stop in the operation, and when to go ahead, are problems of grave import confronting the surgeon in the midst of an operation. Upon his decision depends the life or death of his patient. It is not an operation that is safe to place in the hands of the novice. It is very essential here to know what not to do, as well as to

know what should be done. After an individual has had one or more attacks, and is seemingly well, has he any assurance that he is not going to have another one, or that the next attack will not prove fatal? No.

Case 1.—Appendicular abscess; rupture into cecum; recovery. J. M. L., male, age 45, was taken sick with uneasiness and pain in right iliac fossa, diarrhea, temperature ranging from 99.5 to 102 F. Pulse 80 to 120. After the beginning of the attack he drifted along about as above for ten days, all the time having more or less tenderness and pain in region of appendix. A week after the beginning of the attack an induration developed over or about the cecum, not very painful on pressure. Some two weeks had elapsed when he felt a "giving away" in the mass and a few hours later passed pus and blood per rectum. The mass soon disappeared, and he is to-day up and about, attending to his professional duties.

It would be extremely illogical to reason that as this case made a symptomatic recovery others, seemingly similar, would do likewise. This case was undoubtedly due to the presence of a tubercular ulcer in the appendix, as its slow progress, abundant plastic protective barrier and the history before and afterward indicates. A diarrhea had preceded the case for months. A daughter had died of tubercular peritonitis and ulceration of the intestines, and another child had developed tubercular synovitis. This case should have been operated on early in its progress, and not been permitted to run the gauntlet of dangers incident to procrastination while waiting for nature to relieve herself. Nature is a poor physician or surgeon in appendicitis.

Case 2.—Appendicitis; one mild attack; recovery. Miss L., age 16, was taken with uneasiness over appendix accompanied with some little rise of temperature, 95.5 F., normal pulse, obstinate constipation lasting ten days, no symptoms of intestinal obstruction. All forms of cathartics and enemas given with no response: no vomiting or nausea; general condition of patient all through attack good; no induration, and very little tenderness at any time. This case was watched by myself and the attending physician right along until bowels moved well and symptoms disappeared. I contended all through the case that it was not an appendicitis, but an impaction of cecum, and advised against operative procedure. The attendant claimed that it was an attack of appendicitis, thinks so still, and has reported the case as one cured with medicines. The patient has remained well.

Women do not have the disease as frequently as men (one to six). The obstinate constipation, absence of tympanitis, the complete subsidence of the symptoms following bowel movement, and the non-recurrence of the attack, in my mind warrants me in yet maintaining that she did not have an attack of appendicitis. Let us admit that she did, and has permanently recovered, it only serves to establish the rule by being an exception.

Case 3. Recurring appendicitis; operation in the interval of attack; recovery. H. E., age 20, male, was first attacked with severe pain in region of appendix one year ago, since which time he has had thirteen attacks, each lasting from three to eight days. The attacks have been accompanied by constipation and great distension, the latter often preceding the painful exacerbations a day or two, the tender area usually extending over a space the size of the hand but not as painful on pressure as that usually accompanying a true localized peritonitis. There has not at any time been a localized induration of the surrounding or overlying structures. The attacks have usually been marked by a slight rise of temperature (100 F.), the pulse being very slightly increased in frequency. A disposition to flex the thigh upon the abdomen during the attacks, has been a marked feature in his case, and is explained by the recognition of the fact that the psoas and iliacus muscles are relaxed while the thigh is thus passively flexed upon the abdomen. Any disturbance of these muscles causes more or less movement of the inflamed appendix through its mesenteric attachments, thus giving rise to the increased pain. The genito-crural, anterior crural and ilio-inguinal nerves being immediately (in part of their course) beneath the peritoneum, were more or less disturbed in this case, as manifested by the referred pains in the course of their distri-

bution. During the acute attacks he has been treated by as many as six physicians, in three States. Some of the six are probably reporting this as a cured case of appendicitis without surgery. The attacks were so severe that he would barely throw off the effects of one until another exacerbation would supervene. The appendix could easily be rolled under the finger before operating. Operation July 3, 1895. The appendix was found to be greatly thickened and indurated as a sequela of the repeated attacks of inflammation. Its walls were one-fourth of an inch thick. The operation was performed in the interval of the attacks. His recovery was perfect.

This is one of the most dangerous forms of the disease, as the repeated attacks bring about vascular and other structural changes that favor the death of the appendix (gangrene) and that, too, with no walling in by the protective surrounding adhesions.

Case 4.—Appendicitis obliterans, followed by symptoms of intestinal obstruction. H. G., male, age 28, nine years ago had an attack of what he called inflammation of the bowels, and his right side "caked" and was extremely tender. He had a high fever, and was very sick for a number of weeks. This soreness and pain continued with varying intensity up to the next attack, one year later. This is a diagnostic feature of this form of appendicitis; that is, the soreness and tenderness persist in the interval of the attacks. This second attack was very much the same as the first, lasting three weeks. After this relapse he had fairly good health for four years, with the exception that there was always uneasiness in the region of the appendix and many attacks of what he called "colic" and indigestion, often having to resort to cathartics to keep the bowels regular. At the end of this four-year freedom from severe attacks another "spell" was initiated by severe pain in the region of the appendix and "back ache." Had fever, increased pain and tenderness, lasting two weeks, leaving him seemingly in about the same condition as before. He was often troubled with gas pains and distention, and had "colic spells." He had several mild attacks between the last severe attack and last June, or four years after last severe spell. In June he came down with a severe attack very much like previous paroxysms except that the tenderness was less, no tumor was discoverable and that he had much more gaseous distention and difficulty in getting his bowels to move. Soon after this sickness I saw him, and advised an operation.

I found the appendix atrophied, and its canal completely occluded (appendicitis obliterans). Length of appendix about one and one-half inches. It rolled under the finger like a tendon or a fibrous cord. An inflammatory band the size of the finger was attached to abdominal parietes near internal ring and crossed a coil of bowel and attached itself to the mesentery, thus making a partial intestinal obstruction. This was divided and the appendix removed. He left the hospital in two weeks, and has been entirely relieved of all his painful symptoms.

We have in this case one of the best appeals for an operation in all similar attacks in view of the prolonged suffering and dangers incident to these repeated attacks, and the damage wrought by the delays. Each attack that this man had, endangered his life far more than an operation in skilled hands, having in view a permanent cure and relief for his sufferings.

Case 5.—Appendicitis; gangrene of the appendix; operation; recovery. A. K., male, age 20, was taken on a Saturday night with pain and uneasiness in right iliac region, the pain extending down the inner side of the thigh and in the course of the distribution of the external cutaneous and genito-crural nerves. Very little elevation of temperature (99.5); pulse 84. Hypodermics of morphia were given by the attending physician. The pain and his general condition remained about the same up to Monday afternoon, when I saw him for the first time. Pulse 92 full and "vicious." Temperature 100.5 degrees F. Bright and cheerful except when pains would come on caused by any peristalsis of bowel or movements of thigh. Bowels acted during the night. Tenderness over area size of hand and a false sense of induration over appendix due to rigidity of the abdominal muscles. This condition is often misleading, and added to the edema that frequently attains may be easily mistaken for a walled-off intraperitoneal mass or abscess. At the operation the appendix was found to be gangrenous and entirely free from surrounding protective barriers. His recovery was complete.

Without an operation his blood-vessels would have

been filled with embalmer's fluid within thirty-six hours. An appendix with no walling off, when gangrenous or perforated, kills quickly unless the surgery is immediate.

Case 6.—Appendicitis, recurring, with symptoms of bowel obstruction due to adherent appendix; operation; recovery. Mr. N., aged 44, has had a number of attacks lasting from a few weeks to two months. After last attack, six months ago, he has repeated colic spells, accompanied by obstinate constipation. The cecum would become enormously distended with gas, resembling, as he described it, a croquet ball in size. Operation revealed the appendix long and hard to the touch (appendicitis obliterans in its early stage). The distal end was firmly attached to the iliac vessels. It was ligated near the cecum and again near its distal extremity and removed. The position of the appendix was such that it was pulled upon when the cecum became distended and added to the cause of the symptom producing attacks simulating bowel obstruction. His recovery was complete. He has had no return of his old painful attacks.

Case 7.—Appendicular abscess; operation; recovery. W. K., male, aged 19, was taken down one week before I saw him with fever 102. Pulse 80 to 96. Pain and tenderness gradually getting more severe: constipated bowel, tympanitic; well marked induration in region of appendix. Operation consisted in simply opening the abscess, packing with gauze and leaving wound open to granulate from bottom. Recovery in a few weeks.

This case was one in which nature had time to wall off the appendix before it perforated, but the barrier sooner or later would have been torn down and a death from peritonitis recorded.

Case 8.—Perforative appendicitis; immediate operation; recovery. Mr. Wilson, aged 22. This man, stout and healthy was taken with most intense pain in iliac fossa, accompanied by a subnormal temperature (shock) but with a pulse of only 90. Abdomen distended. A diagnosis of perforative appendicitis was made and operation performed within two hours of the development of the symptoms of perforation. He had been having an "uneasiness there for three days." A septic peritonitis was already inaugurated, but a thorough irrigation with a normal saline solution and gauze and rubber drainage saved him.

Case 9.—Perforated appendicitis followed by a diffused septic peritonitis; operation two days later; death. Miss H., age 16. A lovely young girl, had been complaining for a week, with pain or uneasiness in the region of the appendix. Constipation; little elevation of temperature. Two days before I saw her a most intense pain was felt about the cecum followed by a condition of shock from which she soon rallied, but the pain spread rapidly over the abdomen. This subsided in eighteen hours. At the time I saw her she had a pulse of 90; temperature 100.5; free from pain except a sense of distension in abdomen; was bright and cheerful; insisted, in fact, upon getting out of bed and having her photograph taken standing, not over half an hour before the operation. These septicemic patients often manifest this cheerful disposition up to within a few moments of death. Operation revealed a diffused septic peritonitis, with a perforated appendix. The intestines were as lifeless as a rubber hose. The abdomen contained fully half a gallon of septic fluid. Irrigation and drainage failed to save the case because her diaphragm, spleen and liver were bathed in pus, and she was thoroughly saturated with the products of bacterial chemic changes.

An early diagnosis and speedy surgery would have saved this case, also. With the laymen operations on dying patients bring reproach to surgery because they fail to save the cases. This is true not only with the laymen but with some members of the profession. To me it seems that there are no plausible grounds for a diversity of opinion as to the proper course to pursue in the management of these cases when once a diagnosis is made. Let us, as practitioners and surgeons, get together on this subject. It is not necessary to provoke any ill feeling (which I have often seen done) in discussing this topic. Let our deliberations be friendly and gentlemanly, and sooner or later the truth will prevail and our patients will reap the beneficent harvest, the fruits of our mutual deliberations.

COLLES' FRACTURE.

Read before the Mississippi Valley Medical Association, November, 1894.

BY JNO. EPH. LINK, M.D.
TERRE HAUTE, IND.

I had kept no notes or reports of cases incident to the subject in hand until I determined to prepare a paper to be presented at this meeting; therefore I shall necessarily be somewhat limited in statistics, but hope in what I do by presenting a few typical cases to at least suggest an idea as food for thought. If I fail I hope you will pardon my presumption, and if I succeed that it may be registered as a merit of credit to the anatomic field of study, observation and labor.

Deformity in all cases is either the result of violence or muscular spasm from irritation, or both. In the case of Colles' fracture and other injuries of the wrist joint, this is indeed particularly so. Especially the progressive form from reflex irritation.

Some of the members present may remember my work on bandaging before the Society some years ago at Indianapolis, in which I attempted to show the advantage of a smoothly applied bandage in successive layers; this meets the indication in cases of injury to tissue, rest without restraint, and this in every instance must hold good in order to avoid irritation from the dressings, so far as possible, along with a too long enforced restraint and consequent loss of action of muscle. Yet, while we must necessarily use more or less force in the adjustment and retaining a fractured bone in position, I think I must have about perfected a happy medium between mechanical means and nature's resources.

In the first place, and as holding good in all cases of fractures, dislocations, etc., if the muscles are perfectly embraced in a gentle environment they "go to sleep," and thus half the work is done through the overcoming of spasm in reflex irritation. Then, by gentle traction and pressure well directed from time to time, progressively and frequently applied, perfect results may be obtained; whereas, on the other hand, if severe means are used and a single effort at replacement, great violence is done, and the results will be imperfect and more or less unsatisfactory. That any one method in the details of manipulation will prove equally successful in the hands of every one I can not claim, nor can we reasonably hope. As I often have occasion to illustrate, as showing the absurdity in the quibbles of council in medicine over different remedies in the same class: If two woodmen, the one with a crooked, the other a straight-handled ax, each having familiarized himself with the use of his tool, should enter into dispute, each claiming superiority for his kind; for any one must see that should they either one or both change, the results in the day's work at hand would be unfavorable. Each would do better work with the instrument he is most familiar with.

First in surgical success is knack, mechanical skill, more or less cultivated, with a thorough education in applied anatomy with its physiologic process, backed with practical experience and original clinical observation. The exception, as it may appear, to my general rule of bandage and position, "rest without restraint," without arbitrary environment and mechanical contrivances, is in this class of cases made necessary in the first place by the peculiar flatness (shape) of the forearm, wrist and hand;

and secondly the necessity of mechanical and somewhat forced means in bringing back to the normal line the peculiarly displaced and imperfectly separated fragment, more or less green stick or eggshell fracture, as it may happen to be in its nature according to the distance from the wrist articulation, sometimes involving the articular plate and strictly of the impacted or crushed eggshell variety. This latter, I think, I shall be able to show, can be remedied more successfully by my method of manipulation than by any other, not only in a larger per cent. of favorable results, but in every instance less deformity than has ever been reported. Why? First, by the taking off of muscular spasm before an attempt is made at adjustment; and secondly, by a gradual molding of the parts through well-directed means in the easy, snug-fitting environment, namely, nature's happy yielding to persuasion in the normal line. In all my work involving bandaging, especially next to the skin, I never allow myself to make a reverse. I allow the roller to run up a member, laying the bandage smoothly, and only use reverse when the limit of the part to be covered is reached. This can in many instances be done without the reverse turn, by passing around an enlarged joint, as the knee or around the hips; or, in case of the ankle-joint injuries, when the calf of the leg forms sufficient bulge with nar-

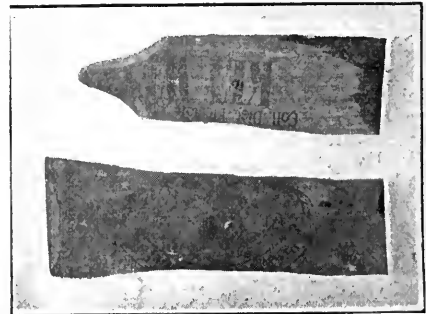


FIGURE 1.

rowing above to enable me to get the descending spiral. In thus laying on in the obliquely longitudinal we get strength and support in keeping the bandage from slipping, and avoid the rolls or thickness and like results by which the skin is creased and the physiologic function of the tissue is more or less interfered with.

I here present you with two splints from a case treated as shown in photograph No. 1, the palmar or anterior, and dorsal splint, hurriedly shaped out of a cigar-box lid with a dull pocket knife. The shaping at the distal, or palmar end is done, as you may see, much in the fashion of the old Day's splint, and is left just long enough to catch a turn of the bandage as it embraces the metacarpal region below the thumb; and in the shaping of this extension we simply accommodate it to an easy fitting in the fold between the enlargement on the thumb and little finger borders of the palm. It will be seen to consist of a short acute curve, so as to fit the muscular enlargement at base of the metacarpal bone of the thumb; the other longer and less curved, nor so deep, to fit that at the base of the fifth or little finger metacarpal and carpal enlargement. The dorsal splint you will see is, in this instance, made of a cigar-box lid. The lower end is made to correspond in width

to the bony structure of the hand at a point just below the thumb, about midway between this and the knuckles, or metacarpo-phalangeal articulation. You will observe that the splint I here show you is curved in its general outline in its upper two-thirds, and has been shaped in the manner to be suggested, and merely shows the outline of the forearm, and while a certain kind of board has been used in this instance nothing more is required to carry out the principal of dressing intended to be taught than to lay a thin piece of board (zinc or tin will answer as well as wood) of sufficient width and length and mark it on the reverse side, using the well limb for a pattern. Cut it a few lines narrower than the member with an idea of the limit of the bony structure. I should recommend that for comfort and the very best results; the upper end of the short or palm splint should be almost or quite the width of the limb at the corresponding point. Here, now, we have a crude frame-work of our dressing, but like that of a finely upholstered piece of furniture it will soon be out of



FIGURE 2.

sight, and to all outward appearances out of reckoning. Yet it is no less an essential part, like the solid foundation of a grand superstructure in building. The dressings in compress and bandage, as you shall see, will finally meet all indications to reshape the disorganized and displaced fragment of fractured bone.

First, now I should cover the surface of the splint with two or more thicknesses of old soft muslin, as a general precaution against violence in pressure or rubbing of the sharpened edges against the skin. For compresses they must be of full sufficient thickness to fill in the natural depressions carried to a little more than a straight line with the prominent points of bone included beneath the splints.

I find on inspection of the dressings removed from a lad of twelve years, a photograph of whose arm I show you (see photos. Nos. 2 and 3 results), that the long compress extending from the upper broad end of the short or palm splint to a point near to the thumb curve, is six thicknesses. This, with the edge

of the splint slightly beveled and considerably so in the concave at the upper end, fulfills the main idea in fitting and skin protection against mechanical irritation from the splints. Now comes the more important point, that of proper shaping in adjustment of the bone with a view of the normal, or non-deformity.

I have here, as applied in this case, a compress of rather thick old sheeting, ten layers, about $2\frac{1}{2}$ inches in width and an inch possibly wider than the splint, thus filling in the space at the edge of the splint so as to form an easy embrace of the limb beneath the splint and secondary bandage. This is placed upon the splint so as to extend from a point above the enlargement of the lower end of the radius to within an inch, more or less, of the upper end of the splint, as indicated by the length of the splint in accordance with the depression in the curvature of the normal or sound bone. On this I have laid another of eight thicknesses about two-thirds the length of the other and half its width. (See photo. No. 4 of compresses in place on splint.)

In this case we have what fits almost exactly the



FIGURE 3.

well limb, possibly a little more than a filling of the curve to a straight line. This will always be a wise provision as there will be a hundred chances to one of too little rather than too much. The tendency always being to displacement backward, as we almost invariably find it in such cases of injury.

As second in importance we will look to the padding beneath the dorsal or long broad splint. Here I find a covering of muslin wrapped about more or less securely, adjusted with a view of preventing its slipping and displacement beneath the bandage after adjustment. All this may be omitted, as the abrupt corner at the ends over which the bandage should be made to lap will be sufficient to keep the splint well in place. But here again comes in the element of precaution of being on the safe side against possible defect where defect alone can possibly obtain. We find on the lower end of the splint a broad compress of several thicknesses of muslin, broad enough to overlap the edges of the splint and of only sufficient length to extend from the point of fracture over the articular end of the radius, down over the carpal

bones and all, to a point near the end of the splint. Another compress of about the same thickness, commencing about 2 inches above the upper end of the lower one and well above the fracture point extending to a point above within an inch or less of the upper extremity of the splint. The idea here involved is to allow some latitude for motion between the abrupt ending of the splint, together with as you see, in photograph No. 1, the cutting out of the edge to a bevel and concavity, so as not to do violence to the skin. While the front line along the lower end of the radius is nearly straight, the danger of its remaining too low seems to me to require this additional precaution in so padding the two ends of the splint, the one over the distal, the other the proximal ends of the fractured bone with an open space between. Now with this padding and the cutting out of the ends of the board to a concave we have our mechanical contrivances complete, and with the patient before us we begin with the wet roller bandages, always of soft, well-worn muslin. With physiologic processes in view I now begin at the point of injury embracing the wrist joint; laying the bandage with firm and gentle binding, allowing it to lie smoothly, the roller running more and more spirally as the bulging of the limb directs, until the elbow is reached, when, after a



FIGURE 4.

turn above and over the olecranon process with forearm flexed to or near a right angle with the arm, the bandage is easily made with a circle or two in the descending spiral to reach the wrist and around again. Probably this time or the next I shall allow the bandage to encircle the hand below the thumb, then up over the wrist and, as before, embracing the muscular part of the limb with some view to the controlling of muscular action, spasmodic and voluntary—all desirable in the view of necessary rest to the fractured ends of the bone. I so continue, roller after roller and layer after layer, until I feel that the indications as above are fulfilled, avoiding unnecessary and cumbersome dressings. Now I place my short or palm splint and compress with a few turns of the wet roller, until it is snugly but not tightly held in place. After satisfying myself that the splint is in proper place, its surfaces on a plane with the bones of the wrist, the palm of the hand resting flatly against the body while the patient stands with elbow flexed, I now run an additional roller a few turns around so as to embrace the upper and lower ends of the splint, taking a turn or two about the metacarpal region below the thumb so as to catch the palmar projecting front as well as the upper end of the splint and firmly fix it in the longitudinal to prevent it from slipping up or down. We

now have it all well fitted to its mechanical shapings, not only in the depression and prominence, but as you see extension by gently inducing nature to seek the point of comfort as per the fittings at the base of the hand.

We next take up the dorsal splint and compresses, placing them as above arranged, and with many turns of the wet roller up and down from the knuckles, the edge of the bandage overlapping the end of the splint around and up to the elbow, or at least well above the upper end of the splint, until the fixation in adjustment of the splint is perfect. I now grasp the embraced member, firmly pressing the two splints together with one hand while with the other holding the hand as in friendly embrace in hand-shaking. With gently increased pressure on the splint and simultaneous pulling in extension I make the first forced effort at adjustment. This is only done to the point of endurance of the patient short of suffering;



FIGURE 5.

in fact few complain at all, as the action is so perfectly in line with the normal and entirely free from muscular spasm, owing to the easy and even compression by the environments, that a sense rather of relief is experienced. Many have told me that from beginning to ending of the dressing and extension, the sense of relief was marked. After a somewhat extended pulling and pressure by gradually applied force up to my full power, so maintained to the tiring of my arm to a stage of necessary rest, I as gradually relax as I applied the force. The limb is now placed in an easy sling suspended about the neck in easy flexion at nearly right angle, looking well to it that no binding from a cord-like rolling and tightening of the bandage about the elbow obtains. I dismiss my patient for twenty-four hours with the injunction to keep up somewhat constant passive motion and massage of the hand of the crippled limb by that of the well; the frequent and somewhat extended elevation of the hand from

time to time with a view to avoiding congestion and stasis with painful results in swelling with tightening of the bandages.

The next day, and the next, I see my patient, looking to it that my general instructions are carried out; that is, that the fingers are supple, the hand spread by pressing in the palm; that there is no undue swelling from lack of the precautions given, especially that of extension with extreme elevation of the hand. I again grasp with very gentle hold, and careful precaution against causing pain, in the effort at further and gradual extension and proper continuous and progressive adjustment of the fracture. This can safely be deferred in some measure until the stage of congestion and extreme irritation has passed, which will be by the fifth or sixth day, when you can use all the force in your power both in grasping and pressing the splints firmly against the bone without causing suffering on the part of the patient, but with comforting assurance to yourself, and which you can impart to him, that the bone will necessarily be in perfect adjustment and as good as ever if continuously and persistently persevered in for a sufficiently long period of time. And now comes the time to see and instruct the nurse, some member of the family or other person who can be relied upon as in constant attendance, to grasp the limb and make extension as you have done, and you must carefully

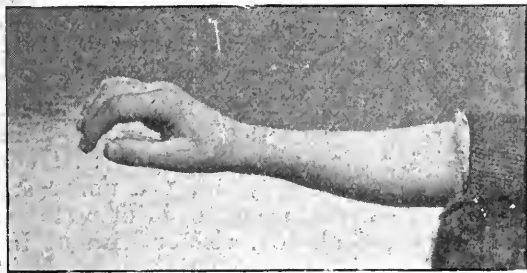


FIGURE 6.

instruct them. This may be done, and if at all possible should be done every three or four hours, and at least three or four times a day. The patient can, if properly instructed, with some comfort to the tired feeling of the confined muscles do much in this line by massage of the forearm, hand, fingers, etc., making, at frequent efforts, some extension by grasping the fingers and hand and pulling on them, bringing only the muscles of the arm above the elbow into action (never below) of the injured limb. Six weeks should be the limit of such treatment and even longer is safer, and I have no doubt in many cases better and in all safer as against deformity from enlargement in callous, exostosis, etc., the results of a lingering tendency to chronic irritation and inflammatory new formation deposits.

The case that I am able to present to you to-day in a photograph of the injured member and from which these dressings here were removed is a typical one in point of not only ordinary results of such treatment but extraordinary, in this, that he had, prior to this injury and but a few months before, suffered a similar fracture of the same wrist, and from neglect to follow out my instructions (not coming to see me and I unable to find his place of residence, he removed all dressings in four weeks) with the result of excess of callous enlargement and some consequent deformity. I had by mere chance met him, and on recognition called

him to my presence for examination, and made some uncomplimentary criticism of his neglect to self and slighting of my injunctions in behalf of his future welfare, the good of science and my reputation as a bone surgeon, so much so that he came at once to me and followed out my instructions, this time, to the letter. Not only this, but on my leaving for Europe he promised to wear the dressings the prescribed time of two months. He did better; presenting himself to me on my return still wearing them, ten weeks from date of injury, February 27 until May 6, 1894. There is now, as you see, no enlargement of the parts immediate, mediate or proximal. I am sure that an expert would find much difficulty in data of evidence to identify the member injured or distinguish between the two, injured or non-injured.

Arthur D. K., aged 20, was injured by falling on the left hand, from a leap in the air in an effort to take high ball, when he was struck by a fellow player and knocked from the erect equilibrium: he fell full force on the hand, the whole weight of body striking the arm: thus weight and leverage were brought to bear in producing a typical Colles' fracture—the radius being fractured about 2 inches more or less above the wrist joint, the bone being bent in its opposite curvature from the natural, with a resistance in an effort at replacement which shows green-stick fracture conditions. I use a primary or skin



FIGURE 7.

bandage with wetted roller of old well worn muslin covering with two or three thicknesses of spiral layers, one turn encircling the limb above the elbow joint, descending to the wrist and up again, and so on. The cigar-box splint used on the anterior or palmar surface I here present also in likeness from photo. No. 2; likewise the longer and broader dorsal or posterior splint. The anterior compress is composed of a piece four thicknesses $4\frac{1}{2}$ inches long; another laid in the center of this $2\frac{1}{2}$ inches long of six thicknesses; a third 2 inches long consisting of twelve thicknesses, and on to this $1\frac{1}{4}$ inch long of six thicknesses. This is formed from my judgment and by testing on the well arm as to the thicknesses required to fill in the natural depression, or to bring the injured and displaced bones to the natural line in curvature. The dorsal splint is padded with two compresses. The lower one is $2\frac{1}{2}$ inches long of eight thicknesses. The upper 3 inches long consisting of eight thicknesses and are placed two inches apart, leaving a vacant or hollow space over the center of the line of depression. These are placed, as intended, on the splints and secured to the injured hand with roller bandages well wetted: first the front with two or three layers of the bandage, with a turn or two below the thumb catching the palmar point, the upper limit embracing the broad upper end of the splint, one edge of the bandage embracing the splint the other the forearm just above, and this throws my bandage back to the descending spiral to a point above the wrist or hand as preferred. Then the posterior splint is placed with its compress and secured much in the same way. The two splints are now in position, at almost exact parallel as to their transverse axis. I now grasp the encased limb, at a point about opposite the injury, with my right hand, fingers to the dorsal and thumb to the palmar, and grasp the hand as in a warm friendly

shake, making with my left gradual extension and pressure at the same time. The patient declares he suffers little or no additional pain, and in fact less than the continuous suffering from time of injury until the commencement of dressing with the primary bandages. He declares that from the moment of commencing the bandaging relief was general and continuous; before, the bones seemed to be getting more and more out of place, pricking painful and causing the muscles to harden in cramps. After the pulling there was no additional pain or soreness, rather less than more: rested a good part of the first night: restless more from restraint than pain. At 1 p.m., the next day I find no pain caused by the extension: says that every time it is pulled upon by assistant a decided sense of relief is experienced. There is little or no swelling, patient using passive motion, kneading and pulling the fingers gently with the well hand. June 1: no swelling of the fingers and no pain, and little tenderness to touch, grasp or pull of forcible extension. June 2: the least perceptible swelling, a slight puffiness of fingers and thumb: dressing a little loosened from shrinkage of the limb. Apply a roller of dry bandage for cleanliness and some addition physiologic support. "I am surprised at the small amount of pain I have suffered," is the voluntary and impulsive expression of the patient following a full power of force-pulling and grasp of the splints, prolonged for four or five minutes. Patient instructed to call at noon tomorrow. June 3: there is no soreness, no tenderness, and gradual and continuous pressure in grasping the splints to my full power, with the like pulling causes only a sense of comfort, relief and strength to the tissues and muscles involved. The patient smiles pleasantly as he assures me, and his brother present, that if all severe surgical operations and dressings were no worse than this they will surely not amount to much. I see the patient the 4th, 5th and 6th. June 8: remove outer bandage and both splints for the purpose of assuring myself that the adjustment was perfect, palm splint compresses sufficient for normal curve, etc. The skin or primary bandage is not removed: added an additional compress of four thicknesses $1\frac{1}{2}$ inches long and another of twelve thicknesses $1\frac{1}{8}$ inch long on anterior or palm splint. No change in dorsal. All compresses are carefully preserved in their exact place on the splint and replaced precisely as they were originally on the arm, the splint mark on bandage and hand enabling me to do this with precision. June 9: saw the case with view of examining as to circulation of hand. All in good condition; patient perfectly comfortable, even on pressure and pulling. June 10: saw case: all well. June 16: removed all dressings, bandaging and splints to the skin and bathed the limb. I replaced all dressings with fresh bandages, using same compresses carefully kept in place on splints and replaced with exactness as before. Saw the case for two consecutive days. June 22: redressed as on the 15th. Arm appeared well; patient using hand as if nothing the matter. Dressings from now on are used only as compresses to insure against excessive callous. Removed anterior splint July 9. Bandaged the wrist July 16. Rebandaged wrist with flannel. There is absolutely no means of distinguishing a difference in the two wrists. Patient working at manual labor, firing an engine. (See photograph after treatment.)

Case 3. Walter Fry, aged 11, injured June 19 by falling from a grocery wagon to the street, striking open palm on the ground doubling the limb back with weight of body on it: body lying prone upon the ground. Dressed in the usual way with wet roller bandage of old soft, well-worn muslin. Primary bandage of two or three layers covering skin with view of controlling muscular spasm. Length of arm from tip of olecranon process to tip of the styloid process, 8 inches: length of palmar splint in full to the tip between the palm folds, 7 inches: circumference of wrist, $5\frac{1}{4}$ inches: width of palmar splint at wrist, 2 inches: circumference of arm at point of upper end of palmar splint, 7 inches: width of upper end of palmar splint, $2\frac{3}{8}$ inches. First compress four thicknesses, 5 inches long, commencing one inch from upper end extending down to palmar folds. The second compress four thicknesses 4 inches long, commencing $1\frac{1}{2}$ inches below the upper end. The third one eight thicknesses (four 2 and four 3 inches long), commencing $2\frac{1}{2}$ and 3 inches respectively below the upper end. Length of dorsal splint, 8 inches: upper end, $2\frac{1}{2}$ inches wide: lower end opposite the thumb juncture to hand, 3 inches: opposite the fracture, $2\frac{1}{2}$ inches. One thickness of muslin covers the whole surface: upper compress six thicknesses, $2\frac{1}{2}$ and 3 inches (three each respectively) in length, commencing one inch from upper end and extending down to a point a little above the fracture line. Lower compress six thicknesses 3 to $3\frac{1}{2}$ inches long, commencing at half inch from lower end of splint to a point just below the fracture. The palmar splint was first secured by a number of turns up and down the splint around

hand below thumb, catching the narrow point of palmar splint below and embracing the upper end with a turn, allowing a half-breadth of the bandage to lap over on the forearm above the splint, then giving acute reverse to the spiral ascending, thus making it descending, then up and down, lightly but well fitting. Next the dorsal splint is applied, much in the same manner, a number of layers thus giving a soft, thick and firm encasement. I now make gentle (in beginning) pressure and pulling, one hand grasping splints, the other to the hand, increasing to full power of pulling and pressure. I finish by enjoining constant manipulation by the patient with well hand to press, knead, bending and straightening the fingers and thumb, a most important matter in comfort as well as in final results of suppleness, non-ankylosis and general deformity as usually charged to rheumatism, truly a nervous or neurotic condition, similar to above attributed cause, but a reflex from irritation, non-use, etc. I see the case every day, and on the 25th I remove dressings and examine the condition of the parts. I find bone well in position, but not quite enough curve. I add a compress of eight thicknesses to palmar splint, length, $1\frac{3}{4}$ inches, and redress as before. See my patient every two or three days at home or at my office. June 29: redress, adding compress of eight thicknesses to palmar splint, length $\frac{3}{4}$ inch. July 6: redress as before. Action of joint, hand, fingers, etc., perfectly normal. Measurement of wrist at styloid process, $5\frac{1}{2}$ inches: at point of fracture 5 inches, exactly in harmony with the uninjured. I see the case July 17: remove the splint and bandage wrist with a few turns of muslin bandage. Should prefer, if at hand, light new flannel, four or five turns around the wrist-joint pretty tight, as the parts are now used to it, and is best a little tight as a precaution against neoplastic action and for firm support. The case is dismissed with injunction to call from time to time for fresh clean bandages to be worn for two months. July 20: rebandage the wrist. July 30: rebandage the wrist. The bandage had slipped up from the external styloid process, and there are consequently evidences of some thickening of callous. Patient dismissed as safe against possible trouble after the limit necessary to wearing present dressing. (See photo. No. 6).

As these cases were all of the true Colles' fracture variety, with fracture of the shaft about 2 inches above the joint, I can only assure you that equally good results have invariably obtained under similar dressings and treatment where the injury was strictly confined to the articulation, with or without impaction or crushing of the articular cartilage. This latter condition is sometimes difficult to differentiate from sprain or injury to scaphoid or semilunar bones, all of which are liable to produce ugly deformities, more so than where the fracture is higher, with progressive crippled function and pain.

A typical case of this condition came under my observation a short time since. The sufferer was a woman past fifty years of age, in the middle walks of life, a housewife. The case when first injured fell into the hands of a general practitioner and able young surgeon, and should only go to show the difficulties attending the diagnosis and successful treatment of this class of cases. I had a photograph taken showing the two hands in comparison, the injured and uninjured. (See photo. No. 2, Case No. 4. The function of the wrist is much impaired and there is constant increasing deformity and pain. Whilst these conditions are of more or less common occurrence, coming frequently under the observation of the surgeon, and unavoidable in at least a small per cent. of cases, yet I have under the above treatment had universal success for over twenty years in surgical practice. And whilst I consider fracture of the long bones and injuries to joints the most difficult work of the surgeon, never to be attempted if possible to be avoided, by the busy general practitioner, yet, with the above course of handling, there will be no occasion for deformity or crippling either in Colles' fracture or the latter; and whilst the anterior compresses are not needed in replacing fragments of bone

as in the true Colles' fracture, yet they are of equal necessity with the bandage and splints in fulfilling the indication for comfort—"physiologic rest."

In not a single instance under the above treatment have I had a case of deformity recognizable by the laity nor of discomfort to the patient. The only point making it possible of recognition by the expert is the less prominent external styloid process and head of the ulna, but in no sense involving a displacement, as usual, of the styloid process. This obtains through the pressure of the posterior splint, and is avoidable, if particularly desired, by using a thicker posterior splint—compresses cut out to fit the uninjured member.

THE MERCURIALS.

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Many of the older remedies need a vigorous scientific reconsideration from the newer vantage grounds afforded by modern laboratory methods. Certain physical and chemical properties of mercury and its salts, if properly studied in connection with the vast mass of undigested clinical knowledge accumulated during centuries, enable the mercurial group to be singled out as having peculiarities that separate it completely from all other remedies, including those with other metallic bases.

Chemistry and physics are woefully neglected sciences in even the best medical schools, and to this fact is attributable the empiricism of our therapeutic work, and whosoever is equipped with physical and chemical knowledge before becoming a physician will find himself unintelligible to the vast mass of his confrères in an endeavor to utilize those fundamental branches in connection with physiology, pathology and therapeutics. The chemistry of *materia medica* is left to the manufacturing pharmacist, though it is closely interwoven with biochemical suggestions temptingly held out to any chemical physiologist with the means, disposition and ability to correlate these fields, and thereby win imperishable honors.

Quicksilver is fluid at common temperatures, which conjoined with its great weight and disposition to vaporize, whether cold or hot, sufficiently set it apart from metals generally. Its cohesive power is great when pure, and lessened by impurity admixture. Poured upon a level surface motion may separate off large and small globules difficult to handle; but whether an ounce is divided into ten or a million distinct drops all of them can be readily run into a single mass again by mere approximation of the particles. It is visibly affected by temperature changes, and a very old trick consists in concealing a quill, containing a little mercury, in a hot hard boiled egg, the capering, rolling and jumping of which amuse and mystify children. Glass barometer tubes in the space above the top or "meniscus" of the mercury column accumulate the vapor of the metal, even when hung in rooms with fairly even temperatures. The great specific gravity of mercury makes it useful to gold miners through its insinuating among the gravel, sand, earth and water, lubricating its way and mixing with the gold, "floating" the less weightier materials above the amalgam. Some miners have been known to swallow several ounces of mercury to move their bowels, and they claim to have secured a rapid and satisfactory result while the mercury appeared to be little sepa-

rated in transit. Invagination of the intestines is occasionally treated with heavy doses of the metal, though not so often as in the earlier part of this century. A few years ago I saw the inflamed and softened small intestines, in a case of the kind, perforated and ruptured by a heavy dose of mercury, causing death before the laparotomy which might otherwise have saved the patient. To a considerable extent what mercury accomplishes in masses in larger tubular structures it may likewise do in smaller cavities when broken up into lesser particles. In absurdly large quantities the metal sinks swiftly through the enteric tract, pushing, crowding, mixing with what it encounters, gliding by, or under, loose material, distending soft receptacles, if obstructed, percolating and comminuting fecal masses, increasing peristalsis, altering their tendency to cohere, and lifting them away from mucous surfaces, finally gravitating in advance of the materials it has mechanically lubricated toward an exit.

Dust and grease dim the surface of mercury and agglomerate to some extent with the mass; from such impurities the quicksilver can be freed by running it through filter-paper cones with pin hole apertures, or by sublimation. Often the filter paper continues to be soiled after repeated attempts to separate the dust, showing that minute particles of foreign matter had been concealed by the metal, though it was apparently clean, a physical peculiarity to be remembered when we reach a consideration of its phagocyte-like physiologic effects.

Bache¹ sums up the general ignorance of the therapeutic action of mercury in these words: "Of the *modus operandi* of mercury we know nothing, except that it acts through the medium of the circulation, and that it possesses a peculiar alternative power over the vital functions, which enables it in many cases to subvert diseased actions." In an inaugural thesis before the Chicago Biological Society, Feb. 4, 1880, and in subsequent papers,² I announced the progress of original continued physiologic, microscopic and chemic observation upon the therapeutics of mercury and its compounds, and shall now review my former articles with such revisions as the succeeding years enabled me to make.

The prevalent medical opinion on the subject is that some unknown compound is formed by the metal and by its salts in the system. Mailhe claimed that the bichlorid was formed in the stomach, but failed to establish his theory. Maisch, Bucheim, Oettingen, Winkler and Jeannel dissent from Mailhe's view. Jeannel suggests the probable formation of the black oxid in the alimentary canal. Maisch denies that this takes place, or that black oxid occurs in old pill masses. Sée argued in favor of an albuminate of mercury as the active agent elaborated in the body. Odling thinks mercury acts as a red blood globule carrying oxygen to tissues. Had any one of these views been established, the mystery would have been no nearer solution. Investigators seem to have been lured away from evident and fundamental principles in imagining no connection between the easily discernible physical properties of mercury and its therapeutic effects, assigning the drug occult, catalytic properties.

¹ U. S. Dispensatory, p. 452.

² Chicago Medical Gazette, Feb. 20, 1880; Chicago Medical Journal and Examiner, April, 1880; American Journal of Microscopy, June and July, 1880; Chicago Druggist, 1881; Galliard's Medical Journal, March 17 and 24, 1881.

Physiologists do not disregard the mechanical properties of water, yet mercury has never been considered from this standpoint. Both water and mercury are fluid at common temperatures; both vaporize at all temperatures; both change their specific gravities in passing from solid to fluid and thence to vapor; both maintain extreme division of their particles under certain circumstances, and by loss of heat or under compression cohere in drops and fall. The great difference is that mercury is fourteen times heavier than water and has a different solidifying point. I claim that the simple mercurials, such as *pilule hydrargyri*, *unguentum hydrargyri*, *hydrargyrum cum creta*, *emplastrum ammoniaci cum hydrargyro*, *emplastrum hydrargyri*, *unguentum hydrargyri compositum*, *linimentum hydrargyri*, *suppositoria hydrargyri* and the oleate of mercury depend for their medicinal properties upon the metal being finely divided, and in proportion to the extent to which this division is carried the therapeutic effects of the drug are augmented. A grain of mercury undivided may have no physiologic value, but when it is separated into a hundred thousand globules and held by an excipient, as in blue mass, from forming large particles, the well-known effects of blue mass are obtained, and the more potent the pill the greater has been the division of the metal. The confections, fats, oils, and other substances, with which mercury in this is blended by the pharmacist, impart nothing to it that changes its character. Though occasional oxidation may occur it will be seen that this is of no consequence whatever. My experiments proved that mercury underwent no change in the system after ingestion, and that it was fully capable of producing all its therapeutic and poisonous effects by circulating in, or obstructing, the microscopic channels of the body.

The first eight mercurials mentioned above contain globules of the metal ranging from one five-hundredth to one one-hundred-thousandth of an inch in size, mixed with substances more or less inert. The first numbers one hundred thousand globules and upward to each grain of mercury in the mass; the second is much more finely divided; the third is badly divided, some of the globules being quite large, as the chalk does not prevent confluence, and it is therefore an unreliable form for administration. The "oleate" contains very minute globules reduced by the oleic acid from the yellow oxid with which it is incorporated. The metal constantly precipitates from this form until very few globules are suspended in the oil. The other mercurials vary more widely in the quantities of mercury they contain, but none of them convey mercury into the system in any other than the metallic condition.

No other metal is capable of comparison with mercury in its mechanical properties and physiologic effects. It is the only metal fluid at common temperature; it resists separation into smaller masses and tends to form larger globules when divided, unless held apart by some substance that will coat each particle separately. Each minute sphere will adapt itself to the shape of the tubular or intercellular space through which it may pass, and will by virtue of its superior gravitating power cleanse many of the parts through which it circulates. The myriad globules released in the stomach and intestines permeate the glandular structures, blood vessels and lymphatics, and act as "alteratives," as we could imagine a foreign body having its weight and adaptabilities, would act when introduced into circulating channels. The dis-

stances between the globules prevent the larger sized masses from forming, and even when lying compactly an albuminous coating will effectually prevent cohesion until such covering is broken. I kept for a month a mass of globules shaken up in albumin, and found, after having given a dose to a frog, that the globules maintained their sizes in the tissues of the animal, and that but few had run together by rupture of the enveloping albumin in the stomach, this being easily recognized by the larger sized globules and the silvery luster of the metal which the coating had previously dimmed.

No one disputes the fact that blue mass contains minutely divided mercury, but nowhere have I found any opinion as to the probability that the *mercury alone* thus given produced its well-known effects. Histologic tissues and a finely divided metal have not been considered as amenable to mechanical principles. Both being microscopic are at once relegated to mysterious modes of working, though a billionth of an inch is as much an entity as a billion miles. When the metal, in an undivided or uncombined state, is administered, it rapidly passes through the intestines, without any apparent effect. The cohesive properties of its component particles resist separation. The metal must be well triturated with an excipient to reduce it to globules; shaken up in water a temporary, uneven, yet pretty fine division may be made, but the water opposes only very temporary resistance to the metallic confluence. Honey, fats, oils, confections, etc., when mixed with the fine globules, tend to keep the particles apart. Albumin and glycerin effect a separation better than many substances.

Finely divided mercury presents a grayish appearance, passing into black as the division is made extreme, this condition favoring the reverberations of light from particle to particle until no rays are reflected to the eye. The microscope shows that no change from the metallic state has occurred in reducing the metal to this form. To count the globules in a gram (15.4 gr.) of blue mass I spread it mixed with water over a square decimeter of surface and found an average of 2,000 visible under a very low magnifying power in an area of a square centimeter, which would make 200,000 of these globules in a gram. But under an objective magnifying seventy diameters, more than ten times as many became apparent. Dr. Lester Curtis estimated the size of these globules at from one six-thousandth of an inch to sizes almost immeasurably smaller. In a gram of pill mass there is one-third of a gram of mercury, which would cubically measure one-fortieth of a cubic centimeter. Taking .01 millimeter (Kölliker) as the average diameter of the capillaries, the division of this mass into twenty-five million globules would suffice to reduce all the mercury to capillary sizes. But all are not so reduced, though many are divided up very much smaller. Carpenter³ asserts that metallic mercury, finely divided, can be absorbed by the blood vessels from the alimentary canal. If these minute globules drop unchanged into the glandular tubules and force their way to the blind extremities, the expulsion of less heavy contents from these tubules would occur necessarily without reference to whether such contents were morbid or normal. In this manner a deobstruent action is obtained by as simple and effectual means as by cannon balls dropped into a large pipe. Peristalsis would assist in passing the same globules onward to other

³ *Physiology*, p. 138.

secreting and excreting surfaces, and a few globules of the proper size would thus change the conditions of a large area of minute tubules. After passing the pylorus the simple follicles and duodenal glands are affected as were the gastric tubules and, by thus cleansing glandular structure, restore normal secretion, or, in some cases, induce hypersecretion. The intestinal villi and lacteals pass the metal into the circulation, while the portal vein carries most of it direct to the hepatic parenchyma. Somewhat as the direct aortic connections with the carotid render embolismus most frequent in the left cerebral artery, the peculiar relationship of the inferior dental arteries with the external carotids facilitates mercury accumulation in the cancellated tissue of the inferior maxillary bone, with resulting tenderness and sponginess of gums. The minute globules find easier ingress to, than egress from, the dependent portion of the lower jaw bone, where they accumulate to exert a slow but sure disturbing effect upon the gums and incisors, and finally the molars. The irritation of the globules upon the peripheral nerves of the salivary glands, together with the detersive influence of the metal itself, already mentioned, accounts for the activity of the sub-linguals, sub-maxillary and parotid glands in ptyalism. The question arises, why catharsis does not continue during ptyalism if all glandular structures are affected: the liver being caused to secrete more bile as the maxillary glands are stimulated to salivary excretion? In the first place, the innervation of all glandular structures is not alike, hence they are not comparable in their actions: next, ptyalism succeeding catharsis shows that while the liver and intestines evince the first effects of mercurial ingestion, the superior glands are reached later through the circulation. From this it may be reasoned that mercury inunctions impress the general system rather than the liver or alimentary canal, and this has been proven clinically.

Mercurials load the circulation and emunctories with effete matter because of their deobstruent effects and ability to insinuate their particles among all tissues, separating some morbid or ulcerated portions from the healthy, by the great and universal law of heavy bodies acting in the line of "least resistance." If the bile is improperly diverted or suppressed, it restores it, by opening the channels through which it normally flows; if superabundant from organic obstruction it would regulate its quantity in the same way by affording exit for morbid causes. Its aplastic action is due to the capillary and lymphatic cleansing it produces: the million minute globules pushing open circulatory channels and preventing accumulation, as well as affording means for absorption. Provisional callus and wound healing is interfered with by globules breaking up new tissue and interfering with its formation as would any foreign substance. Mercury has been distilled over in considerable quantities from the bones of those who have died from mercurial cachexia, the little particles finding stopping places in the cancellated tissue removed from more active circulatory influences, and, in excess, doubtless dissecting away the periosteum, filling the lacunæ and canaliculi, thus producing caries.

Eld, Buchner, Cantu, Jourda, Anduoard, Fourcroy, Gmelin, Byanon, Mayençon, Bergeret, Sakowsky, Osterlin and Heller have found mercury, regardless of the form given, in the blood, urine, serum and pus of ulcers, in the saliva, feces, seminal fluid and aborted

fetuses of salivated women, in every conceivable secretion and every tissue. Naunyn⁴ says: "It has been proved by good observers that mercury is of relatively frequent occurrence in the bones in quantities readily discernible to the naked eye. Years after mercurial treatment, I have found it in biliary calculi. . . . If an albuminate be formed it must be again decomposed, for elimination of mercury sometimes occurs in non-albuminous urine, while albuminous urine sometimes contains free mercury. Mercury is also eliminated by the bile, saliva and sweat. In the finest globules, it is to be found in the bile, urine and feces after inunction."

Taylor⁵ recovered globules from the brain and liver which averaged $\frac{1}{260.6}$ of an inch, while those recovered from the kidneys were still larger. Very often the word mercury is used in a loose way by authors to include the salts as well. In these cases the usual chemical tests were evidently applied for the base, and the radical was undetermined. The microscope would have been effective enough for the discovery of the metal, but nowhere does any use appear to have been made of this instrument in these investigations. Bowman says: "When the presence of mercury is suspected in the viscera or other tissues of the body, the part intended for examination should be first cut into thin slices and then heated with hydrochloric acid and chlorate of potash, by which means any mercury that may be present will be converted into the bichlorid, and thus brought into a state of solution." This method will detect mercury, but not the elements with which it has been combined. The microscope should first be used. Brande and Taylor⁶ say: "Globules of the $\frac{1}{800.0}$ part of an inch in diameter may be easily recognized by the aid of a microscope. Their perfect sphericity, their silvery whiteness by reflected and complete opacity by transmitted light at once identify them as metallic mercury."

The occasional tonic influence of the metal would follow wherever glandular obstruction was superinducing diminution of the red blood corpuscles. Mercury is not a tonic; but as it increases secretion, removes obstructions and sets the corpuscular manufactories in order, as it does the biliary, it induces tonicity. But mercury also causes anemia, and this might be expected from persistence in its use, when occlusive powers, in closing the minute passages and tubular structures which, in medicinal quantities, removed preëxisting obstructions, are remembered.

Mercury in large doses diminishes red blood corpuscles, produces anemia, emaciation, ulceration, febrile symptoms, with a peculiar "jerking, thready" pulse. Obviously a salutary effect upon the glandular system, wrought by small doses, becomes pernicious by overdoses, and hematosis is seriously disturbed by vascular stasis induced by mercurial plugging of the arterioles and venules. Any irritation causing hepatic and splenic function perversion is certainly followed by hemic degeneration, and the pulse characterizing hydrargyria is, in my opinion, due to the irregular but frequent propulsion of blood by *vis a tergo* clearing of the lesser vessels where the metallic globules had for awhile backed up the current till forcibly overcome. This leads to the consideration of the nervous phenomena among its toxic effects. Mercury produces ulceration, neuralgia,

⁴ Ziemssen's Cyclopedia, p. 615.

⁵ On Poisons, p. 389.

⁶ Chemistry, p. 491.

paralysis agitata, epilepsy, often melancholia, all of which can be produced by thrombus, embolus, passive or active cerebral or spinal congestion, or resultant anemia directly wrought in the way mentioned.

Take any treatise on nervous diseases, and wherever the words clot, thrombus and embolus occur, substitute mercurial accumulation, and the cause, in my opinion, is fully explained. Accumulation in the terminal twigs of the cerebral cortical arteries would induce paralysis, paresis, softenings, tremors, hemiopia, amblyopia, etc., according to location, and whether the basilar or carotid supply contained the larger quantity of mercury. Should the middle cerebral artery be the meeting place of the molecules, according to subsequent arrival of the metal thence, aphasia, hemiplegia or anesthesia supervene, singly or together, depending upon whether the gyrus operculum, insula, optic thalamus, corpus striatum, crus or internal capsule had become congested or deprived of blood by this interference.

Bumstead⁷ relates a case of epilepsy as due to syphilis neurosis, which can be better accounted for as mercurialization. The patient had been subjected to a long course of mercury, and manifested neuropsychoses quite compatible with the supposition that the mercury was their cause. Bumstead gave more mercury with iodid of potassium and was gratified with immediate benefit. The iodid alone would have been the better remedy, as iodine unites directly with mercury to form mercurous iodid. That mercuric iodid is not formed, is evident, from absence of the physiologic effects of this active compound. The less soluble mercurous iodid is carried back into the circulation from the bony or vascular recesses in which the iodine united with the mercury, and decomposing, leaves the mercury to reproduce the same phenomena as when first ingested, with the advantage that the excretory channels have a better chance to eliminate the mercury while circulating than when lying dormant in inaccessible places. This explains why the iodids re-salivate the mercurialized.

Finding the metallic mercury "in every conceivable tissue and fluid of the body" warrants the supposition that diabetes, vomiting, gastric and pulmonary irritation following hydrargyric exhibition are owing to nerve-center irritation, mechanical and direct, in the floor of the fourth ventricle, or to interference with its blood supply. At this stage an augmentation of the salivary flow by irritation of the chorda tympani nerve might also be expected, and this may be among the initiatory sialagogic causes. This irritation is exerted upon the nerve-centers by the heavy globules of the metal, exactly as serous or purulent accumulations are mechanically productive of nervous and mental derangements, or that mercurial interference with the circulation thereabouts would be followed by such neuroses.

The elimination of mercury from the system seems to be principally through the kidneys; but gold rings, brooches, necklaces, in contact with the person, will become covered with mercury films during a course of hydrargyric treatment. Consistently with its vaporizable tendency increasing with heat elevation, warm baths help its passage through the sudoriparous channels, and it is well-known that nearer the tropics greater immunity is enjoyed from the effects of large doses. Indeed, the therapeutic dose could be regulated by geographic isothermal lines. The Hot

Springs, Arkansas, physicians attribute much of the success in specific ailment treatment there to the climate, which admits of larger doses of the drug. Now, if we take into account the climate and abundance of hot water in that locality, and reasoning that elimination of both mercurials and the specific poison, the evolution of which they assist, is thus greatly facilitated, we have a key to many of the cures effected there, and also to the reappearance of the disorder among those apparently cured who return north, where climate influence and failure to keep up the hygienic routine, so convenient at the Hot Springs, had closed the excretory passages upon abated, but still existing, disease.

As to the so-called "specific" reputation of mercury in syphilis treatment, and its *modus operandi*, I will not enlarge upon probabilities until syphilitic pathology is better understood. As the virus has a tendency to centralize upon and destroy certain areas, it seems likely that the metal may, by attacking such weakened points, not only break them down, but prevent the static degeneration necessary for recuperative processes. This, with the antagonism the metal has for occlusion anywhere except what it induces itself in great doses, suffices as a tentative view until the cause of the disease and its cure can be demonstrated. Syphilis may not manifest itself if sufficient globules are chasing it from forming nuclei; but where the fluids of the body are saturated with syphilitic points enough to produce tertiary symptoms, how futile must be any attempt to restore health by any doses of mercury. The disease itself is depleting the system at this stage, mercury but adds to the trouble, having more carious and degenerated spots upon which to work. At this period both syphilis and mercury will fraternize against the body as against a common enemy. Tonics might arrest the cachexia so induced, and in addition the iodids known to act both upon this disease and mercury should be given.

The article on the toxic effects of mercury in Ziemssen's *Cyclopedia* contains several mistakes as to the chemie and therapeutic properties of the metal, among which are noticeable the statement that hydrochloric acid acts upon mercury, and that calomel always salivates young children.

"Fürbringer," of Jena, has made a large number of hypodermic injections of metallic mercury, and states that at the time of the injection they are well borne, but within twenty-four hours inflammatory symptoms set in and frequently result in abscess. If mercury be simply injected and not divided by subsequent rubbing, it can not be found in the urine, but has been obtained as unreduced metal from under the skin at the end of a year and a half. However administered, a slow improvement of the syphilitic symptoms takes place. Metallic mercury is best borne when given in emulsion (Hg. 2.00, mucilage of acacia and glycerin $\bar{a}\bar{a}$ 10.00); one or two injections per week should be made. Fürbringer⁸ believes that the treatment of syphilis by mercurial emulsion injections should be reserved for cases in which inunctions and internal treatment fail, or in which it is not advisable to make frequent injections." I do not believe this method has a particle of advantage over mercurial inunctions well rubbed in. It is cited merely to show the identity of the results of mercurialization, how-

⁷ Venereal Diseases.

⁸ Archiv für klinische Medizin.

⁹ St. Petersburg med. Wochenschrift.

ever administered, and the fact that the mercury was not changed after a year and a half contact with subcutaneous tissue. The reason it was not fully absorbed was that division had not been effected between the particles of the mass.

Dr. F. N. Otis¹⁰ assumes syphilitic inoculation to consist of contact of a degenerate ameboid corpuscle, or disease germ, with the healthy human white blood corpuscle. The lymph spaces and channels convey this poison, multiplied in its course, to the general blood current. He cites Bäumlér¹¹ as virtually supporting the view that the characteristic feature of the active syphilitic cell is the possession of ability to set up in other cells through contact the same disposition to rapid proliferation. These cells *obstruct* tissues and undergo degeneration and elimination. Otis demonstrates that the syphilitic tubercle in common with all syphilitic sequelæ is a *deposit of arrested normal material*. He agrees with Bäumlér and Wagner, that "the favorite seats of these accumulations are in the subcutaneous cellular tissue, the skin, in and upon the bones, the liver, the testicles, brain, kidneys, and, especially in children, in the lungs. They occur as infiltrations of microscopic size scattered through the parenchyma of an organ." The causes of the accumulations, Otis claims, are the "*interferences with the lymphatic circulation*, the natural channels through which, according to Rindfleisch, the nutritive material exuded into the tissues in excess of the necessities of growth and repair is returned to the general circulation. *Luxurious new formations, catarrhs and secretions of all kinds, must be produced when the lymph conveyance is hindered.*" Rindfleisch says: "We will find this position in pathology very frequently confirmed." Dr. Otis emphasizes this matter of "*obstruction of lymphatic vessels*," and *hindrances to the lymph conveyance*," throughout his lectures, by italicizing as above.

Notwithstanding its aplastic properties, surgeons employ some mercurial before an operation, where the subject is syphilitic and there is likelihood of the disease complicating or retarding cicatricial growth. From the mechanical standpoint it would seem that they in such cases choose the lesser evil. The aplasticity of syphilis being progressive and destructive, while that of mercury abates, when the cause is withheld, or is even preferable to the fibrinous degeneration of syphilis. The percentage of fibrin is reduced by the increase of the watery secretions attending glandular activity. In this way mercury would be indirectly as well as directly opposed to plasticity.

Reverting to the observation that mercury attached to itself fine particles of dust, which were with difficulty separated therefrom, the behavior of the metallic globules in the physiologic channels may be justifiably compared to that of phagocytes. If a microorganism is eventually established as the cause of syphilis the antagonism of mercury for the disease may be found not only in its assisting elimination generally, but through phagocytic action of the globules in enveloping the morbid organism, as the wandering cells of the circulation are known to load themselves with bacteria, micrococci, etc. In this manner the adjacent tissues would be kept from infection and the globules of mercury could carry away, through emunctories generally, the microscopic cause of syphilis.

The therapeutic action of mercury is in the main mechanical. As water enters and issues from hydrants unchanged so mercury enters the body and leaves it plainly as mercury, and yet speculation has been rife as to some undemonstrable chemie change having occurred in transit, notwithstanding that the bodies of mercurialized animals have been repeatedly opened and mercury found in the various organs en route toward excretion or dormant in tissues. Salivation occurs through accumulation of the metal in the terminals of the dental arteries, a condition favored by the bony coverings of these arteries and their relationship with the carotids from which the globules pour over, to gravitate to the most dependent portions of the jaw; accumulation in the cancellated tissue, gums and salivary glands would fully account for ptyalism, the earliest effects being manifest in the lower incisors, those most apt, from their position, to be affected. Fournier observed that "mercurial ulcerations are situated always on the edges of the tongue, and on the side in which the person has been accustomed to lie when sleeping," further indicating gravitating tendency of the globules.

I shall now proceed to prove that *all the mercuric and mercurous preparations decompose in the body into mercury globules, the sizes of which determine much of their effects.*

Blue Mass.—Under a three-quarter-inch objective, magnifying seventy diameters. I placed the web of a frog's foot, and acquainted myself as thoroughly as possible with the peculiarities of its blood vessels, pigment granules, appearances by reflected and transmitted light, and then gave the frog five grains of blue mass. Twenty-four hours afterward I examined the frog, and found little globules of mercury mingled with the mucus excreted from its skin. Brushing these off, I placed its feet again under the same lens, and found blood vessels choked with metallic mercury; aneurysmal and varicose pouches were distended with mercury, and a great number of the so-called pigment granules had changed to a yellow metallic lustre; these spots reflected the light as would mercury, when examined by direct rays. As many as twenty of these lacunæ, or star-shaped bodies could be counted between two toes, and altogether there were about a hundred on each foot. The close resemblance between the lacunæ thus injected, and Stricker's description of the lymphatic sacs in the course of the lymphatics of the frog, led me to believe, at Dr. Lester Curtis's suggestion, that I had observed mercury in the lymphatic channels of the frog. Two little tubules choked with mercury presented a singular phenomenon. Under the power used the tubes appeared blind, but a little globule of unmistakable mercury lay upon the surface of the web at the outer end of one of the tubes. Watching this globule intently for ten minutes, it suddenly increased in size, and the tube collapsed, having emptied its mercurial contents outward. The globule thus formed was twice as large as the characteristic blue mass globule, and was easily removed from the web by a camel's-hair pencil. The other similar tube was more curved, and at its outer end had two such globules, both of which increased slowly in size, and in half an hour had grown very large at the expense of the tubular contents, the tube disappearing as did the first mentioned. Nowhere could I see anything like foreign particles *circulating* in the blood. The white and red blood corpuscles were distinctly visible, but in one capillary I found a small

¹⁰ Physiological Pathology of Syphilis.

¹¹ Ziemssen's Cyclopædia.

dark particle gradually accumulating similar particles near it: these I suspected were minute mercury globules: they accumulated against the current, and the blood passed around them freely: suddenly the down stream end of the mass broke away and apparently washed away in the blood out of sight. This was repeated several time while the mass, in this way, was proceeding up stream. While exchanging objectives for a higher power, the capillary cleared up. In one vein I observed plainly a large globule of mercury lying motionless, while the blood corpuscles beat against it with as little effect as water would have against a great stone in a brook: the corpuscles changed positions to pass it in the vessel, but slid by as rapidly as ever. Some of the exuded mercury globules on the web enabled me to obtain good comparative measurements. Six of these metallic spheres lay on the surface, just over one of the smallest capillaries. The six together measured the diameter of the capillary, and could easily have passed through this blood vessel abreast.

I repeated the experiment on a smaller frog by anointing the chin, axillæ, and thorax with Squibb's oleate of mercury, with the same result, only the large-sized globules were not so numerous. To a third (large-sized) frog I gave ten grains of blue mass, and as much blue ointment. I kept him in a glass jar, to be sure that he did not eject the pellets, and in this case, twenty-four hours after, found the lymphatic sacs engorged, but blood circulating undisturbed. In all the frogs so treated, where unavoidable lacerations of their feet had occurred in manipulating, there oozed from the torn edges minute globules of mercury. The last frog shed his skin in three days after the dose, but otherwise none of them underwent any apparent change in health or vigor. The skin, I think, must have afforded the main means of exit for the metal. There is not a fragment, however small, of this discarded cuticle which did not exhibit plainly the metallic globules attached to it in great numbers: many hundred microscopic slides might be mounted with the skin from this frog alone, and every slide will reveal fifty or more globules. In the dissecting room of Bennett Eclectic College of Chicago, a cadaver was exhibited to the students, the skin of which was so covered with mercury that an ordinary pocket magnifier revealed the countless globules. Dissecting the frog last mentioned, I found the stomach coated with the globules, but ten days having elapsed since the dose, no mercury was found between the intestines and the skin except in the dermis, but very probably in the liver. This organ was apparently choked with sacculations of an opaque substance, which at first Mr. E. B. Stuart and I took to be pigment granules, but after careful slicing by the microtome some sections one two-hundredths of an inch thick, and the opacity of those spots persisting, after careful consideration we regarded these opaque spots as aggregations of metallic mercury, held in the hepatic channels. In reflected light the unmistakable glint from mercury globules could be caught.

Hoping to discover the course of the metal through the frog's body, I administered a gram (15.4 grs.) of finely divided mercury, in albumin, to a male frog. In five hours globules appeared on its back. Dissection showed that the intestines, renal and portal circulation, heart, kidneys, and even the testes, contained numerous globules of mercury, and the lymphatic passages were beautifully injected with globules much

more finely divided. Apparently the lymph channels had chosen the lesser particles, or the metal had undergone further division in absorption into these passages. Biologists can profit by repeating my experiments and observe hitherto invisible animal channels which the passage of mercury demonstrates with even low magnifying powers.

(To be continued.)

DIPHTHERIA.

Read before the Harrisburg Academy of Medicine, Dec. 3, 1895.

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Diphtheria is an acute infectious disease, which, primarily, affects the mucous membrane of the pharynx, larynx, or air-passages; and, secondarily, as result of the absorption of the toxic element from the seat of infection, a general systemic or constitutional disturbance arises. The history of this disease dates back over many centuries, apparently beyond the time of Hippocrates, and all nations seem to have been scourged with its various epidemics at one time or other. It is notable that various theories were advanced to explain its causation, but it was only during the latter part of the present century, when with the improved teaching of the microscope and the advanced detail of laboratory technique, that the real cause was discovered and identified, namely, the Loeffler bacillus.

INCUBATION.

The period of incubation is the time which elapses from the deposit of the bacillus or germ on the mucous membrane, until some morbid phenomenon is manifested, and varies according to the susceptibility of the patient from one to several days.

SYMPTOMS AND COURSE.

The first appearance of the disease is generally on the most prominent part, as the tonsil, though it may be on the soft palate, the uvula, the posterior wall of the pharynx, the posterior nares, the nasal mucous membrane, or on any part of the mucous membrane exposed to the air. It is characterized by a false membrane or exudate, which varies in color from a grayish white to a yellowish brown or black. The affected part becomes red, swollen and tender, and rapidly becomes septic, and an offensive or fetid odor is emitted which gives rise to the name of "putrid sore throat" as a synonym for this disease. The membrane, at the start of the invasion, consists of simply a small, thin, whitish speck, which if discerned early may be speedily aborted by prompt local treatment and antiseptic precautions; but if permitted to progress the membrane becomes thicker, denser and darker, and spreads in all directions and gives rise to new areas of infection. The membrane has generally a well-defined margin, beyond which extends a considerable area of redness and the adjacent parts are much swollen and inflamed. The membrane adheres tightly and when removed it leaves a slightly depressed raw surface, or wound, over which the membrane rapidly reforms as large or larger than before, unless reparation sets in at this period. In some cases the erosion is quite deep and the mucous membrane seems to be in a state of necrosis or gangrene. The various glands of the neck, the lymphatic and salivary glands become much swollen, tender and

inflamed. There occur at times various extensions of the disease into the nares, the Eustachian tube, the lachrymal duct, the adjoining mucous surfaces, as of the cheeks, palate and alveoli, and on various denuded external parts. But by far the most serious extension is into the larynx, trachea and bronchi, giving rise to what is called diphtheritic croup. This usually occurs within the first week of the disease. Here we have the peculiar hoarse and croupy cough, difficult stridulous respiration, husky voice, dyspnea, and in advanced cases marked retraction of the larynx on inspiration. In some cases the infection starts in the larynx and in a day or two a patch of membrane is discovered in the pharynx, having apparently spread upward. Even no membrane may appear at all by ordinary inspection and thus leave in doubt whether really diphtheria exists, as in some cases of croup.

The secondary or constitutional disturbance is the result of the septic inflammation and the absorption of the toxin elaborated by the bacilli. In the mildest form there is a general indisposition to action, malaise, sometimes chilliness, and a temperature varying from 100 to 103 degrees F., which gradually subsides. In the severer forms these symptoms are magnified, and later when the system is overcome with the toxemia, great depression of the vital forces sets in and the patient has the appearance of being apathetic or indifferent to his fate. In the malignant form the vital forces are overcome by the sepsis from the onset of the attack and the above symptoms may or may not be present; the temperature is not high and soon becomes subnormal, the pulse is rapid, thready and quite weak, and the patient may even die before or within a short time of the discovery of the disease. Albuminuria is a pretty constant feature in most cases from the beginning, at least occurring within the first three days, and gradually subsiding as convalescence sets in.

The main sequel of diphtheria is paralysis of various muscles. This comes on gradually and generally about the second week of convalescence. The muscles most frequently attacked are those in proximity to the seat of infection, namely, those of the soft palate, pharynx and larynx, though various others as of the eyes, the trunk and the extremities, also become affected, and there is also for a time much general muscular weakness and inability of the patient to adapt himself to his usual exercise.

Diagnosis.—The diagnostic symptoms of diphtheria are few and in a general way dependence is largely placed on inspection, which, when a case is somewhat advanced and fairly well marked, is pretty reliable, and if the case occurs during an epidemic or in proximity to another case, it becomes the more certain, though it must be remembered that there are also some other processes which form membranes and are not diphtheria. In the milder forms, or very early in the severer forms, where but little or no membrane exists it is more difficult to distinguish from some other inflammatory processes as follicular tonsillitis and catarrhal inflammations of the pharynx and tonsils with ulceration. In the ulcerative process the covering is generally a secretion and readily removed and seldom gives rise to much glandular infiltration, the fever is more continuous, the fetid odor is generally absent, and convalescence begins in a much shorter time without the usual depression. The exudation of follicular tonsillitis is not so concrete or uniform as a diphtheritic patch, and it generally has the appear-

ance of having just oozed out of the follicles. Advantage can also be taken of the albumin test, as albuminuria is present early and pretty constantly in most cases of diphtheria and absent in the ordinary inflammatory affections. But for absolute certainty in any case, whether with or without membrane, the bacteriologic or culture test should be employed. In some cases of scarlatina it is difficult to differentiate, but here we generally have the peculiar eruption, the scarlet palate and fauces and later the strawberry tongue. The temperature is also generally higher and remains so longer than in diphtheria.

Prognosis.—The prognosis varies in different epidemics and at different times. There seems also to be a singularly higher death rate in some families than in others. In some epidemics the death rate has been as low as 10 to 15 per cent. and in some it has exceeded 50 per cent. It may be said safely that the diphtheria mortality has been about 40 per cent. In cases of ordinary severity, when seen early and where proper local treatment can be enforced, the prognosis is much more favorable than in the opposite state of things. Where the cases are severe and septicemia has advanced considerably before medical aid is summoned the prognosis is much less favorable, and where advanced cases have been neglected until marked depression has set in and where the patient is intractable to the treatment little is to be expected.

LOCAL TREATMENT.

In the treatment of diphtheria it is all important to keep in view the fact that it is caused by a specific germ which obtains effectual lodgment on the mucous membrane and in some manner sets up an inflammatory process, and a breaking down or necrosis of the affected part results; and further, that it is essentially a septic disease and by absorption of the septic element it produces grave local inflammations and most serious constitutional disturbances. The patient should be removed to an upper room where good ventilation and a proper temperature can be maintained. Having then here an abraded or raw surface, a wound on which is deposited a septic or toxic material, it becomes absolutely necessary to employ such means as will cleanse the affected part and render it aseptic. Cleanliness and antiseptics are the watchwords in the local treatment. The false membrane must be removed and the wound must be treated with an antiseptic and bactericide so as to render it unsuitable for the bacilli to thrive, as well as to prevent septic absorption and also to promote healing and restoration of the affected part. To remove the membrane I have found the peroxid of hydrogen a very effectual remedy. My mode of using it is thus: Some absorbent cotton is attached to a holder which is then dipped into the peroxid of hydrogen, which has been poured into a receptacle, and then gently applied to the false membrane with a rotary movement and slight friction, if the same is necessary to gradually accomplish its removal. Frequent changes of the cotton and the hydrogen are deemed advisable and some patience and time and repeated applications are necessary to obtain the best results. Thus the entire false membrane is removed by gradual and repeated applications. I then apply in similar manner the following lotion:

R.				
Tr. ferri chloridi	f3	i	30	
Alcohol vel listerin	3	i	30	
Hydrarg. bichloridi	grs.	ii		12
Menthol	5	i	4	

Being about 1-5 of 1 per cent. mercuric chlorid lotion, or 1 in 500 in strength, it may be applied thoroughly several times successively if the patient will endure it, though sometimes, as in infants, it is better to dilute it to half strength. In children there will be some struggling, and at times vomiting occurs, but the good results more than compensate for its unpleasantness. The patient, if able, is urged to gargle freely and frequently with the same lotion diluted to one-fourth or one-sixth this strength, and also previously with the peroxid of hydrogen diluted to one-half or one-fourth its strength. The attendant is urged to apply the hydrogen followed with the mercuric lotion every two hours. I have had excellent results with this local treatment and where it can be employed early and thoroughly good results can always be realized. I have seen the most severe cases, with the exudate or membrane covering the entire pharynx, improve the second day and gradually progress to recovery. Various other agents have also been used, as pepsin, trypsin, carbolic acid, hydrochloric acid, argenti nitras, cupri sulphas, etc., to remove the exudate. The chief object, however, in local treatment is to cleanse the part and render it aseptic. Cleanliness must be maintained all the time. The most danger lies in the sputa and mucous secretions and these should be disposed of in an antiseptic manner so as to prevent further infection. The hydrogen can be used to advantage at times by the spray as in the nasal and laryngeal forms. Here a dilution to 50 per cent. of its strength is preferable. I have also used listerin with very marked advantage by syringing, in full strength, in the nasal form. In this form upon the slightest appearance frequent syringing or spraying should be employed with the peroxid of hydrogen, the mercuric lotion diluted to one-sixth its strength, or listerin full strength or diluted one-half.

SYSTEMIC TREATMENT.

The constitutional or systemic treatment should be based largely on the existing indication, keeping in mind at all times the septic or toxemic nature of the disease, and its tendency to destroy life by gradual devitalization or lowering of the vital forces. Thus there may exist early good reason for the use of tonics, stimulants and reconstructive agents, as well as the most nourishing and persistent diet possible. If the fever is excessive such remedies as will alleviate, though not permanently depress the system, should be used. And if the patient manifest much weakness stimulants should be employed early and continuously as long as indicated. There is, perhaps, no remedy more valuable than the tr. ferri chloridi, which can be given freely, though well diluted, say in doses of 20 to 30 minims every hour or two to adults, and to children in proportion. The mercuric chlorid is also a most valuable internal remedy in doses of one-fiftieth to one-hundredth gr. every hour, well diluted, and I have frequently given the two in combination with excellent results. The salicylates, hydrochloric acid, cinchona preparations and various other remedies have also been employed by some. It is necessary to institute active and at times enforced nutrition from the start of the disease, and much of the good results obtained by some practitioners is due to the enforced and persistent nourishment of their patients. Where nourishment can not be given per os it must be given per rectum, and surprising results are obtained by thus maintaining the strength until the food can

again be administered in the regular way. In the laryngeal form it is well to remember that the exudate or false membrane likely exists and yet may not be perceptible, hence the propriety of the above treatment supplemented with such additional remedies as are indicated. Here the antiseptics and bactericides are best employed in the form of atomization or spray. In cases where relief is wanting, intubation and tracheotomy should be employed at a reasonably early period in order to save life. The paralyzes are treated with tonics, strychnia, electricity and massage or exercise of the parts.

SERUM TREATMENT.

In addition to the above treatment, a most valuable therapeutic agent, the serum-therapy, has been introduced and pretty fairly tested. My experience with this treatment has been only in private practice, and consequently somewhat limited, but the results obtained in cases of more than ordinary severity warrant me in concluding that it is a most valuable addition to the treatment of this dreaded disease. It seems to me that when promptly employed it is capable of reducing the mortality at least 50 per cent. It is both used as a curative treatment during the course of the disease and also as a means of forestalling or immunizing, on the same principle as vaccination is employed to immunize, or prevent, or modify variola or smallpox. As a curative agent it should be employed as early in the attack as possible and at least within forty-eight hours of the onset in severe cases, and even earlier in all cases where it is possible. By its use early in an attack undoubtedly good results will be had, but where used late in the attack, or when septicemia is considerably advanced and cell destruction has set in and prostration is grave, little can be expected of this remedy. It seems to be of marked utility also in the laryngeal or croupous form, and it is probable that its merits will be largely determined from results obtained in this form of the disease. I have had a very favorable result in a pharyngo-laryngeal attack of the severest type, in which on the second day of the attack the entire pharynx was covered with a black, tough membrane extending into the larynx and causing a most distressing attack of croup. Here the serum was employed about the thirty-sixth hour of attack of the disease, and about the twenty-fourth hour of the croup, and within twelve hours slight improvement in the respiration was noticeable, when another application was made and the case gradually progressed to a final recovery though the paralysis was extreme and very persistent.

Prophylaxis.—In the prevention of this disease it should be remembered that it is highly contagious, though it is regarded to be so mostly at close range and not at a great distance, like measles and various other contagious diseases. The greatest danger arises from direct contact with the sputa, the membrane or secretions. Complete isolation should be enforced and the persons exposed to the contagion should be quarantined, or separated from healthy or unexposed persons until danger of contagion is passed. Very much can also be done by enforcing hygienic regulations about the premises and localities as it is not unusual to trace sporadic cases to bad drainage and imperfect sewerage. It is also well to employ antiseptics and disinfectants about the premises and the probable source of the contagion. It is also well to have persons about the infected premises,

and especially those coming in contact with the affected parties, to gargle freely with a mercuric lotion of the strength of 1 in 4,000 to 5,000, and also to disinfect the clothing. It is also necessary, after convalescence is complete, to rigidly disinfect the premises, as the contagion may linger a long time, and thus be a menace to healthy persons.

RUPTURE OF SAC AND DEATH OF FETUS IN ABDOMINAL PREGNANCY AT FULL TERM. IMMEDIATE OPERATION WITH RECOVERY.

BY J. B. EAGLESON, M.D.

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The following case of abdominal pregnancy is reported as it presents some points of interest which are different from the few cases of this kind previously recorded.

Mrs. B. is 36 years of age, and American born from German parentage. She is of slender build and rather under medium height. She was married at 18 and has a daughter aged 17. At the birth of the daughter both cervix and perineum were severely lacerated, causing her considerable trouble until they were operated on some five years later. After the repair of the laceration she enjoyed excellent health, with regular menstruation, until the beginning of this pregnancy. She menstruated last on March 21, 1894, but as the flow at that time was of short duration and very scanty, it is very probable that the pregnancy really began one month earlier. With the exception of the morning sickness her health continued quite good until May 13, when she had severe uterine and abdominal pains accompanied by profuse hemorrhage, which continued for four or five days. During this flow a membranous cast of the uterus was expelled and the attending physician thought that she had aborted, and that the fetus had escaped notice. At this time there was quite well marked tenderness over the right ovarian region. She improved in general health and was quite free from pains for three weeks, when they returned on the right side, being more acute in character than during the previous attack, but unaccompanied by hemorrhage. The temperature was but slightly elevated. A bimanual examination revealed an enlargement to the right of the uterus, which was variously diagnosed as a cyst, an hematocele and a malignant growth. The severe symptoms subsided after a few days, but slight attacks of pain returned at frequent intervals during the summer. About the middle of July she began to feel what she thought to be fetal motion, and the husband, who is a retired physician, concluded that they must have been mistaken about the occurrence of the abortion in May. Later on he was able to feel distinct movements of the child, and could at times make out the extremities through the thin abdominal wall. He also felt confident of having heard the fetal heart on one occasion. She was fairly comfortable, with the exception of occasional attacks of pain during the latter part of summer and autumn. Some tenderness remained on the right side and during the last few months she was not able to sleep on that side. The child always occupied a position on the extreme right and low down in the abdominal cavity.

I was first called to see her on the afternoon of Nov. 11, 1894, and found her suffering from quite

sharp pains, which had been gradually increasing for several days. An examination revealed a small cervix situated high up against the sacrum almost out of reach of the finger, and the child was in a transverse position to the right of the median line. As the os had not begun to dilate I concluded that the pains were probably false, and gave her a $\frac{1}{4}$ grain of sulphate of morphin hypodermically in order to give her some rest, she having slept but little during the previous night, and advised its repetition sufficiently often to keep the pains in check, thinking that the position might right itself if she went to full term, since I had been informed that she was but about eight months pregnant at this time. The husband stated that he had found some albumin in the urine the day before, and I



Sac of placenta showing rupture through which child was extracted.

found a sample sent to me later in the evening to be very dark colored and to contain about 50 per cent. of albumin by volume. The feet and legs were considerably swollen, especially the left one. Milk diet and Basham's mixture were advised. I did not see her again until the next evening. She slept some during the night and had been comparatively free from pain during the day. The patient remarked that she had not felt motion for several days and feared that she would have a stillbirth. While I was examining for the fetal heart with the stethoscope she went into a very hard convulsion, which was checked by chloroform inhalation, and while she was under the anesthetic I again made a careful examination, but did not succeed in finding the fetal heart.

Realizing that the case was a serious one, a consultant was sent for, but before his arrival she had a second convulsion, and then a third during his examination. At this time the abdomen was very tender and quite tympanitic. The temperature was 101.2 with a pulse of small volume at 112. It was decided that rapid dilatation and immediate delivery was imperative. Under complete anesthesia, my hand was introduced into the vagina and the cervix dilated, but much to my surprise I found my finger in the cavity of an empty uterus scarcely above normal size. It was now evident that we had to deal with an extra-uterine fetus. Owing to the uremic convulsions and commencing peritonitis it was decided to operate at once and she was removed to Providence Hospital, where we operated two hours later. I made a median incision and came down upon a large placental mass just above the bladder. The sac was not adherent to the abdominal wall, but had ruptured and the fluid part of the contents had escaped into the abdominal cavity setting up a mild general peritonitis. After a careful search the opening in the sac was found on the left side of the placenta. On introducing the fingers into this the feet were at once reached, and by enlarging the opening the child was extracted through it. The position of the child was on the patient's right, with its right side toward the right, the legs extended across the abdomen and head turned extremely to the left and pushed up under the right lobe of the liver. It had been dead several days as the cord was somewhat shriveled and the skin was macerated. It was a well-formed female child weighing six and three-quarters pounds. There were no adhesions of the sac to the abdominal wall and but few to the intestines, which with two or three exceptions were easily peeled off without the use of ligatures. The placenta was quite firmly attached to the top and posterior surface of the uterus, and to the right broad ligament. But few vessels had to be tied. The principal nutrient vessel of the placenta, which was almost the size of a lead pencil, came from the under surface of the mesentery of the ileum. But a small quantity of blood was lost during the operation. The peritoneal surfaces presented evidences of commencing inflammation.

The abdominal cavity was thoroughly washed with hot boiled water until it came away perfectly clear. A large glass tube was inserted down into the cul-de-sac in the center of a gauze drain. The abdominal wound was closed by kangaroo tendon sutures for the peritoneum and fascia, with silkworm gut for the deep sutures through entire thickness of the parietes.

The patient was stimulated by rectal enemata of hot beef tea and whisky, with digitalin and strichnia, and by morning she had rallied from the shock nicely. The glass tube was removed on the second day and the gauze drain the fourth day, after which the wound united by first intention and the recovery was uninterrupted. The day following the operation the urine contained 75 per cent of albumin by volume, but this gradually diminished until there is now but a slight trace present. There were no more uremic convulsions after the operation.

For the Prevention of Blindness in Pennsylvania. In order to prevent blindness, a law was passed by the Legislature of Pennsylvania in 1895, which imposes a duty upon all midwives, nurses or other persons having the care of infants, and also upon the health officer, and fixing a penalty for neglect thereof.

ELEVEN YEARS OBSERVATION IN THE USE OF CREASOTE, IN THE TREATMENT OF TUBERCLE OF THE LUNGS.

BY J. O. COBB, M.D.

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For eleven years I have had a greater or less number of patients constantly under observation with the creasote treatment, and feeling the importance of the subject and the general interest taken in this disease, I have been led to report my experience. A large majority of patients have been seamen of the merchant marine. The conditions noted cover all stages of the disease.

The places of observation were South Carolina, Texas, different stations on the Great Lakes, a few cases at Evansville and St. Louis and the remainder at Port Townsend, Washington.

A majority of the cases were not diagnosticated by bacteriologic examination as physical methods easily revealed the condition. All cases of "chronic pneumonic phthisis," "chronic pneumonia," etc., are excluded.

Pure beechwood creasote was given throughout. Dosage ranging from one to seventy minims, has been tried. Some cases have been treated to a termination with a few minims given constantly and without variation. Others were given gradually increasing doses until the limit of toleration was reached, when the drug was recommenced at the small dose to be again carried to the limit of toleration. Still other cases were given gradually increasing doses to the limit of toleration then decreased to the point of toleration and kept there to the end of the treatment. Some of the cases had other treatment in conjunction, though the large majority were treated exclusively with creasote.

The serious objection to creasote is the unpleasant, sickening and burning sensation which it causes in the stomach. I have used the pure creasote made into emulsions, mixtures, pills, etc., none of which were at all satisfactory. The best method that I have found is to nearly fill a gelatin capsule with pulverized acacia, drop in a few minims of the creasote and take at once. If the dose is to be large this is a very bothersome way to give the drug. I have prescribed carbonate of creasote to a few private patients but the period of observation has been short and unsatisfactory; however, I think this a desirable way to give the drug. I have also given the drug by inunction but not with satisfaction. Patients show greater and quicker improvement from the treatment in a warm dry climate and the dosage is smaller.

If there be tuberculous infection of the kidneys, the general condition will be aggravated by giving the drug in any dose. My patients with high fever did not do well, probably on account of irritable stomach. Valvular heart disease does not interfere with the results of the treatment. Tubercular infection of the intestines and mesenteric glands is benefited by the treatment, though the point of toleration is lower. I have had no experience with tubercular meningitis. Tuberculosis of the bones and joints received no benefit. I have had no experience with the drug in the treatment of children. The age of the adult does not seem to make any difference. The treatment may bring on complications such as

severe headache, injection of conjunctiva, lachrymation, the sensation of constriction of the chest which soon passes off, bloody urine, indicanuria, transitory glycosuria, increase of the daily amount of urine, nervousness and disturbed slumber, a rash, and last and most serious and which is nearly always the final and fatal complication, pneumonia. It is especially dangerous to give the drug when there are kidney complications. When there is high temperature it does no good. With the complication of pneumonia it is absolutely dangerous. Pulmonary hemorrhage is rapidly improved. Prolonged administration causes severe and harmful anemia. If the test for blood or indican in the urine shows either to be present the drug should be discontinued at once. The treatment is of little avail when there is sapremia due to absorption from large cavities that have become infected with pyogenic bacteria. Small dosage with creasote is not beneficial; the only positive results obtained have been from a very liberal administration. Hopefulness led me to think many of my cases cured, but in nearly all, the disease has recurred. It has been impossible to follow all of these cases though a few report to me at stated intervals. I doubt that a single case has thus been cured. In comparison with other drug treatment creasote has given me the only satisfaction, however scant, obtained.

Large dosage with creasote given constantly at the point of toleration is dangerous for the following reasons: After continued administration for a great length of time, the patient becomes very anemic, from which trouble he rarely recovers; secondary infection of healthy lung tissue takes place from detached necrotic tissue producing a rapidly fatal pneumonia. Many of my cases on the large dosage have improved very rapidly and were thought to be nearly well. They have been exhibited to medical friends with much enthusiasm with the hopefulness that the cure would be permanent. Many of these patients would rapidly succumb to pneumonia probably a short time afterward. For a long time I thought the pneumonia to be only an accidental complication but I now feel convinced that the treatment is the cause, due to secondary infection with necrotic tissue as mentioned above. Finally I must state that I believe that no well marked case of tubercle of the lungs recovers with the creasote or any other drug treatment without the very best and most favorable climatic conditions coexisting with the treatment.

ON THE DIAGNOSIS OF GASTRIC ULCER.

Read before the Chicago Medical Society, Oct. 7, 1895.

BY L. HARRISON METTLER, A.M., M.D.
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A disease that causes no less than 5 per cent. of all deaths and that can only be "approximately" diagnosed in the absence of hematemesis is still deserving of the closest study. The following case is presented as a text for a discussion upon the hitherto known signs of gastric ulcer.

N. H., aged 27, first came under my observation Nov. 29, 1893, through the kindness of Drs. Lyman and Ward, after a profuse hematemesis. Neither the family history of the young woman nor that of her early life presented anything of special note. Having somewhat of a neurotic type of constitution, she nevertheless has always borne the appearance of fairly good health, being well nourished and well developed. She has always been of a studious turn of mind and devoted much time

to music and literature. She is fond of outdoor sports and is an expert bicyclist. Except for a slight degree of paleness, one would never look upon her as in any way an invalid. There were no pulmonary or cardiac symptoms. Menstruation began at 15 and has always been regular, painless and scanty. Amenorrhea occurs at times. There is a tendency to constipation. About eight years ago she began to be troubled with dyspepsia. At that time Dr. Birdsall, of New York, treated her for anemia, which treatment she continued irregularly for five years. For her dyspepsia she consulted Dr. Vaughan, of Ann Arbor, quite a while ago, and he assured her then that she did not have gastric ulcer. Several physicians have diagnosed her case at various times as nervous dyspepsia and she has been almost continuously under treatment for this condition. Her appetite had always been good but she learned the necessity of being careful in the selection of her food. Near the cardiac end of the stomach she has had at times a slight gnawing or boring pain which shot through to the back and was felt near the angle of the left scapula. Sometimes after partaking of solid food the pain would become very acute and definitely localized so that she could easily cover it with a half-dollar coin. There was almost always more or less pain in the left hypochondrium, and its site never shifted anteriorly or posteriorly. Sometimes, she says, it feels as though a grape seed or other small, pointed object had gotten fast in the left side of the stomach. In the intervals between the taking of food, she feels as though the stomach were contracting or that its lining were forcibly drawing together. She suffers from occasional headaches, due probably to the anemia, but otherwise she is perfectly free from neuralgic pains. Three or four severe "fainting spells," about a year apart, have caused her considerable alarm. In them she became decidedly cyanosed and remained semi-conscious for a brief time. They always left her very weak. In one of these "spells" she fell completely dazed from off her bicycle. I can obtain no more definite history in regard to these attacks of syncope, as they occurred mostly when she was alone and closely engaged in some occupation. Their after-effects were vouched for by friends and relatives. It never occurred to her to notice the character of the stools immediately after them, as she supposed they were due probably to "biliousness" or "nervous weakness." There is a possibility that they may have been the result of small internal hemorrhages, which gave no other indication than that of mild shock. She does remember, however, that right after these spells the stools were somewhat looser than usual. She has frequent attacks of nausea, and though the appetite is good, food frequently produces a feeling of repugnance. There has never been any vomiting.

On Nov. 27, 1893, a severe hematemesis occurred, the first she had ever had. Members of the family declared it amounted to nearly two quarts of blood, probably an exaggerated estimate made in the excitement of the moment. The blood was described as very dark in color and full of small clots. This so prostrated the patient that she fell to the floor and was put to bed in a dazed condition, nauseated and completely exhausted. Menstruation began upon the following day and still more weakened her physically. The pain in the hypochondrium suddenly became much worse and was experienced most keenly on the left side and under the angle of the left shoulder blade. There was an intolerable headache. The temperature was not elevated and the pulse became subnormal. Just before the hematemesis the bowels had moved very freely, almost to the extent of diarrhea. They were noticeably dark in color. She had just been taking for her dyspepsia ten drops of dilute hydrochloric acid. Dr. Ward saw the case immediately after the hemorrhage and administered ergot, cracked ice, cold drinks and one-sixtieth of a grain of strychnia every four hours. Such was the history of the case related to me when I first saw it two days later, Nov. 29, 1893, at the urgent request of Dr. Ward, who was preparing to leave for California. I found the girl in bed, pale, with an anxious expression and complaining of the sharp burning pain in the stomach. Lying upon either side made the pain more acute. Not knowing what diagnosis had been given, I at once told the parents that, in my opinion, it was a case of gastric ulcer. Absolute quiet in bed was enjoined and all visitors positively forbidden. A drachm of milk and lime water or matzoon was allowed every hour. There was no vomiting when I saw her, so that I had no opportunity of examining the contents of the stomach and the passing of a tube to secure a sample of the gastric juice was entirely out of the question. A week later patient was still very dizzy and nauseated when she injudiciously attempted to sit up in bed. The bowels had moved twice, once normally and once after an enema. Both times they were quite normal in color. The headache continued to be dull and constant. The localized pain in the left hypochondrium did not abate but radiated

up along the left side and behind the sternum. It was also very acute posteriorly. At this time one ounce of matzoon, or milk and lime water, or a little of Leube's beef solution was taken every hour, according to the patient's taste. Three times a day she also took a drachm of the juice of pressed, slightly broiled beef, as well as one-sixtieth of a grain of strychnia. Beyond the dietary mentioned the slightest increase brought on sharp pain, nausea and a tendency to vomit.

On December 7 the strychnia was withdrawn and one drop of Fowler's solution of arsenic administered three times a day.

Up to December 20, when for the first time I permitted the patient to sit up in bed for a few minutes, there was nothing of special importance in the progress of the case. Once or twice a slight excess of nourishment came near precipitating an attack of vomiting. Pain and nausea continued but were very noticeably diminishing. Hemoglobin compound (P. D. & Co.) was added to the treatment to restore the loss caused by the hemorrhage. On December 27 the patient began to dress and recline awhile each day in a large arm chair. On Jan. 4, 1894, she commenced taking solid food in small quantities. There was no nausea now, very slight pain and only an occasional ache in the region of the cardiac end of the stomach. There was still much weakness with some shortness of breath. The strychnia was again added to the treatment. After January 7 she began to go downstairs each day and cautiously resumed her usual occupation. Convalescence was rapid and satisfactory. Carlsbad salts and ferruginous tonics terminated the special medication.

In February the patient went to Florida, spending several weeks there, greatly to her benefit, eating heartily, bathing in salt water and living an outdoor life. She returned April 3, the picture of health and having gained twenty pounds in weight. She was then quite free from all suffering. In August, 1894, she was married, and has since given birth to a healthful child. During pregnancy there was no vomiting of any consequence but considerable nausea. Occasionally now some indiscretion of diet will bring on an attack of nausea and revive the acute lancinating pain which shoots through to the back. It does not last, however, and it quickly disappears with a return to liquid or semi-solid food. There is a marked tendency to constipation, but carelessness in regard to eating precipitates a sharp attack of diarrhea. In all other respects the patient appears and feels perfectly well.

There are two kinds of ulcer of the stomach, the diagnosis of which is either impossible or unimportant. The one is the latent ulcer which runs its course without symptoms, and is recognized merely as a post-mortem curiosity; the other is the ulcer which remains latent until a sudden, rapidly fatal hemorrhage renders its diagnosis of retrospective interest only. As clinicians, the form of ulcer which concerns us most is the variety having more or less definite symptoms. Of this variety there are the *suspected* ulcers, the diagnosis of which can never be more than approximate and the *recognizable* ulcers, of which we can form a reasonably positive diagnosis.

The cardinal symptoms of gastric ulcer are, in the order of their importance, gastrorrhagia (hematemesis), pain of a peculiar sort, dyspepsia, hyperacidity and vomiting. Given all these symptoms in any one case and we may be assured that ulceration of the stomach is present. Of these five cardinal symptoms gastrorrhagia is by far the most important, for until there occurs a hemorrhage, large or small, from the stomach, the other symptoms can only lead us to a suspicion of ulcer. The variable importance attributed to these other symptoms is the ground upon which clinicians differ most in their diagnosis of Cruveilhier's malady. It is extremely desirable that more unanimity of opinion should obtain in regard to the value of these symptoms or that new ones should be discovered which would foster uniformity of diagnoses by reason of their greater exactness. These symptoms arranged in the order of their frequency are epigastric pain, vomiting, indigestion, hyperacidity and gastric hemorrhage. Constipation, anemia, chlorosis, amenorrhea, the red tongue of Niemeyer, the local hyperthermia of

Peter and Hayem, the gastric contraction and dilatation of Gerhard and the associated cachexiæ are all so variable as to be of less importance as diagnostic signs than the etiologic factors of age, sex and occupation. I will consider, therefore, for a few brief moments the relative value of the cardinal symptoms of gastric ulcer, namely, the pain, indigestion, hyperacidity, vomiting and gastrorrhagia.

Everybody knows that a dull, lancinating, burning and gnawing pain, strictly localized near the epigastrium, shooting through to the back and appearing with peculiar distinctness near the angle of the left scapula, occurring at times in severe paroxysms, increased usually by food and external pressure, and more or less modified by posture is almost pathognomonic of gastric ulcer. I can not recall a case diagnosed ante-mortem as ulcer, in which pain was entirely absent. It is a marvelously uniform and correspondent symptom. Pain, however, is always an unsatisfactory indication upon which to base a diagnosis, and in gastric ulcer it would probably be one of the least valuable, were it not for its constancy. Its fixed nature and relative constancy are its preëminent characteristics. Even the steady discomfort of gastrodynia can usually be temporarily relieved by a small blister over the site, but not so the peculiar pain of gastric ulcer. I believe, therefore, that its constancy with one or two peculiar features, which it always manifests, raises it to the position of a most valuable diagnostic sign. It is very exceptional for this pain to be continuously absent throughout the entire course of the disease, and a careful study of its character ought, it seems to me, to furnish, when present, the strongest kind of a suspicion of ulcer. Occasionally the pain is modified so as to render a differentiation of ulcer from gastralgia, cancer, chronic gastric catarrh and the gastric crises of Charcot a matter of some difficulty. But if one has an opportunity to observe his case for a time, I think he will be able to determine the cause of the pain. Gastralgia is met with in chlorotic and hysteric females, is independent of the ingestion of food and is not fixed; it is not relieved by vomiting, but is often caused to vanish by external pressure; it is entirely absent in the intervals between the paroxysms and it is benefited more by electricity and general tonics than by the regulation of the diet. Other well-known symptoms usually accompanying cancer, chronic gastric catarrh and the gastric crises of certain organic nervous affections are adequate for a differentiation. It should be remembered, however, that ulcer is always accompanied by chronic catarrhal gastritis. Thus the pain of ulcer during a paroxysm may resemble the pain of gastralgia and in the intervals between the paroxysms, resemble that of chronic catarrh; but in such a dilemma it is safer to conclude that the disease which can give rise to both gastralgic pains and catarrhal soreness is present than that the patient is the victim at one and the same moment of two such dissimilar affections as chronic gastritis and nervous dyspepsia. I do not believe it is possible to diagnose the site of the ulcer, as Brinton teaches, by the location of the pain, by the manner in which it is affected by posture or by the mere ingestion of food. Peripheral pain is never uniformly situated when due to an uncertain, deep-lying lesion, and on the other hand patients assume all sorts of bizarre attitudes in their efforts to get rid of their agony.

Next to pain, vomiting is probably the most fre-

quent symptom of gastric ulcer, but unfortunately it is so commonly associated with other troubles that it is perhaps the least important in this. Its only value here lies in its association with other signs. Unlike pain it alone would never lead us to suspect ulcer. There are certain cases of ulcer in which vomiting is the most marked and distressing symptom, but unless the vomited matter contains blood or it is associated with several other characteristic symptoms, it is a perfectly useless indication of ulcer. It has been said that the vomiting of "mucus or of a thin fluid unmixed with food" is indicative of only chronic catarrhal gastritis, and that "alimentary vomiting" is always suggestive of gastric ulcer. I think I have seen alimentary vomiting more than once in chronic catarrhal gastritis, and moreover, catarrhal gastritis is almost invariably a complication of ulcer. Not infrequently the victim of ulcer experiences an intensely sour taste from the matter vomited, and this leads me to the consideration of the next symptom, hyperacidity.

In regard to the pathogenesis of gastric ulcer, the theory of the self-digestion of the gastric mucous membrane has had, and still has, many advocates. Whether the theory be true or false, it seems to be a fact that the hydrochloric acid of the stomach is in excess in a large percentage of the cases of ulcer. According to Korczynski and Jaworski,¹ it is greatest at the time of hemorrhage. Some declare that the excess of digestive fluid results from the irritative action of the ulcer itself, others that it precedes and originates the ulcer. Riegel, who has studied this symptom most exhaustively, says that the proportion of hydrochloric acid in the stomach of a case of chronic gastric ulcer is 0.4 to 0.6 per cent. as against 0.1 to 0.2 per cent. in health. Ewald's words are: "I regard the demonstration of increased acidity as a marked advance toward the recognition of this condition and it enables us to make an early diagnosis." Hence, hyperacidity, when present, becomes a valuable sign of gastric ulcer. I say advisedly "when present," because it sometimes happens that in the progress of the ulcer the acidity of the gastric juice diminishes to normal or even below normal. This has frequently been demonstrated by Ewald, Ritter and Hirsch and Jaworski. According to Lenhartz the acid may even be deficient in gastric ulcer. After reporting a case in which the percentage of acidity was far below the boundary line, Ewald remarks "that hyperacidity is not an absolute attribute of ulcer of the stomach and that a negative result is accordingly not decisive in establishing a diagnosis."² Furthermore, as ulcer is not infrequently associated with cancer, it may happen that the more pronounced manifestations of the ulcer will be accompanied by total absence of hydrochloric acid. Such association of ulcer and cancer occurs, according to Dietrich, in 5 per cent., according to Rosenheim in 8 per cent. of all gastric carcinomas. In these cases hyperacidity may continue with the growth of the cancerous tumor, or it may diminish. Unfortunately, we can not always obtain this valuable support to our diagnosis, the symptom of hyperacidity, even when it may be present. In many cases of ulcer there is no vomiting, not even nausea; and as soon as ulceration is suspected the passing of a tube into the stomach for the purpose of securing a sample of the gastric juice is regarded by most clinicians as too hazardous to pay for the

meagre information likely to be obtained. For this reason Leube omits the acid test when he thinks he has a case of gastric ulcer. Germain-Sée disapproves of lavage and the use of the tube in such conditions since Cornillon and Daguet have both reported fatal hemorrhages from such maneuvers.

It has been shown by Schreiber and Pick that catheterization of the stomach, however gently performed, invariably produces an immediate and rapid outpouring of secretion from the gastric glands and that only after many trials does the viscus become tolerant enough to retain during such manipulation its wonted production of digestive fluid. In addition to this it must also be remembered that we can only diagnose hypersecretion, according to Vierordt, when by a rapid and careful procedure at least 200 c.c. of acid gastric secretion are obtained. All of this goes to show that those cases of ulcer in which the symptom of hyperacidity, however valuable it may be, becomes available are not very many. It is of some practical use, however, to notice that the state of the urine is more or less complementary to that of the gastric juice; for with the increase of acidity of the latter there is in the former an increase of specific gravity, diminution in quantity and loss of acidity. Alkalinity of the urine and a decrease or absence of its chlorids are bad prognostic signs.³ With the increase of hydrochloric acid in the stomach there are also such general symptoms as thirst, heartburn, pain at night and acid vomiting. As a matter of differentiation it is to be remembered that in acidity occurs in gastric cancer, dilatation produced by an ulcer scar at the pylorus, in severe anemia, various fevers and simple nervous dyspepsia with or without gastralgia.

Indigestion on account of the associated chronic gastric catarrh, must obviously be a frequent symptom of gastric ulcer. As the indications of catarrhal dyspepsia are so familiar to all, they need not be detailed here. With all its train of objective and subjective manifestations, indigestion is not an altogether worthless symptom of ulcer, because in the first place it is almost constantly an accompaniment of ulcer and in the second place when constituting the general background of the picture in which appear one or more special symptoms of ulcer, it immensely strengthens the diagnosis. There is nothing peculiar about this indigestion except its persistency and conjunction with the other suspicious signs of gastric ulcer.

I have thus far referred to the more ordinary signs of ulcer, and I fully believe that if they are carefully studied in every case they will afford us more than a mere suspicion of the disease. The symptom, however, which completes the picture and gives precision to the diagnosis in the majority of well-defined cases at least is gastric hemorrhage. Out of seventy-two cases of hematemesis, forty resulted from gastric ulcer, according to Handfield Jones,⁴ Lebert noted gastric hemorrhage in four-fifths of his cases, and in three-fifths of them the hematemesis was profuse. Brinton estimates that large hemorrhages occur in about one-third of all cases; according to Müller's analyses it occurs in one-fourth of the cases. Gastrorrhagia is sometimes the only symptom of ulcer, such cases being of the latent variety and quickly terminating fatally. They are the *ulcères foudroyants* of the French authors. I believe that gastric hemor-

¹ Deut. med. Zeit., Berlin, April 28, 1892.

² Ewald, Diseases of the Stomach, 1894.

³ Korczynski and Jaworski, Krakow, 1890, quoted by Sajous' Annual.

⁴ Med. Chi. Transactions, vol. XLIII.

rhage occurs more often than is generally supposed, but that it is so slight as to pass off unnoticed by way of the bowels. I imagine that something of that sort may have caused the various fainting spells referred to in the case which I have reported.

Some authorities state that in gastric ulcer a hemorrhage sometimes occurs regularly as vicarious menstruation. Aside from their being but little foundation for such an opinion, I believe it would be dangerous for the patient and confusing to the diagnosis to so regard such hemorrhages. The irregular catamenia, especially the amenorrhea so common in these cases, are not the cause of the hemorrhages so much as the result of the debilitated constitution brought about by the loss of blood. A periodic hemorrhage in gastric ulcer is not menstrual but rather a gastrorrhagia accompanying the ulcer and provoked by the monthly disturbance of the system. If the hemorrhage is large and recent the blood will be bright red in color, alkaline, fluid and mixed with food and mucus. More frequently, however, it is retained long enough in the stomach to be acted upon by the gastric juice. It will then be more or less clotted, having the appearance of coffee grounds, changed in color to dark brown by the changing of hemoglobin into hematin, acid, unacrated and minutely intermingled with particles of food and sour mucus. Hematemesis occurs in many diseases and must always and especially be differentiated from hemoptysis.

In conclusion then, I believe that gastric ulcer may be strongly suspected where there is the peculiar pain already described and hyperacidity; and if to these be added gastrorrhagia, the diagnosis may be made with gratifying certainty. I have purposely refrained from considering the indications of the site of the ulcer, which in cases of perforation may be surgically important. My only object has been to emphasize and assign the proper valuation to each of the cardinal symptoms of gastric ulcer, symptoms upon which alone anything like a positive diagnosis may be based.

Columbus Memorial Building.

OBSERVATIONS AND STATISTICS UPON THE USE OF ANTITOXIN IN ONE HUNDRED CASES OF DIPHTHERIA.

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The following observations, statistics and histories are offered as a contribution toward clearing up obscure and unsettled points relative to diphtheria and antitoxin.

It has long since been experimentally proven that the Klebs-Löffler bacillus produces a specific toxin giving rise to all the classic signs of diphtheria. The pseudo-diphtheria bacillus is supposed to be a non-virulent, attenuated or modified form of the former. The latter, the streptococcus longus, streptococcus pyogenes and staphylococcus are associated with the Löffler bacillus and cause pathogenic conditions, respecting which there is much to learn. For instance, such cases of croup, necessitating even intubation, in which these non-specific germs only could be grown in spite of repeated culture trials, have been relegated to the list of anomalous cases. Such an explanation, however, no longer satisfies the scientific world. More extended biologic research and study of serum-therapy

will doubtless change the nomenclature of a disease having such a multiple genesis and pathology. The minuter chemico-physiologic reactions of the diphtheria toxin and antitoxin upon the human cell and organism still require elucidation. Before proceeding to the tabulation of cases as observed by me in eight weeks' service in the health department, I will formulate the points that particularly impressed themselves upon my attention and later emphasize them by a recital of interesting histories. They are:

1. The marvelously rapid improvement, especially in the laryngeal or most dangerous form of the disease when antitoxin is properly administered, viz., early enough, in large enough doses and in frequently repeated doses in severe cases where but little improvement is noted within eighteen hours.

2. The necessity for early cultural diagnosis.

3. The clinical relation of the pseudo-diphtheria bacillus to the Klebs-Löffler bacillus and their mutual interchangeable attributes, such as virulence, benignancy, transmission, etc.

4. Bacterial, aborted or modified diphtheria without clinical manifestation.

5. Persistence of the Klebs-Löffler bacilli in the throats of these subjects in spite of rigorously applied antiseptic treatment.

6. Menace to the community as contagion bearers of these subjects; hence the need of isolating them.

7. Relative absence of post-diphtheritic paralysis despite the severe character of the epidemic.

8. Period of, and positive and partial immunity conferred by the use of antitoxin.

9. Contraction of diphtheria after immunization due to the tardy use of antitoxin.

10. Rashes and sequelæ consequent to the use of antitoxin.

11. Failure to demonstrate the Löffler bacillus in some undoubted cases of diphtheria.

These inferences have been reached by actual observation and care of the greater number of cases comprised in the following table:

Cases visited or seen, 137; curative antitoxin doses given, 102; curative antitoxin doses given by me and assistants, 72; curative antitoxin doses given by other physicians in my district, 30; recoveries after antitoxin, 95; deaths after antitoxin, 7; physicians asking treatment for their patients, 9; physicians giving this treatment, 20; cultures made for 250; laryngeal cases, 50; mild laryngeal (seen within first sixty hours) cases, 28; severe stenotic cases, 22; cases immunized, 166; cases completely protected, 150; partially protected, 16; bacterial not clinical cases, 28; deaths twenty-four hours after injection, 3; deaths later, 2; deaths in which antitoxin was not used, 5; cases of paralysis within twenty-four hours after use of antitoxin, 2.

	1st day.	2d day.	3d day.	4th day.	Later. day.	Unknown day.
Number of cases injected.	16	34	21	10	14	7
Recovered	16	33	20	8	11	7
Died	0	1	1	2	3	0

Intubations by others, 4; intubations by me, 1; total 5; tracheotomies, 1; cases of rashes consequent to use of antitoxin, 12.

The death, as reported after the use of antitoxin upon the second day of the disease, was in a laryngeal case of probably longer duration than reported. That reported as having received an injection upon the third day, received, to my knowledge, too small an initial and second dose, and besides had not been freely enough stimulated. One of the cases of paralysis was in my practice and was, I think, due to the profound toxemia and could not be ascribed to the action of the antitoxin, for the diagnosis was not made until the fifth day of the disease, or until stenosis set in and

when the child was pretty well poisoned. Seven deaths in 103 cases, of 6.97 per cent., is a very low death rate, especially if one considers that 50 of the 103 cases, or almost 50 per cent., were croup, the most dangerous form of diphtheria. Doubling this death rate to 14 per cent. for the laryngeal cases, still leaves a remarkably low mortality. This brilliant record is due to the fact that 91 of the 103 cases were injected within the first three days. This was accomplished by reason of a large dispensary clientele upon whom cultures were made and the rapid and hearty coöperation of those in charge of the municipal laboratory, whence the reports reached us in from fifteen to eighteen hours, to be immediately acted upon. It is to be regretted that inasmuch as this was an out practice, no evidence as to the effects of antitoxin upon the kidneys could be obtained. Such histories of cases will now be selected as characterize the points above noted:

Case 1.—January 13, I was called in counsel to see Babe S., age 11 months, who had been sick thirty-six hours. It had almost choked to death during the night, as the mother expressed it. The breathing was stertorous and the cyanosis, dyspnea and stenosis were extreme. It had been freely stimulated and given slaking lime fumigations and an iron and bichlorid mixture. There were small patches on the tonsils. The culture showed a few Löffler bacilli only, because of the use of the antiseptics above indicated. Fifteen hundred units of antitoxin was immediately given, with the injunction to repeat the dose in eighteen hours if the child was not much better. The temperature was now 101.4, and had risen to 104.6 when I called again at noon of January 14. I again injected 1,500 units and now advised intubation in order to tide the child over until the second dose should have begun to take effect. By evening the temperature had again fallen and the child was so markedly improved that the latter procedure was obviated. January 15 cyanosis, dyspnea and stenosis had entirely disappeared and the harsh, noisy respiration was the only indication of the recent trouble. The child was bright, smiling and playing with its rattle, in wonderful contrast to its forty-eight hours previous struggle for breath. Six hundred units more was administered in order to entirely clear up the remnants of membrane still evidently in the larynx; for the fauces were now clear. This child made a rapid and uneventful recovery without sequelae or complications.

Earlier in my experience with the use of antitoxin, I had not used it so boldly nor freely, and the cases had invariably progressed to the point where intubation and even tracheotomy were necessitated. I have likewise noticed that in the late cases where tubes were worn and antitoxin freely given, the former were expelled or removed early and sometimes repeatedly, because of the rapid sloughing of the membrane.

The advisability, yes, indispensability of an early cultural diagnosis, the intimate connection of the pseudo-diphtheria to the true or Klebs-Löffler bacillus and its interchangeable virulent and transmittant attributes, are exemplified in the following case. The pseudo-diphtheria bacillus is considered a non-virulent, attenuated variety of the Klebs-Löffler bacillus, consequently should give rise to a mild form of the disease and propagate itself in its own form in the throats of other exposed children. It did neither in this instance, for babe S. died of heart failure after laryngeal stenosis due to the pseudo-bacillus that in its turn communicated a mild or aborted form of the disease to four other children who were not ill one minute, but nevertheless harbored the Löffler bacillus for some time. Such conflicting facts still demand explanation.

Case 2.—January 19. Babe S., 10 months old; slightly ailing; hoarse, coughing, coryza, faucial hyperemia, no patches. Morning temperature 101.6; evening temperature 99.2. Believing this to be a case of gripe, I gave it no further thought,

nor did I make a culture. January 21, the child reported better. January 22, the nurse telephoned to me that the babe had been croupy during the night. When I arrived at 2 p.m. the child was so dyspneic and cyanotic that Dr. Morganthau intubated for me; 1,600 units of antitoxin No. 2 was also given. Calomel sublimations and free stimulation was ordered. After recovering from the exhaustion incident to placing the tube, the babe's pulse and respiration were good. From the membrane and mucus coughed up a culture was made that demonstrated the pseudo-diphtheria bacillus. 5 p.m., child breathing comfortably, looked well, slept a couple of hours. 7 p.m., labored respiration, took milk and brandy well that was afterward regularly administered. 9 p.m., coughed up the tube, respiration labored; calomel sublimation: pulse 120, respiration 60, temperature 101.6. 12 m., pulse 120, respiration 60, temperature 101.6. 1 a.m., sleeping quietly. 1:30 a.m., the nurse noticed that the breathing was shallow and the child almost pulseless; no struggle, dyspnea or cyanosis. 1:20 a.m., it died; no autopsy permitted; death due probably to cardiac paralysis.

Case 3.—Babe E., 1 year old; seen December 29, eighteen hours after being taken sick. Patch on one tonsil; larynx involved to the point of beginning stenosis: temperature 103.4. Injected 10 c.c. of No. 3. January 1, great improvement: temperature 99; breathing comfortably. January 3, tonsil clean; child well. Almost a pure culture of the Löffler bacillus was demonstrated in this case, that infected the cousin Ellen E. with the pseudo-diphtheria bacillus, but who, because of antitoxin immunization, manifested no clinical signs of diphtheria. The antitoxin, however, produced in her eight days after injection pain, swelling and redness of one thigh and leg: 300 units from the same bottle, given to her brother, caused a generalized urticaria to appear in him.

Case 4 is another instance of the communication of the Klebs-Löffler bacillus infection, hence, true diphtheria, by means of the pseudo-diphtheria germ. Mary F., age 3½ years; seen January 2 upon the fourth day of her illness. Made a culture that showed a few pseudo-diphtheria bacilli and staphylococci. It was a severe pharyngeal and tonsillar type of the trouble and thirty-six hours after the injection of 10 c.c., of No. 2, the membrane was extruded *en masse*, the edges having first curled up. This same process was observed by me in several other cases. Cultures made again January 4 and 7, corroborated the original finding of pseudo-diphtheria bacillus. This child's mother had free intercourse with a neighboring cousin's family, where three days later I was asked to attend a case. I reached it January 5. Two children had been ill for twelve hours. The Löffler bacillus was found growing in their throats, and antitoxin given to them. Their recovery was rapid as compared to the supposedly lighter but really severer incursion of the pseudo-germ upon their cousin.

In a series of thirty cases I have cultural proof of bacterial infection minus clinical manifestation. In some of the cases there was absolutely no evidence of disease; in others such slight evidence that it was difficult to convince the parents of the reason for the exclusion of their children from the institution; in still others, because immunized by small doses of antitoxin, so mild an attack that it might be called aborted or modified diphtheria, for there was but slight rise of temperature, unimportant faucial hyperemia and no membrane visible. In these cases infection had probably taken place shortly before or at the time of injection, since they were not antitoxinized until we discovered by daily prophylactic cultures that a bacterial case at least had crept into "The Sheltering Home."

December 21. Isa G. sought admittance to the above institution. He was not sick but a culture disclosed the Löffler bacillus in his throat to the exclusion of all other germs. January 12, a clean bill of health permitted his entrance. He had received no antitoxin and seemed particularly insusceptible as did other members of his family.

January 21, Ida G. was reported sick; temperature 99.6; tonsils swollen; crypts patulous; Löffler bacillus present; no patches. Was isolated and given 500 units of antitoxin and twenty-one other children each given a 200 unit of immunizing dose completely protecting ten.

A like procedure, two months previous to this, had absolutely immunized twenty-four out of twenty-eight cases subjected to this treatment. Four of these cases

harbored the Löffler bacillus but were not sick. They were immunized for eight weeks, being more or less exposed during this period. Later we had another outbreak. Six adults refused immunization and one of them, just nine days after exposure, contracted the disease. The five remaining members of this household now allowed me to inject them. One, however, was not absolutely protected; for five days later a mild form of the trouble appeared in her. To return to the history of Ida G.; she never developed patches and seemed well although her temperature ranged from 99 to 99.6 and 100.6 for ten days and the bacillus was ever present and is still present sixteen days after the onset of her attack. She in turn infected the above-mentioned insusceptible case Isa G., and a sister who January 22 and 23 were respectively taken sick. Up to this date their throats were free but now showed the Löffler bacillus. The boy's temperature was 103 before administering the extra dose of 500 units of antitoxin but fell in twenty-four hours to 102.2. Throats of both were in the same condition as the previously described case. They were now sent home and escaped my farther observation. Daily cultures were now being made and the institution kept open. The urine examined in all these cases before and after receiving antitoxin, proved negative. Seven other inmates (none of whom became ill) developed a Löffler bacterial growth upon January 25, 29, 30, 31, February 3 and 4, respectively, viz., 3, 7, 8, 9, 12 and 13 days after exposure. These, the unrecognized contagion bearers, are during an epidemic, the most difficult subjects to deal with, and at any time a menace to others. In the cases that contracted the disease after antitoxin administration I was able to trace the infection as contemporaneous with the original source. The disease as thus contracted was also incipient or bacillary only.

Rashes appeared in 12 out of 269 subjects injected with antitoxin or a little over 5 per cent; a proportionately slight evil as compared to the benefit derived. Arthritis obtained in two cases; in one after a dose of No. 3, and in the other after a small immunizing dose. In the first case although croup, the cultural finding was negative. Both knees were here involved, while in case No. 2 it was the shoulder and wrist of the side injected. Edema, redness and an erythematous rash of one leg appeared in a little girl eight days after the reception of an immunizing dose. Her culture showed the pseudo-bacillus, although she was exposed to a Löffler bacillus infection. Her brother, who received some of the contents from the same bottle, developed urticaria. I saw another case of urticaria in a child who was subject to this malady. In still another instance, after an immunizing dose, a child who had previous attacks of eczema, now exhibited an additional outbreak. A papular rash appeared in five patients; in two, eight days, and in one, six days after the injection. A fourth subject was first seized by a papular affection followed by an urticarial eruption and left facial edema involving the left eyelid. No urine could be obtained for examination; nor was an analysis made in any of these cases. In an adult, eight days after injection an erysipelas-like rash appeared at the injection site in the anterior upper thoracic region and extended upward and outward to the point of the shoulder, inward to the middle sternal line and downward to the nipple. There was great pain and stiffness in all the joints of the upper extremity of that side, general pain, malaise and some rise

of temperature. Ichthyol ointment was applied by the attending physician who reported rapid improvement.

I have noticed that most patients have complained of pain and soreness after the injection and many children manifested much uneasiness the night after the administration of antitoxin. A few older patients returning to me some time after such a procedure complained that they had not felt well since. I saw a number of cases of unquestionable laryngeal diphtheria of great severity in which repeated cultures failed to demonstrate the Löffler bacillus. In some instances, this was due to the fact that the cases were seen at a late day when the field was overwhelmed with staphylococci and streptococci, and in others to the use of various antiseptic solutions and sprays. But again in many other cases where the last mentioned conditions obtained, I was able to secure cultures. Wherefore in some cases and not in all is a query requiring an answer.

3353 Indiana Avenue.

CLINICAL NOTE UPON AN OVERDOSE OF PROTO-NUCLEIN.

BY H. V. WÜRDEMAN, M.D.

MILWAUKEE, WIS.

A female child, aged 3 years, parents of upper class; subject of malnutrition, from whom large amount of pharyngeal adenoids had been removed six weeks before; in addition to diet and general regimen had been given proto-nuclein tablets, 5 grs. each, taken twice to three times a day (Reed & Carnrick's). Had taken these for about a month. Great benefit as regards general health, the condition of the nose, throat and ears had followed. The improvement was mainly ascribed to removal of the adenoid tissue and restoration of nasal breathing. This child was addicted to eating lead pencils, pieces of chalk, etc., and had previously taken medicine of some kind in large quantity without knowledge of the parents.

On February 4 she was observed to be playing with a bottle which had contained proto-nuclein tablets, of which it is supposed twenty-five or thirty remained (125 to 150 grains or 8 to 10 grams). The bottle was found to be empty and a couple of the crushed tablets were removed from the mouth. She said she had eaten all that was there and parents are convinced of the fact. The child was brought to my office within an hour, when I could observe no apparent change from her general health. Advised half-hourly drinks of water with small lump of carbonate of magnesia. The spoiled child would not take the magnesia and drank the water only when she was inclined. Was seen at noon, when she appeared excitable, pulse full and fast (125). At 6 P.M. had been quite vivacious during afternoon; seemed otherwise well. Pulse 120, tongue clean, no pain. Had passed urine several times in her clothes (a general habit). Specimen could not be obtained. During the night she slept well and was seen the next morning, when nothing was observed. Since then child has been apparently well.

The ingestion of 8 to 10 grams (125 to 150 grains), from twenty-five to thirty times the usual dose of a presumably standard and fresh preparation, had no effect whatever beyond slight mental excitation and acceleration of the heart's action. We would not ascribe this to the environment, as neither the parents

nor myself had anxiety over the dose, as I have looked upon the preparation in the light of a condensed nutriment rather than as a drug. It is yet on trial with me, but in all cases in which I have used it no results have been observed which could be ascribed to the exhibition of the proto-nuclein itself. It has apparently no toxic effect, and is perhaps inert as regards any physiologic action.

805 Grand Avenue.

SOCIETY PROCEEDINGS.

Sanitary Conference of Pennsylvania.

Third Annual Meeting of the Associated Health Authorities of Pennsylvania, Jan. 23, 1896, at Harrisburg, Pa.

In the absence of the Governor, Mr. CROSBY GRAY, First Vice President, called the meeting to order. Prayer was offered by Rev. B. B. Hamlin, D.D. On behalf of the Mayor of Harrisburg, Dr. H. HAMILTON addressed the members in welcome to the city. Mr. Gray responded for the Association. A letter from Dr. L. Pierson, State Veterinarian, regretting his inability to be present, and on motion he was made an honorary member.

Dr. R. L. PITFIELD, Assistant Bacteriologist to the State Board of Health, read a paper entitled

THE BACTERIOLOGICAL ETIOLOGY AND DIAGNOSIS IN DIPHTHERIA.

He alluded to the interesting and valuable improvements in medicine in the last fifteen years. Among these is the scientific study of diphtheria, particularly since 1883, when Klebs first described its bacillus: a year later Löffler confirmed this, isolated it and with it produced the disease in lower animals. Not only the etiology has been made known, but its absolute diagnosis has been developed and a specific cure has been obtained. Roux, Behring and others have shown the antitoxic serum as its specific. Medical men can with pride view this progress; chemistry to-day is on the verge of a revolution, while medicine is more firmly enthroned. The bacillus of diphtheria is a slender, little rod, varying in size, shape and internal structure. By its variability we are able almost at once to recognize it. It is often club-shaped, with rounded ends, a slender middle, or it is spindle-shaped with pointed ends. The shape and general morphology vary as the age and conditions of growth, such as the chemie reaction of its food. On a solid medium it grows little grayish colonies, which are rounded with irregular edges, and are like ground glass in that they do not reflect the light. If stained with an aniline dye, various parts take up the color with varying intensity; some stain deeply, others but little; this gives a characteristic appearance to the bacillus. Often if a blue dye is used, black points appear in its continuity which do not transmit light. The bacillus can not move independently nor form spores. It grows best at the temperature of the body, and exposure to heat above 58 C. kills it in a short time. It has never been found "wild," that is, it is a distinct parasite and differs from some other pathogenic bacteria in this way. Cholera, for instance, exists normally in certain waters all the year round as a native. The native home of the bacillus is in the human mucous membrane of the throat especially, from which it may escape by coughing, by saliva, by contact with spoons, forks, cups, handkerchiefs or by kissing. It is also found in the air-passages of chickens, kittens and other animals. It is rarely found in the air and thrives best in moist places, if warm and dark. It readily grows upon a culture medium devised by Löffler, and for diagnosis this is best. This is called the Löffler blood-serum mixture. It is prepared by collecting the blood from an ox in a clean, sterile jar which has been slightly warmed, and after the clot is formed the fluid or serum is drawn off in sterile pipettes. This serum is then mixed with bouillon, one part bouillon to three of serum. The former containing 1 per cent. of glycerin. A little of the mixture is run into sterile test tubes plugged with cotton wool. They are placed in a hot chamber at a temperature of 78 C. in such a way as to slope the surface of the serum and make a large surface oblique to the sides of the tube. These are kept in the apparatus an hour or more till the serum is coagulated into a firm, translucent jelly, then they are sterilized for three consecutive days in a steam sterilizer twenty minutes each day in order to kill all stray bacteria which may have gotten in. To make a diagnosis of diphtheria, a sterile swab which has been kept in a sterile test tube is firmly rubbed over the membrane in the throat and this is gently rubbed over the moist surface of the serum

and then the tube is carefully replugged and put in an incubator and kept at the temperature of the body, 37 C. for twelve or more hours. If the case be diphtheria, on the surface of the serum will have crept a fine, delicate frosting of raised beads, close together, of a grayish color, semi-translucent; these are heaps of diphtheria bacilli, grown on the serum. With a delicate, flattened platinum wire, well flamed, a few of these are lifted off and gently rubbed on the surface of a clean cover slip, on which a drop of water has been placed. This is dried, stained with an alkaline solution of methyl blue, mounted, and when the lens is brought to bear on it, the field will be found full of delicate, little rods lying in all directions, often in clumps of a dozen or singly. By careful study the organism is seen to vary in size and general appearance, as before mentioned. This and the fact that it takes the stain in varying intensities enables one to make the diagnosis, especially if the culture appears normal to the naked eye. The diagnosis is best done if the swab is rubbed over the membrane before antiseptics have been used. We may find many other organisms, as yeast, molds and other bacteria, especially the staphylococcus, etc., which often cause abscesses. One strongly imitates the diphtheria bacillus in producing a membrane, and in its culture a frosting only a little whiter, but under the microscope it is seen to consist of a chain of little rounded bodies called cocci, which are in some way held together, and there is often a string of eight to sixteen. This organism is also the cause of many inflammatory diseases as erysipelas, puerperal fever, septicemia, and perhaps scarlet fever. Many apparently simple sore throats both with or without a membrane are caused by it. As the diphtheria bacillus developed in the throat, it produced a poisonous alkaloid called toxin, which penetrates the cells of the mucous membrane and the protoplasm of these coagulates, causing them to swell up and turn white as they die. This is the origin of the yellowish white membrane from which the disease takes its name. It is full of dead organisms. Often it mechanically interferes with breathing, especially if it grows on the larynx, and frequently in young children and even adults it causes death by suffocation. The poison penetrates the mucous membrane, the tonsils, lymphatic glands and the whole system, causing fever, depression, rapid pulse, and often paralysis of important nerves, not only of the limbs, but of the circulatory apparatus and the diaphragm: the heart is often overwhelmed and death results from acute poisoning. If the toxin is collected from old cultures by filtering off the germs, it will produce the same effects if given in large doses by injection to small animals; four drops will kill a guinea-pig in twenty-four to forty-eight hours; yet no germs were injected. The worst cases are where there is a mixture of diphtheria bacilli and the streptococci. Both toxins are absorbed and death ensues from a double poisoning. Serum tubes often show this mixture. Thus we are enabled to say if a case is diphtheria alone, or a mixed infection. Many epidemics of sore throat are caused by this streptococcus, and often have a membrane like diphtheria. The diagnosis is of great importance in those cases where the precious remedy, antitoxin, can be employed, for sore throats which are simply follicular tonsillitis need no antitoxin. Dr. Bissell, of Buffalo, says: "It is generally admitted that it is often impossible to make an accurate diagnosis either from a clinical or anatomic lesion or from both. There are no constant differences that separate the simple non-contagious forms of inflammation from the diphtheritic type and it is but a very small proportion of cases that an early and reliable diagnosis can be reached by any data obtainable. In Willard Parker Hospital 30 to 50 per cent. were found to be non-diphtheritic. Such a case with lowered vitality, if sent to a diphtheritic ward would almost surely be attacked by the more dangerous disease. In suspected cases it was found that 72 per cent. were real diphtheria. Children often are attacked by membranous croup, which is a mild diphtheria, killing more by suffocation than poisoning. I believe that in older people with more vitality the same organism is often present but causes only a temporary headache and fever. In epidemics the character of the disease varies much, from a low grade of virulence, perhaps a croup, to the most fatal form; yet the more fatal form may result from exposure to the milder. High vitality enables many to throw off the attack and no membrane forms; yet safety demands isolation of all such. It has been seen in thirteen families with no isolation, forty-eight children exposed to one with a mild form, 50 per cent had diphtheria subsequently. But where strict isolation was practiced, only 10 per cent. had the bacilli. All should be under suspicion till cultures showed the absence of the contagion. The bacillus does not often survive out of the human body and is easily killed by sunlight, heat and chemicals. It is spread more by direct contact than by the air, and has been found in emanations from

dead animals and in sewer gas. A small epidemic in my practice was traced to a game of marbles, all were sick, two died, and the father of one told me that all breathed on the marbles or held them in their mouths. Doubtless one had it and communicated it to the others. Slates often cause the disease. Think of the things that are put in the mouths by children: they often trade chewing gum, partly sucked candy, bitten apples. Apparently well people walk the streets with the bacilli in their throats; they complain but have no objective signs as membrane or enlarged tonsils. Park, in 330 examinations, found the bacilli in twenty-four, the virulent form in eight; hence the demand for care in all contact where there is the slightest doubt, when it can be so easily transmitted by kissing, handling an envelope sealed by the lips of such a one. Next we come to the important phase from a hygienic standpoint. It has been found after the disappearance of the membrane that the bacilli are still present in the throat and capable weeks after of producing the disease. One observer in 752 cases found an absolute disappearance of bacilli at the end of three days in 325; in 427 they persisted much longer: in 201 five to seven days; in 84, for twelve days; in 69, fifteen days; in 57, three weeks; in 11, four weeks; in 5, five weeks; in 1, for seven months after the disappearance of the membrane. Cultures made produced the disease in guinea-pigs within forty hours. This shows that the bacilli are able to cause infection long after the original case appears well and the need of thorough disinfection. It has been shown that in those cases where Löffler's solution has been used, recovery is soonest and the bacilli disappear earlier than in any other form of treatment. The deductions are that diagnosis requires bacteriologic aid. I am convinced that error is made where physicians say their results without antitoxin are equal or better than those with it; these are merely follicular tonsillitis. In conclusion, all suspects should be tested by the culture; all others in a family should also be examined; all should be strictly quarantined till the culture proves it not diphtheria; membrane croup should be considered diphtheria and so regulated.

In the absence of DR. R. MEADE BOLTON, Bacteriologist to the Philadelphia City Board of Health, the Secretary read his paper entitled "The Advantages of Bacteriologic Investigations to Boards of Health." He particularly alluded to the need of laboratories. Their usefulness depends upon the manner in which they are looked upon by the boards. The forlorn state of many scientific men in public laboratories is due to their being forced into a rut. If the board reposes confidence it must select the best men. All are not able to do this work. All need training before selection for the work. To know what to expect he described the working in his own laboratory. 1, The examination of pathologic material sent in by physicians; 2, preparation of diphtheria antitoxin; 3, experimental work upon questions pertaining to bacteriology. The first has consisted for the most part in the examination of cultures made from the throats of diphtheria suspects. Other work is the examination of sputum for tubercle, urine, cultures from wounds and tumors.

The system of examination was modeled upon that in New York City. After organization a circular was issued to physicians explaining what the laboratory was ready to do, telling how to make inoculations, tubes and swabs being sent for the purpose. Physicians have largely availed themselves of the opportunity. A culture outfit was shown; a tube with a cotton swab on an aluminium wire, and a little book for notes of the case. All are kept for reference. Results are sent by cards to the physicians. You should expect prompt recognition of diphtheria, consumption, etc. The preparation of diphtheria antitoxin is a part of the work, and other antitoxins must soon follow. The treating of infectious disease is as follows: Bacteria are now well known to cause disease. These are taken in with the food, drink, or by wounds, or the breath. They grow and reproduce and thus produce toxins. If the animal recovers, the toxins are neutralized in the body of the animal by the production of an antitoxin. Thus if diphtheria bacilli or their products are injected into an animal an antitoxin is produced in the animal. This cures the animal, but if drawn off can be used to cure others. The antitoxin is found in the fluids, notably in the liquor of the blood, also in the milk and elsewhere. The preparation of the antitoxin is done by gradually injecting a large quantity of the diphtheria toxin into a large animal, then drawing the blood of the animal. Horses are preferred. In the laboratories the production of all forms of antitoxins should now be a large part of the work. Select trained men, have well equipped laboratories, do not overburden them, expect prompt recognition of infectious diseases, the preparation of antitoxins and finally advances in knowledge of infections.

The matter of these papers was well discussed, and much

valuable information obtained by the eager sanitarians anxious to prove of value to their respective localities.

DR. A. H. HALBERSTADT, President of the Pottsville Board, who believed there existed a close relation between slaughter houses, bone boiling establishments and other noxious trades which fill the air with foul odors, offered a resolution to appoint a committee to examine this question from a bacteriologic standpoint and report next year. This was adopted, and an able committee appointed.

DR. JOSEPH MCFARLAND, Lecturer on Bacteriology, University of Pennsylvania, read a paper on "Diphtheria Antitoxic Serum." All are familiar with the fact that vegetable and animal cells produce powerful poisons. Now man and animals can accustom themselves to these poisons and endure a very large quantity, as in tobacco, opium, etc. So the hog, because of the slow absorption of rattlesnake poison through its layers of fat, gradually became accustomed to this poison. So with snake charmers, tolerance of the poison is secured. This was inexplicable till Emil Behring in Berlin discovered that, in the blood, there occurred a new substance capable of protecting the animal as well as other animals when injected into them. This must be known as new, having nothing to do with the normal blood. Its effect is to stimulate the cells so they can endure the poisons named. They are not chemically neutralizing agents. Diphtheria antitoxin is one of a group of remedial agents. So with rattlesnake and cobra poison, a specific is generated able to protect other animals into which they are introduced. Ehrlich has shown that when animals are immunized to large doses of ricin and abrin antitoxins, antiricin and anti-abrin are produced which will protect non-immunized animals. The toxin of diphtheria is the poison of the diphtheria bacilli. Diphtheria is not due to the throat lesion, but to the circulation in the blood of this poison. Hence in treating diphtheria the general poisoning is to be regarded. Each poison must be combated by its own antidote, or antitoxin. In diphtheria after recovery by use of antitoxin, the throat still contains virulent diphtheria, but as the symptoms are due to the circulation in the blood of the poison, we understand the recovery when we remember that the poison is no longer poisonous after the administration of antitoxin. Next it is important to make sure of good antitoxin. The mortality statistics show a diminution from 40 to 50 per cent. before the use of antitoxin to but 10 or 15 per cent. since. First, it must be strong. It is not a fatal dose to be arrived at, but the determination of the smallest fatal dose, which requires great nicety of calculation, time and the sacrifice of a large number of animals. Next is the personal equation of the experimenter and individual susceptibility of the guinea-pig. Normal antitoxin will with one-tenth of a c.c. protect a guinea-pig against ten times the smallest fatal dose of toxin. The serums ordinarily used are one hundred times as strong. Inexperienced persons can not test the serum. Fortunately, the exact strength of the antitoxin is of no importance therapeutically, because the exact dose required can never be estimated. There are, no doubt, cases in which we give ten times as much antitoxin as is really needed; at other times no doubt we give one-tenth as much as needed. It does not easily spoil. Many of you are aware that freshly drawn blood is germicidal and retains this power a long time. It is not safe to depend on this; it is best to add some substance which shall not interfere with its virtue and yet preserve it. He showed serums preserved with camphor, chloroform, salicylate of sodium, carbolic acid and tricresol. He preferred the two latter as more certain. These cause a flocculent precipitate which does not interfere but must be filtered off. Tricresol is three times as germicidal as carbolic acid and less than one third as poisonous. Objections exist to the use of antitoxin. Sudden death has been reported, but now no one regards this as true. Paralysis is apt to follow, but this occurs from diphtheria alone. Destructive action on the kidneys, this too occurs where it is not used. Or cases made diphtheria by its use, but antitoxin can not produce diphtheria. There are no germs in it. It would be quite as possible to develop a castor plant from a dose of castor oil. In its preparation, the cultures of diphtheria bacillus are first killed by the addition of a germicide, then filtered through unglazed porcelain. This sterile substance is injected in increasing quantities into the subcutaneous tissues of a horse until experiment shows the blood to contain antitoxin. The horse is then bled from a vein, the clear serum after coagulation pipetted off and preserved with tricresol. This is the antitoxin. The horse has never had diphtheria. The last objection is that it does not always succeed. We can not accept the statistics of those who have used it in a dozen cases, against those of a hundred, nor can we rely upon its use in combination with other remedies. On the lower animals its action is invariable. In the early stages in proper dosage, large enough, there is almost no fatality. Every case

can not be cured, first because we do not know how much toxin is in the blood and hence do not use enough antitoxin; second, because the toxin produces rapid disorganization of the nervous centers, which can never be regenerated. A few cases dying is no reason for rejecting a remedy which has in all parts of the world shown an extraordinary efficiency, so that some assert that it is God's latest and best gift to his children.

Recess was taken till 2:30 p.m.

On reassembling, DR. PITFIELD offered the following:

Resolved, That this Association recommend the antitoxin of diphtheria as preventive of diphtheria.

This provoked much discussion as not being proper from an Association composed of a very large number not learned in medicine, etc. On motion it was laid on the table.

DR. PITFIELD then moved the appointment of a committee to investigate and report next year. After still further discussion on motion of Dr. W. B. Atkinson, the subject was referred to the State Medical Society of Pennsylvania, asking them to inform this Association of their investigation.

Reports of various committees were received and filed.

The special committee on teaching physiology in the public schools reported, showing the many and egregious errors in the books selected for text books, many of which caused laughter in the meeting; the committee had found the authors and publishers willing to correct these errors, etc. On motion the committee was continued till they saw these changes made.

DR. J. T. ROTHROCK, State Forestry Commissioner, addressed the Association on the relation of forests to the water supply. Major Raymond says that all the water that falls on a forest is taken up by the ground, but all that falls on cleared ground soaks in and runs away. In several valleys cleared by the ax and fire he had observed the results of inundations. These valleys were very dry. These inundations destroy life and property. When the leaves and brush intercept the rainfall, it is carried beyond the chance of immediate evaporation, or running away. Growing trees give off water equal to thousands of billions of tons, in a season. The moisture in the atmosphere is a means by which excess of heat is prevented, and loss of heat which is needed to prevent freezing of vegetables, etc. An even temperature is thus preserved. New York has 3,700,000 acres in the Adirondacks, it needs only two forest reservations, while Pennsylvania requires more, as we can not obtain such large parks; hence, we would start with eight miles-square parks which will be object lessons to all. We ought to own all the mountain tops, as the owners are compelled to pay taxes for unproductive land, and must clear away the wood to pay it. Some have paid more tax than the ground would sell for. We should preserve our water, and not be compelled to filter it. There are 1,000 square miles lying between Luzerne, Lackawanna, Monroe and Pike Counties, practically worthless, but a magnificent water shed; as these can be had cheap, we ought to secure them. Forests have grown up within the recollection of the speaker. If fire is kept away they reproduce themselves. Coal is not inexhaustible; we must have some other supply for heat and light; therefore, to generate electricity for heat and light we must have water supplies and must keep our forests.

DR. LEE inquired if he would again bring up the Act which he read and which had been before the legislature at the last session?

DR. ROTHROCK—Yes! Till doomsday unless we get it before. The only reason for its non-passage at the last session was a lack of funds in the State Treasury.

On motion of Dr. Lee it was resolved that the Associated Health Authorities of Pennsylvania heartily endorse the efforts of the State Department of Agriculture, and of the State Forestry Commissioner to obtain the passage of an Act to establish Forestry Reservations at different points in this State as a means of maintaining the purity and permanence of water supplies.

A delegate from Scranton asked that the Associated Health Authorities of Lackawanna County be recognized by this Association.

On motion of Dr. R. Maison a Committee was appointed to consider and report on the relations of such bodies to this Association.

DR. GROFF of the Committee on Legislation reported their success in preventing the passage of the Act to destroy the local Boards of Health.

In the evening, PROF. F. C. PHILLIPS, of the Western University of Pennsylvania, Chemist to the State Board of Health, read a paper on the "Protection of Water Supplies." He believed in the protection of the rivers. He mentioned the Allegheny and Monongahela surrounded with beautiful hills, but a near inspection shows a frightful condition; refuse and

garbage spread around from the towns and people along the banks. The smell is intolerable. Here the markets and slaughterhouses empty their refuse, which decays in the rays of the sun; further up are the culm and slack from the coal mines, the washings of the coke furnaces, etc. The pyrites washed into the river is carried into the boilers, injuring them; the acids from the galvanizing works, from the stock yards the nitrogenous compounds, the offal, all help to make up a disgusting, dangerous mass to go into the water as the rain raises its level and flows down to the reservoirs below. The deforesting of the land in the west and northwest where these rivers rise causes the washing of the soil into the stream, and with the matters just mentioned increases largely the pollution, at present three times what it was twenty years ago. In the Monongahela the original amount of carbonate of lime was small, now this is neutralized with the free acids and the iron works can not use the water without the employment of a neutralizer or it destroys the boilers in a few weeks. That water purifies itself is believed by many. This is a doubtful matter. It is surprising to find how organic matter accumulates at the bottom of a river. Typhoid germs live 100 days in ordinary water; while they do not increase, they are active. We have no law to prevent stream pollution. Pittsburg can employ an old law within five miles of its borders, but there is no penalty attached. Allegheny does much to prevent pollution by an old law. The State Board has done much, but we must bring people to understand the necessity of caring for the water by abating these nuisances. In starting new works, the idea is to use the nearest water and pour all into it. Eleven States are protecting their streams. Others appear to think it better to purify the water after it is polluted. The remedy is to have Congress appoint a Rivers Conservancy Board. This would be excellent for Pennsylvania. Till then, the State Health Board should have control over this matter, and act at its discretion. It is difficult to suggest the best plan as legislation is opposed by those with a pecuniary interest. We must influence the people. We must educate them to the vast importance of this matter. A very important need is to require all hospitals to purify their sewerage. This would be an object lesson. Leaflets on the matter, lectures on water supplies, conventions of all kinds should take it up. But unfortunately these meet in large cities where the water is known to be pure. Yet many delegates incur a great risk by drinking the water in which are typhoid germs. Water meters should be used to stay the waste of water. Too much waste makes more sewage to purify.

DR. ROTHROCK believed we could obtain the aid of the people if they were fully informed of the dangers from this source. The way is, at all teachers' conventions and institutes, to bring before them the need of legislation to prevent this source of disease and death being continued. Employ every way to instruct the people, rouse public sentiment and they will no longer tolerate it.

DR. LEE said it was worse below Pittsburg than above. Braddock's slaughter houses dump all into the water; this runs sluggishly and the stuff lies in a festering mass, filled with maggots, etc.

It was finally agreed that the Committee on Legislation should prepare an Act on this matter and present it to the legislature without reference to the Association.

Adjourned till morning.

On Friday morning, DR. LEE read and commented on the new law relative to the report, etc., of contagious diseases.

It was resolved that the Legislative Committee be instructed to prepare and present to the legislature a Bill to increase the powers of the State Board of Health, as well as the annual appropriation, and to confer with the local boards urging each to use its influence with the members of the legislature to promote its enactment.

A letter from H. H. Quimby, President of the School Directors' Association of the State, relative to the great need of township boards of health, urging that the school boards be impressed with the importance of sanitary measures. The most fruitful field for the propagation of disease is the public school, hence school directors who have the power to close the schools during the prevalence of epidemics should be brought to understand their duties in this respect.

DR. LEE explained what had been done in this respect.

On motion the letter was referred to the State Board with the request that appropriate circulars be sent to the school boards of the rural districts.

The Secretary read a paper by Dr. Edward O. Shakespeare "The Production, Transport, Sale and Delivery of Dairy Products should be under the Sanitary Control of the Labor Board of Health where these Products are Consumed." The liability of these products to become infected with disease

before they reach the consumer, the epidemic thus caused, cholera infantum, tuberculosis in infancy, were alluded to. Intervention should begin at the beginning, and continue till the consumer is reached. It should be executed first and best through the accredited and responsible agents of the local board of health of the consumer. The dairy farm is the one chief source where milk becomes infected. The dealer's shop, for reception of the milk supply and its distribution to the consumer, is the other chief source of contamination. Prevention of infection at both will curtail much of the mortality from infected milk. The first is rarely if ever reached. A sanitary inspection of the cows, their food, surroundings, water supply, health of the dairymen, the collecting and handling of the milk made at unexpected times repeatedly, to exclude diseased cattle, infection of the milk, is essential; then a rigid inspection of the shop, etc. The agents must be thoroughly reliable, and well informed. He must not be influenced by commercial interest or mercenary motives. Otherwise the inspection will be worthless. A proper license system is absolutely needed. This to be wholly in the hands of the health authority. Cost to be nominal to the producer, more expensive to the dealer. The invested capital of the former is much greater. Milk from unlicensed to be prohibited entering the health districts. While it may be objected that this is an unwarrantable interference with individual rights, it must be remembered that the milk business is one of the most dangerous of human occupations. People have a right to this protection.

This paper was discussed and approved by the members.

On motion of Mr. Gallagher the Legislative Committee was directed to prepare a bill to present to the next legislature, covering the ground stated. An amendment to the plan of organization of the Association was adopted admitting all health boards which had united in a county health association at the rate of \$2.50 each.

The annual election was then held, resulting: First Vice-President, Crosby Gray, Pittsburg; Second Vice-President, Dr. J. S. Hunt, Easton; Third Vice-President, A. M. Sloan, Esq., Greensburg; Secretary, Dr. Wm. B. Atkinson, Philadelphia; Treasurer, Dr. Jesse C. Green, West Chester. The usual standing committees were appointed, and the Association closed its session after some remarks by Mr. Crosby Gray.

Chicago Ophthalmological and Otological Society.

Annual Meeting held at the Chicago Athletic Association Hall Jan. 14 1896.

Dr. F. C. Hotz in the chair.

There were twenty-two members and visitors in attendance. Minutes of the last meeting were read and approved.

Dr. GRADLE showed a patient whose case had been reported to the Society in April, 1895. At that time he was suffering from paralysis of some of the extrinsic muscles, but the condition was improving under moderate doses of iodid of potash. There had never been any syphilitic history, or any reason to believe that syphilis was a factor in the case. Iodid was continued all through the summer in larger doses, and toward the fall all the symptoms had disappeared with the exception of increased knee jerk and an unnatural gait. At present the only symptom is that in extreme excursion of the eyes in any direction there is nystagmus and a rapid shaking of the head in the plane of the excursion, also a slight lagophthalmus in the left eye with a twitching of the orbicularis. The iodid had been stopped last fall and injections were tried, but after a few applications a violent stomatitis started up and the mercury was stopped. About a week after this stomatitis had subsided, the field to the right was hazy, although the perimeter showed no contraction. A few days later the patient complained of poor vision in both eyes. Although the test card showed normal vision, still the reading of letters was very slow and difficult instead of rapid and easy as heretofore. The accommodation also was somewhat diminished. In November the iodid was started again in large doses, and these symptoms disappeared. Shortly before Christmas vision in the left eye was nearly lost; color vision entirely gone. There were at no time any ophthalmoscopic appearances. Since Christmas the vision in the left eye has improved. Dr. Gradle thinks that the recent attack is probably one of retrobulbar neuritis now improving.

Dr. WOOD examined the case and thought that the nystagmus resembled that which we see in practically normal eyes on extreme excursions to the side, or up or down.

Dr. TILLEY suggested that possibly the condition of the nose might explain the symptoms.

Dr. HOTZ was inclined to think that a central lesion was present.

Dr. GRADLE said that the original paralysis of the extrinsic muscles must undoubtedly have been nuclear, but that the recent affection of the left eye, as far as he knew, could only be some trouble with the nerve between the bulb and the chiasm.

The next business was the election of officers. Dr. H. Gradle was elected President: Dr. C. D. Wescott, Vice-President; Dr. Pinckard, Secretary, and Drs. Hotz, Coleman and H. H. Brown, the Committee on Membership.

On motion, a committee was appointed by the Chair (the Secretary being one of the committee) to consider the advisability of any changes or additions to the By-Laws of the Society, governing all questions of membership, dues and procedure.

DRS. TILLEY and HALE were appointed to act with the Secretary on this committee.

DRS. E. T. Dickerman, C. E. Robertson, S. L. McCreight, T. A. Woodruff, and H. V. Würdemann, were elected members.

The report of the Treasurer showed a balance of \$20.80.

On motion, the Secretary was instructed to cancel the assessment of Dr. H. Weir.

The application of Dr. H. J. Hornbogen, of Marquette, Mich., was read and referred to the Committee on Membership.

On motion, the Secretary was instructed to use the funds of the Society, if necessary, in order to complete the guarantee for the dinners.

Dr. Hotz then read

REPORT OF A CASE OF CILIARY NEUROSIS.

In November, 1887, Mr. L. S., aged 41, consulted him for recurrent attacks of pain in the right eye, the attacks coming on between 3 and 4 o'clock in the morning, usually lasting but a few minutes; sometimes, when severe, an hour. The pain resembled that from a foreign body under the eyelid, attended with great photophobia and profuse lachrymation, with an edema of the upper lid and injection of the conjunctiva. The vision was always blurred by an attack and continued so for a short time. The attacks had lasted for some nine years. Sometimes he was free from them for several months; at other times he had one every night for a week or more. During the free intervals vision was clear. Ten years ago his left eye had been enucleated by Dr. Reuling, who stated to Dr. Hotz that the left eye at that time had been lost from irido-choroiditis in childhood, and that there were some symptoms of sympathetic trouble in the right. The healing of the left eye after enucleation was rapid and normal. Vision at that time with a correcting cylinder was normal in the right eye. Dr. Hotz laid considerable stress on this report as showing beyond doubt that ciliary neuralgia was present in the right eye at that time. Mr. S., however, ascribes all his trouble to a scratch on the cornea inflicted by a child about a year after the enucleation. Dr. Hotz was not inclined to place so much importance on this circumstance; however, unquestionably slight corneal wounds have often caused very troublesome neuralgic pains, but they do not as a rule last as long as in this case. There has never been any increase of pressure; pupillary action normal, vitreous clear and fundus normal. No tenderness on pressure. At that examination he thought he could see by a focal light a very minute gray line in the cornea. These paroxysms of pain being rather regular in appearance, quinin suggested itself as a remedy, and for the first week after its use the eye was free from pain. It then returned, and quinin has never had any effect since. Cocain, however, gave temporary relief. In January, 1889, all constitutional treatment was discontinued and the eye put under the influence of atropin. For a week again the eye was free from pain, but it returned. During this week the refraction was retested and a glass $.75\text{C} + 1.50\text{ax. } 90^\circ$, vision normal. The doctor believed that this discovery was of great importance in causing ciliary trouble, but again his hopes were shattered, for in spite of the constant use of the correct lens the attacks returned. In February, 1889, Mr. S. went to New York and consulted Dr. Grüning, who found the eye free from all irritation, but the enucleation scar in the left eye somewhat irritated, and operated on that. The wound healed very kindly, but the patient reported in March that the pains had returned. After April, 1889, the patient was not seen again until January, 1892, when he stated that from May until October of 1890, he had been comparatively free from pain, but that lately they had become more frequent again, and whereas formerly the pain was confined to the eyeball, it now extended over the whole right side of the head. The attacks occurred at the same time, between 3 and 4 in the morning, with the other symptoms about the same. Between January and July of 1892, antipyrin, salicylate of sodium, iodid of potash and mercurials were tried, also the continued use of atropin for six weeks, but the

attacks continued just the same. In July the patient was examined by Dr. Beard, who thought that the retinal arteries were quite small and the veins easily pulsated, and suggested that the patient's heart, which was irritable, might play some part in the case, and that he cease smoking, which he did for six months without any relief.

In August Dr. Hotz received a message to visit the patient at his house. All the night before he had been suffering from incessant pain in the eye and right side of the head, and cocaine had been given with very little relief. Dr. Hotz found the upper lid very edematous, the eye very red, sensitive to touch, and the epithelium of the whole lower half of the cornea was hazy and separated from Bowman's membrane in a large bleb. Atropin was instilled, bandage applied, and in five days the eye completely recovered from this attack. Again, in October, a similar attack of keratitis bullosa occurred, involving again the lower half of the cornea. During the winter of 1893 the attacks of pain continued, and in the spring and summer of 1894 they were more frequent, but seldom severe. The vision has been repeatedly tested in from six to eight hours after an attack, and the same result always obtained. Unquestionably the dimness of vision occurring after the attacks was due to a spasmodic contraction of the ciliary muscle, because the vision was always normal with an additional weak concave lens or the use of atropin. The question of diagnosis lies between cyclitis, glaucoma, and pure ciliary neurosis. Glaucoma has never been shown in any way in the case. Cyclitis could hardly have existed for so long a period without leaving some permanent changes in the eye. Probably the case is a pure ciliary neurosis. In the literature the only cases similar to this reported are by Dr. Samelsohn in Graefe's Archives for 1875. In that article a number of cases are quoted and the cause ascribed to vasomotor changes.

Dr. GRADLE had seen this patient both before and after he had been under Dr. Hotz's treatment. He first saw him in 1880 and had him under observation until 1887. He agreed with Dr. Hotz's description of the symptoms, and had also tried the remedies that Dr. Hotz had used. In addition he had thought at one time that the trouble was aggravated by the condition of the nose and cauterized the turbinate and septum for catarrhal trouble, but without any effect on the neurosis. He next saw him in 1894, when he was still in practically the same condition as before he left him. In September of 1894 he returned again for treatment, the attacks being more frequent. Salicylic acid internally at that time seemed to lessen the severity of the attacks somewhat. At Dr. Gradle's suggestion the patient began to keep a record of the attacks, dividing them into four degrees of severity, and making weekly records of the number and violence of the attacks. Dr. Gradle thought that pilocarpin might be of benefit, and it was tried with considerable relief. Eserin had an unhappy effect on the patient, and that was tried and shortly discontinued. Dr. Gradle believes that the pain is due to irritation of a nerve fiber in this scar, or an irritation in the course of the nerve, although he had never been able to see the scar since a year after the injury.

Dr. HOLMES suggested that latent gout might be a cause, but Dr. Hotz said that colchicum had been tried without benefit.

Dr. TILLEY thought that empyema of the antrum would account for the symptoms, and spoke of a case where the symptoms were relieved by the antrum being drained.

Dr. COLBURN saw one case in which repeated attacks of keratitis bullosa were followed by blindness from opacity in the cornea, and the globe was enucleated for pain.

The Society adjourned by limitation.

C. P. PINCKARD, Secretary.

103 State Street.

SELECTIONS.

The Craig Colony of New York State.—The Craig Colony for Epileptics was opened January 20, by the preparation of quarters for thirty patients. These will be selected by Dr. Hoyt, of the State Board of Charities, being geographically distributed. Later, others will be received from county almshouses, until the full list of 200 is reached. Applications from all over the United States are received, even from other countries, Canada, South America, Russia and Asia. The object of this admirable undertaking is well stated in an editorial in the *American Practitioner*, for November 16, as follows: "The object of the colony is to provide for the four great needs of these unfortun-

nates: 1. To give them schools where they may be educated as other children and young people are. 2. To afford them industrial training in any sort of occupation they may desire to follow. 3. To provide those epileptics a home to whom all other doors are closed. 4. To treat every case of epilepsy according to the best known scientific methods." The writer also makes the following comments on the grand scope of the work: "The idea of forming colonies for persons suffering with chronic incurable diseases is not new, for the leprosy have been colonized since early times; but in this and similar instances the sick were segregated for the benefit of the well, and not out of any special regard for the former. The extension of the practice for the good of the afflicted is purely humanitarian and the natural outgrowth of the spirit of altruism which now pervades christendom. There can be no question that epileptics can be better managed and more successfully treated in institutions devoted to the purpose than at home or in the public hospitals and dispensaries; but private institutions can avail the poor nothing, and they are compelled to drag out a wretched existence, handicapped by a cruel disease, shunned by their neighbors, and neglected, through ignorance or necessity, by their kin. To such a State sanitarium or farm is indeed a godsend, nor is it to be forgotten that many who are able to pay for care and treatment would gladly escape into such a place from surroundings wherein their epileptic seizures are a perpetual source of mortification. The work is Christian, is humanitarian, is beneficent, and no argument is needed to commend it to the favor of every lover of his kind. It is stated that Massachusetts and Ohio are preparing to follow the lead of New York in this good work, and there can be little doubt that the other States will soon do likewise." Let it be remembered that while the colony will, no doubt, for all time bear the name of a worthy and charitable layman, the chief brunt of the laborious organizing work has been borne by a junior member of our profession, Dr. Frederick Peterson, of New York city. Dr. Peterson has been in practice about fifteen years, and during the latter half of that period has spared himself in no way in order to bring about the required legislation and appropriations and laying out of plans. It will be a perennial monument to his unselfish charity, although it will never bear his name. One of his first, if not the first, contributions on the subject of the colonization of epileptics, was a descriptive paper published in 1886, regarding the colony at Bielefeld in Westphalia, Rhenish Prussia, which began in 1867 with four patients. See also this JOURNAL, Vol. xxv, page 598.

Erythropsia.—Dr. Myles Standish, in the *Boston Medical and Surgical Journal*, reviews a contribution by Dr. L. Fuchs in *Annales d'Oculistique*, September. That writer "noticed on climbing a high snow-covered mountain that when he entered a hut erected on the top, everything appeared red. This suggested a series of experiments which seemed to show that in order to elicit the erythropsia in the normal eye, it is necessary to expose it for some length of time to the glare of the snow upon which the sun is shining, and that this was still more quickly accomplished if cataract cases were exposed to a reflection of light from the snow. As a result of his experiments, he states that the erythropsia of normal eyes, as well as of eyes deprived of their lenses, is caused by dazzling, which need not be disagreeably strong, but must be of long duration. Exposure to sunlight reflected by snow is the most effective means of producing it. For most eyes, however, it is necessary that the dazzling shall take place high above the level of the sea, where the sunlight is stronger and also richer in short-waved rays. He found by trial that the phenomenon was produced on patients who had been operated on for cataract, without regard to elevation above the sea-level. He draws attention to the fact that the color of the erythropsia is exactly like the color of the retinal purple, also that the erythropsia is, as a rule, less pro-

nounced or entirely absent in the part of the field of vision which corresponds to the macula lutea, and thinks that by long exposure to strong light the retinal purple is bleached and the retina becomes uncolored, and that phenomenon is seen during the re-establishment of the retinal purple."

Contribution to the Study of Gelseminin.—The tincture of gelsemium and the fluid extract of gelsemium, both obtained from the root of the *Gelsemium Sempervirens*, have been rather neglected lately, on account of our ignorance of its active principles and their mode of action. A recent article in the *Pharm. Ztg.* of Nov. 18, 1895, describes the chemic character of pure gelseminin, and some of its compounds. The oxidation of gelseminin ($C_{22}H_{26}N_2O_9$), with permanganate of potassium results in a salt: the formula for its composition being $C_{18}H_{19}N_2O_9$. The quantity produced was so small that no further experiments were made with it. Separating under the influence of the hydrate of potash the iodomethylate of gelseminin produces the chlorhydrate of a volatile base, with the formula $E_{13}H_{22}NO_4HCl$: a salt (the chlorhydrate of gelseminin) with the formula $C_{21}H_{11}NHCl$: another salt with the formula $C_{10}H_{11}NHCl$: and a resinous substance composed as follows: $C_{10}H_{13}N$. This last substance, dried and pulverized, is a fine, very bitter powder. There is every reason to believe that this is an entirely new substance, having nothing in common with any other compound hitherto known possessing the same formula for its composition.—*Les Nouv. Remèdes*, Jan. 8, 1896.

A Stout String as an Obstetric Aid.—A physician writes to the *Rev. de Ther.*, November, 1895, describing the assistance he derives from a stout string about a meter and a half long, in his obstetric practice. The patient placed in the usual position with the forceps in place, the physician seats himself on rather a low chair in front, as if to make an examination with the speculum. The string has a loop on one end which he fastens to the left handle of the forceps. It is then carried across to the right handle, making a figure 8, two or three times repeated. Then the string is passed from left to right behind the physician's back, brought around and fastened to the right handle. By bracing against the string around his loins, the physician can control the forceps while his hands are left free to guide it, moving it up or down, to right or left, simply by twisting his body a little on the chair. With ordinary care this use of a string is a great advantage, but in careless hands it might do damage. The string must be the diameter of a penholder to insure its not breaking.—*La Province Médicale*, January 4.

Splenopexis; Operation for Wandering Spleen. The treatment of wandering spleen by artificially fastening it to the parietal peritoneum is an operation of comparatively recent date. Since Rydygier showed that the extirpation of the spleen is not so entirely without significance for the organism, the attempt has been made to proceed with more conservatism. Konwer describes in the *Nederl. Tijdschr. v. Gen.* 1895, No. 15, a case treated by him, in which he made an opening as if to remove the kidney, and manipulating the spleen through the abdomen, he pressed it down opposite the opening, where it was held in place with cotton pads and tight bandages. An attempt to sew it failed, but the operation resulted successfully without this, and four years have passed since, without a relapse. The spleen was not restored to its former place, but Konwer thinks this is immaterial, as long as it does not interfere with any other organ. Similar treatment failed in another case, as the bandages had to be laid aside the sixth day to arrest occlusion of the intestines. *Centralblatt für Chir.* January 10.

Prejudice Against New Treatment for Hypertrophied Prostate. Dr. Englisch recently delivered an address on the subject of the treatment of hypertrophy of the prostate gland before the k. k. Ges. of Vienna Physicians, in which he reviewed the whole

subject and asserted that there was not a single case on record of complications following the operation of castration for this purpose. Wherever there was trouble it was traced directly to previous abnormal conditions. He dwelt at length upon the disinclination of patients to submit to castration, and remarked that the method of suppressing the functions of the testicles by tying the vas deferens seems to have a more promising future before it than the former method. In the discussion that followed Dr. Dittel asserted that it might be accepted that this tying operation would have the same effect as castration upon the relations existing between the testicles and the prostate gland.—*Wiener klin. Rundschau*, Jan. 5, 1896.

The Role of Chlorin in Narcotic Poisons, Especially in Acetone.—There is no relation between the narcotic power and the amount of chlorin in those compounds in which the hydrogen has been replaced by chlorin, bromin or iodine. We are obliged to admit that their hypnotic properties depend on the energy with which the halogen is retained, or the ease with which it is liberated. This explains the notable difference in narcotic power between the chlorid of ethylene and the chlorid of ethyl. After dwelling upon this fact, Kossa describes in the *Ung. Arch. f. Med.*, 1895, Nos. 3 and 4, the effect of a recent compound, acetone chloroform, or as the same writer calls it trichlorpseudobutyl-alcohol. Administered hypodermically to rabbits it produces sleep very soon. Given to persons through the mouth, in a dose from 0gr.8 to 1gr.3, it produces an agreeable slumber, with no noticeable disturbance of the heart or respiration.—*Les Nouv. Remèdes*, Jan. 8, 1896.

Experimental Researches on the Physiologic Effect of Anemonin.—Anemonin usually comes in the form of orthorhombic crystals, with an odor *sui generis*: it dissolves very little in water, alcohol or ether. Repeated experiments with it on rabbits, frogs, guinea-pigs and dogs, show that it is a slow poison, the first indications of which are drowsiness followed by paralysis, and terminating in convulsions. The torpor is evidently due to the physico-chemic action of the drug on the brain. The anemonin commences by affecting the brain and does not act upon the spinal cord until later. The intensity of the convulsions varies: sometimes they are merely isolated spasms. Death is produced by the cessation of respiration, the muscles losing completely their contractility.—*Brit. Med. Jour.*, Nov. 2, 1895. Reviewed in *Les Nouv. Remèdes*, Jan. 8, 1896.

Congenital Hydrocephalus with No Clinical Manifestations until Adult Manhood. The *Gazz. degli Osp. e. Clin.* of Jan. 4, 1896, contains a detailed study of a typical case of congenital hydrocephalus which did not reveal its presence until late in life. The patient was a clerk, an Italian, of fair average mental development and no bad habits, with no apparent physical defects except an affection of the left eye, which finally lost its sight. In his twenty-third year he was suddenly and violently attacked with vomiting, vertigo, cephalalgia and other symptoms which gradually grew worse, until there was the combination that is the unmistakable picture of congenital hydrocephalus. Death ensued at 34 years of age. At first it was very difficult to differentiate the case, but as time passed, all doubts vanished, and the autopsy confirmed the original diagnosis.

Elimination Through the Stomach. Experiments have been made recently on healthy dogs to determine what substances find their way into the stomach when introduced into the system by rectal or hypodermic injection. The alkaloids discovered in the vomit withdrawn mechanically from the stomach were morphin, brucin, veratrin, caffein and quinin. There was absence of atropin and apomorphin. Other substances found were salicylic acid and antipyrin. Phenic acid was not eliminated by the stomach. Still other substances noticed were chloroform, chloral hydrate, methyl alcohol, ethyl alcohol and acetone. The methyl alcohol was administered in a rectal injection. It was mostly eliminated in the urine the day after the injection. These substances found their way into the stomach through the blood in some cases, but Grützner's recent experiments show that there is an antiperistaltic action of the bowels to which may be due the presence in the stomach of some of the substances introduced into the rectum.—*Schmidt's Jahrbch.*, 1895, No. 11; reviewed in *Les Nouv. Remèdes*, Jan. 8, 1896.

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SATURDAY, FEBRUARY 22, 1896.

SANITARY LIMITATIONS.

The development of hygiene as a department of medicine is the prominent professional characteristic of this age. From a scarcely tolerated subsidiary to physiology or medical jurisprudence in a few schools, it has risen to become an important chair in all colleges of the highest standing. Health associations, health boards and health journals abound, and that which was itself only a subordinate study, has been the parent of another as abstruse and difficult as any of the older branches in medical science. Bacteriology alone is a special object of research, and works treating of it have the proportions and intricacies of old text-books. The public health is the refrain in the periodical professional literature; and the office of the practitioner to medicine would appear to be menaced as a sinecure.

Nevertheless, the insanitary doings of the people go on, and they continue to defy the unselfish counsels that aim to banish disease and death. Is this significant of the hopelessness of the task? Does it suggest that there are limitations to sanitary effort, which it is idle to hope to surmount?

A single illustration suffices. It ought to be manifest to the simplest intelligence that fresh air, free air, and sunlight are essentials to healthy development and vigor of body. Barbarous races demonstrate that fact by their lusty frames and their freedom from the morbidic pests of civilization, yet not alone the lower classes of our great cities, but their wealthy and educated inhabitants as well are equally indifferent to the truth that to breathe fresh air and live in the sunshine are more potent invigorators than apothecaries' stuffs at a dollar a bottle. The faces of the throngs in

the street cars of our great cities, hurrying to and from their daily occupations, bear the evidence of race degeneracy in their pallid or sallow complexions. The ruddiness of the Anglo-Saxon is disappearing, chiefly because these people pass the greater portion of their lives in rooms, in which direct sunlight rarely enters. The apartment-house system is attaining appalling dimensions, as in New York City, where even suites, which rent for a thousand dollars a year or more, have as their prominent feature dark interior bedrooms, opening upon wells, into which the rays of the sun can never penetrate. With attractive approaches and entrances from the street, elevators and decorated drawing-rooms, there coexist small chambers, with windows facing blank brick walls, near enough to be touched, six or seven stories high. The occupants of the lower apartments breathe only the stagnant air at the bottom of the narrow space (well) outside their windows, yet apartments of this sort are not only readily rented, but when rented are further obstructed and darkened by superfluous hangings. The ignorance or indifference of even wealthy lessees is shown by one instance of many in view, of a suite of rooms on the second floor of a most expensive establishment, occupied by a family in affluent circumstances. All the windows face north and are closed with heavy inner and outer curtains, thus even excluding the sun's rays reflected from the houses on the opposite side of the street, ever burning gas lights supplying the illumination necessary to prevent stumbling over the multitudinous articles of furniture, which encroach upon the air space, and only evidence the purchasing ability of the occupant. Even greater folly than this is that of the owner and resident of a large brownstone house on the northeast corner of a splendid avenue, the length of the house having an unobstructed southern exposure on a street running east and west. In this wide surface are spaces for twenty-one windows, *fourteen* of which are blind, having been filled in by brownstone slabs, leaving only the indicated sites of windows as designed by the architect. Sanitary teaching is idle addressed to such a person. The pallid, shivering, ill-developed children are only weighted more and more by furs and heavy wraps. Only a day or two ago, the writer entered a cable-car crowded to the point of stifling, and aroused the ire of the passengers by opening an overhead ventilator near him; and two ladies, expensively clad, conspicuously drew their capes around their shoulders and moved their seats at the first opportunity. What, then, can be expected from the hordes of the tenement houses, who find stupifying warmth in their sealed doors, when the rich and presumably intelligent themselves violate the warnings of the sanitarian? Owners and architects will continue building long rows of dark, ill-ventilated apartments, which the necessities and indifference of tenants

cause them to occupy, with the certain physical impairment of the children to be born and reared in their dim, murky interiors.

Perhaps a more glaring disregard of sanitary considerations is that exhibited in the street cars of all our cities, by the tolerance of the expectorator, who voids a mess as disgusting as a vomit on the floors of vehicles used by the public. It is amazing that no serious effort has been made to put a stop to the abominable, offensive practice. Men, well dressed, with intelligent faces and apparently aware of the proprieties of life, do not hesitate to discharge upon the floor the viscid accumulations of saliva, mucus and pus in full view of their fellow passengers to besmear the skirts of the young girl or woman who next occupies the seat. It has been possible in a crowded cosmopolitan city like Paris to absolutely prevent the practice. In every tram car and omnibus a placard is conspicuously displayed, bearing the words: *Il est interdit par mesure d'hygiène de cracher sur le parquet* (It is forbidden as a hygienic measure to spit upon the floor). Why should it not be just as possible in our own communities, where the communicability of tuberculosis through the medium of dried sputa is known to every newspaper reader, and where there are health boards whose duty is to prevent the spread of this disease by the direct transference of the foul mess of tobacco juice, saliva and morbid expectoration to the underclothing of innocent women? If this is not done it must be admitted that sanitary endeavor in America finds a limitation wherever a car fare may be obtained from a creature whose habits are no matter how disgusting and obnoxious, and that provisions for the public welfare are impracticable if wealthy corporations negative them. There can be no better missionary service than to preach the gospel of cleanliness and godliness to the enriched directors of street railways, who are as criminal in their indifference to this one provision of public decency and public health as the builders of unsanitary dwellings or the venders of unwholesome food. A league of zealous, determined men and women could profitably serve both God and man by removing at least this one existing limitation to the sanitarian's work.

THE PATHOLOGY AND ETIOLOGY OF THE DISEASES OF THE ACCESSORY CAVITIES OF THE NOSE.

Our knowledge of the morbid processes in the accessory nasal cavities is very limited. The inaccessibility of these places is no doubt largely responsible for this fact. To ZUCKERKANDL, the anatomist, belongs the credit of having directed attention to the diseases of these cavities by the publication of the well-known "Normal and Pathological Anatomy of the Nose and its Pneumatic Appendages," in which are found many illustrations of interesting morbid processes. A very important step in advancing the

range of observations concerning the anatomic changes in these spaces was introduced by HARKE,¹ who devised a practical method of gaining access to the interior of the nose and adjacent cavities during post-mortem examinations without any disfigurement of the face of cadaver. HARKE's method consists, in brief, of the following steps: After removing the brain in the ordinary method the soft parts are reflected anteriorly down to the root of the nose, posteriorly down below the foramen magnum. Then the floor of the skull is divided in the median line by means of a keyhole saw from the nasal bones in front to the occipital foramen behind, keeping as nearly as possible to the median line. Now the two halves of the skull are separated by means of a broad chisel and mallet, and as the nasal and pharyngeal cavities come into view, the pieces of mucous membrane may be cut across with the knife or scissors so as to prevent further tearing. With the hammer and chisel the axis may be divided. The two halves of the skull are still connected by the nasal bones, the maxillary process of the upper jaw and the palate; strong traction will separate these bony connections without injury to the soft parts, and the lateral halves of the skull will yield sufficiently to allow inspection down to the vocal cords. The partitions between the accessory cavities are readily cut away with scissors.

By means of this method HARKE examined some four hundred noses, and his "Contributions to the Pathology and Therapy of the Upper Respiratory Passages"² forms a very valuable addition to ZUCKERKANDL's work.

In order to study more closely the relations of general affections to the pathologic processes in the nasal accessory cavities as well as the histologic changes of the mucous membranes of the latter and the nature of the etiologic agents at work in their inflammatory diseases FRÄNKEL,³ of Hamburg, made a systematic and broad examination of these localities in a large number of autopsies. Among fifty cases examined exclusively for the purpose of showing whether the normal mucous membrane of the accessory cavities of the nose is free from bacteria or not, FRÄNKEL found only twenty-eight to be available for this purpose, *i. e.*, normal, and of these twenty-eight only thirteen were completely sterile. The remaining fifteen showed microorganisms to be present most often in the antrum of Highmore (eleven times), then in the frontal sinuses (six times), and least often in the sphenoidal sinuses (five times). Without going into complete details it may be said that the following microbes were found in the order of frequency in which they are named: The diplococcus lanceolatus, the yellow pus coccus, an organism morphologically like the bacillus diphtheriæ, the

¹ Virchow's Archiv., Bd. 125, Heft 2.

² Wiesbaden, 1895.

³ Virchow's Archiv., Bd. 113, Heft 1.

bacillus coli communis, and two hitherto undescribed bacilli. The *diplococcus lanceolatus* was found oftener than the others in each of the cavities; it was frequently single but also in company with some of the other microbes named, most often with the pus cocci. From the results of this phase of his studies FRÆNKEL concludes that in a large number of normal accessory nasal cavities there occur microorganisms which, we know, play an essential rôle in the inflammatory processes of the respiratory tract. In 40 per cent. (sixty-three cases) of the post-mortem examinations of the nasal cavities there were morbid changes present. In thirty-seven cases the process was limited to a single cavity. The antrum of Highmore thirty times (right seventeen, left thirteen), and the sphenoidal sinuses seven times. In eighteen cases two cavities were involved at the same time, both antra of Highmore seven times, one sphenoidal sinus and antrum of Highmore eight times, both sphenoidal sinuses once, one sphenoidal sinus and one frontal sinus once, and frontal sinus and antrum of Highmore once. In six cases three cavities, and in one case four, and in one case all six accessory cavities were involved. The general result may consequently be said to show that the antrum of Highmore furnishes by far the largest contingent of cases of disease of the accessory nasal cavities, then comes the sphenoidal sinuses while the frontal sinuses furnish but a small number of cases. Systematic examinations like this are the only means that would lead to any definite information concerning the relative frequency of disease in these various centers mentioned.

In regard to the nature of the pathologic processes present FRÆNKEL found that inflammatory or exudative changes are by far the most frequent. The exudate may be serous, mucous, muco-purulent, purulent or sanguinous. The quantity is variable. In quite a number of the cases the mucous membrane contained cysts which most likely were due to retention. ZUCKERKANDL⁴ doubted the ability of the mucous membrane of the antrum of Highmore to form pseudo-membrane, but one observation of FRÆNKEL's shows that it may form fibrinous false membrane. The histologic changes in the mucous membrane most frequently present were those more or less characteristic of inflammation. The microbe most frequently found in the diseased cavities was, again, the *diplococcus lanceolatus*, quite frequently in association with other germs, especially the pus microbes. Various members of the latter group were also found alone. Once the influenza bacillus was demonstrated to be present, the cause of death being pneumonia in the course of influenza. The colon bacillus was found once. A *bacillus mucosus capsulatus*, FRÆNKEL, hitherto undescribed, was also found in a few cases. The action of these various microorganisms is incon-

stant and the character of the changes present does not allow any inference as to the kind of infection at hand. The same microbe may cause different forms of disease.

Among the general conclusions arrived at by FRÆNKEL may be mentioned that these accessory cavities of the nose are so frequently the seat of disease that more attention must be paid to their condition than has hitherto been done. Suppurative processes in any of these cavities always form a menace to the health and life of the individual. Both HARKE⁵ and FRÆNKEL call our attention to the fact that in atrophic and marasmic children it is not unusual to find chronic suppuration in the antrum of Highmore that might be regarded as the source of a chronic intoxication. FRÆNKEL has also observed a case in which a chronic empyema of the frontal sinuses was followed by thrombo-phlebitis of the longitudinal sinus and consecutive pyemia. In general infectious diseases as, for instance, fibrinous pneumonia inflammatory conditions of secondary origin may arise in the nasal accessory cavities, which may become chronic and in turn act deleteriously upon the whole body. While ZUCKERKANDL⁶ regards the diseases of the accessory cavities as oftener secondary to nasal affections HARKE and FRÆNKEL both conclude that in the main the acute inflammations of the accessory cavities are entirely independent of the affections of the nose proper. It is a significant fact in support of this view that FRÆNKEL in his investigations found only nine cases of disease in the main nasal cavity and that in five of these the mucous membrane of the accessory cavities was normal. It is also a quite general belief that the most frequent cause of empyema of the antrum of Highmore is the extension of morbid processes connected with the teeth or their alveoli. This view is upheld by ZUCKERKANDL. HARKE and FRÆNKEL both find, however, that the frequency of the dental origin of inflammation in the maxillary sinuses has been greatly overestimated. Out of all his cases FRÆNKEL found only two in which the process in the antrum could be referred to the teeth. FRÆNKEL consequently makes the general statement that in the majority of instances inflammation of the maxillary sinuses develops independently of pathologic changes in the neighborhood and that certain general diseases play a much more important part in its pathogenesis than has been assumed. These anatomic studies also seem to show that the relation of nasal polypi and of inflammatory swellings of the infundibulum to the diseases of the antrum is the reverse of the usual teachings in so far as no evidence has been brought forward that polypi and the like are secondary to disease in the antrum, which is the view usually held by the clinicians. Finally, attention is also directed to

⁴ Loc. cit.⁵ Loc. cit. ⁶ Loc. cit.

the fact that the inflammations in the mucous membranes of the accessory nasal cavities do not seem to give rise to lesions of the bones unless specific processes like tuberculosis, syphilis, or leprosy are present. A correct understanding of the etiologic and anatomic factors and conditions will undoubtedly be of the greatest benefit in the treatment and the prophylaxis of the morbid processes that have been referred to. When the interest of the specialists and of clinicians in general in these common forms of disease in the accessory cavities of the nose has been awakened by such comprehensive investigations as those of HARKE and of FRANKEL, there can be no doubt but that much will be brought to light that will be of importance in the symptomatology and early diagnosis of these affections.

HOSPITAL CORPS EQUIPMENT AND DRILL.

During the past week two orders have been published by the War Department bearing on the equipment and efficiency of the hospital corps. One of these orders provides that when detached for service in the field during Indian wars, or when left with the sick and wounded under circumstances which justify the expectation that their rights as non-combatants under the Geneva Convention will not be recognized, commanding officers will issue to members of the hospital corps revolvers or other available fire-arms. The meaning of this is obvious, to afford them the means of protecting themselves and the wounded under their care. It affects the equipment of the men under certain conditions of active service; but the sentence which follows will be regarded by many as containing the essence of the order: "With these exceptions no side arms will be issued to members of the hospital corps." This modifies their present equipment by removing the sword or saber of the non-commissioned officer, and the heavy knife worn by the men since the organization of the corps. The sword is not required by the hospital steward as a badge of authority. It is a useless relic of a former age and an encumbrance at all times, and particularly in the discharge of his duties to the sick and wounded, while the knife of the enlisted man, a cross between a Mexican machete and a sword bayonet, has been merely so much useless weight for him to carry on active service.

The second order referred to is one convening a board of officers to revise the drill regulations of the hospital corps. The board consists of MAJOR JOHN VAN R. HOFF, MAJOR VALERY HAVARD and CAPTAIN JULIAN M. CACELL, Medical Department, U. S. Army. All these officers have had much experience in the handling of hospital corps companies. It is understood, however, that no radical change in drill methods is intended, the main object of the revision being to bring the drill regulations into harmony with the

litter and sling, model of 1895, recently approved by the Surgeon-General. The present regulations were prepared for a litter with an attached sling, but, in the model of 1895, the sling is an individual sling worn on the shoulders of the bearer, its looped ends merely requiring to be slipped on and off the handles of the litter in the various movements. The convention of this board does not mean that present drill methods are unsatisfactory, although no doubt the board will embody in its revision all the changes and improvements that several years of experience in the method have suggested as desirable.

CHILD STUDY.

There exists in the city of Chicago, and similar organizations can probably be found in other centers, a society for the promotion of child-study. While the leading idea of such study is undoubtedly psychology, the subject is suggestive in a medical point of view, and may well be worth an editorial comment in a journal that only deals with psychologic questions in their specially medical aspects and bearings.

There is no period in life when mental and physical development is as rapid as in childhood, and therefore there is none more interesting in a physiologic as well as in a psychologic point of view. Physicians have studied children in their pathologic peculiarities; pediatrics is a recognized medical specialty, but it is a reasonable question whether it might not be as well to widen its scope and take into it some attention to the unfolding of the intellectual life in its beginnings. The skilled medical practitioner can better than anyone else first take note of and point out the way of correcting the morbid traits and tendencies that lead to physical and mental degeneracy, he can study and estimate the hereditary influences and advise how they are to be met, and can instruct the mother in what should be the most fascinating pursuit of her life, the proper method of studying the development of her offspring. These are the possibilities of his profession; we do not say they are generally or even often realized.

Considering, however, only the physical side of the question of child study, it is not a credit to our profession that while the studies of the growth and the physical data of childhood are being taken up by laymen and educators it should be in any degree behind them in the same line of investigation. While physiologists were ahead of psychologists in recognizing the value of knowledge of the earliest developmental processes and conditions in the study of functions, it seems now that the newer school of psychologists, enlightened by the data of physiology, may in their turn put practical medicine under obligations for important facts and deductions. Sometimes they may be on the wrong track, or on one that is uncertain, but they are always suggestive and instructive in their modern methods.

The practical value of child-study should be evident to anyone. The old saying that "as the twig is bent, the tree is inclined," so often quoted with a moral application, has a physical and intellectual appropriateness as well. Hence every real acquisition of fact or legitimate theory in regard to the bodily or mental development of children has its value, and there is an ample store of such facts yet to be acquired. At the present time we may take, for example, the theories of mental and bodily degeneracy that are just now so much to the fore, and it is easy to see that they can only be proven or disproven by taking into consideration the earlier conditions of the individual and the influences that affected his development. The question as to the existence of such a type as the "born criminal" is, as might be inferred from the term itself, one that can only be settled by the study of the development and beginnings as well as the finished type; in short, by a study of the morbid tendencies and moral development of the child. As an almost purely medical line of investigation, and not the least important may be mentioned that of heredity in children, which can hardly be studied by anyone so well as by the general practitioner—the family physician. GALTON has laid down a plan for this line of research in his "Natural Inheritance" that is at least worthy of some consideration. The amount of valuable facts and statistics that could be obtained from a general interest in this study in the medical profession can hardly be over-estimated. Other interesting questions are some of those of the origin of insanity, especially those forms that seem to be more or less dependent upon errors of education and training and management of developmental periods, and here the well directed attention to the facts of early life will be found to be productive of valuable results. It is not meant to be understood that these questions are neglected by physicians, but more systematic study of all the stages of early human development is needed to fully elucidate them.

It is noteworthy that this whole subject of child-study is comparatively of modern development. If we look over the bibliography as given in the report of the Commissioner of Education for 1892 and 1893, just issued from the Government press, we find comparatively few works dating back more than twenty years, and most of the papers bearing directly on the subject have appeared within the last decade. While it is likely to continue to be for the most part a specialty of educators and psychologists, it is to be hoped that our profession will not too much neglect the special opportunities it has in this particular direction.

A special telegram to the JOURNAL from DR. R. HARVEY REED informs us the Practice of Medicine Act passed the Ohio State Senate February 19. The quacks will now have to "move on." The medical profession of Ohio are to be congratulated.

CORRESPONDENCE.

"Nine Years of Diphtheria."

To the Editor:—The JOURNAL of February 15 contains a remarkable article with the above title. If you will allow me sufficient space I would like to call attention to some of its remarkable statements.

1. The author has used the serum treatment in a series of nearly three hundred cases, both as a curative and a preventive agent *during the past year*.

2. In December, 1894, the disease appeared in its *most malignant form* and has *continued ever since*.

3. During September and October of one year he treated 123 cases *without a death*.

4. Since Jan. 1, 1895, he has treated fifty-seven cases varying from the *most malignant* to moderately severe cases, *none having been mild*; there were two deaths with fifty-five recoveries, a mortality of *less than 4 per cent*.

The remainder of the article contains many extravagant statements equal to the foregoing but I have not the time to devote to them. After reading the article referred to, curiosity led me to make some investigations. By referring to a map of Indiana I noticed that the city of Vevay, Ind., was situated on the Ohio River, about midway between Louisville and Cincinnati; that the county in which city is situated is not marred by a single mile of railroad; that its only communication with the outside world was by way of the Ohio River; that it was one of the oldest settlements in the State; that the population of the city in 1880 was 1,884, in 1890 it was 1,663; that it has no children's hospital or general hospital, except an orphanage and poor asylum. So the statistics of the article must be made up from cases in private practice. Vevay is credited with seven other physicians than the author of the article in question.

Now as to statement No. 1. Three hundred inoculations in one year; this is more than one-sixth of the entire population. Surely the Doctor must have a formidable grip on that community if more than one-sixth of all ages combined resort to him for curative and preventive inoculations; possibly the Doctor holds his patronage by inoculation! (Other doctors take warning.) In these 300 cases he has used from 200 to 4,500 units (Behring) each injection and has repeated 200 to 600 units every six hours as required. For a town of 1,663 inhabitants Vevay is the boss market for antitoxin. Possibly this may account for the scarcity of Behring's antitoxin in Berlin.

Statement No. 2. Malignant diphtheria existing in a city of 1,663 for an entire year is quite a reflection on the local Board of Health, to say the least. Reference to the records of the State Board of Health will possibly define the character of this long-continued epidemic; and as Dr. D. has saved three hundred what have the other seven physicians been doing?

Statement No. 3. One hundred and twenty-three cases treated during the months of September and October without a death. Over sixty cases a month, in private practice, in a city of 1,663 inhabitants, and seven other physicians to hear from. We will take it for granted that the seven were not very busy, but it must have made Dr. D. hump himself to attend to that many cases of diphtheria in addition to his other patients. This was called a mild epidemic but no doubt as to the diagnosis is entertained; the writer of the article did not say, but we infer that he made a bacteriologic test in every case, and confirmed the diagnosis, for he makes the statement that the discovery of the *Löffler-Klebs bacillus* has forever settled the controversy and we are satisfied he wished to be exact. These 123 cases, we suppose, antedated antitoxin in his practice.

Statement No. 4. Fifty-seven cases in one year with two deaths, under the use of antitoxin. (Seven other physicians

still to hear from.) Enthusiasts often make extravagant claims for any treatment that is new, but Dr. D. has had better success than any writer of my acquaintance, and I am sure he deserves it all for he seems to have pinned his faith to serum-therapy alone, and such devotion will assuredly be rewarded. Serum-therapy, still in its infancy, has burdens enough of its own to bear: it seems a pity that it should be loaded down by one of its supposed friends by an article in its behalf as illogical, unreasonable, unscientific and misleading as the one above referred to.

In the State of Indiana, reports of contagious diseases are required by law. Did Dr. D. make said reports and are they safely on file in the Health Office for future reference, or is the Doctor liable to fine for failure to report them? Such valuable statistics should not be lost. I am somewhat surprised that the JOURNAL admitted the article to its columns. CRITIC.

Abortion Legalized.

CLINTON, IOWA, Feb. 12, 1896.

To the Editor:—It is of interest to us to be posted on the laws and decisions that relate to the profession. A respectable woman of this city called on a female practitioner stating that she had a babe five months old and was again pregnant, and very earnestly desired to be relieved of it. A soft catheter was introduced by a director or sound. The director was withdrawn and the catheter was left behind. After waiting seven or eight days as was proved, the "doctress" called on a medical man telling him she had introduced a soft catheter into a woman's uterus and could not get it out. He told her it would undoubtedly be expelled: if not, to dilate the os and reach for it with a pair of placenta forceps, that he lent her.

In the evening she returned saying she was in trouble and wished him to see the woman. He called at the house and on examination found a length of intestine protruding from the vulva, bearing the marks of the forceps. The patient said she had endured the torments of the damned for a week. The doctor at once called in three other physicians and as soon as convenient made a section, opening the abdomen, finding the catheter among the intestines with abundant signs of inflammation. The uterus was cut through in several places by a curette, through one of which the intestine had been drawn. The woman did not rally from the operation. The coroner was called; the "doctress" acknowledged the introduction of the instrument, with intent. The verdict was rendered accordingly. Prosecution followed, for malpractice and murder. Being a woman, by a quibble of the law she was admitted to bail. After passing over several terms the case came up for trial. All the facts were proved. Witness for the defense testified that it was done at the woman's urgent request and that due care and diligence had been taken afterward. Counsel for the defense asked the several witnesses if such was not their practice; this was of course overruled, but the benefit of the doubt was put before the jury.

The Judge charged, that if they found the act done in contravention of the law, they were to convict: that if it was done with good intent and that due diligence and care had been used according to the best of her ability they could modify their verdict. The jury retired and on first count stood ten for acquittal. After being out for several hours the refractory ones came over and a verdict was returned of not guilty.

The courtroom was so crowded with women during the trial that the door was closed shutting many of them out. The sentiment among them was that the prosecuting witnesses were addicted to the same practice and were actuated by malice or envy. Mr. Tait was quoted, as having heard that rupture of a diseased uterus had taken place spontaneously. After the trial an autograph letter of Tait was published in the local papers thanking some one for reporting a case of spontaneous rupture of a uterus.

It seems to us that this lets down the bars and gives a quasi-legal sanction to the practice. To our credit, however, we may add that the "female practitioner" was not a graduate but had received a license from the State Board of Health of Iowa.

Very truly yours,

M.D.

Diphtheritic Treatment.

ST. PAUL, NEB., Feb. 14, 1896.

To the Editor:—In the JOURNAL of Feb. 1, 1896, we notice an extract from the *New York Medical Journal*, entitled "Diphtheria *sine* Antitoxin," credited to Dr. O. B. Douglas. We read this short article with much interest, as it seems to be very nearly a concise reproduction, in meaning at least, of a paper contributed by myself on the treatment of diphtheria, to the *Southwestern Medical Gazette* for March, 1887, from which the following is quoted. In speaking of the local application of irritants such as tinc. ferri chlorid, we said: "In the first place we get the irritating effect on the diphtheritic abraded surfaces of the fauces and pharynx, which is anything but desirable, as it aggravates the inflammation by its constricting and irritative properties." "I have used locally a very mild gargle or spray of glycerin, carbolic acid and rosewater." "To sum up: My success I have attributed to the use of aconite and belladonna. Their use has been kept up for from one to four days and governed by the urgent symptoms." "The use of aconite in diphtheria will to many appear as a gross error, but when we consider its many desirable properties, as the lowering of temperature, relieving the engorgement of a part by dilating all blood vessels, thus subduing congestion and inflammation, that it is a great eliminant both of liquids and solids (probably in that way acting as a specific in diphtheria by eliminating the poison), and that its depressing effects are overcome by belladonna, its efficacious use seems to me very rational." "Alcoholic stimulants injudiciously administered in diphtheria, is a very routine practice, yet given in appropriate doses at the proper time, great good may be achieved by their use. In the early stages I venture to say that nine cases out of ten are better off without any stimulants."

Since the above was written we have employed this treatment in upward of six hundred cases, in what was clinically proved diphtheria, with the best possible results. Indeed, the mortality has been so low when the patients were seen early that the use of antitoxin would almost seem superfluous.

While we still employ the aconite-belladonna treatment, yet we must beg to differ with Dr. Douglas. We are thoroughly "converted" to the "faith" in antidiphtheritic serum. Cases in our hands, bacteriologically proved diphtheritic, brought under the influence of this agent, do certainly become convalescent in half the usual time required under any other form of treatment. To my mind, judging from clinical observation, the treatment of diphtheria to-day, *without* the use of a reliable serum, can not be too highly censured both from a medical and a humane standpoint.

O. GROTHAN, M.D.

The Character of the Anti-Vivisectionist.

CINCINNATI, OHIO, Feb. 15, 1896.

To the Editor: Among your comments on the vivisection bill of Mr. McMillan, on p. 297 of the issue of the JOURNAL of February 8, you make use of the following language:

"In the absence of knowledge of the subject, no one should chide these good hearted men and women, etc.," (no need to quote the remainder). Now my dear doctor, the "good book" (both versions) contains the following passage, "Fools rush in where angels fear to tread," in line with this statement is the fact of experience that ignorance will criticise, while knowledge is weighing evidence. It is also a known fact that an exaggerated idea of the specific individuals, qualifications and *ego*, is the prompter for the rendition of judgment by that individual, who

thinks what he or she *thinks*, is necessarily *law*. It is a well-established principle of justice, and common sense as well, that evidence shall precede a verdict, and when we refrain from "chiding" those who reverse the order, we are guilty, at least, "after the fact." I have paid considerable attention to the matter, and my personal experience has shown me that those individuals who deprecate harsh measures with poor "Lo," are in every case, people who are intimately acquainted with the "Leatherstockings" of the novelist, but who have not even a slight acquaintance with a veritable copperskin except as civilized temporarily, for dime museum purposes; and that the most active in behalf of suffering hearts, find no time for efforts in behalf of suffering humanity. There are exceptions possibly, but the above may be formulated in a general law. Why individuals who are intensely humane in one direction are equally cruel in others is a question not difficult to answer, but is not germane to the present subject. True advancement has ever been retarded by the "snap judgment" of the ill-informed, especially those who have a smattering of technicalities and consider them the science. People who offer judgment upon matters which have not been fully considered by them as to *pros* and *cons*, should not only be *chidden*, but forcibly sat down upon in *all* cases. *All* persons are "laymen" with regard to any point of which they have not made a definite study, whether it concerns medicine, or political economy, or any other subject, and it is the constant attempt made by many proficient in *one* matter to assume the judicial ermine as to *all* matters, which retards the spread of real truth. The foregoing is my "say so" and I presume that having said it, the rest of the world will accept, and keep on judging as usual.

Yours truly,

J. WINCHELL FORBES.

1128 Locust Street, Walnut Hill.

BOOK NOTICES.

The Year-book of Treatment for 1896. A Critical Review for Practitioners of Medicine and Surgery. 12mo, 476 pages. Cloth, \$1.50. Philadelphia: Lea Brothers & Co., Publishers. 1896.

This is the twelfth issue of this annual, and it represents the work of twenty-five well-known English contributors, who have culled from contemporaneous medical literature the material for the volume, which thus constitutes a pretty fair epitome of the medical writing of the year.

The Principles of Bacteriology: A Practical Manual for Students and Physicians. By A. C. ABBOTT, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. Third edition, enlarged and thoroughly revised. 12mo, 492 pages, with 98 illustrations, of which 17 are colored. Cloth, \$2.50. Philadelphia: Lea Brothers & Co., Publishers.

In our notice of the second edition of this book (see this JOURNAL, Oct. 6, 1894), we took occasion to say that it was "in every way worthy of the success it had met with, and is destined to become a general favorite."

The edition now before us is gratifying evidence of the correctness of the judgment then expressed. It has been brought quite up to date, and will doubtless retain its popularity with students. We commend it as a trustworthy guide.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia College, New York. Vol. IV, for the collegiate year 1894-1895. Reprints.

Dr. Prudden states in the preface to the volume, that "it has seemed to us that by this form of publication—first the wider circulation which current medical journals afford and the subsequent grouping together of reprints—the aims of such varied studies are more certainly accomplished than they would be by a special departmental or college publication."

Our readers will we are sure agree with Dr. Prudden in his views, and feel that they are the gainers by the prompt trans-

mission through the medical press of the conclusions of the laboratory experiments. Those wishing to preserve them separately have the opportunity. The volume is well illustrated.

Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the Fiscal Year 1894. Washington: Government Printing Office. 1895.

This report, which is handsomely illustrated, details the operations of the Service for the year ended June, 1894, and conveys the usual professional information contained in the necropsy reports, and the carefully compiled statistical tables which have constituted a valuable feature of these reports for many years. The operations of the quarantine service for the period mentioned are fully set forth, and the continued evolution of that branch of the Service is manifested in the voluminous reports and regulations reprinted in this volume.

As these operations passed into history nearly two years ago, it is not practicable here to discuss situations which no longer exist, or which may long ago have been modified by changes in regulations. As a contribution to the governmental history of the year 1894, the report is an extremely interesting one.

Transactions of the American Surgical Association. Volume XIII. Edited by DEFOREST WILLARD, A.M., Ph.D., M.D., Recorder of the Association. Royal 8vo, cl., pp. 516. Philadelphia: William J. Dornan. 1895.

This volume contains, beside the address of President Dennis, articles by Drs. Gerrish, Homans, Connor, Wight, McGuire, Gerster, White, Mears, Gay, Weir, Deaver and Frese, Carmalt, Sayre, Roberts, Bradford, Park, Mastin, Wharton, Burrell, Packard, Fenger, Weeks, Norris, Mixter, Elliot, MacCormac, Hart, Souchon, Richardson and Bryant, names sufficiently well-known to insure the excellent quality of the essays. The report of the Committee on Necrology includes biographical sketches of the late Prof. William T. Briggs, of Nashville, Prof. Albert B. Miles, of New Orleans, Professor Thiersch, of Leipzig, Mr. A. E. Durham, of London, and Prof. Aristide A. S. Verneuil, of Paris.

The volume is handsomely printed and a worthy companion to its predecessors. The next meeting of the Association will be held at Detroit May 26, 1896, under the presidency of Dr. Tiffany, of Baltimore.

Syphilis in the Middle Ages and in Modern Times. By DR. F. BURET, Paris, France. Translated from the French, with notes, by A. H. OHMANN-DUMESNIL, M.D., Professor of Dermatology and Syphilology in the Marion Sims College of Medicine; Consulting Dermatologist to the St. Louis City Hospital, to the St. Louis Female Hospital; Physician for Cutaneous Diseases to the Alexian Brothers' Hospital; Dermatologist to Pius Hospital, to the Rebekah Hospital, to the St. Louis Polyclinic and Emergency Hospital, etc. Being Volumes II and III of "Syphilis To-day and Among the Ancients," complete in three volumes. 12mo, 300 pages. Extra cloth, \$1.50 net. Philadelphia: The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street: Chicago: 9 Lakeside Building.

The interesting historical study begun by Dr. Buret in volume I is continued in volumes II and III here completed. The painstaking labor has comprised an examination of all literature of the subject, and we can well believe, as the author states, three years were consumed in the compilation of the first volume alone.

Dr. Dumesnil has very lucidly and accurately translated the work and thereby laid his countrymen under a permanent obligation. We notice an error in spelling the name of Paulus Ægineta on page 3, and repeated twice on page 5.

The material which Dr. Buret has offered as evidence to prove the pre-Columbian existence of syphilis in Europe, can not all be accepted as evidence, but he has produced more than enough that is conclusive, to prove his postulate. After the publication of the manuscripts and documents now unearthed by the author there can no longer be any doubt of the greater antiquity of syphilis on the continent of Europe than old John Astruc was willing to allow it.

Color Vision and Color Blindness. A Practical Manual for Railroad Surgeons. By J. ELLIS JENNINGS, M.D. (Univ. Penna.) formerly Clinical Assistant Royal London Ophthalmic Hospital, Moorfields; Lecturer on Ophthalmoscopy and Chief of the Eye Clinic in the Beaumont Hospital Medical College; Ophthalmic and Aural Surgeon to the St. Louis Mullanphy and Methodist Deaconess Hospitals; Consulting Oculist to the Missouri, Kansas and Texas Railway System; Fellow of the British Laryngological and Rhinological Association; Secretary of the St. Louis Medical Society. Illustrated with One Colored Full-page Plate and Twenty-one Photo-engravings. Crown 8vo, 110 pages. Cloth, \$1 net. Philadelphia: The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street; Chicago: 9 Lakeside Building.

This book contains ten chapters as follows: 1. Historical Sketch; 2. Physiological Anatomy of the Retina; 3. Physics of Light-color Sensations; 4. Theories of Color Perception; 5. Color Blindness; 6. Methods for Detecting Color Blindness; 7. Pseudo-isochromatic Tests, Contrast Tests, Special Tests; 8. Acquired Color Blindness; 9. Pennsylvania Railway Company's Instructions; 10. Oliver's Tests, and General Remarks.

The book applies exclusively to railway employes, but it does not touch upon the subject of its enforcement by the Treasury Department of the Government, nor are the statistics of the Public Service, although easily accessible, touched upon. So far as its scope extends, the book is an excellent one and will be of use to all railway surgeons.

Transactions of the New Hampshire Medical Society at the one Hundred and Fourth Anniversary, held at Concord June 3 and 4, 1895. Concord, N. H. Printed by the Republican Press Association.

One of the important functions of the medical society nowadays is the cultivation of the art of public speaking, and if our readers are in any doubt about the ability of the physician as an after-dinner speaker, let him make a collection of the post-prandial gems that emanate from the different members of our profession while in reunion at the annual society dinners, and he will be convinced that there are none more able than our doctors. But the annual dinner is not only productive of oratory, but of good fellowship, and it strengthens the ties of professional *camaraderie* by those of social sympathy. The publication of the remarks made at these reunions, naturally stimulates one's pride in his profession, and leads to stronger attachment to one's medical society than if the bald terms of science were alone used, and the dry topics of tedious experiments alone considered. The beer is stale without its froth, and the scientist without humor or sociability is like an icicle, which one may indeed admire, but only at a distance. Moreover, a pleasant manner and air of freedom from care increases the power of the scientist over the people who are otherwise prone to vote him always a bore, and perhaps at times an ass as well.

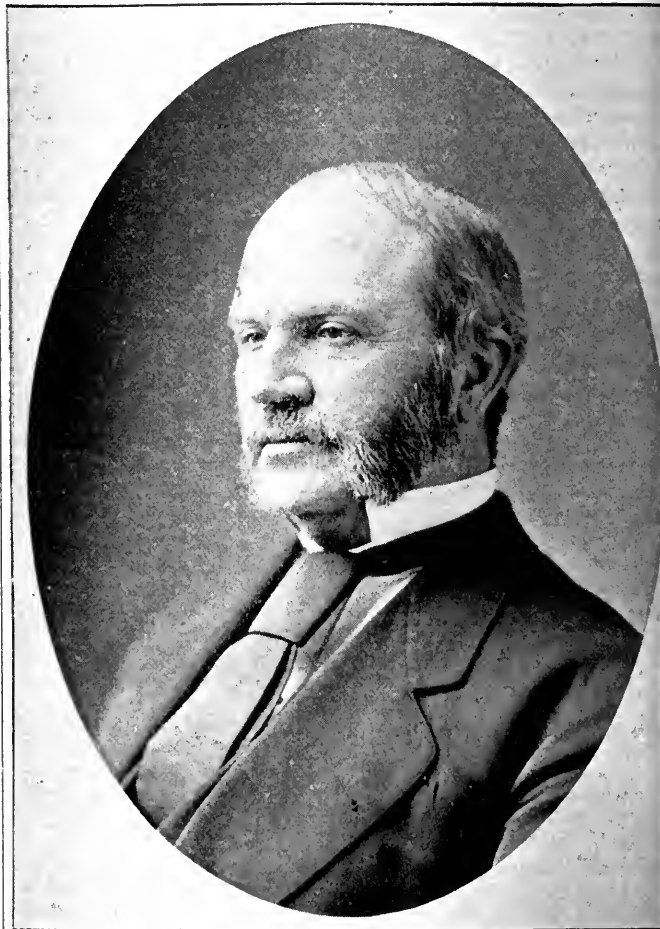
We were led into these reflections on reading the excellent speeches printed in the New Hampshire Transactions for 1895. And the many valuable scientific papers printed in the book are not one whit less instructive because an account of the annual dinner is included.

NECROLOGY.

DR. CORNELIUS GEORGE COMEGYS died at his residence, 524 West Seventh Street, Cincinnati, February 10, at 1 o'clock A.M., after an illness of one month of la grippe complicated with nephritis. From his autobiography as printed in the "Physicians and Surgeons of America," we learn that Dr. Comegys was born July 23, 1816, in Cherbourg, the family estate in Kent County, Delaware. He was a descendant of a German-Holland family that was naturalized in Kent County, Maryland, in 1673, being a son of Cornelius Parsons Comegys, Lieutenant Colonel of State troops in the War of 1812, and Governor of Delaware, 1838-41. His mother, Hannah, was a daughter of John Marin, a soldier in the Revolution; his brother, Joseph Parsons Comegys, LL.D., was Chief Justice of Delaware, 1876-92; also a United States Senator, 1856. Benjamin Bartus Comegys, LL.D., is President of the Philadelphia National

Bank and a trustee of the Girard estate. Dr. Comegys was educated chiefly in the Dover Academy. He began life as a teacher in a district school; then he went to Indianapolis, Ind., for employment in the United States Engineer Corps, constructing the National road to St. Louis; at length he became Cashier-clerk in the State Bank of Indiana, removed to Lawrenceburg to become a cashier; finally took part in a large flouring manufactory; this proving disastrous, he resolved to abandon a business life and study medicine, his original purpose. In the meanwhile he had studied chemistry, physics, astronomy, geology, psychology and political economy. He removed to Philadelphia and matriculated in the University of Pennsylvania, Department of Medicine, under the preceptorship of W. E. Horner, professor of anatomy and dean of the medical department. He took two winter courses and one summer course—daily clinics in the college and Pennsylvania Hospital, and a course of French under Delacroix; was graduated in March, 1848, and began practice in Philadelphia. In the latter part of the year he located in Cincinnati.

After the epidemic of cholera in 1849, in which he took a



most active part and attended a large share of cases, he went to Europe to complete his education. He there attended Guy's Hospital under Cooper, Addison, Golding, Bird, Gull and Oldham. While in Paris he was associated with Charcot, Andral, Velpeau, Trousseau, Rostan, Nélaton and Dubois. On his return to Cincinnati in 1852, he gave a course in anatomy in the College of Physicians and Surgeons, then joined in the organization of the Miami Medical College as professor of the institutes of medicine, and continued until the fusion with the Ohio Medical College in 1857, where he was allotted the same chair, and, additionally, clinical teacher in the medical staff of the Cincinnati Hospital, at that time under the control of the Medical College of Ohio. He resigned his chair in the college in 1869, but retained his hospital position for over thirty-five years, and for the past seven years has been President of the staff. It was at his suggestion that the department of pathology was created by the board. He also proposed a system of bedside instruction in all the departments, to small groups of advanced students. He was one of the founders of the Academy of Medicine and twice served as President; was a mem-

ber of the old Medico-Chirurgical and the Cincinnati Medical Society; he was a member of the AMERICAN MEDICAL ASSOCIATION, of the Mississippi Valley Medical Association, honorary member of the Philadelphia College of Physicians, of the Delaware State Medical Society, of the Western Reserve Historical Society of Ohio, the Ohio Historical and Philosophical Society and the Cincinnati Literary Club. His chief publications are translations of Renouard's "History of Medicine," 1855; Charcot's "System Diseases of the Spinal Cord," 1881. His medical papers have been numerous, among which are: "Conservative Value of Fever and Inflammation," "Transactions of the Cincinnati Medico-Chirurgical Society," 1849; "Etiology and Treatment of Phthisis Pulmonalis," "Transactions of the Ohio Medical Society," referred to in the American edition of Watson's "Practice of Medicine," and in Copeland's "Medical Dictionary," "The Pathology and Treatment of Asiatic Cholera," 1866, Blackman and Parvin's Cincinnati *Medical Journal*; address before the Alumni Society of the University of Pennsylvania, 1875, published by the society. He maintained the necessity of reform in medical education in the line of entrance examinations, a longer period of instruction, especially for clinical study and laboratory work, which, he has been assured, promoted the adoption of the great forward movement which has distinguished the course of the universities since 1875; he proposed at the same time the encouragement of the practice by physicians of forensic medicine, which he argued would secure a higher form of judicial decisions and serve to advance the medical profession to higher rank and usefulness in the State. After the battle of Fort Donnellson and Shiloh he volunteered his services and had charge of the boats fitted up for the relief of the sick and wounded.

His most conspicuous work of the past two years was as Chairman of the Special Committee of the AMERICAN MEDICAL ASSOCIATION to secure an act of Congress for the creation of a Department and Secretary of Public Health on a parity with other departments of the Government. He married in 1839, Miss Rebecca, daughter of Governor Tiffin, the first Governor of Ohio and United States Senator. Their children are: Edward Tiffin, A.M., M.D., Major and Surgeon in the United States Army; William H., M.D., Major in the pay department of the United States Army; Charles George, B.S., B.A., practicing law in this city: Ellen Tiffin and Mary Porter Comegys.

In the death of Dr. Comegys the profession has lost a most beloved and respected member, the city of Cincinnati a most valued citizen, and the younger element of the medical profession a staunch supporter. Dr. Comegys was a man who could always be relied upon to fight for the right and his constant and enthusiastic endeavors were to elevate the profession of medicine to the highest possible standard from both an ethical and scientific standpoint. Dr. Comegys belonged to the real school of chivalry and was, under all circumstances, a gentleman: his helping hand was always extended to assist the poor and the young man who was ambitious and endowed with noble principles. He was one of the giants of our time and he died in harness, for up to the day of his being stricken he was at his work and keeping abreast of the progress of the science of medicine with as much vim and familiarity with all discoveries and theories as the most ardent worker among the rising generation. In the sick room Dr. Comegys was the dignified and comforting visitor whose presence shed light to the clouded brain, encouragement to the disconsolate: peace to the troubled; and benefit to the afflicted, and his expressions of hope and comfort to the one who was crossing the dark river were like rays of sunshine appearing through the deepest gloom. The Cincinnati Academy of Medicine held a special meeting February 11, and adopted the following resolutions upon the death of Dr. Comegys:

The medical profession is assembled to-day to express a last word in memory of their late associate, Dr. C. G. Comegys.

He was no ordinary man. For forty-eight years he has been a notable figure, not only in his profession, but as a citizen of pure life, of honest purposes, serving the public faithfully and with great ability in various positions.

In all of his relations with us, his professional brethren, he was a gentleman, moved by the spirit of doing unto others as he would have them do to him. He detested everything that savored of the empiric.

A man of gentle, liberal spirit, he was charitable and forgiving. He was, indeed, the friend of his profession, esteeming its object to prevent disease and to do good to all. He was the friend of young men, and by his words of encouragement and his example did much to aid them. Yes, he did much to elevate the tone of the profession in this city.

Dr. Comegys was a man of superior intellect. He fully exemplified the fact that the strong physician is one whose

mind is not "cabbined, cribbed or confined" by strictly technical and professional reading, but is enlarged by all collateral studies and observation. He very early achieved a prominent place as a practitioner. He was a sound counselor, a good clinician, a clear lecturer and teacher. He was the advocate of higher education for the people and for medical students. He did much by word and deed to further this great object.

He believed his profession in its ability do good mentally, morally and physically, superior to any other. He often spoke of the power of the good, able physician.

He originated the idea of having a Board of Health created by Congress, whose head should be a physician and a Cabinet officer. His idea will yet take form. He advocated that physicians should be representatives of the people in Congress and the State Legislatures.

A man of deep religious convictions, and yet charitable to all, he was dominated by the spirit of walking humbly and acting mercifully, serving Him whom he regarded as his Master and Saviour. He did not believe that it is all of life to live or all of death to die.

He belonged to the time when the general practitioner was not only the medical advisor, but the counselor and friend of his clients. There were giants in those days. Up to a few weeks before his death our departed friend showed the ability and superiority of the general practitioner.

He is an example for every young struggling man. His honesty, his high tone, his noble purposes, his usefulness, should impress his memory on all. Let us cherish it.

[Signed]

JOHN A. MURPHY,
B. P. GOODE,
WM. H. TAYLOR,
JOSEPH EICHBERG.

PROF. JOSEPH JONES.—As we go to press we learn with deep regret of the death of Prof. Joseph Jones, M.D., LL.D., of New Orleans, which occurred February 17.

LEMON WILLARD CLARK, M.D., of Elkhart, Ind., died from apoplexy, February 8. He was born August 1, 1858, and was graduated from Rush Medical College Feb. 21, 1882. He was an active member of the medical societies to which he belonged.

LOUIS Y. WIGGINS, M.D., a veteran physician of Newburg, N. Y., died at that town on February 10, aged 70 years. He was graduated in medicine at the New York University Medical Department, in the class of 1847. He was for a number of years a practitioner of New York city, but for forty years of his professional life he was a popular and successful practitioner of the town above mentioned.

T. H. ELLIS, M.D., of Butte City, Mont., February 1.—Reuben F. Dyer, M.D., of Ottawa, Ill., January 31, aged 62.—F. McClelland, M.D., of Cedar Rapids, Iowa, February 13, aged 66. He was editor of the Cedar Rapids *Times*.—John W. Taylor, M.D., of Shelbyville, Ky., February 8, aged 70.—John W. Kerr, M.D., of Allegheny, Pa., February 9, aged 41.—Daniel Dennison Slade, M.D., of Boston, Mass., February 11, aged 72. He was graduated from Harvard College in 1844, and from the Medical School in 1848; he was Professor of Zoology, and at the time of his death was lecturer on comparative osteology.—J. M. Maloney, M.D., of Allegheny, Pa., February 12, aged 52.—Benjamin Corneille, M.D., of Trempealeau, Wis., aged 29. He was graduated from the Detroit Medical College in 1892.—J. L. Phythian, M.D., of Newport, Ky., February 12. He was born in Johnstown, Pa., in 1833. In 1852 he was graduated from the University of Louisville, and began the practice of medicine in Frankfort until the beginning of the civil war. During the war he was Surgeon-in-Chief of the hospital at Frankfort, and after the war he was appointed Post Surgeon of the United States Barracks at Newport, Ky. He held that position for several years, and was retired in 1873.

PUBLIC HEALTH.

Department of Health of Brooklyn. On February 1, Dr. Z. Taylor Emery took office, for a second term of two years, as the Commissioner of Health of Brooklyn, N. Y. He renominated for his Deputy Commissioner Dr. R. M. Wyckoff, for Register and Secretary Dr. George E. West, and for the Chief of the Bureau of Contagious Diseases Dr. Frederic A. Jewett, for Chief Bacteriologist Dr. Ezra H. Wilson, and for Medical Superintendent of the Department Hospital Dr. A. S. Ambler, Experts in Infectious Diseases Drs. Morton and Duryea.

Changes in South Dakota Board of Health Law.—In 1895 the Legislature of South Dakota enacted a new board of health law. The State board of health is to consist of five members, all of whom shall be resident physicians in good standing, their term of office to be five years, and their appointment to be made by the Governor. It is to meet on the first day of May and November of each year, and at such other times as it shall deem necessary. Its powers are the same as provided by the act of 1891, so far as pertains to the public health, but it is relieved from likewise looking after the protection of the domestic animals of the State. In counties where there are no resident physicians, so that county boards of health can be formed therein, the State board of health is authorized to provide for such county boards under such rules and regulations as it may deem proper.

The Sanitary Management of Floors and Floor Coverings. The editor of the *British Medical Journal* has recently treated of the dangers of household dust, and especially of the improper management of carpets. His line of argument is quoted in the following extract:

To those who know the true inwardness of things, the sight of a housemaid brushing a dusty carpet is suggestive of many evils. The death of Pasteur has reminded the world of what is constantly present in the thoughts of medical men, namely, that while microorganisms are the great producers of disease, dust is the great carrier of microorganisms. Now that we know these things, now that we understand that in the quiet hours of night the germ-laden dust settles down upon the floor, it is distressing to find how little our knowledge is put to practical use, and to see old customs still unchanged, old habits which we know to be destructive carried on, and to find the housemaid on her knees, with her brush and dustpan stirring up dust to the detriment of everyone, and breathing germ-laden particles to her own destruction. It needs but a small amount of common sense to see that if carpets must continue, a thing greatly to be deprecated, they should be rubbed with a damp cloth rather than brushed, and that if, in deference to prejudice, they must be brushed, this should be done by a covered American sweeper with plenty of damp tea leaves. Of all ways of removing dirt from a carpet the worst is by the use of the ordinary short brush, which involves the housemaid's kneeling down in the midst of the dust which she so needlessly creates, and drawing it into her lungs with every breath. For ordinary household use something like linoleum, something which can be washed with a wet cloth every morning, would seem to be the best covering for floors: but if carpets must be, and if it is impossible to teach the present generation the evils of seeking present comfort at the expense of future risks, at least let us remember that carpets may be washed even where they lie: that, till the day of washing comes, a closed sweeper is far better than a brush, and that the worst form of brush is one with a short handle.

Pennsylvania Bureau of Health for Cities of Second Class.—A bureau of health in the department of public safety in cities of the second class was created by the legislature of Pennsylvania in 1895. The law requires it to remove all things imperiling health; provides a penalty for doing anything tending to endanger health; prohibits placing unsound or offensive matter in street, alley or lot; requires dead animals to be removed within six hours; prohibits rendering or trying out except under certain conditions; provides for abatement of nuisances; prescribes how privies shall be constructed and cleaned; authorizes confiscation of tainted or decayed meats offered for sale, and forbids exposure for sale of decayed or unwholesome vegetables or matter or things; regulates sale of milk; provides that bones, dead animals, etc., shall be hauled in tightly covered wagons, which must not stand on any public street longer than fifteen minutes. The officers of the bureau of health are to carry out these provisions. When the bureau of health shall have reason to believe from the report in writing of any reputable physician practicing in the city that any person therein is afflicted with any contagious disease dangerous to the community it may forbid and prevent all communication with the infected house or family, except by means of physicians, nurses or messengers to convey the necessary advice, medicines and

provisions to the afflicted person or persons, and exercise all such other powers as the circumstances of the case shall require, and as shall in the judgment of the bureau be most conducive to the public good, with the least private injury. The physician of the bureau is, among other things, to keep a supply of vaccine virus, and see that all persons, so far as possible, are properly vaccinated, and to report to the bureau all cases in which any sick person has not been properly cared for. Variola or varioloid is to be placarded as "smallpox," and diphtheritic or membranous croup as "diphtheria." All persons refusing or neglecting to obey an order of the bureau to be vaccinated shall be liable to a fine of from \$5 to \$25. A register of marriages, births and deaths is to be kept, also of physicians, midwives, undertakers and superintendents or sextons of cemeteries. Certificates of death are to be made by attending physician, and also by coroner when the case comes under his notice. A permit to remove a corpse for any purpose must be obtained. Physicians and midwives must keep record of and report births.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Connecticut: Middletown, February 11, 1 case.
Louisiana: New Orleans, February 1 to 8, 9 cases.
Michigan: Detroit, February 8 to 15, 4 cases, 1 death; Saginaw, Riga Township, February 1 to 8, smallpox reported present.
Tennessee: Fayette County, January 1 to 31, 1 case; Memphis, January 1 to 31, 21 cases, February 8 to 15, 1 case; Obion County, January 1 to 31, 2 cases; Shelby County, January 1 to 31, 35 cases.

SMALLPOX—FOREIGN.

Corunna, January 4 to 18, 3 deaths.
Guayaquil, December 28 to January 31, 18 deaths.
Montevideo, December 21 to 28, 5 cases.
Naples, December 26 to January 31, 68 cases, 45 deaths.
Odessa, January 18 to February 1, 3 cases, 3 deaths.
Pernambuco, November 1 to 15, 87 cases, 28 deaths.
Prague, December 28 to January 4, 22 cases.
Rio de Janeiro, January 11 to 18, 32 deaths.
Trieste, December 29 to 31, 3 cases.
Warsaw, January 18 to 25, 1 death.

CHOLERA—FOREIGN.

Calcutta, December 28 to January 11, 77 deaths.
Bombay, January 14 to 21, 2 deaths.

YELLOW FEVER—FOREIGN.

Pernambuco, November 1 to 15, 8 cases, 4 deaths.
Rio de Janeiro, January 11 to 18, 137 deaths.

ASSOCIATION NEWS.

Section on Neurology and Medical Jurisprudence—Announcement.

—The work of the Section on Neurology and Medical Jurisprudence at the coming meeting of the AMERICAN MEDICAL ASSOCIATION at Atlanta, promises to be of unusual interest. The desire has been quite generally expressed to have discussions upon the following topics:

The Etiology of Insanity.

Expert Medical Testimony in Disputed Mental Cases.

Medical Aspects of Crime.

It is believed that these topics have a special medical interest at this time, and papers dealing with any phase of these subjects will be very welcome. An urgent invitation is extended to all members, whether they are expecting to be in attendance or not, to present papers and records of cases that have a bearing upon the topics mentioned, or upon any other Neurological or Medico Legal subject.

Any persons who expect to contribute papers or reports to this Section will greatly facilitate the business of the Section by writing at once to the Chairman,

T. D. CROTHERS, M.D., Hartford, Conn.
or to the Secretary,

W. J. HERDMAN, M.D., Ann Arbor, Mich.

SOCIETY NEWS.

Sacramento Society for Medical Improvement.—At a regular meeting of the Sacramento Society for Medical Improvement, held Jan. 21, 1896, the following preamble and resolutions were adopted, and copies ordered sent to the medical journals and to medical societies in general, in order to obtain concerted action on the part of the profession:

WHEREAS, The New York Life Insurance Company and the Equitable Life Assurance Society have recently adopted a graded scale of fees for medical examinations, the practical effect of which will be a reduction of the Medical Examiner's income from these sources by about 40 per cent.; and whereas, these companies, claiming to be amongst the largest and strongest in the world, have, hitherto, in common with all other first-class "old line" life insurance companies, paid a uniform fee of \$5 for medical examinations, insisting that the same care be used in examining applicants for small as for large policies; and whereas, under the proposed schedule, no reduction is made in the amount of work performed or in the degree of responsibility exacted: therefore be it

Resolved, That we, as physicians, recognize that all life insurance is based on mortality tables and on the probable life expectancy of the assured, in striving at which the Medical Examiner is the most important factor, and that in the past he has been the most valuable as well as the most essential feature in the establishment of life insurance companies.

Resolved, That we can not recognize, as a principle governing our remuneration for exactly similar services, the amount of premium paid by the applicant, or the profit derived by the company from any individual risk.

Resolved, That such methods, having no foundation in reason or justice, are contrary to all business principles, and must inevitably lead to a lower standard of examinations with correspondingly disastrous results.

Resolved, That the Sacramento Society for Medical Improvement protests against methods that are unfair, irrational, and indefensible, and on behalf of its members, pledges them to absolutely decline to examine applicants for life insurance for any "old line" company, for any fee less than \$5, for each and every examination made.

Resolved, That copies of these resolutions be transmitted to every medical society in California, to all State medical societies, and to the AMERICAN MEDICAL ASSOCIATION, requesting that concerted action be taken in the premises.

THOS. W. HUNTINGTON, Chairman.

W. J. HANNA,

JAMES H. PARKINSON.

The Society believes that success can only be attained through agitation and organized opposition, so that this movement, now confined to two life insurance organizations, may not be adopted by all the "old line" life companies. In forwarding these resolutions, the Society asks you to give the matter the widest publicity, and to, as far as possible, procure similar action on the part of medical societies in your vicinity. J. A. NELSON,

J. H. PARKINSON,
Committee.

Sacramento, Cal., Jan. 25, 1896.

Michigan State Medical Society Committee on Organization.—The following circular letter has been addressed to all State medical societies:

GRAND RAPIDS, MICH., Feb. 4, 1896.

Dear Sir:—At the last meeting of the Michigan State Medical Society a committee (of which I am Secretary) was appointed to consider means relative to promoting more complete or systematic organization of the medical profession throughout the country. In accordance with the request of the committee, I ask you to read carefully the enclosed "Address," and to present the subject, by means of the "Synopsis," to your State Society. Our committee earnestly desires that some concert of action may be had in the matter, and to that end takes the liberty of urging you to use all proper means to have a committee appointed, whose duty it shall be to confer, by letter or in person, with similar committees from other State societies, for the purpose of formulating some plan that may be presented for adoption by the State societies next year. Please let me hear from you at your earliest convenience.

Very respectfully, R. J. KIRKLAND.

1. Every local society, in good standing, shall be a part of the State Society, and under its government.

2. Every State Society shall be part of the National Society.

3. No local society shall be represented in the National organization except through its State Society.

4. A man joining his local society becomes, by that one act, a member of the State and National societies, and can join such societies in no other way. In this way the local society would guard the avenues of entrance.

5. To the annual dues demanded by and payable to the local society, would be added \$3 for the State, and \$5 for the National organization, and would entitle the member to the transactions of both.

6. The degree of "Fellow of the American Medical Association" should be created, and every man qualified to join his local society would be entitled to bear this degree.

7. In the National Society should be formed an Executive Board (from the Presidents of the State societies, or otherwise) which should, among other duties, exercise supervision over the various State societies. And in the State Society a similar board which should exercise a similar jurisdiction over the local societies.

According to this plan a man can join the State and National societies only by being accepted by the local society, where he is known. Thus fewer unworthy men would gain entrance to our National Society. By the payment of \$10 and signing such constitution as may be required, the member would be entitled to the transactions of both his State Society and the National organization, and to write himself "Fellow of the American Medical Association."

The Wayne County (Mich.) Medical Society at its regular meeting, Thursday evening, January 30, met in the Cadillac Hotel, where Frank T. Lodge, M.A., Professor of Medical Jurisprudence of the Michigan College of Medicine and Surgery, read a very interesting paper on, "Insanity, its Relation to Crimes, Contracts and Wills." Insanity was defined in its various phases, and Mr. Lodge showed how the law differed from medicine in the application of the term insanity, and how it addressed itself to the mind and not to the body; that almost anyone was able to make a will, even if they were not able to make a contract. In making a contract it required the application of two minds; there was force against force. In the making of wills this is not the case. If it can be shown that the desire of the person's life points to the manner of his making his will, the court will sustain the will, and as a result comparatively few wills are broken. Upon the other hand, if the lines were too tightly drawn, few people would be permitted to make wills and have them stand; as when old age came on, peculiarities would be manifested, and when sickness invaded the body, the patient would oftentimes be unconscious of his surroundings. The object of judges in constructing wills is to ascertain the testator's real intentions, and if these correspond with his individuality in life, the will would stand. Every court in constructing a contract, first endeavors to ascertain when, and upon what subjects the minds of the contracting parties met; the object of a jury in a criminal court is to ascertain, whether the accused had the evil intention of committing the crime with which he is charged. The object of equity and elastic rules of chancery procedure is to overturn the rigid requirements of the law, to prove the fraud which misled the party and enslaved his mind. It can readily be seen how important in legal jurisprudence is this subject of insanity. The degree of mental capacity that is required of a man differs with the differing relations, and it is on account of these differences that so much uncertainty has arisen in the administration of the law. The degree of insanity is an important factor in fixing criminal responsibility. The mere fact that a person is insane does not relieve him from criminal responsibility. The insanity must have been such as to prevent the accused from distinguishing between right and wrong in a particular act. As a general rule insane persons are incapable of entering into valid contracts. A person who is so insane as to be incapable of entering into a valid contract concerning property can not enter into a valid contract of marriage. Mere weakness of understanding does not invalidate a marriage.

The paper was discussed by Drs. Kirker, Jenks, Inglis, Scurr, ex-Prosecuting Attorney S.W. Burroughs, and Judges Donovan and Chapin.

The Detroit Medical and Library Association at its regular meeting, Monday, January 27, heard a paper by Dr. James Sampson, of Windsor, Ont., entitled, "The Treatment of Renal Calculi." Before reading his paper, the doctor showed plans for a unique, modern hospital, one that could be erected in the down town parts of any city without endangering the surrounding inhabitants.

MISCELLANY.

Virchow Decorated. The decoration of Commander of the Legion of Honor has been conferred upon Virchow by the President of the French Republic.

Pennsylvania New Pure Food Laws. The Legislature of Pennsylvania passed laws in 1895 to provide against the adulteration of food and apple products, and another to prohibit the adulteration of milk by the addition of so-called preservatives.

Instruction for the Laity. The Woman's Union of France has opened a course of free, public, evening lectures on the principles of hygiene and the care of the sick and injured in the family, on the street and on the battlefield, in fourteen different precincts of Paris.

German Congress of Internal Medicine. Our German exchanges announce that the XIV. Congress of Internal Medicine will be held this year at Wiesbaden, April 8 to 11, with an exhibit of medical and surgical appliances in connection. The list of speakers contains some noted names. We notice one American on the list, Einhorn of New York.

Correction.—In the article by Dr. Christison on the "Normal Mind," printed in last week's issue, there was an omission in the plate p. 313 whereby the arrows leading from "fear" and "grief" to "anxiety" were omitted. If those interested will kindly draw the lines at the points indicated, the plate will more clearly show the author's intention.

The War in Cuba. The scientific societies of Havana have suspended their meetings for the present, although their publications appear as usual. The anomalous and threatening conditions that prevail throughout the entire island are driving so many people away from the country that the present and future offer but a gloomy prospect to professional men.

Fecal Micro-organisms. The Biological Society of Paris has been experimenting to determine the number of microorganisms expelled from the body under the influence of a purgative. A healthy subject who evacuated twelve billions on an average during the day, passed four hundred and eleven billions under the influence of a purgative which acted the same day. Succeeding days averaged only half a billion.

The Queen of Portugal. The *Coimbra Medica* of January 10, denies the statement that has been going the rounds of the press to the effect that the Queen of Portugal has been studying medicine and lately received a diploma to practice. The report was probably based on the Queen's interest in various medical institutions, such as the Policlinic, the Diphtheria Serum Service, etc., of which she is an influential and appreciative patroness.

Artificial Testicle. Dr. Guelliot, of Reims, had a patient, one of whose testicles had been removed on account of tuberculosis some years before. The other was attacked in the same way, but the patient would not allow the operation unless an artificial testicle was provided in its place. Dr. Guelliot, after castration, introduced into the scrotum a wad of coarse, soft, sterilized silk (Doelere's No. 4), and completed the suture as usual. The operation was successful. *Revue Internat. de Méd. et de Chir.*, January 25.

Instantaneous Color Photography Discovered by Dr. Selle, of Brandenburg. According to a cablegram to the New York *Herald*, a reported discovery by Dr. Selle, of Brandenburg, Germany, of a method whereby photographs in colors can be instantaneously obtained, is arousing great interest throughout Europe. Several patents, protecting methods for photographing colors, are already filed in Washington. All these patents, however, represent complex processes, while the great value of Selle's discovery lies in the fact that he obtains the same results from one instantaneous exposure.

Memorial to the late Surgeon Parke.—The editor of *Illustrated Africa* writes that "Henry M. Stanley and Lieutenant Jephson, surviving officer of the expedition for the relief of Emin Pasha, have caused to be placed in the church of Kilmore a memorial brass in affectionate memory of the late Surgeon Parke. He first served in Egypt with distinction, accompanying the Nile expedition for the relief of General Gordon in 1884-1885. This tablet is a tribute to his constant gentleness and care for the sick and suffering, and to the splendid services he rendered alike to Europeans and Africans during the three years' march across Africa."

Transposition of Viscera.—Dr. W. Gilman Thompson, professor at the University Medical College, New York City, recently exhibited a man, several of whose organs are transposed, before his class. This patient's heart, stomach and spleen are on the right side and his liver on the left. His lungs are also transposed. The man is perfectly healthy, is about 23 years old, and is a brakeman regularly employed on the Pennsylvania Railroad. He was ignorant of his own peculiarities until a year ago, when he was placed in a Philadelphia hospital; while there doctors informed him. Since then he has given a large share of his time to advancement of clinical teaching.

The Toxic Properties of Alcoholic Drinks Determined by Injecting Them into Rabbits.—Daremborg publishes the results of his experiments to determine the toxicity of alcoholic drinks, in the *Arch. de Méd. Experimentale* of November, 1895. He announces that the most poisonous of all are the liqueurs, such as absinthe, anisette, etc. The least injurious are the drinks made of the alcohol of commerce with non-toxic bouquets, without the addition of liqueurs or cordials. For the same proportion of alcohol, wines are more toxic than wine brandies, and wine brandies are more toxic than brandies made from a good quality of alcohol. Red wines are generally more toxic than white wines. Adulterated and spoiled wines are exceedingly toxic. *Revue Internat. de Méd. et de Chir.*, January 25.

Insane Prisoner to be Removed to Asylum.—Provision was made by the legislature of Pennsylvania in 1895 for the more immediate relief, care and support of indigent insane persons committed on criminal charges less than felony. It is to the effect that upon such commitment when any two physicians of at least five years practice shall certify to his insanity, it shall be the duty of the county commissioners, with the approval of the court of quarter sessions of the county, or one of the judges thereof within fifteen days after such examination, certification and approval, at the expense of the county, to remove such indigent insane person to the proper hospital for the insane, there to be maintained at the expense of such county as indigent insane persons are now kept and supported, until the proper legal settlement of such indigent insane person can be ascertained and determined.

Primary Myoma of the Heart. In the *Centralblatt f. Allg. Pathologie und Pathologische Anat.* for January 18, Dr. Gusti, of Hanburg, described an instance of this rare form of neoplasm occurring in a man, 31 years of age, who died with the clinical symptoms of dilatation of the heart due apparently to a muscular insufficiency because changes in the valves were not demonstrable by physical examination. The post-mortem examination showed two large nodular tumors in the wall of the left auricle, one as large as an apple, the other the size of a walnut, composed of long, narrow spindle-shaped cells, with rod-like nuclei arranged in parallel or interlacing bundles without any intercellular substance. The tumors sprang from the auricular walls and there were no tumors in any other parts of the body. The clinical symptoms are explained as due to the encroachment on the size of the cavity of the auricle. The impossibility to make a clinical diagnosis in cases of heart tumors has often been remarked and in this case another illustration of this fact is brought forward.

Dying Declarations Evidence of Abortion in Pennsylvania.—A law was passed in Pennsylvania in 1895 to the effect that the ante-mortem statements of any woman, who shall die in consequence of any criminal acts producing or intended to produce a miscarriage of such woman, as to the causes of her injuries, shall be competent evidence on the trial of any person charged with the commission of such injuries, with like effect and under like limitations as apply to dying declarations in prosecutions for felonious homicide; provided, however, that before such statement shall be submitted to the jury as evidence the commonwealth shall, by competent and satisfactory evidence, prove that such woman was of sound mind at the time such ante-mortem statements were made: and provided further, that no conviction shall be had upon the uncorroborated declarations of such woman.

Cultures of Pneumococci in Defibrinated Blood.—Experiments were made with liquid defibrinated blood and also with dried. In the former the pneumococci retained their vitality, their continuous growth and their virulence to a remarkable extent. The color of the blood changed, first resembling dregs of urine and then the color of prune juice. In solidified defibrinated blood, the pneumococci did not grow on the surface, but penetrated into the substance, where they flourished luxuriantly. They retained their vitality and virulence for a long while, but with less intensity than in the liquid form. The blood changed in color also, turning first green and then chamois yellow. An important fact noted is that all other organisms except the streptococci vegetate on the surface in solidified defibrinated blood, and do not alter the color. The above report was read at the meeting of the Paris Société de Biologie, January 11, and the opinion was universal that in this material we have a valuable culture medium for the differentiation of the pneumococcus.—*Gaz. Méd. de Paris*, January 25.

Prolific Canadian Half-Breed Family.—A letter to the Philadelphia *Telegraph*, from northern Vermont, refers to a Canadian half-breed with a remarkable family record. His name is Macomber, and he is the son of a French Canadian: he visits northern New York and Vermont selling snowshoes, baskets and moccasins. "The tribe to which he belongs has a reservation twelve miles square. The tribe is descended from the Five Nations. The reservation is known as Caughnawaga. Macomber's grandfather died last week, aged 103, leaving considerable wealth. He had married three times, the first two wives being dead. His first wife bore him six children, the second fifteen and the third the same number. His grandchildren, great-grandchildren, and great-great-grandchildren number over 1,000. Of thirty-six children twenty-eight are living, as are most of the grandchildren, great-grandchildren and the great-great-grandchildren. The tribe claims a portion of Vermont known as the Missisquoi Valley. Chiefs and great men of the Five Nations have appeared before every session of the Legislature for half a century demanding remuneration."

The Congress of American Physicians and Surgeons.—A meeting of the Executive Committee of the Congress of American Physicians and Surgeons was held in New York, Nov. 23, 1895. At this meeting the following officers were elected: President of the Congress, Dr. Wm. H. Welch, of Baltimore; Secretary of the Congress, Dr. Wm. C. Carmalt, of New Haven; Treasurer of the Congress, Dr. Newton M. Shaffer, of New York; Chairman of the Executive Committee, Dr. Landon Carter Gray, of New York; Secretary of the Executive Committee, Dr. Wm. K. Simpson, of New York. The next meeting of the Congress will be held in Washington in May, 1897.

It will be observed that the officers elected are all able and worthy members of the medical profession, but they are all confined to Baltimore, New Haven and New York, while "the sunny south," "the great northwest," and "the land of the

setting sun," saying nothing of the Mississippi Valley, have received no recognition. In fact, the number of square miles included in these appointments, and even the place of meeting would hardly be lost if it should happen to fall out of any of the great western States, and yet this congress has the audacity to call itself the American Congress of Physicians and Surgeons, while in reality it is a congress of a selected few, who have elected all their officers from members who live on the borders of the Atlantic between New Haven and Baltimore. Why not give it its right name? Why ignore the west, the south, the central States, and "the great northwest," and yet call it the Congress of American Physicians and Surgeons, when the facts are that the great masses of the surgeons and the physicians of America who should be members of this congress have been simply ignored? Much better call it by its right name and christen it the Eastern Congress of Physicians and Surgeons.—*Columbus Medical Journal*.

The Medical Journal is the True Post-Graduate Instructor.—The *Archives of Pediatrics* for February contains the following remarks regarding modern medical journalism. They are a part of an unsigned editorial that is, as we believe, from the incisive pen of Dr. Floyd M. Crandall, and they are a part of a series of editorials on the building up of a complete professional character. He says: "Three avenues are open to the physician by which he may keep abreast of the times—books, medical journals and post-graduate schools. The last of these are accessible to but few, and present instruction adapted only to certain cases. The last editions of standard medical books are indispensable to the true student. In the text-book and monograph he finds the various subjects of medical interest reviewed systematically and discussed in all their details. In the medical journal, however, he finds the record of medical progress as he can find it in no other place. The journal with its various departments admits of all classes of medical literature, and contains many practical and important articles which would not be adapted to the more pretentious and dignified bound volume. The well-arranged journal covers the whole field of medical writing, from the scientific original article to the clinical report, which not infrequently furnishes a key to some puzzling case. Such assistance in a single case often proves of a value not to be estimated in dollars and cents. Nearly all the best papers that appear in medical journals are first read in societies. The discussions which they elicit are frequently of even more practical value than the papers themselves. Society reports are justly regarded, therefore, as of very great value to the practitioner. A department of book reviews when conscientiously conducted is also a factor of value to the medical man. The average doctor is limited in the number of books he is able to purchase. A discriminating review, which does not fear to criticise, but does not criticise for the mere sake of criticising, enables him to judge both of the scope of a book and its probable value to him. He is thus able to place in his library those books from which he will derive the most good in his own particular class of practice."

Surgeon-General Sternberg's Defense of the Pasteurian Treatment of Hydrophobia.—According to *Science*, February 7, at a joint meeting of the scientific societies of Washington, held Jan. 14, 1896, a series of memorial addresses was presented, and of these a triad was devoted to men whose names are immortal in the annals of physiologic medicine. Those three are Pasteur for France, Helmholtz for Germany, and Huxley for England. The address regarding Pasteur is by Dr. George M. Sternberg, and presents with characteristic thoroughness the biologic value of the French scientist's work. The following is the view taken by Dr. Sternberg, of the remedial value of the Pasteurian treatment of hydrophobia:

"There has been and is still a considerable amount of scepticism among members of the medical profession, and others, as to the practical value of Pasteur's inoculations for the preven-

tion of hyrophobia: and some physicians have even contended that the disease known by this name is not the result of infection from the bite of a rabid animal, but is a nervous affection due to fear. The time at my disposal will not permit me to present for your consideration the experimental and clinical evidence upon which I base the assertion that nothing in the domain of science is more thoroughly demonstrated than the fact that there is a specific infectious disease known to us as rabies, or hydrophobia, which may be communicated to man, or from one animal to another, by the bite of a rabid animal; and that Pasteur's inoculations prevent the development of the disease in animals which have been infected by the bite of a rabid animal or by inoculations with infectious material from the central nervous system. This being the case, it is evident that there is a scientific basis for Pasteur's method of prophylaxis as applied to man, and his published statistics give ample evidence of the success of the method as carried out at the Pasteur Institute in Paris and elsewhere. Great as have been the practical results which have already followed Pasteur's brilliant discoveries, there is reason to believe that in the future still more will be accomplished, especially in combatting the infectious diseases of man. Having pointed out the way, a multitude of earnest investigators in various parts of the world are now engaged in laboratory researches relating to the cause, prevention and cure of infectious diseases. Already, in the treatment of diphtheria and of tetanus with blood serum obtained from immune animals, results have been obtained of the highest importance, and it seems probable that in the near future other infectious diseases will be cured by a specific treatment based upon scientific information obtained by those who have been following in the pathway marked out by Pasteur, the illustrious pioneer in this line of research."

Practical Notes.

Cortex Monesiae as an Expectorant.—Rosanow, of Moscow, recommends this drug as an efficient cough medicine in cases where ipecac. and other remedies produce stomach irregularities. He prescribes it in the following formula:

R Ext. aquos. cort. monesiae c.c. 2 to 4
Aq. destill. c.c. 150
Syr. simpl. c.c. 30

Misce. A tablespoonful every two hours.—*Therapeutische Wochenschrift*, January 12.

Scopolamin as a Hypnotic for the Insane.—Experiments have been made in Russia with the bromohydrate of scopolamin, which show that it is an efficient hypnotic for the insane. Administered hypodermically in doses varying from one-fifth to one mgr. it produces sleep from three to six hours, and the calming effect lasted after waking. The chronic insane, maniacs and victims of hallucinations were benefited, but it had no effect upon delirium tremens, except to weaken the patient.—*Semaine Médicale*, January 8.

Action of Strychnin in Alcoholism.—Kroutowski describes in *Wratsh*, October, 1895, the action of strychnin on fifty victims of alcohol, presenting various pathologic manifestations. He does not consider its effects durable, and believes it is only beneficial during an acute alcoholic attack, or possibly in forestalling it. But it is not, as some have asserted, a specific for alcoholism: patients apparently cured with it relapse into their old habits at the first opportunity that offers. —*Nouveaux Remèdes*, January 24.

To Remove Disagreeable Taste of Cod-Liver Oil. Add to 100 grams of oil (Duquesnil's preferred) 1 gram essence of eucalyptus. Pavesi's process is to take 400 grams oil, 28 grams roasted and ground coffee, and 10 grams pulverized animal black. Heat this combination to 60 degrees C. in a water bath for fifteen minutes, in a tightly closed receptacle. Let it stand two or three days, shaking it up occasionally, and then filter. This results in a limpid, amber oil with the perfume and taste of coffee. —*Gaz. Médicale de Liège*, January 30.

A New Laryngeal Dilator for Chronic Stenosis. Pfffermann and Bors exhibited a new appliance for this purpose at the last meeting of the Royal Imperial Medical Association of Vienna, which can be introduced without the least pain or inconvenience in the form of a very slender tube. Once in place it can be dilated to the required size with gentle equable pressure on

the sides of the organ. Prof. Weinlechner has used it in hospital treatment with fine results, curing permanently many cases of chronic constriction of the larynx produced by diphtheria, etc., and afforded relief in all.—*Wiener klin. Rundschau*, January 26.

Cinchonidin in Malaria.—The *Therapeutische Wochenschrift* of January 12 gives the following formula for internal use:

R Cinchonidin sulph. 1.00
Acid. tartar. 0.75
Mixt. gummos. 120.00

Misce. Take in the course of the day.

For subcutaneous injections the formula is:

R Cinchonidin sulph. 1.00
Acid tartar. 0.80
Aq. distill. 3.00

Misce. Each c.c. of this solution contains 0.25 of cinchonidin.

A daily dose of 1 gram cinchonidin by the mouth is usually sufficient, but 1.20 or 1.50 can be taken without detriment.

Extra-uterine Pregnancy with Rupture of Sac.—At the December meeting of the St. Petersburg Med. Society, Rymschev described six cases of this kind in which laparotomy was imperative on account of the excessive anemia and scarcely perceptible pulse, owing to the blood flowing into the abdominal cavity. Judging from these and similar cases, he has noted that the abdomen should be opened at once. Even when the hemorrhage stops spontaneously, it is impossible for this mass of blood to be reabsorbed. The Surgical Society of Paris also devoted their last meeting to this subject, and the majority advocated laparotomy in all cases except where an opening through the posterior wall of the vagina is indicated.—*Revue Internat. de M. et de C.*, January 25, and *Progrès Méd.*, January 25.

The Chaput and Murphy Button Compared.—Chaput claims the following advantages for his invention already mentioned in this JOURNAL: 1. The technique is more rapid, since only one suture is required instead of two. 2. My largest button has a smaller circumference than Murphy's smallest, with a larger opening than Murphy's largest. 3. My button does not sphacelate the intestine like Murphy's, and is thus less dangerous. 4. My button can always be inserted in good order, no matter how thick the walls of the stomach or intestine may be, which we know is not the case with the Murphy. 5. While Murphy's button can not be detached, a sound will easily detach mine. 6. My button is very simple, with no delicate nor complicated mechanism, and yet imitations of it can not be made so readily as of the Murphy button.—*Gaz. Méd. de Liège*, January 30.

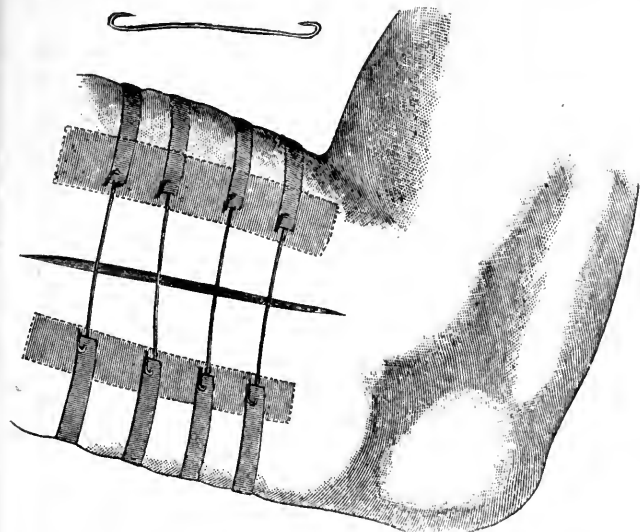
Castration for Hypertrophy of the Prostate.—The address delivered by Prof. Englisch on this subject and reported elsewhere in this JOURNAL was accompanied by a practical illustration of the effects of this operation. A patient appeared in Prof. Albert's clinic suffering from complete retention of the urine, with the prostate distinctly palpable, complicated with epididymitis and other troubles which indicated castration as the only means of relief. The operation seemed to be a failure at first, as no relief was obtained from it until the fifth week. At that time the urine began to be discharged spontaneously and gradually the prostate decreased in size, resulting in a perfectly successful case, important on account of the way in which the castration produced the desired result in accordance with the latest theories in regard to its modus operandi.—*Wiener klin. Rundschau*, January 26.

Electrolysis in the Treatment of the Nasal Canal.—The *Province Médicale* of January 25, brings us a careful study of this subject, based on the personal experiences of the writer, who states that the failure of this method with other organs, has blinded us to its remarkable advantages in the treatment of the nasal canal, far surpassing those obtained with catheters and injections. It is of the greatest benefit in treating the lachrymal

ducts, much simpler and easier than Bowman's method. One treatment is as effective as a course with the catheter, and the only drawback is the possibility of cicatricial formations, which is still an undecided question.

Antipyrin as an Anesthetic for the Bladder.—Antipyrin is as prompt and certain as cocaine for this purpose, and its use is absolutely free from danger. Pousson writes to the *Journal de Méd. de Bordeaux* that he uses a 2 per cent. solution, although it might be as strong as 4 per cent. without danger. After having injected 50 to 60 grams of this solution, then allowing an interval of five minutes, and injecting again the same quantity, the patient evacuates it alone or with the assistance of a catheter, and the bladder is ready for the introduction of an instrument. He sometimes makes a third injection in order to prolong the anesthesia. If the bladder is sensitive a smaller quantity of a 4 per cent. solution is preferable.

Hooks instead of Sewing for Support of Wound Edges.—Sewing a wound is not always practicable for various reasons, and in such cases the platinum wire hooks and strips of plaster shown in the cut, prove an efficient method. A strip of gauze or rubber should be laid along the plaster edge on the side toward the wound, so that none of the glue can pass into the wound. The plaster should be double, and encircle the entire limb if



possible, leaving a broad space for the wound, to secure asepsis. The wire should be sterilized and bent to fit the limb. *Centraltbl., für Chir.*, January 18.

It will readily occur to most surgeons, that this device, as a support, will prove a valuable resource in cases where early removal of stitches is desirable, and yet there is danger of gaping, and perhaps reopening or infection of the wound.

Oxygenated Water in Hemostasis.—Petit addressed the *Soc. Obst. et Gyn.*, December 12, on the use of oxygenated water in hemostasis. It possesses the three-fold property of promoting the precipitation of fibrin, of stimulating inert fibers, with very little, if any, injury to the tissues. In treating an intra-uterine hemorrhage caused by a fungous metritis or fibroma, if a cotton wad dipped in oxygenated water is introduced suddenly into the organ, froth pours out of the orifice, the organ contracts at once and the hemorrhage is immediately arrested. There is no pain, and no injury to the tissues, while the hemostasis produced persists long enough for an anemic patient to recover strength sufficient to support a more radical intervention if necessary.—*Rev. Internat. de M. et de C.*, January 25.

Fixation of the Liver in Hepatoptosis.—There are so few cases of this kind on record that we quote the following from the publication of the *Moscow Société de Chir.*, October, 1895: A woman of 50 was injured in an accident and her liver displaced. Jaundice, severe pains, impossibility to sit down, distress in

walking and inability to sleep on the left side indicated wandering liver and immediate treatment of some kind. Hepatopexis offered the only means of relief. The organ was found perfectly sound and was fastened with two strong silk threads. The first passed entirely through the liver and back again, with the same needle 4 c. distant, and the thread was firmly fastened in the cartilage of the ninth rib. The second thread also passed entirely through the liver at right angles to the first and the two ends were fastened just above the ninth rib. The surface of the liver was then scratched lightly with the point of the needle to ensure secondary adherence to the diaphragm. At first the rib was dragged down, but this soon righted itself, all pains ceased, and a year later the liver was in the same position and none of the old symptoms had shown themselves except an occasional icteric eruption.—*Prov. Méd.*, January 25.

Detroit Notes.

IN HIS PAPER upon "The Effect of Heart Strain on the Tricuspid Valves," read before the Detroit Medical and Library Association Monday, January 13, Dr. W. R. Chittick brought forward the importance of the subject, at the same time referring to the fact that the text-books have very little to say upon the subject. Much has been written and said upon lesions of the valves of the left side of the heart, but little about those upon the right side of the heart, although the latter are of almost equal importance with the former, though much rarer. In many cases tricuspid follow mitral lesions. If the venous circulation is interfered with by disease, we usually have the right heart correspondingly affected. The doctor went on further to explain what he meant by heart strain, not confining himself to the strain which the heart suffers in excessive athletic exercises, but including also strain occurring in pathologic conditions. In soldiers on forced marches and hunters following their hard mode of life, incompetency of the tricuspid valve may suddenly develop. From such cases we have gained most of our knowledge of these lesions. The doctor then cites several such cases in which he shows how prolonged and excessive work is immediately followed by the suddenly developed tricuspid lesion. Excessive stimulation, as in drinkers, may also be an etiologic factor. This lesion is often followed by mitral incompetency, and the former may not be recognized until the latter begins to develop. In pulmonary congestion, due to any disease or pathologic condition of the body, blood may be backed up into the right ventricle, and the tricuspid valves becoming incompetent, be further backed up into the liver. The thinness of the walls of the right ventricle allowing of distension may sometimes save the valves upon that side, and this may account for the lesser frequency. Though great stress has been laid upon venous pulsation in the neck in tricuspid insufficiency, the writer had found this absent in several cases which he had seen. Another diagnostic point he had not always found present, namely, hepatic systolic pulse. The venous engorgement in some cases may further affect the structure of the kidneys, producing uremic symptoms. The paper was discussed by Drs. W. McDonald, E. S. Shirrell, Chas. Douglas and J. Flinterman.

THE WAYNE COUNTY MEDICAL SOCIETY at its regular meeting Thursday, February 13, listened to an interesting paper by Dr. Edward W. Jenks, entitled "One of the Lost Arts of Gynecology."

HEALTH OFFICE REPORT for week ending Feb. 15, 1896: Deaths 93, under 5 years 33; births, male 52, female 40, total 92. Contagious diseases: Diphtheria, last report 7, new cases 6, recovered 4, died none, now sick 9. Scarlet Fever: Last report 20, new cases 4, recovered 11, died one, now sick 12. Smallpox: Last report 2, new cases 4, recovered none, died one, now sick 5.

Washington Notes.

TO TEST THE CONTAGIOUS DISEASE LAW.—A warrant has been issued for the arrest of a Washington physician on the charge of violating the contagious disease law. It is alleged he failed to make a proper report of a case of diphtheria.

A NEW FREE DISPENSARY.—Articles incorporating the South Washington Free Dispensary have been filed with the Recorder of Deeds by Drs. James T. Morgan, D. K. Shute, George Barrie and Henry A. Robbins. The dispensary will be put in operation at once. Dr. Morgan will have charge of the department of diseases of throat, chest, and general medicine; Dr. Chas. L. Allen, nervous diseases; Dr. Barrie, surgery; Dr. Robbins, skin and venereal diseases; Dr. H. D. Fry, diseases of women, and Dr. D. K. Shute, diseases of the eye.

COMMITTEE ON PUBLIC HEALTH.—The committee of the Board of Trade on public health held an important meeting on the 15th instant and have arranged a report for presentation to a public meeting of the Board to be held during the coming week. Sewer extension, water supply and filtration, and prevention of typhoid fever will be fully discussed.

THE POST-GRADUATE SCHOOL OF MEDICINE OF THE DISTRICT.—The act of Congress incorporating the Post-graduate School of Medicine of the District of Columbia, which passed both Houses, was signed by the President on the 7th instant and has consequently become a part of the revised statutes. The school is allowed to hold real and personal property to the amount of \$200,000. The course of teaching has been arranged and the school will be in operation shortly.

A MEDICAL LAW TO BE REPEALED.—The Senate Committee on Military Affairs favorably reported the bill repealing the existing law which requires surgeons and other medical officers of military homes to be persons who have been disabled in the military service of the United States.

A SYSTEMATIC TRADE IN CADAVERS ACCIDENTALLY DISCOVERED. The police are investigating a case of grave robbery. The first known of it was when a report came to headquarters that a box containing two corpses had been left at the Baltimore & Ohio station last week by three colored men, who put it on the freight platform. One of the men said the box was to be sent through, expressage to be collected at the other end. Later, when the men at the station took up the box they found that there were two addresses upon it. One was "Angus McLane, 223 Pelham Street, Detroit, Mich." In another place was the address of a Baltimore firm. It is supposed one of these was inadvertently left on, but the trainmen were in doubt as to the proper destination of the parcel. To get some clue of the destination the lid was forced off. The men, who supposed that the contents were merchandise, were surprised to discover the bodies of two colored women.

PHYSICIANS ON THE WITNESS STAND. Senate bill 981, relating to the testimony of physicians in the courts of the District of Columbia, was the subject of a report to Congress by the Commissioners. They inclose two reports upon the bill, one from the justices of the supreme court of the District, and the other from the president of the Medical Society of the District. The bill proposes to exempt and prohibit physicians from disclosure in the courts of information obtained in attending a patient in a professional capacity. The judges report against the measure. They say: "The enactment sought by the bill would be a serious obstruction to justice in contests over life insurance, personal injury from negligent or willful act, wills and others in which mental capacity is involved. In such cases facts coming under the observation of the attending physician are generally of first importance, and in cases involving questions of mental capacity the opinion of the physician, based in whole or in part upon communication made to him by the patient, is frequently the most important evidence adduced. These objections are not obviated by placing such evidence within the power of 'the person afflicted, or of his legal representative,' to permit or deny. It is not to be anticipated that such person will ever consent to the examination of a physician whose testimony is expected to be adverse to him, and the other party to the litigation, and the court as well, perhaps with the full knowledge of the situation, would be powerless in such instances to require the truth to be shown." The report of Dr. Bussey, President of the Medical Society, says the bill was drafted by direction of the Medical Society. It is, he says, modeled on the law of the State of New York, and is substantially the same as similar laws in force in twenty States and one Territory of this country, the first of which was enacted by the State of

Oregon in 1872, and the latest in 1887 by the States of Indiana, Wyoming, Montana and Idaho. The report argues at considerable length against the position taken by the judges.

MICROSCOPICAL SOCIETY.—At the regular meeting of the society held on the 11th inst., Hon. A. A. Adey presented the subject of photomicrography.

MEDICAL SOCIETY. At the meeting of the society held on the 12th inst., Dr. S. O. Richey read a paper entitled "Fads and Fashions in Surgery."

THE BILL TO REGULATE the practice of medicine and surgery in the District of Columbia passed the House February 11.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from February 8, 1896, to February 14, 1896.

First Lieut. William W. Quinton, Asst. Surgeon, will be relieved from duty at Ft. Riley, Kan., and ordered to Ft. Logan, Colo., for temporary duty.

Capt. C. N. Berkeley Macauley, Asst. Surgeon, died Feb. 6, 1896, at Ft. Logan, Colo.

Major Joseph B. Girard, Surgeon, will be relieved from duty at the Presidio of San Francisco, Cal., and ordered to Jefferson Bks., Mo., for duty at that post, relieving Major Robert H. White, Surgeon. Major White, upon being relieved, will proceed to Presidio of San Francisco, Cal., for station.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending February 15, 1896.

Surgeon J. M. Steele, detached from the "Independence" and ordered to the "Monadnock."

Change of Address.

Cobb, J. O., from Port Townsend, Wash., to U. S. Marine Hospital, Cincinnati, Ohio.

Davis, W. M., from Chicago, Ill., to Blackfoot, Anderson Co., Texas.

Ferguson, Clara, from Tipton, Iowa, to Dunning, Ill.

Hubbard, Thomas, from 205 Ontario St. to 145 22d St., Toledo, Ohio.

Kelly, E. E., from 1247 Market St. to 803 Sutter St., San Francisco, Cal.

Martin, C. M., from Belding, Mich., to Bellevue, King Co., Wash.

Regensburger, M., from 114 Geary St. to 803 Sutter St., San Francisco, Cal.

Russell, E. David, from Cedar Bluffs to Iowa City, Iowa.

Taylor, W. H., from 329 W. 7th St. to 553 W. 7th St., Cincinnati, Ohio.

LETTERS RECEIVED.

American Publishing Association, Montreal, Canada; Alonso, F. M. Y., Las Vegas, N. M.; Avery, S. J., Chicago, Ill.; Aydelott, J. F., Decatur, Tenn.

Barclay, W. F., Pittsburg, Pa.; Bowen, Chas. H. (2), Washington, D. C.;

Benjamin, D., Camden, N. J.; Bowles, M. K., Joliet, Ill.; Boehringer,

C. F., & Soehne, New York, N. Y.; Brooks, H. A., Salem, Mass.; Brown,

F. E., Advertising Agency, New York, N. Y.; Black, C. G., Chicago, Ill.

Clendenin, W. G., Haw River, N. C.; Connorton, J. W., Chicago, Ill.;

Collins, R. G., Chicago, Ill.; Chancellor, E., St. Louis, Mo.; Cullen, Gil-

bert L., Cincinnati, Ohio

Dombrowski, Paul, Peoria, Ill.; Drew, C., Jacksonville, Fla.; Davis,

Geo. S., Detroit, Mich.

Edwards, F. L., Cuba City, Wis.; Eames, Geo. F., Boston, Mass.;

Eckelman, Metus M., Elkhart, Ind.; Eysler, G. L., Rock Island, Ill.

Farber & McCassy, Dayton, Ohio; Fehr, Julius, Hoboken, N. J.;

Farnsworth, P. J., Clinton, Iowa; Fassett, Charles Wood, St. Joseph,

Mo.; Fellows, C. D., Valley Junction, Iowa.

Goss, F. W., Roxbury, Mass.; Goodwin, R. S., Thomaston, Conn.;

Gihon, Albert L., New York, N. Y.

Hummel, A. L., Advertising Agency (2), New York, N. Y.; Hersey,

Geo. D. (2), Providence, R. I.; Hanecker, Wm. H., Farnhurst, Del.;

Howard-Anderson, Ada, Philadelphia, Pa.; Harsha, Wm. M., Chicago, Ill.;

Helm, Ernest, Beloit, Wis.; Hallenberg, Carl S. N., Chicago, Ill.;

Herdman, W. J., Ann Arbor, Mich.; Horner, Frederick, Marshall, Va.; Hayes,

J. Chicago, Ill.; Horsfall, Wm., Marshfield, Ore.

Irwin, W. E., Owensboro, Ky.; Ingals, E. Fletcher, Chicago, Ill.

Johnston, W. H. (2), Birmingham, Ala.; Johnston, George Ben, Rich-

moud, Va.

Katharion Chem. Co. (2), St. Louis, Mo.; Kelly, E. E., San Francisco,

Cal.; Kiefer, H., Detroit, Mich.

Linger, O. E., Starbuck, Minn.; Longmans, Green & Co., New York,

N. Y.; Lehn & Fluk, New York, N. Y.

MaeCoy, Geo. T., Columbus, Ind.; McCormac, J. F., Marshfield, Ore.;

Martin, W. A., San Francisco, Cal.; Martin, H. M., Chicago, Ill.;

Matteson, J. H., Buffalo, N. Y.; Maltine Mfg. Co., New York, N. Y.;

Mitchell, Louis J., Chicago, Ill.; Myers, A. A., Waterloo, Iowa.

North, L. G., Tecumseh, Mich.; Nostrand, D., Van Co., New York, N.

Y.; Nowlin, H. E., Washington, D. C.

Parkinson, Jas. H., Sacramento, Cal.; Pantagraph Ptg. and Stationery

Co., Bloomington, Ill.; Payne, Geo. F., Atlanta, Ga.; Penrose, C. B.,

Philadelphia, Pa.

Randall, Ferdinand, New York, N. Y.; Richardson, A. B., Columbus,

Ohio; Robinson, A. R., New York, N. Y.; Rogers, John H., Springfield,

Ohio; Roy, Dunbar, Atlanta, Ga.

Stearns, T. & Co., Detroit, Mich.; Smith, Chas. D., Portland, Me.;

Sternberg, Geo. M., Washington, D. C.; Stone, C. & Sons, Chicago, Ill.;

Short, O. J. (2), Hot Springs, Ark.; Schenck, W. Edwards, Cincinnati,

Ohio; Siefert, C. F., New York, N. Y.; Seibert, W. H., Steelton, Pa.;

Small, Edward H., Pittsburg, Pa.; Stokes, W. B., Coldwater, Ky.;

Strichter, F. G., Louisiana, Mo.; Sheldon, Charles S., Madison, Wis.;

Stevenson, Chas., Philadelphia, Pa.; Stone, R. French, Indianapolis, Ind.

Taylor, C. M., Columbus, Ohio; Tomlinson, P. W. (2), Wilmington,

Del.; Tuttle, Albert H., Boston, Mass.

Van Wyck, Mrs. R. C., Hopewell Junction, N. Y.; Vinsonhale, F.,

Little Rock, Ark.

Watkins, W. W., Moscow, Idaho; Watson, Irving A., Concord, N. H.;

Wall, G. W., Topeka, Kan.; Werner, O. E., Louisville, Ky.

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No. 9.

ADDRESS.

THOUGHTS ON GENERAL AND CARDIAC THERAPY.

President's Address before the Burlington Clinical Society, Nov. 29, 1895.

BY D. C. HAWLEY, A.B., M.D.,

BURLINGTON, VT.

During the last quarter century remarkable advancement has been made in every department of medicine. While in the realm of therapy, advancement toward scientific accuracy has perhaps hardly been in keeping with the general progress, still modern therapy is becoming one of the more exact branches of medicine. It is not based entirely upon empiricism, as was formerly the case, but is establishing itself upon a basis which may be called scientific or rational. In treating disease empirically, a certain remedy is used because it seems to have been valuable in treating the same disease or conditions. I do not deny, or wish to under-estimate, the value or success of such treatment in many cases, but would emphasize the fact that the method is anything but scientific. A system of scientific medication must be founded upon a knowledge of the natural history of the diseases to be treated, and of the agents to be used. Or more accurately, scientific therapy must be based upon a knowledge of physiology, pathology and materia medica. This implies a knowledge of physiologic effects of drugs, and their action upon healthy states and conditions, and of the indications for treatment, based upon clinical and post-mortem observations of the natural history, that is, the cause, course and results of diseased states and conditions, as well as a knowledge of the physical and chemie characteristics of remedies. I am aware that we are at present unable to base all our therapeutic methods upon this scientific basis. But as our knowledge of pathology and the natural history of disease advances, I believe there will be a corresponding advance in scientific therapeutics. Every physician possessed of the truly scientific spirit and equipped with all the knowledge available along the lines above indicated, will hardly be satisfied with what are known as shot-gun prescriptions, or with happy combinations, but will select his therapeutic agents with an eye to the good of his patient and the honor of his profession.

With a deeper insight into physiology and pathology we shall surely learn more of the value of what may be styled physiologic remedies, and place more reliance on a proper application of air, food, water, rest and exercise. If we recognize our dependence upon the *vis medicatrix nature*, and learn to make a more intelligent use of scientific and of physiologic remedies, we ought certainly, as a natural result, to abandon any allegiance we may have formed with polypharmacy, and also in a great measure with symptomatic therapeutics. To illustrate, let me call

your attention to the symptomatic treatment of typhoid fever by modern antipyretics, and by modern antiseptic remedies. With what enthusiasm has one and another physician lauded the use of antipyrin, phenacetin or acetanilid in reducing the temperature and ameliorating the symptoms in this disease! But to-day we are well awakened to the fallacy of considering hyperpyrexia the principal destructive agent or process, and the coal-tar derivatives are practically abandoned, as being not only useless, but actually dangerous. What is known as intestinal antiseptics is much in vogue at the present time. We are asked to believe that naphthol, salol, zinc sulpho-carbolate, bismuth salicylate, hydrogen dioxid, sulphur, etc., administered at intervals of two to four hours, will disinfect or render aseptic the mucous membrane of the intestinal canal, and destroy the pathogenic micro-organism which is the cause of the disease, or the toxins which are generated thereby. This treatment is supposedly based upon the germ theory of disease. Suffice it to say that thus far none of its advocates has done more than to advance their claims; they have proved nothing. The drug has not been discovered which shortens by a day the course of the disease.

Allow me to call your attention briefly, by way of contrast, and to illustrate the difference between empiric or symptomatic treatment and what I have called scientific treatment, to a remedy, a physiologic remedy, which has established itself firmly in the therapeutics of enlightened medicine the world over. I refer to the Brandt method of balneo-therapy. I take pleasure in quoting the following from an eminent authority¹ as to its effects: "The rationale of the bath is so simple that it appeals to our best judgment at once. We have an overwhelming of the nerve centers by the products of infection. The shock and the subsequent stimulus to the cutaneous surfaces are conveyed to the nerve centers, and thence reflected to the heart, lungs and other organs. Observations at the bedside at once renders these effects patent. The first effect is a refreshment, an enlivenment of the cerebrum. The eyes are opened; the face loses its apathetic stare; consciousness returns after one or more baths; the inspiration is deepened; expectoration is facilitated; the widening of the peripheral vessels and the stimulation of their coats relieve the heart; blood pressure is increased and the laboring organ becomes as quiet as does a sea-tossed ship in the hands of a skilled mariner. The secreting glands are aroused to activity. Moreover, the temperature is reduced, not so violently as by medicinal agents, but more definitely, more in accord with normal tendencies. . . . It has been recently shown by Thayer, in the Johns Hopkins laboratory, that the leucocytes are more than doubled after a Brandt bath. On the other hand, the destructive

¹ Simon Baruch.

effect of medicinal antipyretics on the leucocytes, their inhibition of excretion of products of tissue change and their effect on the heart have been again and again demonstrated." I believe that one of the greatest improvements in our methods of treatment, which may result from what I have styled scientific medication, will be the withholding of remedies of uncertain value, in other words, less medication. I do not say that scientific medication means no medication, but I believe that as our skill in diagnosis increases, our faith in polypharmacy will decrease.

With these remarks on therapy in general, I wish briefly to call your attention to a branch of the subject in which there seems to have been considerable advancement toward scientific precision, viz., cardiac therapy. I venture the statement that there is no department of therapeutics in which knowledge is so exact as in that relating to cardiac disease. Our knowledge of the action of the heart in normal as well as in pathologic conditions, ought to tell us why and under what circumstances a given remedy may be useful, provided we know its physiologic effects. The principal remedies which directly affect the heart and blood vessels are digitalis, strophanthus, strychnia, spartein, convallaria, caffein, glonoin, aconite, veratrum viride, opium, bromids and ergot. Let us briefly review the physiologic action of some of these remedies, when administered in medicinal doses.

Digitalis stimulates the motor ganglia of the heart, increasing the force of the ventricular contractions. By stimulating the inhibitory fibers of the pneumogastric, it lengthens diastole, thereby giving time for the cavities to receive more blood. It also acts upon the vaso-motor ganglia in the medulla, causing contraction of the arterioles and thereby increasing arterial tension. It is a vascular stimulant raising arterial pressure, and steadying the heart by lulling it into long diastoles. Is digitalis a cardiac tonic as well as stimulant? It certainly increases the nutrition of the heart muscle by supplying it liberally with blood. The coronary arteries fill during diastole and when the heart is acting powerfully and steadily under the influence of digitalis, the increased volume of blood swells the aorta, which, in turn by a mighty recoil, fills the coronary arteries and carries food to every part of the heart.

Strychnia stimulates the vaso-motor centers, constricting the capillaries and causing an increase of arterial tension. It also stimulates the vagus, inhibiting cardiac contractions. Thus we see it has a double action in slowing the heart.

Cocain affects the vaso-motor centers and the cardio-motor ganglia, increasing arterial tension and the force of the heart's action.

The action of belladonna is to increase the force and the frequency of the heart's action by stimulating the cardiac ganglia and by paralyzing inhibition. It also raises the blood pressure through capillary contraction, due to vaso-motor stimulation.

Ergot, by stimulating the vaso-motor ganglia, decreases the caliber of the arterioles and produces a marked increase in arterial tension, thereby causing the heart's action to become slower. It also acts on the unstriated muscular fibers in the arterioles, aiding their contraction. All the remedies thus far considered, viz., digitalis, strychnia, cocain, belladonna and ergot may be classed as vaso-constrictors.

Aconite, by lowering the action of the cardio-motor ganglia, lessens the force of the systolic contractions

and by stimulating the vagus, lengthens the interval between the beats. It also dilates the peripheral vessels, probably through vaso-motor depression, thereby lowering blood pressure and slowing the heart.

Veratrum viride depresses the vaso-motor centers, dilating the vessels and reducing vascular tension. By a direct effect upon the heart and its contained ganglia it lessens the force and frequency of its pulsations.

Glonoin increases the energy and rate of the heart's contractions and lowers vascular tension by widening the blood paths. The former is done by directly stimulating the heart, the latter by its action on the muscular coats of the arterioles, and not by depression of the vaso-motor centers. Aconite, veratrum and glonoin may then be classed together as vasodilators, but with this difference in their action, while aconite and veratrum depress the heart's action, glonoin increases it.

Strophanthus slows the heart's action, lengthens diastole and increases the force of the muscular contractions, thereby raising arterial pressure, but does not affect the caliber of the vessels through the vaso-motors.

Convallaria, by direct action on the heart, lessens the frequency and increases the force of systole, thus raising arterial pressure. It does not affect the vaso-motors or the pneumogastric.

Caffein stimulates directly the heart, increasing its contractions in force and frequency. It causes dilatation of the arterioles, not by vaso-motor depression, but by an action upon the intra-vascular nerve ends (Senmola). Large doses affect the vagus, decreasing the number of systolic contractions.

Cactus shortens and increases the energy of systole, raises arterial pressure and shortens the intervals between the beats. Under its use the pulse becomes quicker and stronger.

Spartein primarily increases the pulse rate, and the force of the heart. This increase of the heart's action is soon followed by a decrease of the same. The augmented rate is due to an action of the drug on the heart's muscle or its ganglia, and the decrease to stimulation of the cardio-inhibitory centers. Spartein increases the blood pressure by its action on the heart and by stimulating the central vaso-motor system, and subsequently decreases it by a depressing effect through the same channels.

Thus we see that strophanthus, convallaria and cactus have no appreciable effect on the caliber of the vessels, while the effect of caffein and spartein in this direction is less marked than is that of the drugs we have classed as vaso-constrictors. The effect of opium is to stimulate inhibition, producing a slow and full pulse with increased arterial pressure. Systole and diastole are both lengthened. Bromids lessen the force and frequency of the pulse, as well as arterial tension. It is claimed by Hammond that bromids produce contraction of the arterioles of the brain, thereby causing cerebral anemia. In the study of cardiac therapeutics it is well to bear in mind that the heart is a double pump with normal valvular insufficiency on the right side and with perfectly closing valves on the left side; that the principal resistance to the flow of blood is in the arteries and arterioles, and not in the veins; that the capacity of the veins is double that of the arteries, and that the abdominal vessels when dilated are capable of holding

all the blood in the body. By the use of the vaso-constrictors we increase arterial tension, and as a result send an increased quantity of blood through the coronary arteries, thus improving the nutrition of the heart muscle. In a dilated heart without compensatory hypertrophy, we may, by increasing peripheral resistance and keeping it just within the power of cardiac contractions, bring about hypertrophy of the left ventricle, and thus restore the circulation to a nearly normal condition. This has been proved by Oertel. The effect of the vaso-constrictors may be carried too far, and so narrow the arterioles, as to send the blood so rapidly through the capillaries as to cut off nutrition from the heart. The administration of nitro-glycerin, which has the power of dilating the capillaries, will, however, remedy this over-contraction. The vaso-constrictors increase peripheral resistance and lower the rate of the heart's action. The vaso-dilators, on the other hand, decrease peripheral resistance and lower the rate and the power of cardiac contractions.

Now the question arises, what working conclusions are to be drawn from these considerations? Let us try for a moment to apply the above data to some of the conditions which we daily meet. In mitral stenosis we have at the mitral orifice an obstruction to the free flow of the current of blood from the auricle to the ventricle. The orifice being narrowed, the auricle can not pump the normal quantity of blood through it, in the time allotted, and in an attempt so to do, the heart works at an increased rate. Dilatation of the auricle follows, and there is a stasis of blood on the venous side of the heart while the vascular tension is lowered on the arterial side. What must be done to help that heart? We must increase the power of the ventricular contraction in order to overcome the effect of the dilatation, at the same time that we lengthen diastole, to give the auricle time to empty itself. We must also increase the blood pressure in the arteries for the benefit of the coronary circulation, and must work the blood over from the venous to the arterial circulation. If our findings in the physiologic action of drugs are correct, here is a field for the use of either digitalis, strychnia, strophanthus, spartein, convallaria or ergot, or a combination of two or more of them. In regurgitation at the mitral valves, we have the conditions above noted, with the addition of eccentric hypertrophy of the ventricle. Such a heart may be in great distress, putting in thirty to fifty extra beats per minute, with the veins full and the arteries empty. Systole is weak and diastole too short for the ventricle to fill with blood. The indications are plain: shorten and strengthen systole and lengthen diastole. To do this we must turn to the same remedies mentioned in speaking of mitral stenosis. Here is an opportunity to use the full physiologic effect of digitalis. Having secured that effect, having restored the equilibrium of the circulation it is probably better to combine glonoin with the digitalis, in order to cut out the vaso-constrictor effect of the latter. In some cases a combination of ergot, for its vaso-motor effect, with spartein or strophanthus, will accomplish all that is desired. The other drugs mentioned in connection with these lesions are valuable and play an important rôle in cardiac therapy, but having pointed out the general indications for their use, we will not attempt to do more at the present time. In aortic stenosis, so long as hypertrophy keeps pace with the obstruction

and with the ventricular dilatation, all goes well. But when the compensation is broken, when the obstruction or the dilatation, or both, get ahead of the hypertrophy, then the ventricle is unable to send the full charge of blood through the narrowed aortic opening. At each contraction of the ventricle some blood is left within its cavity, and the blood flowing in from the auricle as usual, causes a surcharge of blood within the ventricle. This condition makes it impossible for the auricle to fully empty itself and here again we have dilatation resulting. Nature at once attempts to compensate by starting a hypertrophy of the left auricle; but this only adds fuel to the flame, for the increased power of the auricular muscle sends more blood into the crippled ventricle, which is already distended to such an extent as to destroy the compensatory balance. The effect upon the circulation is decreased arterial tension, and engorgement of the pulmonary and venous circulation. Now what are the indications? Plainly, to strengthen systole, shorten diastole and increase arterial tension. We certainly must not look to digitalis and its congeners to meet these indications. Cactus, caffein and cocain, from their physiologic effects, may be expected to do much for us, and experience has proven their value in aortic stenosis. In aortic regurgitation we have eccentric hypertrophy of the left ventricle from a reversed current of blood from the aorta. Regurgitation becomes rapid and prevents the perfect filling of the coronary arteries. The hypertrophy so increases blood pressure as to produce endarteritis and finally atheroma. Thus the heart muscle becomes impoverished and dilatation without compensation results. Regurgitation through the aortic orifice takes place during diastole. If we can shorten diastole and strengthen systole, we are certainly doing something toward restoring the circulatory equilibrium. Again our physiologic findings point to cactus, caffein and cocain. We have it on so good authority as that of Dr. Reynold W. Wilcox, of New York, that cactus has proved itself, clinically, to be the remedy, par excellence, in aortic regurgitation. Lesions of the right heart being rare we will pass over their consideration. In cases where there is increased peripheral resistance as in pneumonia in the first stage, chronic disease of kidneys, etc., we find a special field for the use of the vaso-dilators, viz., aconite, veratrum and nitro-glycerin. In the first stage of pneumonia we have engorgement of the blood-vessels of the lung, with increased action of the heart. If we give veratrum, we bring down the heart's action and dilate the blood-vessels throughout the body. We take the blood away from the lung, and we practically bleed the patient into his own vessels. I am well aware of the important rôle played by hygienic, dietetic and mechanical agents in cardiac therapy. However, a consideration of these in detail is entirely without the scope of this paper, in which I have endeavored to call attention to the scientific use of some of those agents, which strictly speaking, must be set down as secondary to a proper regulation of rest, diet and regimen, in the treatment of cardiac disease.

Insufflation as an Aid in Diagnosing Gastric Stenosis.—A severe case of what was supposed to be cicatricial stenosis of the pylorus, was differentiated as constriction through the center of the stomach and treatment indicated by means of insufflation. The *Prov. Med.* of January 11 records the case, with details of effect of insufflation as aids to diagnosis.

ORIGINAL ARTICLES.

A PRELIMINARY REPORT ON THE
ROENTGEN OR X RAYS.

Read at the Meeting of the Chicago Medical Society, Feb. 17, 1896.

BY JAMES BURRY, M.D.

CHICAGO.

Probably no scientific discovery has received wider attention than the promulgation of the use of this ray has elicited.

Prof. William Conrad Roentgen attracted the attention of the world when he succeeded in making photographs of the bones of the human body through the living subject. Earlier experimenters had described photographic activity in cathode rays, and it may be proper to consider some of their work.

In 1879 Prof. William Crookes presented to the Royal Society a paper embodying the results of a series of remarkable experiments on electrical discharges through vacua. Previous to this, experimenters had investigated discharges through rarefied gases, and had observed in a general way the behavior of discharges in comparatively high vacua. Faraday also had speculated on the possibility of an attenuated state of matter in which the behavior of molecules might be expected to be different than in the case of matter in any ordinary form. Such attenuated matter he designated "radiant matter." Crookes, however, was probably the first to conduct an exhaustive investigation on the discharges in very high vacua, and to connect the state of the attenuated gases with Faraday's hypothetical radiant matter.

At ordinary atmospheric pressure an electrical discharge of high tension takes place usually in the form of sparks between the charged terminals, or, under certain conditions, in a practically continuous discharge called a "brush." At a much diminished pressure, say one-thousandth of the atmospheric pressure, the discharge between the terminals becomes continuous and is characterized by a diffuse illumination, the color of which is distinctive of the gas through which the discharge takes place. The discharge is probably in the nature of electric conduction, and the tubes or bulbs prepared to exhibit such discharges are termed Geisler tubes.

At much higher vacua, approximating one-millionth of atmospheric pressure, the character of the discharge in the tube undergoes a marked alteration. The illumination of the path of the discharge is much diminished. A dark space surrounds the negative electrode or cathode in the bulb, the depth of the space being determined by the degree of exhaustion of the bulb, the observed path of the discharge is no longer in a line joining the negative and positive electrodes—the cathode and anode—but appears to be independent of the anode.

Crookes' investigations were conducted principally with discharges of this character, and the highly exhausted bulbs which he used are designated "Crookes' Tubes."

Crookes applied to the rarefied gases or vapors in his tubes the borrowed term "radiant matter." He assumed that within the exhausted tube the matter was attenuated to such an extent that a molecule is free to move through a sensible distance, enormous in comparison with the similar distance at ordinary pressures, without colliding with another molecule. He supposed that the molecules within the tube were

projected from the cathode at a high velocity, moving from the cathode in lines normal to its surface and being stopped only by collision with other molecules, with a screen in the tube, or with the wall of the tube. At a certain distance from the cathode the rapidly moving molecules thrown off from the electrode collide with the reflected molecules; the distance from the cathode at which the greater number of these collisions takes place was considered as being coincident with the limit of the dark space, and the depth of the dark space surrounding the cathode was taken as representing the average free path of the molecules within the tube.

His experiments demonstrated, among others, the following propositions which are of value in considering the cathode or X rays:

Ordinarily radiant matter moves in straight lines; the path of the matter may be deflected by a magnet; the impact of the molecules on a surface exerts a pressure, which is sufficient in some forms of his apparatus to move vane wheels; the impact of the molecules generates heat in any body with which they collide, and excites fluorescence in many substances capable of such action.

A few years ago Dr. Heinrich Hertz discovered that the effect of the bombardment with the Crookes' tube was not limited by the walls of the tube; in other words, that the effects of the bombardment were noticeable outside of the tube. He observed that fluorescence was excited in fluorescent substances outside of an aluminum window in the Crookes' tube which was being bombarded by the molecules projected from the cathode. He suggested that this might be due to an actual projection of the radiant matter through interstices in the walls of the tube, or of the aluminum window.

In 1894 Philip Lenard, a pupil of Hertz, showed that this assumption was untenable, and that the effects observed outside the Crookes' tube might be more reasonably accounted for as due to a vibration of the ether created by the cathode. These vibrations he found to be capable not only of exciting fluorescence, but of precipitating chemie changes in photographic plates. He observed that the "cathode rays," as he called the vibrations, might penetrate to a considerable distance outside of the tube, all substances being to different extents penetrable by the rays.

Within the last three months Professor Roentgen has announced the discovery of a ray proceeding from the excited Crookes' tube characterized by behavior different from that of the cathode rays. He stated that the newly discovered Roentgen, or, as he designated it, the "X" ray, proceeded not from the cathode, but from the point in the wall of the tube upon which the radiant matter in the tube impinged. The point from which these X rays emanated can be shifted by changing the path of the radiant matter with a magnet so as to make the molecules strike on a new point of the tube. The X rays, on the other hand, could not be deflected by a magnet, were not reflected by any body which obstructed them, and were not refracted by any body which was transparent to them. For the most part the law of the X rays, as announced by Roentgen, are quite similar to those announced by Lenard for the cathode rays. Hence there is still some doubt as to whether the X rays are not in fact identical with the previously known cathode rays. However, the announcement of Professor Roentgen's

discovery was accompanied by the statement that the bones were less penetrable to the X rays than the soft tissues, that a photograph or shadow picture might be obtained showing the bones within living bodies. This startling statement gave a prominence and value to his work which obtained for it instant recognition.

The surgical importance of securing outlines of deeply imbedded bones or foreign substances appealed to me strongly. My first experiment was made with a two-cell battery, a one-half inch spark induction coil and an incandescent lamp for a Crookes' tube. This experiment was made on the 4th inst. and was unsuccessful. On the same day, after a liberal use of the telegraph I secured two Crookes' tubes from a house in Philadelphia. The tubes could not be secured

company with Mr. Scribner and Mr. McBerty, my experiments were resumed.

Our first efforts were made with a four-volt primary and a $1\frac{1}{2}$ inch induction coil. The tube was placed immediately above the object to be photographed, with the latter resting on the wooden slide of a holder containing a photographic plate. In this way, with thirty minutes exposures, shadowgraphs were secured. These shadowgraphs gave but dim and indistinct outlines of the bones. Experiments were then made by varying the time of exposure, the distance between the bulb and the plate, the voltage of the primary current and the number of interruptions. After these experiments, which gave but fair shadowgraphs, a lead diaphragm with an aperture of one-half inch in



ROENTGEN PICTURE TAKEN BY DR. BURRY AND CHAS. E. SCRIBNER, FEB. 14, 1896.

either in Boston or New York. One of these tubes is worthless. The other is the one with which all our successful work has been done.

The tube is spherical in shape with four electrodes entering it, one pointed terminal at each end, a disk terminal in one side and a pointed terminal in the other side. All of these electrodes are made of aluminum connected with a platinum wire. As I use it the disk terminal is the negative or cathode and the pointed terminal the anode. From the cathode emanate the rays which travel in straight lines and independently of the anode, producing in this tube a greenish-yellow light.

On Thursday the 6th inst., on invitation of Mr. Scribner, I took the tubes to the experimental laboratory of the Western Electric Company, where, in

diameter was interposed between the bulb and the plate, the distance of the bulb from the plate reduced to eight inches, and longer exposures made. The aperture in the lead diaphragm was placed below and in a line with the fluorescent spot in the bulb. These changes gave improved results. By varying the distance from two to fifteen inches between the bulb and sensitized plate, increasing the aperture in the lead diaphragm, and with the bulb six inches from the plate a perfect shadowgraph of the bones in the hand, wrist and a part of the forearm was obtained.

On Tuesday, the 11 inst, a small buckshot was located in the hand of a painter, between the fourth and fifth metacarpal bones near their carpal ends by means of the shadowgraph, and this shot I removed

in Mercy Hospital. This is the first instance in America as far as I can learn, of the removal of a foreign body following its location by such means, and where it could not be located by any other means.

These shadowgraphs show that the soft tissues make some impression on the plate. It does not seem improbable that with a more intimate knowledge of these rays, some way of controlling them, as is the case with all other known rays, will be found. It may then appear that the varying changes in disease and health of the soft tissues, as shown by the shadowgraph, will become known and in this way a cirrhotic liver may be differentiated from a normal one, or pulmonary tissue in pneumonitis from normal tissue. Certainly, calculi of the kidneys or gall ducts should be easily disclosed.

In the shadowgraph (see illustration) the marrow cavities of the metacarpal bones clearly appear, thus showing that these rays do penetrate bone tissue, making it not improbable that the pathologic changes in bone tissue can be shown as well as foreign bodies of substances impenetrable to these rays that may be deeply imbedded in bone.

I have exposed tuberculosis bacilli to the action of the X rays for two hours but have not had time to make cultures, so I can not make any report as to the germicidal or other action of the rays at this time. The therapeutic uses of this ray, if there are any, must be determined by careful experiment, and speculative thought in this direction is apt to be disappointing. Many uses are suggested to which this ray can be put, and the newspapers are full of experimental researches in this country and abroad. We find that many of the Universities in the East, as well as our own, are making experiments, and various reports have been printed in the papers on the work of these scientists. Out of all this work must proceed some good.

Among the claims are many ludicrous ones, as they appear in the papers. For instance, it is said that at Columbia College the shadow of a bone was projected on the brain of a dog and he immediately became hungry. In another case reported in the paper a New York physician succeeded in getting a good negative of his own brain. Is it pardonable to suppose that the plate was simply "foggy?"

Whatever the future may show, these shadowgraphs prove, at least, that as far as the extremities go, no engraving can portray the bones as well as a good shadowgraph.

Bario-platino-cyanid becomes phosphorescent under these rays. Upon a fluorescent screen of this powder it is perfectly possible to project an instantaneous shadow which would reveal to the surgeon all that a good shadowgraph would show, and it is in some such way as this, it seems to me, that this process will be most used by surgeons. If I am correct in this, two minutes time would give the surgeon a clear idea of the condition of the parts he wishes to investigate, thus doing away with the present great disadvantage of the long exposure necessary to secure a good shadowgraph negative.

Fractures through the shaft of bones are usually easily diagnosed, but those near joints are sometimes difficult to recognize. This difficulty will be easily overcome by means of the Roentgen ray.

Some of the features of this work are remarkable in showing the striking difference between the penetra-

bility shown by bodies to this ray as against the white rays of the sun. For instance, glass which is so easily penetrated by the white rays, is very feebly, if at all, penetrable by the X ray. On the other hand, aluminum is readily penetrated.

One medical use may be in convincing patients who believe that they suffer from some organic disease, when none is present, that they are mistaken by showing them a shadow of the organ that they fear is affected.

Beyond Roentgen's application of his ray, and his statement that the ray can not be deflected by a magnet so far no advance has been made on the work of Prof. Philip Lenard as shown by his papers published in 1894.

THE PROPOSED INTERNATIONAL MEDICAL INSIGNIA.

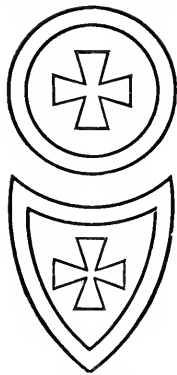
BY COL. R. FRENCH STONE.

SURGEON GENERAL INDIANA NATIONAL GUARD.
INDIANAPOLIS, IND.

Since the recent publication of various articles with reference to the above subject have appeared in the leading medical journals of this country, and especially of those from the editorial pens of the *Boston Medical and Surgical Journal*, the *Journal of the Army and Navy* and of the AMERICAN MEDICAL ASSOCIATION, much interest has been excited and great unanimity of opinion expressed concerning the symbolism and esthetics of our profession. As one phase of the development of this question it may be stated that Col. C. H. Alden, Assistant Surgeon General of the U. S. Army, has been appointed chairman of a committee to adopt insignia to distinguish the medical corps of the Army from officers in other branches of the service, and as the medical officers of the National Guard may adopt the same design he has requested the Surgeon Generals of different States to offer suggestions as to the most appropriate emblem for this purpose, and for this reason the author of this communication has been lately engaged in a critical study of this subject in all its bearings, giving due attention to the requirements of the medical fraternity in civil life as well. As a result of this investigation we find that particular symbols have in all ages been assumed by the various civilized and uncivilized families of the human race. They have been placed upon the standards and banners of tribes and nations, upon the genealogic escutcheons of kings and the nobility, and for centuries they have been borne by members of many social, religious, literary and scientific organizations; by those of numerous and diversified trades or guilds, as well as by various civil and military officials as an expression of their position in the world or of their rank and special line of duty. In view of these facts we ask why should not physicians, although incased, like the knights of old, in the close armor of medical ethics, have at least the privilege in the exercise of their life-saving mission of proclaiming to the world the secret of their identity or nature of their vocation by means of some mystic heraldic emblem. While it is universally understood that the great mission of the medical profession is the protection of life, and while this should be symbolized, the insignia should also be expressive of the ancient origin of the noble art of healing. Early insignia were usually very simple, the colors in strong contrast and their form and outline such as could readily be distinguished even in the dust and confusion of battle. In order that our insignia,

as an emblem of neutrality, might be of international significance its claim to recognition should depend upon its form, design and coloring, and not from bearing upon its face any printed letters, words, motto in Latin, or phrase in the language of any nation. To meet this requirement the outlines of such a device are here represented. In order to protect the medical profession in its use for any other purpose than hereafter designated, as well as to protect manufacturers in its construction and sale by unauthorized parties and also in order to secure uniformity in the appearance of the emblem essential to its general recognition Letters Patent would be required.

The shield, as the most obvious piece of protective armor, was that upon which symbols were first displayed. For this reason it is believed that in the general approval and adoption of medical insignia, not only in our own country but throughout the world, the form of the ancient circular or triangular shield should be selected. For esthetic reasons the edges of the emblem should present a gold border, its inescutcheon should be of dark-green color embracing as the central feature of the field a modified form of a red Maltese cross surrounded by a narrow stripe of gold. Thus in recognition of the rules of blazon in order to preserve in striking contrast the visible elements of its structure, the placing of metal upon metal



Design, patent applied for.

and color upon color is avoided as much as possible. The red color of the cross, and green color of the field are not only universally recognized as symbols of life, thus emphasizing the significance of the cross (which for reasons hereafter given we believe to be typical of the same thing), but are also the most attractive and beautiful shades in nature, and when these are associated with the form of the ancient triangular Egyptian or Grecian shields in actual use as protective armor, at the time when the "Healing Art" was first recognized as an independent and distinguished vocation, then the ancient origin and the essential object of our profession, the protection of life, would be completely symbolized and the language of the insignia would need no further interpretation. Then we would be afforded not only an ornate and conspicuous emblem of neutrality in time of war, but one easily recognized on social occasions and for professional requirements in the civil as well as the military pursuits of our profession. But why should the cross be adopted as the essential feature of our insignia? In answer to this it may be stated that throughout the entire range of medieval decorative art the cross sign exhibiting an endless variety of form, proportion and adornment has exercised a most powerful influence. Referring to this subject Charles Boutell has written as follows:

"With the triumph of Christianity the cross at once was recognized as a universal symbol of the highest dignity and honor. It was made of the most precious material, enriched with the most costly gems and exquisite art. The cross became the most prominent ensign upon royal diadems and it gave both their form and their name to the noblest insignia of knightly rank. The cross crowned the scepters of princes, and the greatest warriors were proud to see the cross as well in the hilts of their swords as on the banners under which they fought." In private life also the cross was held in corresponding estimation, and accordingly the most beautiful and most prized personal ornaments appeared in some cruciform type. Thus was art taught to aid in realizing the enthusiastic sentiment of Justin Martin when he said "The sign of the cross is impressed upon the whole of nature. There is hardly a handicraftsman also but uses the figure of it among the implements of his industry. It forms the part of man himself, as may be seen when he raises his hands in prayer." In the Middle Ages the cross sign was universally held to be the special and distinctive symbol of Christianity, as to the present day the cross and the crescent are symbols which distinguish the faith of the Christian from that of the Moslem. While as a symbol of the Christian faith, at once preëminently characteristic and significant, the cross in various modifications of its form would naturally be adopted for many purposes and used in a diversity of ways, and while the greatest progress in medical science has been made since our crucified Savior died in order that a sinful world might have eternal life, and while in many ages and nations the vast majority of those distinguished in medical annals have been devout members of the Christian faith, and while the Geneva Cross of the Red Cross Society is now recognized the world over as its best practical application, yet it is not altogether for these reasons that we should adopt the cruciform device but because it has also occupied a prominent position and signification among the many sacred and mystic figures and symbols connected with the medical history of heathen nations of the greatest antiquity. Such certainly was the case in Egypt, Assyria, Persia, India, Greece, Rome and among the Scandinavian races of the North. If, therefore, we would learn the earliest account of the foundation, development and symbolism of that honorable vocation which in every land and in every clime has exercised for thousands of years its beneficent influence upon suffering humanity, we must turn back the pages of history until we reach those of Egypt, that old and mysterious country that first beheld the gray dawn of the world's creation and which has given birth not only to our own profession but to those arts and sciences which have shed their luminous rays over the field of human progress among civilized and enlightened nations in all ages from prehistoric days to the present time. And as an important reason for the expression of the main feature of this design it should be stated that a study of the hieroglyphics which constitute the sacred characters of the ancient Egyptian language in its classical phase, as found upon the earliest monuments and vases of that strange people at an age corresponding with the birth of our profession, reveals the curious fact that the cross was the ideographic sign or symbol of life. Again, we find the symbol or crucial sign of the old Olympian god, which to-day stands at the head of every medical prescription, has been handed down through

the ages from the early Greek and Roman physician to typify their invocation to that ancient heathen deity while in the exercise of their life-saving mission, and with a remnant of the old superstition still clinging to it this sign will doubtless continue to be used for centuries in the future in order that the early origin of the profession we represent may be remembered. A still more extended research among the histories and other records of ancient and modern nations with reference to the subject of medical symbolism leads to the conclusion that the crucial sign in its various forms and combinations, including the caduceus, the emblematic staff and serpents still familiar to us as part of the imprint on the title page of early and more recent medical books, are all more or less expressive of the same idea and that they are but typical outgrowths of one and the same thing. For this reason the writer, with others who have given the subject much attention, believes that the cruciform symbol somewhat modified would not only meet with very general approval but should be universally adopted as the most significant emblem of medicine in all its practical application to art, literature and civil or military organizations, affording as it does a proper emblem of the "Healing Art," fitting in its origin, significance, and, to some extent, in its actual use by civilized humanity. In this connection it is a matter of interest to know that the original idea in the international adoption of the Red Cross banner at Geneva, Switzerland, in 1864, was based on the needs of the wounded in battle, and the extent of its neutral service since this time throughout the world constitutes the most marvelous achievement in all the history of medicine. During the last thirty years this Red Cross banner has been on the fields of conflict in the wars between Prussia and Austria, France and United Germany, Russia and Turkey; in Servia, Macedonia, Roumania, Montenegro and Spain. It has also done service on fields of conflict in Abyssinia, Tunis, Morocco, the Transvaal, Dahomey, the Congo State, Zululand, Egypt and Soudan. In Asia the French have carried it in all their movements in Cambodia, Tonquin and Siam; the British into Burmah, the Dutch into Java, and the Japanese into Corea and China. In South and Central America this symbol of international beneficence has been borne in field service in Brazil, the Argentine Republic, Chile, Peru, Bolivia, Guatemala and San Salvador. And while it is fitting, therefore, that the primary and central feature of our insignia should be the crucial symbol typical of that divine gift of which we are the earthly guardians, a well founded objection has been urged against the common Geneva or Greek Cross because the arms of this are of equal size and the great mass of red color in and about the center causes an apparent lack of proportion by making the middle square look larger than its actual size. To correct this optical illusion it has been deemed best to substitute a modified form of the Maltese Cross which is lighter in the center and, therefore, presents a more pleasing feature. As an insignia for the Army it is suggested that the arms of the cross be made in the form of an ancient spear head, and for the Navy that they terminate in the form of an anchor. For use on military or naval uniforms the triangular escutcheon could be made of handsome shades of embroidered gold, or other durable material set in gold, and worn on the collar of the coat or shoulder knots and somewhat enlarged as an ornate decoration of officers' housings or saddle cloths. For those members of the medical profession not connected

with the Army or the Navy the insignia can be made in colored or enameled gold and with essentially the same features of the design also of other durable material more or less expensive so that the cost of the emblem would range in price anywhere from twenty-five cents to as many dollars. Both the circular and the triangular shields may be reduced in size and could be made from rolled or solid colored or enameled gold; either would be ornate and could be obtained at a moderate cost. The circular shield should be worn as a lapel button; the triangular shield as a scarf pin; the latter could be set with jewels, the cross of garnets or rubies with a small diamond in the center, but would be somewhat expensive. The accompanying engravings only show the general outline of these insignia, but illustrations in colors with prices according to material and finish may be obtained by correspondence with the writer.

250 N. Illinois Street.

FIBROMYOMA COMPLICATING PREGNANCY : FIBROMA OF VAGINAL WALL.

Read before the Chicago Pathological Society, Dec. 9, 1895.

BY J. B. MURPHY, M.D.

CHICAGO.

FIBROMYOMA COMPLICATING PREGNANCY.

Nettie S., age 39, colored, married, admitted to the Cook County Hospital Oct. 19, 1895; family history negative; was married two years ago, no children, no miscarriages nor abortions; has always enjoyed excellent health with the exception of the present trouble. Menstruated at about 14, was regular, fairly profuse, lasting about four days; no clots, never hemorrhage. Present illness began in July, 1895, with a cessation of menstruation. It has not reappeared since. Has not had sexual intercourse for three or four months. After the suppression of the menses, noticed a tumor just below the umbilicus. This has rapidly increased in size since that time. It has not been accompanied with pain. There has been no backache; the greatest discomfort has been produced by pressure of the tumor against the edge of the ribs. No urinary symptoms; there has been no discharge.

Physical examination: Patient well nourished; large physique, considerable adipose, abdomen very markedly distended and irregular in contour. Nodular growth can be felt in the abdomen, extending above the umbilicus, and especially to the right side, where it presses against the margin of the ribs. One of the nodules below the umbilicus is about the size of a child's head, of hard consistence and fairly movable. The whole mass can be moved laterally about two and one-half inches, but not up or down. In the median line, from two inches below the umbilicus to the symphysis, fluctuation can be felt. It is apparently deep-seated, and surrounded by an irregular margin. No fetal heart-sounds nor placental souffle can be heard. Vaginal examination reveals a large hard mass, entirely filling the pelvis. The os can be felt above the symphysis. By pressing the tumor up, the sound can be introduced into the uterus two and one-half inches, but not farther, it being extremely difficult to get the os in position for the introduction of the sound. The tumor in the pelvis is very firm, smooth on surface, and of very hard consistence.

Diagnosis: Uterine fibroid, with cystic degeneration. The rapidity of growth and the absence of the history of hemorrhage somewhat oppose the diagnosis of fibroid, but this was explained subsequent to the operation.

Celiotomy: Oct. 25, 1895. Tumor found to be free from adhesions. On lifting it out of the abdomen, through a very long incision, and turning it to elevate the large nodule out of the pelvis, the left broad ligament ruptured close to its attachment to the tumor. There was profuse hemorrhage for a few seconds. The ligament was clamped with a long pedicle forceps, broad ligaments ligated and excised. The uterus was situated on the anterior surface of the pelvic portion of the tumor, and was about six and one-half inches in length. An elastic ligature was placed upon the stump, allowing the cervix to remain, so as to treat the pedicle externally. Two large pedicle forceps were placed above the ligature; uterus amputated. There was no blood in the pelvis. The parietal perito-

neum was sewed to the cervix, all the way around, just below the elastic ligature. The abdominal wound was closed down to the pedicle, packed around with iodoform gauze and dressed antiseptically.

Time for operation, thirty-two minutes. The mass weighed six pounds six ounces; it consisted of a large irregular fibroid, growing from the posterior wall of the uterus. The uterus was enlarged about six inches and contained a sac of fluid. When opened, a fetus of about three months was found in the sac, which had not been ruptured. The question of pregnancy had been thoroughly considered before operation, and thought impossible from the patient's statements and the absence of physical signs.

The impregnation accounted for the great rapidity of the growth, it being borne in mind that the patient had never noticed the tumor until July.

The patient made an uninterrupted convalescence; she did not vomit from the anesthetic, and at no time did her temperature reach 100 degrees. The highest pulse rate was 96, and that was immediately after the operation. There was no secretion from the stump, which remained perfectly dry for fifteen days, when a slight serous exudate appeared at its base—the line of separation. The pedicle sloughed on the twenty-seventh day after the operation; patient is now sitting up in bed. This completes a series of ten consecutive abdominal hysterectomies with ventral fixation of the



FIGURE 1.

pedicle, for large fibroids, not previously reported, all of which recovered.

That pregnancy should complicate uterine fibroma, is not surprising, as Gusserow, in quoting Bayle's statistics, states that twenty of every 100 women over 35 years of age have fibromata of greater or lesser size; and Klob states that 40 per cent. of all women over 50 years of age have fibromata.

That pregnancy does not appear more commonly with fibroma, is accounted for, 1, the fibroma itself tends to sterility, as it produces a pathologic condition of the endometrium, except in the sub-peritoneal variety; 2, that the fibroma does not attain a considerable size in the majority of cases, until after the child-bearing period is past; and 3, that the fibroma in the great majority of cases does not produce any disturbance during the period of gestation, and in many cases does not complicate labor. If it has attained a marked size before impregnation, its development is greatly enhanced by the pregnancy. The variety of fibroma in which the muscular element predominates over the fibrous, increases most rapidly under the stimulus of pregnancy. The tissue becomes edematous and doughy, as may be noted in the posterior wall of the uterus and the portion of the tumor attached to it, in the specimen presented.

The uterine fibroid of large size rarely admits of the completion of the period of gestation. It usually terminates in abortion, hemorrhage, impaction in the pelvis, labor pains, placenta previa, rupture of the uterus, death of fetus or sepsis. That the presence of fibroma with pregnancy may not deserve surgical attention, was well established by Theodore Landau (Volkmann's *Sammlung klinische Vorträge*, No. 26, Neue folge). He expressed himself in the following words:

"A myoma which rests in or on an impregnated uterus, does not of itself, demand the attention of the surgeon. Only when the tumor produces unpleasant symptoms is active interference indicated. The principal of these unpleasant symptoms are mechanical or pressure symptoms, as incarceration of the uterus in the pelvis, galloping increase in size of growth, nephritis, uremia, ascites, etc., as well as the reflex manifestations of pressure, cardiac, respiratory and gastric. When these disturbances are sufficiently severe to demand the physician's attention, the question arises—What shall be the procedure? Will it be an enucleation of the fibroma, an induced abortion, an abdominal hysterectomy, or



FIGURE 2.

an abdominal extirpation of the fetus, without the removal of the uterus and appendages? The selection of operation will depend on whether the immediate emptying of the uterus is necessary, and if so, whether it is possible for the fetus to pass from the uterus, through the cervix and vagina; or, whether it is desirable to have the tumor itself removed, at the same time that the patient is freed from the fetus. When the pelvic passage is blocked, the only question to be considered is laparotomy."

This statement was made three years ago. The improvements in technique and statistics of abdominal hysterectomy have produced an entire change in the conditions which guide us in our selection of procedure. It is questionable whether induced abortion in the presence of a large fibroid is not as serious a procedure to-day as an abdominal hysterectomy in the hands of an expert operator. It is certain that if the tumor itself demands removal, it is better that the tumor, uterus and fetus in situ should be removed at once, without attempting a previous abortion. The recognized dangers in parturition of a myomatous uterus are atony, hemorrhage, peritonitis, gangrene of the tumor, rupture of the uterus and retention of the placenta. These dangers are all

present with abortion, some in a lesser and some in a greater degree than in labor at full term. The dangers of sepsis and hemorrhage are very much greater in induced abortion, while the dangers of rupture and gangrene of the tumor are less. Gusserow reports a death from intraperitoneal hemorrhage in induced abortion, from rupture of the veins around the tumor.

The statistics for simple myomectomy, without removal of the uterus collected by Landau, represent eighteen cases at different periods of gestation, ranging from twelve weeks to seven months, and in the hands of fourteen different operators, show four deaths and seven miscarriages. It was first performed by Péan, Dec. 15, 1874. It can be seen that the mortality for this operation is 22 per cent. and for abortion about 40 per cent. (Würkert¹ collected twenty-seven cases with seven deaths), not encouraging from either standpoint, notwithstanding the beautiful results produced by Schroeder, Landau, Frommel (four cases and one death), and others. The same author collected eighteen cases of super-vaginal amputation of an impregnated myomatous uterus at different periods of gestation, ranging from two to eight months, by different operators, with seven deaths, a mortality of about 39 per cent. (first performed by Kaltenbach, March 21, 1880). The operations of enucleation and amputation, from these statistics, are to be considered very grave undertakings, both for the life of the fetus and the life of the patient. Still, these statistics were collected before 1890, and the operation of abdominal hysterectomy in that period had a much greater mortality than now. It is to be hoped, therefore, that the statistics of the future, as well as of the past two years, will show a great improvement in the results of the amputation of the gravid myomatous uterus, over the period preceding 1890. Landau concludes: "Hysterectomy should be the operation of selection, in submucous, intramural and multiple fibroid, enucleation coming in question only where the tumor is pedunculated or of small size, and subserous."

The difficulties of operating on the impregnated uterus, contrary to belief, are less than in the non-impregnated, and Hoffmeyer says whoever has seen an operation on the gravid uterus must admit that this statement is true. The vessels are larger, the uterine body is lifted up out of the pelvis and the ligaments are more easily reached in the impregnated than in the non-impregnated uterus. The danger following the operation, the same author says, should be less, if care be taken to remove all of the placenta and membranes.

For operation, fibromata are conveniently divided into 1. impacted pelvic myomata. These are the most favorable for operation and they usually originate from the cervix uteri and can be enucleated through the vaginal wall, without opening the peritoneal cavity. This procedure, says Chrobak, should always be followed, except where the tumor is larger than a child's head. 2. Extra- or retro-vaginal impacted fibroids. These may originate in the cervix, or in the lower portion of the corpus uteri, and are usually in the process of the enlargement of the uterus, lifted out of the pelvis into the abdomen (Spiegelberg), and are removed by laparotomy. This may occur, even though they be retro-vaginal primarily, and originate from the cervix. 3. Abdominal fibroids. The latter usually originate from the body of the uterus, and are removed by celiotomy.

When should the operation be performed? In the process of enlargement, the uterus lifts itself out of the pelvis; the fibroid may remain in the pelvis or accompany the uterus. The symptoms of impaction, as a rule, are transitory, as the uterus accommodates itself to its surroundings. If, however, these symptoms persist, they must be relieved, either by lifting the uterus and tumor out of the pelvis, or by enucleating the tumor. The rule laid down by Schroeder is that the operation should be postponed as late as possible. He says the prognosis of hysterectomy is more favorable, particularly of retro-cervical myoma, the later in pregnancy it is performed, and most favorable, if performed at the end of gestation, because at this period we jeopardize the mother less, and favor the preservation of the child. When the period of gestation is complete and abdominal section is indicated, we must then decide whether it shall be Cæsarean section, Porro or hysteromyomectomy. The statistics of the Cæsarean section with fibroma show the results to be extremely discouraging; the majority of the cases terminated fatally, even with Säger's method. The Porro, without the removal of the tumor, can be accomplished in only a small number of cases and should not be attempted. Hysteromyomectomy is the most desirable as well as the most favorable, both to the mother and the child. The question of treatment of the pedicle, whether it be extra or intra-peritoneal, or a total extirpation, must be decided by the individual operator, as each can obtain better results with the method with which he is most familiar. True, the extra-peritoneal variety tends to longer convalescence, but it has the advantage of leaving the peritoneum practically without an abrasion.² Gusserow collects in all 228 cases; the mother died in 123, a mortality of about 54 per cent., and 67 children, a mortality of 30 per cent. This includes the operations performed in the pre-antiseptic period, and a few in the antiseptic period, but does not include any cases of the aseptic era. Chrobak in 1893 successfully treated a case of this kind, in which he performed the total extirpation on the three-month impregnated uterus with internal treatment of the stump. From Schroeder's standpoint, the most desirable time to operate is at the completion of the period of gestation, and the most favorable operation a hysteromyomectomy.

In the case here presented, the indication was for immediate hysteromyomectomy, as it was not possible to even sound the uterus from the vagina, and delivery through the vaginal route could not be thought of. The tumor was producing pressure symptoms, and pregnancy had only existed for three months. The broad ligaments were quite well elevated above the brim of the pelvis; the laceration produced in the left was caused by the great distance to which the uterus had to be elevated before the tumor, which was situated deep in the pelvis, could be turned out. The application of the ligature and clamps was less difficult than in the average abdominal hysterectomy where pregnancy was not present. The statistics collected by Gusserow are certainly not encouraging for allowing the pregnancy to continue to the full period of gestation. It would seem that the operation at the seventh month should give more favorable results to the mother and scarcely less to the child, as

¹ Centralblatt für Gynecologie, No. 45. Page 1056, 1893.

² This can also be accomplished by the total extirpation, with only a line of suture in the peritoneum in the floor of the pelvis.

the mortality to the latter is already 30 per cent. The cases reported by Dr. Thad. A. Reamy, of Cincinnati; Dr. Wm. J. Taylor, of Philadelphia; Dr. Henry B. Stehman, of this city; Dr. Chrobak, of Vienna, and the case here reported, are illustrations of the results that may be obtained in early hysteromyomectomy where the tumor is complicated by pregnancy.

FIBROMA OF VAGINAL WALL.

In the year 1882 there appeared from Keimwächter, an article on "Vaginal Myoma and Fibroma" (published in the *Zeitschrift für Heilkunde*, Band iii, S. 335, Praag), in which he collected fifty-three cases. It is the largest collection that I have been able to find. Breisky, in the year 1886, added five to this number (*Die Krankheiten der Vagina, Deutsche Chirurgie*, Lief. 60, S. 163), which included the cases of von Hermann, two from Gaye, one from Casewell, and one of his own. In addition to these, I find one from Hasenbalg (*Zeit. für Geb. und Gyn.*, Band 23, Heft 1, p. 52), and one from Archibald Donald (*Med. Chron.*, January,

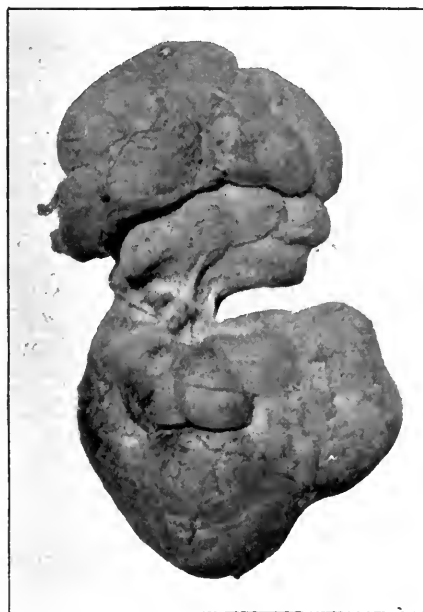


FIGURE 3.

1889, p. 103). The one reported by E. Hasenbalg was polypoid in shape. Of the total number, twenty-nine were in the anterior, twelve in the posterior, five in the side; others not given. The tumor may reach a considerable size. Oliver and Jacob's cases weighed a kilogram. In two old cases reported by Baudier and Gremler, the tumors weighed ten pounds. They are more frequently sessile than pedunculated. The development of the tumor is extremely slow. It may be observed at all ages. Martin reports a case in a child at birth. Traetzl found one in a child 15 months old. It produced obstruction of the urethra and rectum. They are most commonly detected at middle age, and are often found in old people, where they have existed for many years. The symptoms produced by them are merely mechanical, *i. e.*, pressure upon the bladder, urethra, rectum and surrounding tissues. One case was reported that was accompanied by uterine hemorrhage. The diagnosis is not difficult to make, the greatest care being necessary to differentiate it from cysts in the vaginal wall close to the urethra, and fibroma of the cervix uteri. It presents

a smooth, hard surface and can be distinctly separated from the uterus in the majority of cases. When located in the anterior vaginal wall, it usually begins at the urethra, close to the sphincter, and spreads laterally between the mucous membrane, as in the following case, *viz*:

S. B. was admitted to the Mercy Hospital Oct. 17, 1895. Family history negative. About four years ago, patient noticed that a tumor projected from vagina. It grew with moderate rapidity, and when about the size of an apple, it ulcerated on the surface and gave a very offensive discharge. The tumor up to this time had not caused any unpleasant symptoms, with the exception of a heavy, dragging sensation in the pelvis. She was operated on at that time (two years ago) and the protruding portion removed. About six months ago, she discovered that a prominence still remained in the anterior wall of the vagina. There was no pain nor discomfort. It has gradually increased in size: there were no urinary symptoms.

Examination: The smallest portion of the tumor is apparently attached to the wall of the urethra, in the median line.

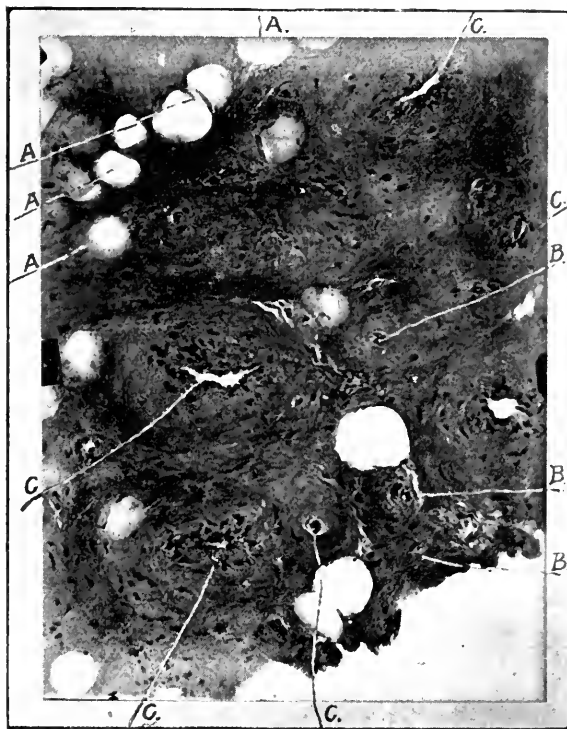


FIGURE 4.

It extends from that point to the left, out to the margin of the pelvis. It can be distinctly separated from the uterus, to which it is not attached. The largest portion presses upon the left side of the pelvis, in front. Rectal examination shows that the tumor is about an inch from the cervix uteri, and hugs the left pelvic wall closely.

Diagnosis: Fibroma of vaginal wall.

Operation: An incision was made in the anterior vaginal wall, beginning at the urethra, and extending to the left an inch and a half. The surface of the tumor was exposed, and it was readily enucleated with the finger from the submucous vaginal tissue. Cavity packed with iodoform gauze. Uninterrupted convalescence. The tumor measurements are, $9\frac{1}{2}$ c. long, and 5 c. in diameter; the thick end being 4 inches and the smallest $2\frac{1}{2}$ inches. It weighs 57 grams.

Microscopic examination: Myxofibroma of the vagina. The tumor is a typical fibroma, the seat of fatty and mucoid infiltration. The sites of fat masses are shown at A. The mucoid infiltration is not even. This material did not stain with iodine, nor with methylen violet. With eosin it stained somewhat more deeply than the other tissues though not markedly so: it was soluble in water. The conclusion was that it was mucus. The number of vessels in the tumor had been very large. Two factors, endarteritis and infiltration obliterated many of them, and greatly diminished the caliber of others. Some entirely obliterated are seen at B. Others partially excluded at C.

NOTES ON THE DISTRIBUTION OF *BACILLUS COLI COMMUNIS*.

BY JOSEPH MARSHALL FLINT, S.B.

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The peculiar but obscure relations existing between the bacillus of typhoid fever and bacillus coli communis have made it necessary to acquire a fuller knowledge regarding the natural distribution of the members of the coli-typhoid group. It has sometimes been asserted, although on insufficient evidence, (Blachstein, Kellogg), that many of the lower animals normally harbor intestinal bacteria capable of causing typhoid fever, and in this connection the recent investigations of Lösener¹ upon the occurrence in nature of bacteria possessing the characteristics of the typhoid bacillus having no apparent connection with an antecedent case of typhoid fever seem to be especially noteworthy. With a view to throwing light upon some of these questions of distribution, the following study was undertaken.²

The fact that bacillus coli is normally found in the intestines not only of man, but also of several domesticated animals has been well established by the researches of Escherich,³ Smith,⁴ Tremblin,⁵ Dyer and Keith⁶ and others. My own studies were chiefly upon material procured through the kindness of Mr. C. B. DeVry, while head-keeper of the Lincoln Park Zoölogical Gardens, Chicago. The feces, obtained as fresh as possible in each case, were collected with bacteriologic precautions and transported as speedily as possible to the University laboratory where they were plated at once. All told, the feces or intestinal contents of twenty-eight animals were examined; in fourteen of these bacillus coli was found either in pure culture or in numbers greatly preponderating over the other forms present. In several cases, *e. g.*, in the feces of the moose, I have found varieties resembling bacillus coli very closely, but these have been for the time being neglected, my aim being to discover the presence of the typical, unmistakable bacillus coli. Minor variations, however, appear in the tables following:

	Source.	Fremlin.	Dyer and Keith.	Smith.	Flint.
Man	Feces	+	+	+	+
Elephant	Feces	+	+	+	+
Buffalo	Feces	+	+	+	+
Cow, calf*	Feces	+	+	+	+
Horse	Feces	+	+	+	+
Moose	Feces	+	+	+	+
Elk	Feces	+	+	+	+
Reindeer	Feces	+	+	+	+
Llama	Feces	+	+	+	+
Cashmere goat	Feces	+	+	+	+
Lion	Feces	+	+	+	+
Tiger	Feces	+	+	+	+
Leopard	Feces	+	+	+	+
Bear	Feces	+	+	+	+
Black wolf	Feces	+	+	+	+
Wild cat	Feces	+	+	+	+
Dog	Feces	+	+	+	+
Swift fox	Feces	+	+	+	+
Cat	Feces	+	+	+	+
Swine	Feces	+	+	+	+
Raccoon	Feces	+	+	+	+
Kangaroo (no growth)	Feces	+	+	+	+
Rabbit	Feces	+	+	+	+
Cubana pig	Feces	+	+	+	+
White rat	Intestine	+	+	+	+
Mouse	Feces	+	+	+	+
Fish otter	Feces	+	+	+	+
Stork	Feces	+	+	+	+
Brown pelican	Feces	+	+	+	+
Dove	Feces	+	+	+	+
Snake	Intestine	+	+	+	+
Frog	Intestine	+	+	+	+
Nocturnal	Intestine	+	+	+	+
Turtle	Intestine	+	+	+	+
Perch	Intestine	+	+	+	+

The growth of these forms on gelatin and agar plates was typical and needs no comment. No active movement in the hanging drop was observed in well-developed colonies on gelatin and agar plates, but individuals from the younger colonies frequently exhibited rapid movements of translation. Upon potato the characteristic rich, yellowish-brown growth took place. In all comparisons of the growths on various media I have found it absolutely essential to conduct parallel cultures, since comparatively trivial changes in composition, age and temperature lead to results which are not strictly comparable.

The more important tests made are presented in tabular form:

	Nitro-indol test.	Formalin bouillon.	Gas production § (Glucose agar.) Glucose bouillon.	Coagulation of milk.	Dunham's rosolic acid medium. 24 hours.
Human feces	+	cloudy	+	+	alk.
Moose	+	cloudy	+	8 days	alk.
Lion	+	cloudy	+	3 days	alk.
Bear	+	cloudy	+	2 days	
Black wolf	+	cloudy	+	2 days	
Llama	+	cloudy	+	2 days	
Leopard	+	cloudy	+	8 days	alk.
Tiger	+	cloudy	+	2 days	alk.
Swift fox	+	cloudy	+		
Raccoon	+	clear	+		
Fish otter	+	cloudy	+		
White rat	+	cloudy	+	18 hours	
Snake	+	cloudy	+	quickly	
Frog	+	cloudy	+	slowly	alk.
Turtle	+	cloudy	+		

Investigation into the diet of the animals examined throws no light upon the reason for the presence of bacillus coli. The meat-eating animals, with the exception of the wild cat, have been found to contain bacillus coli in the feces, but it has been observed not uncommonly in those of the herbivora also.

Black wolf, + meats.
 Swift fox, + meats.
 Tiger, + meats.
 Wild cat, - meats.
 Leopard, + meats.
 Lion, + meats.
 Calf (month), milk. Probably fecal contamination.
 Fish otter, + fish, twice daily.
 Raccoon, + vegetables.
 Goat, - vegetables.
 Kangaroo, vegetables.
 Bear, + vegetables + bread.
 Llama, + vegetables + hay.
 Elk, - hay and oats.
 Reindeer, - hay and oats.
 Horse, hay and oats.
 Cow, + grass and hay.
 Buffalo, hay and oats.
 Elephant, hay and vegetables.

The facts here brought out emphasize the eminently saprophytic character of bacillus coli. It is sufficiently surprising that the ultra typical bacillus coli should occur normally in the intestine of so many animals, living in nature under widely different con-

* Kellogg and Novy could not find bacillus coli in feces of calf, and say that it is an unsettled question whether or not bacillus coli can pass through the alimentary canal of the cow. Kellogg holds also that bacillus coli in passing through the body of an animal acquires biologic characters closely resembling those of Eberth's bacillus.—Mod. Med. and Bact. Review, 1891.

† Flocca found the organism in the mouth of a suckling kitten.

‡ Fremlin does not state whether it is the common rat or white rat.

§ It is perhaps possible that a more exhaustive determination of the fermenting powers of these microorganisms might have revealed differences between them which the glucose test alone did not bring to light. See *e. g.* Smith "Notes on Bacillus Coli Communis and Related Forms." *Am. Jour. Med. Sciences*, Sept., 1895.

|| "Vegetable diet" consists of ordinary market vegetables, such as carrots, turnips, cabbage, etc. Animals fed twice per day.

ditions and with intestinal contents chemically quite dissimilar. It is further clear that the statement that "the true habitat of bacillus coli and its varieties is the intestinal tract of the higher mammals" will have to be extended to cover at least the intestinal tract of the lower vertebrates. It is interesting to note, for example, that in the intestinal tract of the poikilothermus frog is found the typical bacillus coli agreeing in every respect with the form isolated from the normal human intestine, even to finding its optimum temperature at 37 degrees C. The same is true of the culture of bacillus coli isolated from the intestinal contents of the sucker and the turtle.

Bearing in mind these facts, it is obvious that deductions from the presence of bacillus coli in water are to be drawn somewhat cautiously. Its presence, like that of "free ammonia," may or may not be indicative of sewage pollution. The assumption that bacillus coli or the closely allied forms found normally in the intestine of the lower animals can cause disease in man is thus far without foundation. The facts of epidemiology, indeed, go far to rivet our attention on the connection of cases of typhoid fever and similar diseases with antecedent cases in man.

THE TREATMENT OF AURAL CATARRH IN THE LONDON CENTRAL THROAT, NOSE AND EAR HOSPITAL.

BY FAYETTE CLAY EWING, M.D.

Late Senior Clinical Assistant Central Throat, Nose and Ear Hospital — and at the London Throat Hospital; Fellow of the British Rhinological, Laryngological and Otolological Association, and of the American Medical Association.

ST. LOUIS, MO.

In a previous number, having given the treatment of the different forms of nasal discharge classified as catarrhal, at the Central Hospital, I shall now proceed to make clear the method used for the cure of those varieties of ear disease usually termed catarrh, and divided into acute non-suppurative, acute suppurative, chronic non-suppurative and chronic suppurative.

Acute Non-suppurative and Suppurative.—Since the acute suppurative is only a more advanced or severe form of the non-suppurative, for clinical convenience they will be discussed together. Children who are victims of adenoids in the naso-pharynx are most susceptible to acute catarrh. Frequently the disease progresses no further than the non-suppurative variety. When due to adenoids they are removed under nitrous oxid gas, the curette generally being invoked, followed by a good finger scraping. When the faucial tonsils are enlarged they are removed first, at the same sitting, with a Mackenzie guillotine, the whole operation lasting only about half to three-quarters of a minute. There has never been a dangerous hemorrhage from tonsillotomy at the Central Hospital. When the tonsils are very large a cold wire snare is employed instead of the guillotine. In exceptional cases some of the surgeons use the Lowenberg forceps. The advantages claimed for the gas over chloroform are that it is quicker, and the patients recover sooner, and without the undesirable after effects. After the operation the patient is kept indoors, and fed on slops until the bleeding surface is somewhat healed. When

the exciting cause of the aural mischief is the adenoid hypertrophy, the catarrh generally gets well without further treatment, after the growth has been removed. The majority of patients do not come to the hospital until after the membrane has ruptured. Previous to this occurrence the pain is generally very severe, to relieve which several leeches are applied over the mastoid and in front of the tragus. These are supplemented by warm, wet cloths, which promote bleeding and dispel pain. Poultices and blisters are never applied. Instillations of morphin gr. ij to the ounce, or a 10 per cent. solution of cocain, are dropped into the ear if necessary. When ear drops are used they are warmed by first dipping the spoon that is to contain them in hot water, and then pouring a small amount into the meatus. When the acute symptoms have subsided the ear is kept clean by syringing with a lotion composed of boracic acid gr. x to one ounce of water. For a time, daily inflation with the Politzer bag is practiced. Before perforation, if the membrane is found to be bulging and tense, indicating serum behind, an incision is made and the contents let out. Before performing this operation the membrane is anesthetized, as far as possible, by the introduction of a pledget of cotton soaked with a 10 per cent. solution of cocain. Assistance is required to steady the head, preventing the removal of the spot from the line of light at the critical moment. Careful drainage is promoted, and the patient cautioned not to stuff the ears tightly with cotton-wool. Simple, uncomplicated suppuration is generally cured in a short time by careful syringing with the above boracic solution. The ears are carefully wiped afterward and a thin pledget of cotton-wool introduced. The "dry treatment" is seldom or never prescribed.

Chronic Suppurative.—The idea kept constantly in the patient's mind in treating the malady is cleanliness. The ears are required to be syringed at home one or more times daily with an alkalin solution, the one usually employed being composed of:

R. Sodii sulph.	3 ij.	60
Aquæ.	3 x.	300

Misce.

Or

R. Sodii bicarb.	gr. c.	6
Acidi carbolic.	5 ij.	8
Aquæ.	3 x.	300

Misce.

The special recommendation of an alkalin wash is that it dissolves the cerumen and mucus. After the cleansing wash an instillation is employed composed of:

R. Acidi boracici	grs. xvi.	96
Aquæ	3 i.	30

Misce.

Or if a more astringent effect is desired, the following:

R. Liquor plumb. subacet.	5 iij.	12
Aquæ	3 ij.	60

Misce.

Or

R. Zinci sulph.	grs. v.	30
Aquæ	3 i.	30

Misce.

As the case progresses inflation by the Politzer bag is practiced to prevent adhesion of the membrane of the inner wall of the tympanum, and ankylosis of the ossicles. It also assists drainage. The most frequent complication is extension of the inflammation to the mastoid cells, manifesting itself in pain, tenderness and swelling. The pain and swelling may be

¹ Arbeiten a. d. k. Gesundheitsamt, XI, 1895.

² The work was carried out in the bacteriologic laboratory of the University of Chicago under the direction of Prof. Edwin O. Jordan.

³ Fortschr. der Med., 1885, III, 515.

⁴ Bulletin No. 6 of the Bureau of Animal Industry, Washington, 1891, pp. 9-41.

⁵ Archiv f. Hygiene, XIX, (1893) p. 295.

⁶ Technology Quarterly, vol. VI, No. 3, October, 1893.

present without the cells themselves being involved, in which case an incision is made down to the bone, over the site of the swelling. Should the cells show involvement, a flap of skin is turned back and an opening made into them with a small trephine designed for the purpose, or with a sharp gouge, generally the latter instrument. After they have been well exposed the cavity is washed out with a 1 to 2,000 solution of bichlorid of mercury, or the following:

R. Hydrarg. biniodid	gr. $\frac{1}{4}$.	015
Sodii iodid.	gr. $\frac{1}{4}$.	015
Aque	$\frac{3}{4}$ i.	30

Misce.

Care is always exercised that the solution pass into the cavity and out of the external meatus. Drainage tubes are inserted, and the ear kept carefully syringed. The tubes remain until the discharge ceases. The further complications that may attend chronic suppuration are thrombosis of the lateral sinus, cerebral abscess and meningitis. Cerebral abscess is opened and the pus let out, and the others are treated on general principles. Constitutional treatment and general hygiene are carefully looked after.

Chronic Non-suppurative.—Realizing that non-suppurative catarrh in the large majority of cases is the result of pathologic changes in the post-nasal chamber, and that a catarrh originating here, through extension into the Eustachian tube may produce a stenosis of its caliber through chronic inflammatory thickening of the mucous membrane, special attention is directed to the treatment of post-nasal catarrh and concomitant or producing conditions. Inflation is practiced regularly, in order to keep the tube patent and prevent fixation of the ossicles, and also for the purpose of supplying the normal quantity of air to the tympanum. When only one ear is affected or there are any special reasons why both tympana should not be inflated, the catheter is used. While the inflations are in progress the membrane is carefully watched for evidences of relaxation, in which case they are not done so often. In order to stimulate the lining membrane of the tube to a healthier condition vapors are employed, a favorite being:

R. Chloroformi	āā 5 ij.	8
Etheri acet.	ad 3 i.	30

Misce.

A few drops of this solution are blown into the middle ear through a Dundas Grant¹ self-inflator, or from an ordinary Politzer bag with an expanded nozzle. The inflator is a simple and inexpensive instrument, and is supplied from the dispensary to patients. It consists of a glass tube about two inches long, contracted at both ends. The expanded center contains cotton, and one end serves as a mouthpiece, while to the other is attached a piece of rubber tubing about fifteen inches long. A smaller piece of glass tubing is connected with the other end of the rubber, and over this fits a rubber nosepiece. After a few drops of the ethereal mixture is dropped on the cotton the patient fits the nosepiece in one nostril, closing the other with his fingers, and blows steadily with puffed-out cheeks, until he feels the membranous movement. The *minimum* force necessary to produce this result is advised. The vapor can be specially directed to one ear by stopping the other, and turning the one to be inflated upward. Chloroform greatly facilitates the passage of air through the tube. Dr. Grant claims brilliant results from this method of inflation and medication,

where Politzerization produced no appreciable benefit, and he attributes the good results to the *minimum* pressure employed. In long continued inflation the advantage of the Grant method is obvious. The Eustachian bougie is seldom used in this hospital. Massage is advocated in desirable cases, the instrument being Siegle's pneumatic speculum or some modification of it.

3526 Olive Street.

COMMON GROUND OF MEDICINE AND DENTISTRY.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY JOSEPH ROACH, M.D.

BALTIMORE, MD.

At the outstart, definitions are necessary, and it is well to state, that the term medicine includes all that the average practitioner would expect to do, who did not think of establishing himself in any one of the numberless so-called specialties of medicine. For convenience, I will call dentistry one of these specialties, although it might be shown, that it is so distinct and so peculiar as to make it well nigh a thing by itself and difficult to place with any of the specialties. If it be surgery, many operations consist in cutting out decayed parts in an organ so constituted that it has of itself no power to make use of the vis medicatrix naturæ, found in other organs and tissues, and with filling the same with some foreign material. The sole use of that material is to prevent further progress of the disease and to serve as a substitute for grinding and cutting food.

There is no blood, no ligation of arteries, no stitches, no sutures are made; and the patient is dismissed, on the spot, cured by a surgery, of which it might be said, that its only relapses are due either to mechanical imperfections in the operations or to inherent faults in the structure repaired. True it is, that one department of this work trenches on surgery thus far; that in the exploration of the canals, occupying the roots of teeth, either by a failure to remove living tissue or a failure to disinfect any decomposed tissue, a local sepsis may occur, resulting in abscess and occasionally invoking grave consequences. But even this does not ordinarily rise higher in the scale of surgery, than the treatment of a felon on the finger. I have thus purposely taken a low view of the daily work of dentistry for this reason. I think possibly too much pains have been taken by its membership to elevate a most useful, nay, a most indispensable calling, into a position to vie with surgery proper. I say daily work, for while it is true, that, as dentists, we are occasionally called upon to repair a fractured maxilla or even extirpate a tumor of the jaw; such operations are but occasional and in the nature of the case, it seems to me to fall as naturally into the domain of the general surgeon, as does the fracture of the femur. The true usefulness of the dental surgeon in such cases rests in his ability as mechanician to skillfully form and adjust special splints in case of fracture. This ability he forms from his daily work noticing artificial dentures or in his possessing special, cutting instruments in the form of burs, etc., for the dental engine, instruments, peculiarly adapted for his own work in removing decay from teeth and turned to occasional use as above in removing tumors. Still none the less skill-

¹ One of the surgeons.

ful, is the work of making plates, crowns, bridges, etc., where to the dexterity of the mechanic must be added the fine eye of the artist, restoring sunken features, harmonizing incongruities and above all and most perplexing of all, pleasing or failing to please the tastes of fading humanity.

But while all the above may be true, and the work of the average dental surgeon may be largely mechanical, the fact, that both the surgeon and he work on the human body, makes a bond of union between them, which is worth study, inasmuch as whatever links in this bond are found to be the common property of both, are of much greater interest than any dissimilar points.

Of the maladies of common interest I will mention those often obscure and occasionally grave diseases, that involve the maxillary sinus. This is obvious for the reason, that in such cases the dental surgeon very often is apt to be the first observer on the ground. For whether we view these diseases as arising from diseased teeth or from some more remote and obscure cause, the dental surgeon, if he be ready to take up such cases for himself or turn them over to the surgeon, is none the less called on to diagnose accurately the symptoms, that they may be treated as purely from tooth-trouble or he may proceed on some other line. It is not in the province of this paper fully to describe all the various troubles, that may arise in the maxillary sinus; but, if you will throw with me a rapid glance at its position and uses, it will be of service in following any line of treatment that may be suggested. It is situated above the so-called jaw teeth on either side of the upper jaw and extending from the first bicuspid (sometimes the cuspid) backward to the second molar of the same. Its size varies and its exterior or facial walls are quite thin, the palatal wall stronger and its floor very variable in shape and thickness. The only opening into it upward is into the nasal cavity. The situation of the cavity is surgically important, for when we consider the tendency of all mucous-membrane covered surfaces to catarrhal troubles and the position of any cavity without natural drain, shut in by bony walls, and its only outlet narrow and pointing upward, we see at a glance how the difficulty or impossibility of any natural drainage and the tendency of fluids once accumulated could give even more trouble than does occur. Indeed if we consider the tendency of catarrhal troubles to spread by continuity of surface, it seems a wonder that all cases of chronic nasal catarrh do not involve engorgement of the antrum itself. Certainly this is what one might expect. Yet it would seem that this is not only not true; but that, on the other hand, certainly from the partial view of the case taken by the dental surgeon, the lighting up of antral trouble can be traced often to diseases of the teeth, the roots of which lie under its floor.

The dissecting table reveals to the dental pathologist a curious state of affairs just here; but, in order to grasp this situation fully, it is necessary to state what comes much more closely under the observation of the dental surgeon, a fact that only the physiognomist studies, as it should be, and that is, that in inheriting our tendencies, we inherit a mixture. Small jaws with large teeth are the rule, occasionally large jaws with small teeth: the back teeth of the father, the front teeth of the mother or vice versa. The jaws are sometimes so narrow and cramped and the teeth so large, that they crowd each other and such a lack of

blood in the jaw, from non-use in mastication, makes bone and muscle without stamina. The result is, that the large teeth of the upper maxilla, the roots being formed physiologically, by addition to their length are either forced through the floor of the antrum, or else, in the evolution of that chamber from six years to twenty-one, the periosteum fails to build thickly enough to cover those roots.

They are, however, always covered by the membranous lining of this cavity, else the vessels, passing into the foramina of these teeth, would be exposed to the atmosphere. All this is not likely to involve the antrum in pathologic trouble so long as the roots of these teeth are sound, but it may be fairly stated, that more than one-half of the patients, falling into the dentist's hands, sooner or later have pulpless molars, the roots of which project through the floor of the maxillary sinus and are objects more or less irritating to the tissues against which they rest. Again in the case of molars, the roots of which do not pass through the antral floor, in the case of devitalization, an ordinary alveolar abscess may occur with the sequelæ of absorption of the alveolar plate at the tip of the root and the outflowing of pus into the antrum itself. It is true, that an abscess in such situation might not be of grave consequences, yet it is plainly a situation of risk. This may not often exist, for the reason that the widely forked roots of the upper molars and their nearness to the outer walls of bone cause development of fistulous openings, away from the antrum, yet it is a source of danger and as such should be studied. Dentists devitalize and remove the pulp from the roots of such teeth. This is a very usual, almost daily, operation. But while an earnest and faithful effort is made to perform this operation thoroughly, so attenuated are the canals of the molars, that it is not at all certain that all the pulp is removed. In such a case it is easy to see that any filling material forced into the root canal may force particles of dead tissue through the foramen and into the tissues above, inoculating these with septic matter; or if disinfectants have been used there, such as carbolic acid, corrosive sublimate, etc., may be forced through to the injury of a tissue which has, as described in the outset, no drainage in case of chronic irritation. I have said enough on this subject, I dare say, to call your attention to certain lesions of the antrum, that are common ground of observation and treatment of both dentist and surgeon, and call attention in conclusion to a case, sometimes very grave, always painful, that of an impacted and abscessed third lower molar.

The same causes to which I have already alluded, as dwarfing the upper jaw, conjoin to make the lower both small and short. In the evolution of the lower wisdom tooth, it seems less often to share in the dwarfing process than the corresponding upper tooth. In a word, it is often too large for the space between the second molar and the angle of the jaw. In consequence its eruption is so interfered with, that it may be either only partially erupted or it may be impacted at an angle against the second molar, appearing through the gum slightly or not at all. Abscess of this tooth often involves not only the tissues immediately around it, but the tissues of the throat become inflamed and grave results ensue. It is pretty well established that throat trouble of a serious, or even fatal character, has been set up by an agency seemingly so unimportant. Abscess, opening into the

pharynx, is certainly one of the sequelæ of this trouble. I have been told of cases, where the infiltration of pus between the muscles of the neck and connective tissue proceeded to the formation of fistulous openings on the stomach with ordinary results of blood poisoning.

I have said enough to indicate a common ground for dentistry and surgery in the two cases above cited. Many more might be mentioned, if time permitted, to strengthen the statement thereof.

THE DESTRUCTION OF CHILDREN'S TEETH—CAUSE AND PREVENTION.

Read by title in the Section on Dental and Oral Surgery at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY J. G. HENISTER, M.D.
BALTIMORE, MD.

The destruction of children's teeth is to me, as it must be to all of you, a source of the greatest regret, and ordinary methods have failed to overcome the difficulty. It would be useless for me to attempt to go into details as to the cause of this condition, as it must be perfectly apparent to all, who stop to consider a moment. I think the first and greatest cause is neglect and ignorance as to the proper time and means of caring for the teeth. I tell you, gentlemen, it is astonishing to see the ignorance of some parents in regard to the teeth of their children. They will come into your office with a child and point to a six-year molar with the crown nearly destroyed, and say: "Doctor I wish you would extract this little snag." You will answer, "That is a permanent tooth and should be preserved." They reply, "Oh no that is only one of the baby teeth." You insist that it is a permanent tooth and refuse to extract it, and they leave your office a look of great incredulity, go to some one else who will extract it, and you will probably never see them again. This ignorance is not confined to a few of the poor, who are unable to procure the services of a dentist but extends to others who have plenty of time and means, but who never think of their children's teeth until they are crying with the pains of toothache. There is still another class of parents, who do all that they think necessary by insisting upon the use of the tooth-brush and dentifrices, but never think of consulting a dentist, so long as the child does not complain. They make a mistake, common to a great many, that the incisors are the first permanent teeth, and thus utterly neglect the six-year molar, thereby leaving it for a year or two exposed to the inroads of caries, without any protection whatever.

Another important cause of this decay is in the use of improper foods: by double bolting in the craze for white flour and bread, the phosphates or bone-making properties are taken away, and as a consequence, the teeth of children are imperfectly developed. I suggest to my patients the use of corn bread and graham bread, and I also prescribe the "Syrup of Hypophosphites" to endeavor to check and restore the loss of the lime salts of the teeth.

I have tried to enumerate a few of the causes of the loss of the teeth of children; I now come to the methods of saving them and to the responsibility of dentists and physicians alike. I have spoken to physicians about the matter, and they nearly all disclaim any responsibility, saying: "The teeth are not in our

line, that is your work." This is a serious mistake. No physician who has the welfare of his patients at heart can afford to neglect the teeth, for in the mouth begins the process of digestion, and if the food is not properly masticated, it goes into the stomach in lumps, and gives the digestive organs there, so much work that they become impaired and unable to properly perform their functions. We have been called a "nation of dyspeptics" and the cause has been attributed to the rush and hurry of American life, in eating too much and too rapidly, but I do not think this is the entire cause. The teeth being imperfect, imperfect mastication is the result, which is an important factor in this distressing complaint. The physician says, "What can I do? You would not have me fill the teeth?" No, that is entirely unnecessary and out of his line, but he can, at least, examine the teeth of children, and insist upon the parents taking them to some careful dentist. This is not a mere suggestion; it is his duty, a sacred obligation. If the nose, eye or ear is affected, does he not examine it and insist upon the parent taking the child to a specialist? Do you not think that the teeth are of sufficient importance to warrant equal care? I think so and say that the health of future generations will, in a great measure, depend upon the preservation of the teeth now. It has been predicted that the "coming man" will be toothless and hairless, and if things continue as they have been going, this will probably be so. It has been demonstrated by scientists that deformities and malformations can be transmitted from parent to offspring. If it is so with other parts of the body, why not with teeth? Jaws are sometimes entirely stripped of teeth, and when some teeth do remain they are only vestiges of what they should be. This I think is a deformity that can be transmitted.

I have observed on several occasions that peculiarities of the mouths of parents were inherited by children: for instance, I saw a mother who never had a left superior lateral incisor. One of her sons, in fact, the only one of her children I ever saw, had the same peculiarity. So I might go on giving examples of what will probably happen if we do not save the teeth of the children. You all know that the field of action of the dentist is, in a manner, circumscribed. He can not regularly go the homes of his patients to examine their teeth, but must wait until they come to him. Now here is where the physician should do his part. He usually has the care of the child from its very infancy, and if he would occasionally make a careful examination of the teeth of his little patients, and send them to the dentist, the small cavities of decay could be filled with some simple material, and the teeth thus preserved indefinitely. A short time ago a physician, whom I know, insisted that a mother should take her little girl to a dentist, saying the six-year molars were decayed, and required filling. She was brought to me and I found that the teeth were badly decayed, and so sensitive that I had great difficulty in persuading the child to allow me to do anything to them. She was eleven years of age; if this physician had examined her mouth regularly, and insisted upon her going to a dentist the caries could not have made such progress. Dr. Bonwill, the eminent Philadelphia dentist, has said that the only way he has ever been able to do anything with the six-year molar, was to fill every tiny spot of decay. So once again I beg of physicians to watch the mouths of the children, and send them to a dentist.

Now, gentlemen of the dental profession, what is our duty? In the first place, we must endeavor to educate our patients. How can it be done? I have seen little treatises upon the care of the teeth, written from time to time by dentists and others, who have given this matter some attention, but as a rule they were too scientific for the average lay reader. What is needed, and what I would suggest is the publication, under the auspices of the AMERICAN MEDICAL ASSOCIATION, or the National Board of Dental Faculties, of a small tract or leaflet, written in plain, simple language so that any one can understand it, describing the order of the eruption of the permanent teeth, and the proper means of caring for them, and warning parents of the necessity of preserving the temporary teeth until the permanent teeth appear. These little papers could be given our patients, and I think, in this manner, great good could be accomplished. Another method that has occurred to me, is the preparation of short articles upon the care of the teeth, written in such a manner as to interest, and at the same time instruct, the children as to the necessity of taking care of their teeth, these articles to be published in juvenile papers, such as *St. Nicholas*, *Chatter-box*, *Golden Days*, etc. This is only an idea of mine, and may not be practicable. Everything is to be published with the sanction of some recognized medical or dental society, thus removing from it every semblance of quackery or advertising.

Now, gentlemen, I have presented these few ideas of mine. I have attempted nothing scientific, and have given no new and startling theories, but have endeavored to express myself in plain, simple language; and I would ask you not to hesitate in criticism of me, and my suggestions, for my object has been to provoke discussion, thereby bringing out the views of those present upon the subject. I thank you for your kind attention, and will say, in conclusion, if this paper is the means of saving only a few of the teeth now annually lost, I will be very happy.

THE MERCURIALS.

BY S. V. CLEVENGER, M.D.

CHICAGO.

(Concluded from page 366.)

Calomel.—Adopting Schmidt's¹² analysis of pancreatic juice, I found that it required 21 grams (323 grs.) of the official hydrochloric acid to neutralize 143 grams (2200 grs.) of this artificial pancreatic juice. The proportion was as 1 to 7. One part of hydrochloric acid will neutralize one and one-half parts of potassium hydrate. Then the alkalinity of pancreatic juice is to potassium hydrate as 7 to 1.5, or it requires 4.6 times as much pancreatic juice as caustic potash to neutralize the same weight of muriatic acid. Schmidt's quantities being parts of 1,000. I am thus enabled to place the alkalimetry of pancreatic juice at 4.6 parts per 1,000, which agrees remarkably with Matteucci's estimate of the lymph and chyle alkalinity being equivalent to 4.3 parts per 1,000, in terms of potassium hydrate. Bidder and Schmidt estimated the amount of pancreatic fluid daily secreted by man as 7 ounces (224 grams). This is equivalent to 10 grams (154 grs.) of potassium hydrate and sufficient to reduce 42 grams (647 gr.) of calomel into black oxid of mercury. At least it is safe to presume that an ordinary dose of calomel is converted into black oxid

of mercury as soon as it encounters the pancreatic fluid. Black oxid of mercury is one of the most unstable compounds; at bodily heat it will yield oxygen and readily be converted into metallic mercury in the presence of deoxidizing substances. Liver sugar, or the glucose formed by pancreatic juice acting upon starchy matter, is quite sufficient to convert the black oxid into metallic mercury, by deprivation of oxygen at bodily temperature.

At this stage it might be expected that calomel would act the same as blue mass, and generally speaking this is true, though the liberation of the small amount of chlorin and formation of chlorids of sodium and potassium would of itself accelerate glandular action in the gastro-enteric vicinity. The globules released from calomel average smaller than those in pill mass, though many of the spheres are quite as large.

Parrish claims that "long trituration of calomel increases its power to salivate."¹³ This pulverization may cause the liberated globules to be more widely distributed in the alimentary canal and hence prevent any tendency of the lesser globules to form larger ones. In the finer divided state the metal would be able to act more rapidly through the circulation. At 10 A.M., to a chicken weighing four and a half pounds, eighteen months old, I gave 5 grains of calomel. At noon it was sick and very thirsty; 9 P.M. I blew 10 grains more calomel into its pharynx, and at 10 o'clock P.M. killed it. It ejected four ounces of water from its mouth, mixed with the last dose of calomel I had given it, and I recognized black oxid crystals in this liquid which apparently formed above the crop. I did not expect conversion to occur at this point, but it indicated the general tendency of mercurials toward decomposition everywhere in the body instead of a formation of higher salts. The feces contained mercury globules. Mercury was distinguishable by the microscope in three out of five parts of the chicken's blood; traces of calomel and black oxid were discernible in the proventriculus and gizzard; a few crystals of the black oxid with a great many globules of the metal were found in the upper intestine, with only metal lower down; the liver contained the metal, while the mesenteries held unmistakably large quantities of the globules, ranging downward in size from those usually found in blue mass. The liver globules were small, while those in the mesenteries were large.

Frequently repeated, small doses of calomel impress the general system better since they allow reduction and absorption to occur at intervals, insuring complete reduction and absorption, and widespread dissemination through circulatory channels. This is no less true of the mercurials in general.

From remote periods it was supposed that salt and acids converted calomel into corrosive sublimate in the stomach though this has been repeatedly shown not to be the case. One of the denials was made from numerous experiments by Verne:¹⁴ "No poisonous compounds are generated from calomel in combination with such bodies as salt, sugar, citric acid, etc.; and whenever such mixtures have been followed by alarming symptoms the calomel must have been an impure article. The protochlorid of mercury is really a more stable compound than ordinarily considered, and it would appear that bichlorid is more easily converted into the proto combination rather than *vice versa*."

Upon testing the stocks of calomel in a dozen drug

¹² *Annalen der Chemie und Pharmacie*, 1894, XCH, p. 33.

¹³ *Pharmacy*, p. 290.

¹⁴ *Repertoire de Pharmacie*, June 1879.

stores in Chicago I found corrosive sublimate traces in nearly all, and in that of a few manufacturers the amount to the ordinary dose must have rendered this chlorid far from "mild." So, as Verne notes, when calomel acts harshly it is probable that it is impure by containing the bichlorid.

Further, as to the mistake that a higher salt may be formed from a lower mercurous compound Wurtz¹⁵ says: "Bichlorid of mercury is easily reduced to the monochlorid or even the metallic state by many agents. Light will precipitate calomel from an aqueous solution, and many organic substances reduce the bichlorid to calomel or even to quicksilver, especially under the influence of light." In the face of these facts it can hardly be logically maintained that calomel shows a tendency to assume a higher state of oxidation. It also appears absurd to prohibit the consumption of acidulous food while administering calomel, the more so when we consider the presence of free hydrochloric acid in the stomach, and remember that this acid reacts with calomel only at a boiling temperature.

Corrosive Sublimate.—"Mercuric salts are converted into mercurous by sugar."¹⁶ According to this view therapeutic doses of the bichlorid would change into calomel in the duodenum, but this calomel must by extremely minute division liberate much finer globules of mercury in its further reduction to black oxid and metal. But pancreatic conversion of the bichlorid into yellow oxid takes place in the duodenum, and this oxid is absorbed into the circulation, where its conversion may occur slowly into the most minute metallic globules. The fact that toxic doses affect mostly the esophagus and stomach shows that the extra amount of chlorin operates corrosively until the compound is changed by the alkaline pancreatic juice. The transformation of the yellow oxid would occur in the liver, or, if it remained long enough, in the intestines, by the glucose it would encounter, for the yellow oxid is reduced by glucose as well as is the black oxid, only less rapidly.

The bichlorid of mercury is not the only substance that will coagulate albumin, nor does it enter into chemie combination with albumin. Excess of the latter will dissolve the bichlorid, showing that the whites of eggs alone can not be relied upon as an antidote for the bichlorid of mercury.

A better antidotal method is to give at once an alkali, thus converting most of the bichlorid into yellow oxide; then white of egg, with demulcents, to allay the irritation caused by the corrosive chlorid. That this corrosive action is due to the chlorin liberated is evident from the fact that no other mercuric salt formed with another radical produces the distress peculiar to large doses of the bichlorid. Local applications of this salt are apt to be accompanied by severe effects, because the energetic material does not meet with as strong an alkali as it would in the intestines, and hence is not at once converted into a less active form. The blood, being alkaline, would gradually reduce it, but not until wide-spread, well-marked effects had been experienced. Doubtless the antiseptic property accompanies the mercury, in this soluble form, into the blood, adding to its efficiency as a remedy in syphilis, particularly where the disease is widely disseminated through the body and favoring the probability of syphilis being due to a microorganism. The sizes of the globules liberated

from the yellow oxid formed from bichlorid of mercury are incomparably smaller than those from calomel.

I have proved that corrosive sublimate is reduced partly into metal and yellow oxid in the pancreatic fluid, and part of the yellow oxid is reduced by the glucose of the intestine, the remainder undergoing slow conversion in the liver and blood, until the circulation contains the metallic form only, in a state of excessively minute division.

Chloral and chloroform each contain three atoms of chlorin, and resemble mercuric chlorid in coagulating albumin, and in having irritating and vesicating properties. Bernard believes that chloroform acts by temporarily coagulating the nerve cells. Albumin is given to antidote chlorinated water. Chlorid of lime and chlorin are both irritants; the former causes the same kind of gastro-intestinal inflammation as bichlorid of mercury. The metallic deposit is found on articles of gold worn next the person after taking mercury bichlorid, as well as in any other form. One tenth of a grain of red oxid taken twice daily in syphilis, resembles bichlorid in not causing salivation readily. In a case of corrosive sublimate poisoning, through a solution applied to the scalp in the dark by mistake for camphor water, local saturations with lime water alternated with whites of eggs rapidly disposed of the external distress, but strangury occurred, which doses of potassium iodid rapidly relieved. The kidneys had undoubtedly been occluded by the precipitated mercury globules.

The antiseptic effects of the bichlorid may be largely due to the phagocytic action of the minute globules released from the chlorin, which latter is poisonous to low plant organisms the smallness of the amount of chlorin being more than compensated by the nascent state. The metal in its mechanical form changes, and, in enveloping microorganisms, could be pictured as having ameboid peculiarities to a certain extent.

Cyanid of Mercury.—Some syphilographers prefer cyanid to bichlorid, claiming similar results from its use in the same doses, which shows that it was the mercury and not the material combined with it which exerted medicinal effects. As might be expected from the liberation of cyanogen in the stomach, none of the epigastric pains said to be caused by the bichlorid accompany the use of the cyanid. Cyanid is converted into bichlorid with hydrochloric acid. This may occur in the stomach, through the free acid there. A characteristic of cyanids is that the weakest acids decompose them with liberation of hydrocyanic acid. Its further reduction would be into yellow oxid, and the metal, as described above, under corrosive sublimate. Knapp's test for diabetic sugar with cyanid of mercury shows that sugar is very active in reducing the metal from this form, and this, I believe, explains its *modus operandi*. Differing from the other salts of mercury the cyanid is not decomposed by alkalies, so its conversion is through the stomach hydrochloric acid into bichlorid, then into yellow oxid, by the intestinal alkalies, and metallic mercury by glucose, which latter converts the cyanid direct into the metal, precipitating the same sized globules as does the bichlorid of mercury.

Mercurous Iodid. A synonym for the protiodid was the "green iodid" (which term has been dropped by the pharmacopœia of 1890 in favor of yellow iodid). Some French importations of a yellow pill of mer-

¹⁵ Dictionnaire de Chimie.
¹⁶ Miller's Chemistry, vol. II., p. 22.

curious iodid were examined by me at the request of a New York chemical manufacturing firm and I found that the yellow color was that proper to protiodid, and that the green powder under the microscope plainly revealed that it was composed of metallic mercury globules and the red biniod with some yellow protiodid. By recombination $(\text{HgI})_2 = \text{Hg} + \text{HgI}_2 + \text{HgI}$. The yellow iodid in the stomach heat could easily undergo this reduction and reintegration, but the acid stomach fluid and duodenal juices would separate the iodine and afford yellow oxid, and finally metal. If the mercurous iodid passed the pylorus unchanged it would more closely resemble calomel in its effects by resolution into black oxid and mercury and finally wholly into mercury. Schläpke says,¹⁷ explaining an interesting point in this connection: "It has been frequently observed that the external application of calomel may give rise to severe inflammation of the conjunctiva, if used simultaneously with the administration of iodid of potassium internally." This, Dr. Schläpke explains by the formation of mercury iodate and iodid, which in the presence of common salt or iodid of potassium are soluble and act as caustics. He finds that if potassium iodid be taken twice daily, in half-grain doses, its presence can constantly be detected in the conjunctival sac. Dr. Plym. S. Hayes¹⁸ detected metallic mercury in the urine of a patient who had been taking this salt. The patient developed renal symptoms which disappeared on the discontinuance of the mercury iodid, and were therefore regarded by Dr. Hayes as due to its causing emboli in the way previously described. An excessive dose reaching the kidneys unreduced would encounter urea enough to decompose more of the drug; the precipitate would thus occlude the uriferous tubules and account for the congestion.

Red Iodid of Mercury.—The biniodid loses its iodine in the pancreatic fluid, though a small amount of the combination may pass into the circulation, there to be decomposed by the alkaline blood. It resembles the bichlorid in responding to reagents, and is as poisonous, another indication that the mercuric combination owes its activity as much to the amount of the radical liberated in decomposition as to anything else. Topically the effects of concentrated iodine are obtained with mercurialization precisely as a similar application of the bichlorid exhibits the localized influence of liberated chlorine.

Ammoniated Mercury.—Hydrargyrum ammoniatum is prepared from the bichlorid, and to all intents remains corrosive sublimate, combined with ammonia. Its insolubility renders it ineligible for internal use. Pancreatic fluid acts upon it as upon bichlorid.

Mercury with Chalk.—Hydrargyrum cum creta is milder than blue mass. It does not contain the same percentage of metal, and the chalk does not maintain separation of the globules, which often are visible to the unaided eye. The metal in all the chalk mixtures examined was in larger spheres than in blue mass, hence the latter is much the better preparation.

The Oxids of Mercury.—The red oxid, as prepared by the pharmacopœial formula, contains mercury nitrate, and complete purification of the oxid thus made can not be accomplished without endangering the compound. In consequence it differs from the yellow oxid, though said to be an allotropic deutoxid, by its harshness and crystallization, the yellow being

amorphous and much milder; but as it contains twice as much oxygen as the black oxid, just as there is twice as much chlorine in the bichlorid, the yellow oxid would, in obedience to this general rule, be expected to act more vigorously than the black oxid. The latter has been given in pill form in place of blue mass or calomel, according to Wood¹⁹ and found to have identical effects. Dr. Christison²⁰ advises the use of black oxid ointment in place of officinal mercurial ointment.

Turpeth Mineral.—There has been much discussion over the chemie and physiologic properties of this preparation. After analyzing the contradictory statements of all accessible authors, I am justified in calling it a mixture of mercuric oxid and mercury sulphate, $\text{HgO} + \text{HgSO}_4$. It is an emetic like other metallic sulphates, and responds to all tests for the sulphate and oxid of mercury.

Ethiops Mineral.—According to the method of its preparation this substance is a mixture of sulphur and mercury uncombined, cinnabar and metallic mercury with sulphur, and sometimes a mercury sulphate.

Cinnabar.—Mercuric or red sulphid differs from the other mercuric preparations by being insoluble and undecomposed by alkaline solutions, consequently most of the dose will pass unchanged from the system, though some mercury must be liberated, for it acts rapidly as a mercurial. When used by fumigation, it liberates sulphurous acid gas and mercurial vapor. "In its native state there is reason to believe it has no action at all."²¹ It may thus be regarded as inert, owing to its insolubility. Anything apparently inconsistent with this view may be accounted for by presuming that other forms of mercury accompany the dose as impurities. If any authentic record could be found indicating how long the Japanese had used cinnabar and other crude mercurial minerals it would throw light on the history of syphilis.

Oleate of Mercury.—With a vague, ill-defined idea that all mercurials depend for their efficacy upon their conversion into an oxid in the body, Dr. Marshall suggested, in 1872, the incorporation of mercuric oxid with oleic acid as an eligible substitute for the common ointment. Any chemist can see that in Marshall's process, or even later improvements in modes of manufacture of this preparation, the oxid must be destroyed. In fact, a precipitation of visible metal occurs, the weight of which is subtracted, plus its oxygen weight, from the original weight of the mercuric oxid used, and the invisible remainder is assumed to be mercuric oxid in oleic acid. Squibb's label on the oleate bottles reads: "This bottle contains—per cent. of mercuric oxid in oleic acid." By decanting off the liquid, further precipitation of the metal, as metal, can be found, and under the microscope beautifully uniform and minute globules of metallic mercury in countless numbers may be seen suspended in the oleic acid. A mechanical mixture of oleic acid and minutely divided mercury presented very nearly the same appearance, the globules wanting in uniformity, which can be remedied by permitting the mixture to stand some days, allowing the larger globules to precipitate. This settling may prove to be the cause of the minuteness and uniformity of size in Squibb's oleate. So, instead of a mercuric oxid being introduced into the system by innunction with this preparation, a simple mercurial.

¹⁷ Medical and Surgical Reporter, vol. XIII., p. 12.

¹⁸ Chicago Medical Gazette, Apr. 5, 1880.

¹⁹ Dispensatory, p. 1257.

²⁰ Dispensatory, p. 1531.

²¹ National Dispensatory, p. 791.

reduced to such beforehand, is thus administered, and so acts. A Chicago physician applied the oleate several times to his axillæ, and soon after, on being dry-cupped, called the attention of Dr. J. S. Jewell (who was treating him for ataxia) to the presence of mercury globules visible in the cupping-glass. Prior to 1890 the yellow oxid of mercury was incorporated with oleic acid at a temperature of 74 degrees C. (165.2 degrees F.) which promptly reduced the oxid into metal. The later adoption of 40 degrees C. (104 degrees F.) merely delays the eventual reduction of the oxid. After I announced the instability of the oleate of mercury,²² Squibb²³ noted the tendency of his oleates to deposit mercury, and offered the 20 per cent. strength only as more stable than those containing less quantities of metal. Nevertheless at the present day the oleate still has its "looking-glass" deposit on the bottom of the bottles, and when the "oleate" is microscopically examined the metallic globules will be found slowly floating downward or suspended in the oleic acid. The oleate is *not* a yellow oxid but is rather a finer unguent of the metal.

The *Bibromid* resembles corrosive sublimate in most respects, and the bromid calomel. Donovan's solution contains the deutoxid, and completes all the medical compounds. All seem to be reduced directly or indirectly to the metallic state. As the therapeutic differences of mercury preparations are ascribable mainly to the differences in sizes of the globules, an intermediate effect might be expected between the mercurous and mercuric doses, should the extremely divided black precipitated mercury from stannous chlorid and corrosive sublimate be used.

The preparations of mercury may be divided into:

1. Simple mercurials which contain metallic mercury in a finely divided state and which act mechanically in the system.

2. Mercurous compounds which decompose first into the black oxid of mercury and then into metallic globules of about the same size as those in the simple mercurials, only the sizes are more uniform.

3. Mercuric compounds which decompose into the yellow oxid and then into much finer globules of mercury than are yielded by reduction from the mercurous salts. Mercuric cyanid passing more directly into the metallic state by the action of intestinal sugar.

4. Sulphur and nitrogen compounds not generally used as medicines.

The proportions of excipient and metal in the simple mercurials are easily estimated. By calculations based upon the combining weights of the mercurous or black oxid group one grain of metallic mercury is yielded by the reduction of the following weights of the compounds: Black oxid 1.04, calomel 1.175, yellow iodid 1.635, bromid 1.40 grains. The mercuric or yellow oxid group contains one grain of metallic mercury in the following proportions of the different compounds: Yellow oxid 1.08, corrosive sublimate 1.855, red iodid 2.77, cyanid 1.77, bibromid 1.80 grains. Essentially, all the mercurous salts act alike medicinally and are closely allied in their effects to the simple mercurials, but calomel will always hold its position as the most preferable of mercurous salts because it contains the largest percentage of base with the exception of the black oxid, which would take the place of calomel were it not for the instability of the oxid. All the salts of the mercuric

group, to which corrosive sublimate belongs, are based upon and decompose with alkalies into the yellow oxid of mercury, a dense amorphous powder, which further breaks up into extremely minute globules of metal in light, heat or deoxidizing agents such as sugar. These globules are, as a rule, incomparably smaller and more numerous than those obtained from the mercurous compounds. Micrometrically they number one hundred million to six hundred million globules to the grain. A dose of one-tenth of a grain of the bichlorid of mercury will contain, when decomposed by intestinal fluids, ten to sixty million globules. By spreading the solution over a square decimeter of surface, and precipitating with caustic potash solution, this area will show under the microscope a yellow powder. Glucose at the body temperature will cause these oxid particles to break into black points, which under high magnifying powers become apparent as mercury globules in the numbers mentioned.

The so-called "*Red Oxid of Mercury*" needs special reinvestigation, and I feel certain that sooner or later chemists will acknowledge it to be a nitrate, and that is not an oxid. In 1771 Priestley disengaged oxygen from potassium nitrate and three years later from a mercuric compound which he assumed to be an oxid because focused sun rays liberated therefrom a gas which supported combustion. Had nitrogen accompanied the disengagement of oxygen the result would have been the same, for nitrous oxid will also support combustion by parting with its oxygen which combines with the carbon and hydrogen of the candle, heat effecting the interchange. Nitrous fumes are given off by heating a mercuric nitrate. In processes for the conversion of the nitrate into the red oxid especial care is taken that nitrogen is included. Pharmacists have been vexed and puzzled over the reasons for some processes which afford promptly the characteristic red oxid crystals which at other times gave the yellow oxid only. Careful examination of chemical writings will show that whenever the yellow oxid is precipitated from a soluble salt it has been by a process which will exclude nitrogen and that whenever the so-called red oxid is formed nitrogen is included even if it abstracts it from the air direct (in spite of the assumed inertia of atmospheric nitrogen), or its free ammonia, as when the yellow oxid cools in the test tube and becomes red. The yellow is amorphous and is physiologically milder, and prepared in the absence of nitrogen. The red is crystalline and is harsh in its action when taken internally, and it can not be made when nitrogen is excluded. It is a mere assumption that the red is an allotropic form, and there are better reasons for believing it to be an insoluble subnitrate belonging to the great list of nitrates which mercury is more capable of forming than any other metal.

The mechanical color changes of mercuric iodid are not comparable to the differences between the red and yellow oxid tints, depending upon chemical associations. The U. S. Dispensatory acknowledges that complete purification of the oxid from the nitric acid can not be effected without endangering the compound. The British pharmacopeia calls it nitric-oxidum in recognition of the derivation and probable dependence upon nitric acid for its characteristics.

The following tables will enable comparisons of the wide dissimilarity between the two compounds:

²² Western Druggist, 1881.

²³ Semi-annual price list, No. 51, 1881, p. 15.

YELLOW OXID.

Prepared by precipitating mercuric solution with KHO. Forms yellow amorphous powder. When prepared in any way nitrogen capable of combining is excluded.

Has been proven to be an oxid.

Mercury forms only two oxids, the black and the yellow.

Combines readily.

Forms mercuric oxalate with cold solution of oxalic acid.

Readily forms oxychlorid with HgCl_2 solution.

Boiled with potassic bichromate it yields basic mercuric chromate $\text{HgCrO}_4 \cdot 2\text{HgO}$.

Does not blacken on heating.

Nitrogen in some form is required to convert it into the red oxid.

Its physiologic action is mild and not escharotic.

RED OXID.

Prepared by heating nitrate of mercury until red fumes cease. Forms red crystals. When otherwise prepared, as in air, forms with difficulty, owing to nitrogen not readily combining, but nitrogen is never excluded.

Has not been proven to be an oxid nor has it been found apart from nitrogen and responds to tests for sub-nitrate.

Mercury forms more nitrates than any other metal and unknown nitrates exist.

Combines with difficulty.

Does not form oxalate.

This change is very slow.

Similarly treated forms basic salt with large proportion of base $\text{HgCrO}_4 \cdot 3\text{HgO}$ (Millon.)

Blackens on heating (assuming the color of mercurous oxid).

Neutralizing its acid solutions precipitates the yellow oxid, thus abstracting nitrogen.

Its physiologic action is harsh, irritating and escharotic, and like other metallic nitrates.

The Toxicology of Mercury.—Where hydrargyria had been induced let us assume that in three months exposure to mercury fumes at the rate of a gram per day (which in quicksilver works can be considered a very moderate figure), and allowing one-half of this to have been excreted, there would remain forty-five grams of mercury lurking in the vessels, bones, viscera, muscles, etc., capable of division into thirty-three hundred and seventy-five million particles. Distributing these about the body by probabilities we can estimate three hundred million concerned in producing ptialism through the parotid, submaxillary and sublingual glands and branches of the internal maxillary artery, with a portion (say a million) bearing directly upon the cerebro-spinal centers through the carotid and basilar arteries. The condensation of any thousand of these globules in certain areas would be enough to produce nervous effects from chorea to paralysis.

Naunyn²⁴ says that living flowers serve as the most delicate reagents for detecting such dangerous impurities in the air, they die very rapidly in an atmosphere containing mercury. A gold leaf becomes rapidly coated in such exposure, and wood painted with flowers of sulphur becomes brown on the surface, owing to sulphid of mercury formation. It is not possible for a plant to live with its cellular interspaces, through which pass nutrient fluids and gases, clogged up with multitudinous particles of metal, and this is the exact condition of the poisoned plant under microscopic examination. Parasites with small tubular structures such as respiratory tracheæ are actually suffocated by these little bullets lodging in

these passages. I demonstrated that mercurial ointment killed bed bugs by occlusion of the spiracles, tracheæ and alimentary canal, a condition readily determinable by low magnifying powers.

All quadrupeds whose heads are frequently below the level of the spinal column would be most liable to have mercury accumulations in the vessels of the brain and cranium when poisoned by mercury, and Taylor²⁵ observes that "ruminants are easily killed by mercury ointment; their lungs are congested and head drops to the ground." That the mercuric salts are reduced to the metallic state is shown also by their elimination as metal in urine, feces, bile and sweat. The yellow oxid and a carbamid are precipitated from soluble salts of mercury in urine. The filtrate throwing down no precipitate with caustic potash shows that all the mercuric salt is decomposed. An excessive dose reaching the kidneys would encounter urea enough to reduce more of the poison which would occlude the uriniferous tubules and account for the congestion and transient albuminuria.

RECAPITULATION.

1.—Mercury acts mechanically as a deobstruent upon the glands and lesser tubular strictures, by virtue of its unstable chemic properties, its volatility and great weight.

2.—Its condition in the fluids and tissues is that of finely divided globules of the metal numbering upward of one thousand million (one billion, French) to the cubic centimeter, and as a vapor of the metal. In whatsoever form it may be taken, it is quickly precipitated as mercury, and without change is excreted or retained in the system, mainly in the bones.

3.—It cleanses the intimate visceral tissues by projecting from them materials of less weight, and in this way breaks up, removes or prevents morbid accumulations. In excess it occludes the tubular parts, and may produce any of the phenomena attending stasis of vital operation anywhere about the body, such as ulceration, congestion, paralysis, anemia, etc.

4.—The liver and inferior maxillary region for anatomic, and the former for physiologic, reasons receive most of its primary influences.

5.—It can be given in larger doses in warm weather or climates, because heat favors its elimination, systemic effects decreasing necessarily in proportion.

6.—Its antiphlogistic properties are merely deobstruent and detergent.

7.—Its value in syphilis is owing to its acting in the line of least resistance, breaking up any nidus the disease may form. The ability of the metal to envelop and carry microorganisms gives it an ameboid or phagocytic value. In phagedenic ulcerative processes it would be contraindicated, because the degeneration is too rapid to be effectually reached by mercury, which is not the case in slower-forming specific ulcerative stages. Its administration in these diseases could be regulated by the rapidity of degradative processes. Comparatively slowly acting morbid centers, or those of a congested nature, could be improved by mercury where the drug would only accelerate rapid tissue destruction.

8.—It is tonic, by increasing red blood globules whose formation has been prevented by glandular perversion, the metal removing the obstructions toward their formation, while in overdoses anemia is produced by occluding the vessels it, in small doses, cleanses.

²⁴ Ziemssen, p. 618.

²⁵ On Poisons, p. 353.

9.—The solubility and consequently superior penetrability of the bichlorid is probably productive of the mercurial characteristic effects which seem out of proportion to the amount of metal in doses of this salt; but it is not to be denied that chemic or direct neurotic influences coöperate with the metal in the more active preparations, and thus possess features of their own.

10.—Experimental evidence is opposed to probable formation of any compound in the body, and supports the belief that decomposition invariably and almost instantaneously follows its ingestion with the precipitation of mercury as minutely divided globules, from any preparation of which it forms the base.

PUERPERAL ECLAMPSIA AND ITS TREATMENT.

Read before the Marion County (Ind.) Medical Society.

BY J. T. McSHANE, M.D.

INDIANAPOLIS, IND.

In presenting this paper, with the reports of the cases which have come under the writer's observation, together with the treatment and results, it would be ingratitude not to mention the name of the late Dr. Ellerslie Wallace, of Jefferson Medical College, Philadelphia, who, after a large experience, taught with emphasis the value of venesection in puerperal eclampsia. His hand with which he emphasized his words, with a deformed index finger, the result of a dissecting wound, was not more apparent to me when he said relative to this subject "you are on a life saving mission: do your duty fearlessly, and bleed for effect, not for ounces of blood," than when at the bedside of my first patient with eclampsia. It occurred in 1871 in the case of Mrs. W., primigravida, aged 35 years. Labor was slow and a severe headache was complained of which did not yield to free administration of bromid of potassium. After four hours of moderately hard labor the patient complained of intense throbbing pain in the head, sudden fright and blindness, followed almost immediately by a violent convulsion. As soon as the convulsion subsided, preparations were made for venesection, but before it could be done a second convulsion came on. Without further delay the arm was constricted and a large stream of blood allowed to flow. A third convulsion came on while the blood was flowing. After this convulsion passed off the patient's face, which had been dark, swollen and distorted, became pale and placid, the pulse became weak and thready. The bandage was removed from the arm and the flow stopped. The os uteri was pretty well dilated and with the assistance of Dr. S. C. Dove, of Westfield, Ind., whose office was less than a mile away, the patient was delivered of twins, both of which were still. A good recovery followed.

Mrs. G., now of this city, had convulsions with two confinements, and also early in a subsequent pregnancy. Dr. Rodman, of Zionsville, now of Denver, saw her during her first attack. She had some fifteen convulsions before bleeding, none after, and two hours later she was delivered of a masecrated child. In her second attack Dr. N. G. Harold, of Carmel, Ind., saw her with me. She had had seven or eight convulsions before my arrival. She was large and plethoric and an unusual amount of blood was required to produce the desired effect. Labor advanced slowly and in about two hours she was again seized with a convul-

sion. The vein in the opposite arm was opened after which there was no more trouble, and as soon as dilatation was sufficient to admit of the application of the forceps she was delivered of a still child. When six months advanced in a subsequent pregnancy this patient had violent throbbing headache, a slight convulsion, clouded memory and intellect, all of which were immediately relieved by venesection. This treatment was repeated twice for the same symptoms, with the same happy results, before her term expired, when she was delivered of a healthy child, having no return of convulsions.

Mrs. W., lived at Nora, Ind., now of this city. She was delivered in her first confinement of a healthy child without unusual labor or other symptoms. Some two hours later she was seized with convulsions which were terrific in violence and came in quick succession. She had eighteen or nineteen convulsions, some of which were observed by Dr T. M. Hinshaw, who now lives in Westfield, Ind. On my arrival the doctor and the husband considered the case hopeless, and, indeed, it looked as if their opinion was correct. The patient was profoundly comatose, face almost black, swollen and distorted, leaving no trace of its former likeness, pulse quick and wiry, temperature high. As soon as the convulsion passed off a vein was opened and a large stream of blood allowed to flow. The amount drawn, though large, was disregarded, but the effects were eagerly watched. The face blanched, the pulse became thready and soft; the bandage was loosened. No more convulsions followed. The patient returning to semi-consciousness the next day heard her baby cry and exclaimed, "Whose baby is that?" Her recovery was not retarded. Her memory was thoroughly obliterated for a period of two days before and four days after delivery.

Mrs. S., multipara; a patient of Dr. W. O. Harland, now of Chicago. This patient was neither anemic nor plethoric. Soon after delivery she was seized with violent convulsions. She had taken chloral and chloroform without effect, and had had six or eight convulsions before my arrival. After a moderate bleeding convulsions subsided for a time. After an interval of two or three hours' rest, convulsions returned. Her pulse was hard and quick and the temperature was high. Blood was again drawn but in larger quantities, leading Dr. Harland to think the danger point was reached. In a letter received from Dr. Harland a few days ago, in answer to inquiry concerning this and another case, he says "we stopped the convulsions in Mrs. S., but we had to bleed her nearly to death to do it." The danger was more apparent than real. She had no more convulsions and was up and well in the usual time. A subsequent pregnancy was attended with a throbbing headache, disturbed vision, congested face and clouded memory, at the sixth month. A vein was opened and while the stream still flowed the grateful patient exclaimed "Oh, what a relief!" These symptoms reappeared at the seventh and eighth months, and the patient sought relief by the lancet both times. The delivery of a healthy child at term was normal.

Miss P., primigravida, also a patient of Dr. W. O. Harland. Convulsions came on early in her labor. She was freely bled after she had had five or six convulsions. The intervals were lengthened, but an occasional convulsion came on until the os was sufficiently dilated to admit the application of forceps. She was

delivered of a still child, after which she had no more convulsions. She made a good recovery.

Miss H., primigravida. Large, strong, domestic; walked four miles to the house of an acquaintance. She was dazed and unable to give an account of her visit or from whence she came. In a short time she was seized with a convulsion. My arrival was delayed some hours on account of the messenger bearing no intelligence regarding the nature of the case. On my arrival five hours after the first convulsion she was comatose; her tongue was lacerated and bleeding. The family in whose house she was had no knowledge of her labor nor her pregnant state. An examination revealed both, the os being considerably dilated. Her convulsions had been frequent and severe, according to her great muscular development. After venesection she had no more convulsions. She shrank from her pains, and being unconscious the assistance of two strong men of the neighborhood was required to hold her in position in the bed. In about two hours, dilatation was sufficient to admit of the application of forceps, when she was delivered of a large still child. The return of consciousness was deferred thirty hours after delivery.

Mrs. D., multipara, was attended in her labor by Dr. Leavens. She complained of blinding, throbbing headache during the progress of her labor. This was lightly regarded, the physician thinking it would subside after delivery. Labor terminated at 4 o'clock P.M. At 2 o'clock the following morning a summons reached me. She was in a convulsion when the messenger started, and was in a stupid state on my arrival. A vein was opened and about a pint of blood taken when, the patient expressing a feeling of relief, the bandage was removed. Thirty minutes later she was attacked by a second convulsion. The vein in the opposite arm was opened and the blood allowed to flow until the face became pallid. The patient being large and plethoric a large quantity of blood was required. No further trouble followed and the patient's recovery was not retarded by the loss of blood.

Mrs. K., of Mattsville, Ind., was seized with a convulsion during her third confinement. The premonitory symptoms were pronounced and a vein was opened just as a convulsion came on. A healthy child was delivered an hour later and her recovery was uneventful.

Mrs. S., primigravida, was attacked with convulsions while under the care of Dr. K. C. Hershey, who then lived at Mattsville, Ind. The convulsions were hard and came in rapid succession. She had a large but uncounted number before my arrival. Her pains had been constant, severe and distressing, but not of an expulsive character. Free bleeding resulted in temporary relief. Examination revealed dilatation to the size of a silver half dollar, and the os presenting high up against the sacrum, the result of obliquity of the uterus. Gentle pressure against the fundus and slight traction with the finger brought the os down to its proper position, when the labor pains became strong and normal, with intervals of rest. Consciousness returned so that the patient conversed intelligently. After waiting three hours the patient was left in the care of Dr. Hershey, the attending physician. After some time had elapsed he was called away from the bedside. The history of the case shows that the pains lost their distinct character, becoming constant and distressing. After four hours intermission the convulsions reappeared. On my arrival in

answer to a second summons the patient was in a moribund condition and soon expired. At the request of the husband and with the assistance of Dr. Hershey, the child was removed by Cesarean section. It was a perfect child, but as we expected, after so many convulsions, it was still.

Mrs. C., large, fleshy patient in fourth confinement. Had complained of throbbing headache for two days. A hurried messenger came with the report that she had fallen on the floor and they thought she was dying. Her term had expired and an examination revealed a dilated os, although no uterine pains had been complained of. She was in her fourth convulsion on my arrival. Her mouth was bleeding from laceration of the tongue. A vein was opened and a stream allowed to flow until the dark congested condition of her face gave place to pallor. Two hours later a still child was delivered and she made a good recovery.

Mrs. S., now living in Kansas; during her first confinement was seized with a terrific convulsion. This was in all respects like a puerperal convulsion, but the patient having occasionally had epileptic symptoms, this was at first thought probably of that character. Chloral hydrate and bromid of potassium were freely given but in less than an hour a second convulsion came on which was followed by stupor and continued congestion of the face. My conclusion was that, although a slight epileptiform manifestation had been observed once or twice a year, this was puerperal, and fearing death of the child and danger to the life of the mother if the convulsions were repeated, she was bled until the desired effects were produced. No more trouble followed and she was soon delivered of a healthy child. It is a matter of regret that examinations of the urine were not made in each case reported. In the four cases in which analyses were made, there were traces of albumin in two. Those who have had the misfortune to witness cases of puerperal eclampsia will readily appreciate the delay which would attend such examination before treatment. The patient and child are in great danger and the necessity for prompt action engages the physician's time and attention. Whether there is or is not albuminuria, although of scientific interest, is at the instant of little importance. The treatment which relieves in the one case also relieves in the other.

The etiology of puerperal eclampsia is not definitely settled. Perhaps Löchlein covers the ground by stating that "no explanation of eclampsia has been fully established, and the disease has certainly more than one cause." Albuminuria is present in a majority of the cases, but this is not sufficient to afford a positive decision that the condition of the kidneys which produces albuminuria is the cause of eclampsia. Albuminuria is said to be present in five cases of pregnancy to one of eclampsia. It is pretty generally conceded that, whether the case is one of eclampsia gravidarum, parturientium or puerperarum, the arterial pressure is high, and this is true whether the blood is rich in red corpuscles or not. This condition may depend upon the action of the vasomotor system, or to increased volume of the circulatory medium, or both. The kidneys become clogged by congestion resulting from high tension, and their function is partially suspended, in which case albuminuria may or may not be present. Women in pregnancy are much inclined to accumulate flesh and when constructive metabolism is in excess of destructive meta-

bolism, toxemia and plethora are simultaneously present. When albuminuria is present, unless chronic, the patient recovers without delay after cessation of convulsions, when the pressure is removed allowing the kidneys to assume their normal state. As a rule, the condition of the patient who is to become an eclamptic is not incompatible with comfortable health; the foudroyant out-break being the first announcement of departure from the physiologic state.

Reflex uterine irritation is said to be a cause of eclampsia in some cases. The fatal case of Mrs. S. reported above, is probably one of this class. Obliquity of the uterus disturbed the normal expulsive character of the pains. When the uterus was righted the constant grinding, distressing pains ceased, giving place to normal labor. When left without support obliquity again took place, with disturbance of normal labor pains, and reappearance of convulsions. While in this case the obliquity seemed to be a disturbing factor, it is well known that such obliquity not infrequently exists without such disturbance. It would seem to be an interesting and curious fact that mal-presentations are very rarely attended with convulsions. The cases reported in this paper were all vertex presentations with the face to the right or left sacro-iliac synchondrosis. Dr. King asserts that convulsions scarcely ever occur in cross or shoulder presentations. A Dublin obstetrician says (*Dublin Journal Medical Sciences*) that there is little fear of eclampsia if the child does not present by the head. This refers to eclampsia during labor; certainly not to cases occurring months before. There are exceptions to this rule. In a series of fifty-nine cases reported by Ramsbotham there were four breech presentations.

The annual of the *Universal Medical Sciences* for 1895, records the researches of Rapin and Monier, who examined the blood of four women with eclampsia, and in three of the cases found a special bacillus, which they were able to cultivate, and when inoculated into animals caused symptoms of eclampsia.

Chamberland has experimentally proved that some poisonous element is present in the blood of eclamptic women, but the exact nature of the poison, or its origin, have not been determined. A rabbit is killed by the injection into its tissues of healthy human serum, when injected in the proportion of ten grams of the serum to every kilogram that the rabbit weighs. Chamberland has experimented extensively with the blood of eclamptic women, and has found the amount of serum of such blood necessary to kill a rabbit is less than the serum from a healthy person. In some cases one-half, and in others less than one-third the proportionate amount is sufficient to prove fatal.

It is believed by some investigators that the liver may have something to do with some of the cases of puerperal eclampsia. The healthy liver modifies certain poisonous elements brought to it from the intestines through the portal vein, and impairment of the liver which would wholly or in part, destroy or suspend this function would admit to the blood substances freighted with toxic properties. Hahn, Masser and others have shown by experiments, by which the blood from the portal vein is emptied directly into the circulation, thereby depriving it of passage through the liver, nervous symptoms similar to those of eclampsia are produced. This is especially pronounced when the experiment is made after the inges-

tion of meat. Their deduction is that these symptoms are due to the presence of carbamic acid in the blood, a substance which in passage through the liver is converted into urea. Further experiments show that when carbamic acid is introduced into the circulation not only the nervous symptoms are developed but the urine becomes scanty and albuminous.

Women in their first pregnancies, and also those who have more than one child in utero are most susceptible to eclampsia. Of the fourteen cases reported in this paper six were in cases of primipara, one of which had twins. In reference to the frequency of convulsions statistics are variable. The total number of deaths from eclampsia reported to the Board of Health in New York city in the nine years ending in 1875, were 408. The estimated maximum number of deliveries during that period was 284,000, or nearly one death in 700 confinements.

The vital statistics furnished by the Indiana State Board of Health show the number of children delivered during twelve years and nine months to be 452,429. Deducting one birth from each case of doubtlets and two from each case of triplets the approximate number of labors represented in these reports is 449,000. The number of deaths reported from eclampsia during this period is 440 or one in 1,020 deliveries. One series of 100,935 deliveries in the Philadelphia Board of Health reports, shows 94 deaths from eclampsia, or one in 1,073 confinements. Of women attacked Hecker found 1 in 522; Wiegner 1 in 519; Kleinwächler and Galabin 1 in 500; Korman 1 in 600; Corson 1 in 300; Cazeaux 1 in 200 deliveries. It is estimated by some authors that the average is 1 in 500 labors. The health reports show the deaths only, but if this average is correct about 50 per cent. of the patients die. Parvin places the percentage of women attacked at 1 in 250 or 1 in 300 in this country, and if this is correct the death rate from this cause as compared to the number of patients affected is reduced to about 28 to 30 per cent. Dr. Kemper, of Muncie, had nine cases of eclampsia in his one thousand labors reported. Eight of the women recovered and one died. After reference to the great fatality which attended eclampsia in the seventeenth and eighteenth centuries, Ramsbotham says in his work on obstetrics, "few cases now terminate unfortunately; and the favorable results are to be attributed to the extent to which bleeding and other evacuant means are carried."

Patients who are bled in this disease do not suffer from anemia on account of the depletion, but regain their normal strength and color, and as a rule, are out of bed as early as though nothing unusual had transpired. Prof. Fordyce Barker insisted upon the unmistakable clinical evidence favorable to the employment of the lancet, and pleaded for its restoration in the management of puerperal eclampsia. Lusk says the claims of bleeding in eclampsia rest upon a substantial foundation, and that its special advantage lies in its prompt action.

Speigleberg says, "No means so quickly lessens arterial pressure, none so quickly restores their function to the kidneys, irritable from blood pressure, and few act so readily upon the excited vasomotor nerves, causing relaxation."

Patients with eclampsia are never able to sit while the operation is made, consequently a larger quantity of blood is required to produce the desired results than if the sitting posture could be assumed. It is

much better not to bleed at all than to bleed inefficiently. While the loss of a small amount of blood will do no harm it can do no good, and therefore it brings probably the very best life-saving remedy in eclampsia into disfavor and disrepute.

The life of the child in eclampsia parturientium is endangered by each succeeding attack, rarely persisting after the fourth or fifth convulsion. In proportion to its relative prompt action the life of the child and also that of the mother are enhanced by venesection. In claiming for the lancet a clean, safe, prompt, efficient and ever at hand remedy, the value of other remedies is not ignored. Dr. L. J. Hammond, Secretary of the Staff of Maternity Hospital, of Philadelphia, has kindly furnished me a history of nine cases which occurred in that institution during the last five years. All but one occurred in primigravida, and three women died. The treatment relied upon is depletion by purgation; chloral and bromids per rectum, veratrum viride, hot packs and anesthetics during the seizure, oleum tiglii is the cathartic relied upon. Two of the cases which recovered were bled, one to the amount of twenty-six ounces.

In answer to a letter addressed to the Philadelphia Lying-in Charity and Nurse School, Drs. W. Reynolds Wilson and Della M. S. Walker kindly prepared for me a table of the nine cases which occurred in that institution during the last four years. Previous history was negative in all the cases but two, one of which had vomiting of pregnancy, and the other had previous dropsy. These two patients died, the other seven recovered. One of the patients that recovered had sixteen, one had ten, one had three, and three had two convulsions. One of the patients who died had one, and in the other the word "frequent" takes the place, in the column, of the figure designating the number. The patient who had sixteen convulsions was bled. The others were treated by chloral, morphia and calomel. One exclusively by purgation, except that chloroform was used in all for the paroxysms. The average number of convulsions in these cases is small, owing doubtless, to the fact that the patients were in the hospital under the immediate attention of the physicians who were equipped with everything needful, thus securing prompt relief before the patients became so profoundly influenced. Whether the poison contained in the blood of an eclamptic acts directly upon the cortical cells of the brain is not demonstrable. It is a reasonable position to assume that it does, and that this poison, as well as reflex irritation from abnormally painful uterine contractions, disturb the cell power to control energy. The result is sudden liberation of energy manifested in a convulsive seizure.

Chloroform, chloral and morphia lessen reflex irritability and paralyze cell energy, thereby aiding in holding convulsions in abeyance; while diaphoresis, purgation and venesection relieve arterial tension and eliminate the poison.

The high arterial pressure which is almost universally present in eclampsia has lead many practitioners to believe that this disease does not occur in patients who do not bear depletion. Morphia, chloral and chloroform have been used with excellent results in a large number of cases. These agents may be used with advantage after depletion, or in the early history of an attack. After a patient has had a large number of convulsions and is in a state of coma, or near it, the administration of such drugs is not likely to prove

beneficial. Chloroform has been recommended and given in full anesthetic doses for the purpose of completely paralyzing the motor centers. There is much danger from prolonged anesthesia carried to the surgical degree, and added to coma, or tending coma, resulting from convulsions, it is capable of doing irreparable harm. The same may be said of large doses of morphia and chloral.

Dr. W. Reynolds Wilson, in his article on "The Use of Morphia in Eclampsia, with a Report of Two Cases," published in "The Annals of Gynecology and Pediatrics," June 1892, a reprint of which the author has kindly furnished me, discusses this subject pretty thoroughly. In the second case reported by Dr. Wilson, morphia was given hypodermically in doses ranging from $\frac{1}{8}$ to $\frac{1}{2}$ grain. The history of the case shows the drug had a partially controlling influence, but "the patient was bled on account of vascular tension, shown in the congestion of the face, and throbbing of the arteries." Fifteen ounces were abstracted after which the patient had no more convulsions, but the morphia was continued and served a good purpose in controlling the restlessness.

Veratrum viride has been successfully employed in some cases reported. In large doses it slows the pulse, and as expressed by Hare, it "bleeds the patient into his own vessels" by filling up the mesenteric veins and thereby relieving arterial pressure. Dr. Fearn, of Brooklyn, in his article published in the *American Journal of Obstetrics* on "Veratrum Viride in Large Doses as a Substitute for Blood-Letting in Puerperal Eclampsia" recommended the tincture of veratrum viride in doses ranging from fifteen minims to a teaspoonful repeated every five or ten minutes until the pulse became soft or vomiting occurred. After the arrest of convulsions he recommended the continuation of the drug for some hours in smaller doses and at longer intervals keeping the pulse below fifty per minute. In each case reported in this paper a very large dose of some active cathartic was given. Nitrite of amyl was used by Dr. W. F. Jenks, of Philadelphia, on the suggestion of S. Weir Mitchell. Ether had been used without avail. The inhalation of a few drops of nitrite of amyl immediately arrested the convulsions, but the patient had a dangerous uterine hemorrhage, which was attributed by Dr. Jenks to the action of the drug. The opinion of Dr. Jenks is corroborated by the experience of Dr. A. W. Brayton, of this city, who met with a dangerous uterine hemorrhage following the administration of one-fiftieth grain of nitro-glycerin, the action of which is similar to that of nitrite of amyl. The drug was given as a cardiac stimulant in a case of palpitation of the heart in a woman who had been delivered six days before.

Delivery should be facilitated in cases of eclampsia parturientium, when labor is difficult, and where the os uteri is dilated, by the application of forceps, or podalic version. Dilation may be hurried by the use of the colpuruter. A method has been proposed and practiced by Dührssen of Berlin which in his hands seems to have proved highly satisfactory. When the cervical canal is opened up, and the obstacle to delivery is the undilated os externum he makes four incisions reaching from the margin of the os up to the utero-vaginal junction. This he claims leaves no further obstacles to the delivery of the child, which can readily be effected without any fear of tearing the soft tissues. Thirty-five cases were treated by him, by this method, according to his published report, with-

out the loss of a mother, and with a loss of only two children. The technique of this operation is explicitly stated in his report.

There is great danger to the life of the unborn child in cases of eclampsia. Its death not unfrequently occurs during the first convulsion, often during the second, and after a number of convulsions the child is rarely born alive. The child is profoundly influenced and if its life is spared until birth it may die in convulsions soon after, as was the case with two of the cases reported by Drs. Wilson and Walker, of Philadelphia, and a case reported by Spence which was removed alive by the Cæsarean section, the mother having died from eclampsia before there was any disposition to labor. Respiration is suspended during the early part of an eclamptic seizure, and is very imperfect until the attack passes entirely off, thus adding to the already bad condition of the maternal blood, rendering it inadequate to act as an oxidizing and purifying agent for the infantile circulation through the placenta. It is therefore fair to say Dührssen's cases must have been selected and operated upon immediately after the onset of the convulsions, otherwise more than two still births would have occurred in thirty-five labors. This is a possible illustration of the effect which over-enthusiasm has on statistics.

TRAUMATIC CARIES OF CERVICAL VERTEBRÆ.

A CASE WITH REPORT OF THE POST-MORTEM.

BY L. G. NORTH, M.D.

TECUMSEH, MICH.

Mr. R. J., aged 34 years, unmarried, an Englishman by birth and a resident of this country for fourteen years. By occupation a farm laborer and ditcher. In build very muscular, and rather thick set. He had great endurance, taking pride in the amount of work he could do in a day. His habits were all good, and when questioned in regard to syphilis asserted positively to the end that he had never known a woman.

About the middle of December 1894 while at work in a pig-pen he suddenly slipped and fell violently striking his right infra-mammary region upon the top of a low door, and falling from the door to the floor. He was aware that he bumped his head, but the injury to the side was the only one that he thought of any account.

From the time of the accident he was aware that he was not right, having pain in the right mammary and infra-mammary regions with constant shortness of breath. For this he consulted a physician and took medicine and used local applications for about two months, without decided improvement. About the middle of February 1895 while in the post office in a country store he was suddenly taken with a violent "catch" or "crick" in the back of the neck. He was able to get into a chair and from there on to a couch or settee, from which place he was not able to be moved for some five or six hours. From that time to the time of his death he was not able to turn his head or bend his neck without severe pain, and in fact did not move his head at all without supporting it with both hands. A favorite "hold," when it was necessary to move was with the left hand behind the occiput and the thumb of the right hand under the inner end of the supra-orbital ridge of the right eye. When not moving he often lay for a long time in this posi-

tion. Following the severe attack above mentioned he continued to have pain in the right mammary and infra-mammary regions with soreness on motion, pressure and respiration, and before coming under observation of the writer he had two more similar attacks. The writer subsequently elicited the facts that the attacks occurred suddenly when the patient was somewhat improved and on assuming a vertical position. It was at first asserted that the second attack occurred in the night when the patient was in bed, but close questioning elicited the fact that he had risen to attend to a call of nature. During and between these attacks he had fever and acceleration of pulse but to what degree the writer was not able to learn. Soon after the first attack he began to cough and expectorate freely a muco-purulent material. The attending physician had counsel, but a definite diagnosis was not reached. The case came into the hands of the writer May 5, 1895. The patient was found lying on the right side with the head turned slightly to the right and with the chin near the right clavicle. He continued to occupy this position most of the time for the next six months, turning on the back occasionally but preferring the former position. He was not able to get on, or remain on, the left side at any time. When first seen by the writer the temperature was 101.5 F. and the pulse 120. He was still coughing and expectorating the muco-purulent matter. The writer was told that a sample had been sent to a microscopist of Detroit, who had reported himself unable to find any bacilli of tuberculosis. Another specimen was then sent to Ann Arbor and a similar report received from the microscopist in the University Laboratory. The patient was in fair flesh and though he had been told by his former attendant that his prospect of getting well was small he was in good spirits and very hopeful. He was in full possession of all his faculties and functions except those mentioned above. There was no material difficulty of deglutition, but the mouth could not be widely opened, and the appetite was fair. On account of the extreme sensitiveness of the neck it was impossible to make a satisfactory examination. Distortion of the spines of the cervical vertebrae was suspected, and sought for, but could not be demonstrated with certainty. A moderate blow on the top of the head with the hand caused pain in the vicinity of the cervical vertebrae. Pressure over the spines was not as painful as pressure at the sides of the neck about opposite the bodies of those bones. Percussion over the lower portion of the right mammary region elicited diminished resonance, and auscultation revealed diminished vesicular murmur over the whole mammary region of that side. Within a month the cough and expectoration first diminished and then completely ceased and did not return. The temperature continued uniformly and invariably in the immediate neighborhood of 101 F. for more than six months and the pulse continued for the same length of time between 80 and 120, being generally above 100. The slight fluctuations of temperature that occurred were without assignable cause, so far as could be determined. Within the first fortnight of the writer's attendance he discovered on auscultation a distinct friction or crepitation sound over the whole lower part of the right chest. It continued for about a week and then permanently disappeared, and vesicular murmur increased but never reached the normal. As the percussion note was nearly flat in the infra-mammary and infra-scapular regions effusion was suspected

and the needle of a hypodermic syringe freely used but without discovering any fluid.

At his third visit on May 9, the writer announced the title of this article as his diagnosis. On July 24 it was found absolutely necessary to move the patient to another house some four miles distant. The moving was done with the greatest care on a spring mattress in a spring wagon, on a good country road, and with the patient protected from sun and wind. Notwithstanding these precautions he complained of much pain and nausea and vomited several times during the journey.

At this point in the patient's history he became a township charge and the officer of the township desired to take him to the county poorhouse some ten or twelve miles distant. This desire caused a controversy between the official and the attending physician. The latter affirmed his diagnosis and expressed the opinion that to make the long removal would be dangerous to the patient's life. His opinion finally prevented the removal. In the light of subsequent events the correctness of the position is fully confirmed.

In August a small puffy tumor made its appearance directly under the right nipple and over the sixth and seventh ribs. It was about two inches in diameter and was raised above the surface about five-eighths of an inch. Careful examination now revealed the fact that the continuity of the sixth rib was broken, and on a few occasions crepitus was elicited. The swelling was without discoloration and seemed to fluctuate, but the hypodermic needle repeatedly used failed to find fluid of any kind. The pain in this region still continued but the tumor was not much more sensitive to pressure than the surrounding skin, and the temperature of the part seemed the same as the rest of the body. In October another similar swelling appeared over the upper end of the sternum. It was some larger than the first and was more painful during its growth but was rather less sensitive to pressure than the other. Careful exploration with a hypodermic needle, and also a grooved needle, by the attending and by two other physicians who saw the case, failed to obtain fluid of any kind.

This last tumor for several weeks had a distinct pulsation but there was no bruit. Crepitus was frequently elicited with the fingers of one hand on the right clavicle and the fingers of the other hand over the upper part of the sternum. The nature of these tumors was a matter of much question and their relation to the disease in the back of the neck a difficult problem. Professional friends suggested that they might be malignant. As early as the middle of July it was noticed that while his face was full and of good color his lower limbs and the lower part of his body were emaciating very markedly. At this time there was no motor paralysis or loss of sensation of any part, but it was evident that the nutrition of the parts was suffering. The patellar reflexes were exaggerated. About the first of November the temperature suddenly dropped to the normal for a very few days without assignable cause. Immediately following this the first signs of paralysis appeared and within ten days he entirely lost the use of both limbs. Sensation was not affected more than that the patient said his feet felt sometimes as if they were asleep. The patellar reflexes were still slightly exaggerated, and the reflex action of the spinal cord most marked. When the bed clothes were lifted or when the limbs or feet were stroked or handled they would spasmodically contract with such violence that he would complain of the pain that the

motion of the body caused in the back of the neck. At the first appearance of paralysis he was put upon strychnin sulphate, but on account of the jerking of the paralyzed limbs it had to be discontinued, after which there was improvement in this respect, but the reflex action was very marked till death, in fact, for a few moments after respiration and the heart beat had ceased. Notwithstanding the paralysis of the voluntary muscles of the limbs, the bladder and bowels gave almost no trouble. A catheter was at no time necessary and an injection was sufficient to secure a free movement of the bowels. Soon after the paralysis came on, the exposed points over the trochanter, and crest of the ilium, and sixth and seventh ribs of the right side developed bed sores in spite of our efforts to prevent them. The patient was now almost compelled to lie on his back, and for the last two months of his life he scarcely moved from that position. Between the paralysis and the pain that motion caused in the back of the neck, he had command of only the hands and the lower jaw. During the last three or four days of his life he was so weak in the hands that he could not hold knife nor fork, but it is hard to say whether it was paralysis or muscular weakness. For the last two weeks he had occasional attacks of dyspnea of varying periods of duration. Swallowing and expectoration became difficult and on the afternoon of Jan. 17, 1896 an attack of difficult breathing came on that continued to increase in severity till the time of death at 2:30 A.M., January 19. The mental faculties were retained till within ten minutes of death.

Post-mortem, January 20, thirty-two hours after death, was made in the presence of Dr. Stephenson, of Adrian, Dr. Rice, of Tipton, and Drs. Howell, Jenkins, Woodward, and the writer, of Tecumseh. The body was much emaciated but not to that extreme degree that is often seen in tuberculosis. With the exception of the bed sores mentioned above there was no disorder or discoloration of the skin. Palpation disclosed the fact that the sixth rib of the right side was broken, and that the clavicles were detached from the sternum. The body was turned over on the anterior surface and the spines of the cervical vertebræ examined by palpation and crepitation was plainly felt particularly in the upper ones. On dissection the spines and laminae of the vertebræ were found in apparently healthy condition and when the posterior arachnoid cavity was opened it was free of pus. On carrying the dissection further forward pus poured out at the sides of the bodies of the fourth, fifth and sixth vertebræ. The pus was of thick consistency and creamy in appearance. The bodies of the fifth and sixth vertebræ were entirely consumed and the bodies of those above and below much eroded. According to the books at my command, trouble of this kind is almost always confined to the first three vertebræ, the body and odontoid process of the axis being especially vulnerable, and those below not often affected. In this case the atlas and axis were but slightly diseased, being ulcerated in small extent and the ulceration without discoverable connection with the large field of disease below. It was demonstrated that the abscesses extended downward on both sides of the bodies of the vertebræ into the thoracic cavity. The dissection explained why there was so little deformity in the spines of the cervical vertebræ discoverable before death, there being no perceptible lateral displacement. As the case occurred some eight miles in

the country and as all the physicians present are busy men the dissection was not as thorough as could have been desired, and the question of the "pinching" of the cord was not positively demonstrated, but from the inspection that it was possible to make and from the slight or imperceptible distortion of the vertebrae, it may be set down as almost certain that the cord was not compressed by bone. The body was next turned on the back and the swellings above mentioned investigated. They were found to be abscesses, connected with carious bone, more than half the contents being cheesy. The manubrium was entirely destroyed and the sixth rib was carious. The thorax was opened and its contents examined. With the exception of a few frail pleuritic adhesions the left lung was found normal. The right lung was attached by strong adhesions of the pleura to the entire inside of the right thorax. The lung tissue was healthy as far as could be determined. On each side of the upper dorsal vertebrae the abscesses of the neck bulged into the thorax but nowhere communicated with the pleural cavity. It was positively demonstrated that the abscess at the head of the sternum did not communicate with the abscesses of the cervical vertebrae, as the hand was passed freely up through the thorax between the two without difficulty and without disturbing either of the cavities or finding pus. The abscess of the sixth rib was also isolated.

In this case the use of the hypodermic and grooved needles for the detection of pus was worse than useless for they were misleading. I have no doubt but that at the time they were used the contents of the cavities were mostly cheesy and it was as well or better for the patient for them to remain unopened, but when they were used it was facts that we wished them to reveal, and they deceived us. The trouble unquestionably came from the injury, and it is now apparent that the patient should have been put to bed and kept quiet till the injured bones had time to unite, but it is perfectly certain that no man is sufficiently skillful in diagnosis to detect, or has sufficient authority to adopt, that treatment in such a case. As soon as the writer had made his diagnosis he gave positive orders that the patient should not to be allowed to assume the vertical position under any circumstances, and in consequence he never had another "stitch" in the back of the neck. Further than this all treatment adopted was, at most, of but temporary benefit. The patient did not die of compression of the cord by the bony structures around it, but from the exhausting effect of the long continued pyemia and the pressure of the abscesses upon the cord. That the long continued fever and rapid pulse were due to pyemia can hardly be doubted, for the pressure on the cord was below the heat centers, but it is strange that he never had a chill, and had so little variation in temperature, the latter remaining practically the same to the day of his death. It is probable that the injury to the side was responsible for the pleurisy and that the first abscess to form was in the back of the neck and that the others were metastatic in character. The case is offered for publication that physicians may find in it a possible guide to the diagnosis of a similarly difficult case.

Women in Professional Life. Professor Bergmann says: "I consider women absolutely unadapted to study for or practice the professions to which the universities now offer them access. This incapacity I consider is due to their physical conformation as well as to their moral constitution."

TRANSPORTATION OF INJURED EMPLOYEES.

BY FRANK H. CALDWELL,

CHIEF SURGEON OF THE PLANT SYSTEM.
SANFORD, FLA.

The preliminary treatment given the employe or passenger at the time of accident, resulting in injury, and before the patient is removed to his home or to the hospital, is a service of vital importance; but the scope of this paper will not permit its discussion. The writer intends to confine himself strictly to the subject, as outlined for him by your committee.

Considering the importance of transportation of persons injured it would be natural to suppose that there exists some literature on the subject, but a careful search has failed to reveal any material which could be utilized. The writer is forced, therefore, to give you his experience, trusting that in the discussion of his brief paper, new and valuable ideas will be brought out, which will prove of benefit to those unfortunates, who are often compelled to travel long distances while suffering intense agony from injuries.

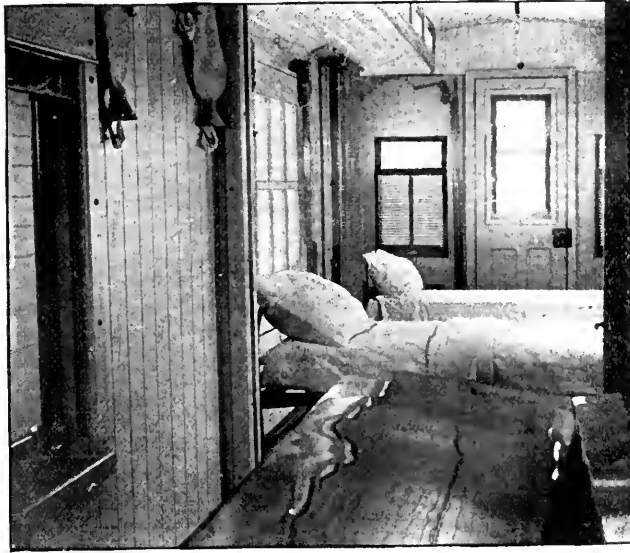
It has been conclusively demonstrated that injured persons, except when suffering from severe and extensive injuries to the head, spine, thoracic and abdominal cavities or in a state of profound shock, may, when properly handled, be transported almost an indefinite distance without endangering life or increasing the extent of injury. And it has been further shown by actual experience that a large percentage of the exceptional injuries above mentioned can be safely handled if proper transportation facilities are provided. In cases of lighter forms of injury, as a crushed limb, how should they be transported to the hospital in order that shock may not be induced or increased, or the already mangled parts be further injured?

The nearest surgeon is sent for, and under no circumstances should the patient be carried to him. The messenger informs the surgeon as nearly as possible of the nature and extent of the injury, so that he may come prepared, for not all surgeons have emergency cases, ready for every kind of accident. The surgeon, upon his arrival, controls hemorrhage, anticipates or combats existing shock, and adjusts a temporary dressing. Briefly, he prepares the patient for his journey, whether it be long or short. After due preparation, the patient is lifted gently a few inches from the ground or floor, and a stretcher slipped under him, and he is lowered into it and made comfortable. He is then carried into a coach or baggage car of the first passenger train going in the desired direction. An injured man should never be transported by a freight train. If no passenger train is available in a reasonable time, a "special" should be provided. If the surgeon in attendance fears for the safety of his patient, the chief surgeon should be notified of the fact, and he should instruct the surgeons along the line to visit the patient as the train passes their stations and render any assistance necessary.

As a rule, upon arrival at the hospital, you will find your patient in condition to submit to any operation required for his relief. The plan above outlined in this class of cases, is the one practiced on the system which the writer represents and furnishes the patient almost constant attention from the receipt of injury until he arrives at the hospital; the greatest distance.

between surgeons being forty miles, and usually but twenty.

The comfort and safety of the patient will depend very much upon the stretcher used in transporting him. The writer spent several years experimenting before one was secured which answered the purpose to the satisfaction of himself and patients. Photographs of the ones that have been in use upon our system for the past eight years are submitted for your inspection. It is made of cypress; a light, springy, yet strong, native wood. The stretcher will pass easily through a car door, and two standard car cushions placed end to end, fit it exactly, and can be used as additional protection when required. The bottom of the stretcher is of wire netting, two-inch mesh, and is covered with eight-ounce duck. The netting and duck are fastened to the frame with strips of wood which are screwed on, enabling us to easily clean or repair the wire and duck. The legs fold under, and have heavy, corrugated rubber tips. This stretcher is light, strong, durable, and easily kept clean. It has sufficient elasticity to prevent undue jolting, but not enough to give pain. The



Internal view of Plant System Hospital Car "II."

writer has personally tested it, and can certify to its comfort.

What shall be done with those cases of extensive injury, accompanied by profound shock?

When the surgeon is given sufficient authority, these cases may receive the proper "first aid to the injured" at almost any point on the line of road, for all employes should be instructed that in case of accident, the surgeon's authority is practically unlimited, and that they must obey all orders given by him. By having the coöperation of employes generally, the surgeon is enabled to isolate his patient and give him perfect quiet and rest.

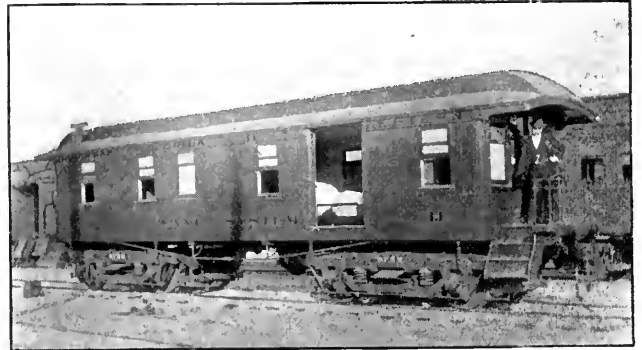
The patient should be allowed to remain at the place where the accident has occurred until the arrival of the ambulance or relief car, in which he is placed and transported to the hospital, either by a "special" or by the first passenger train, as may be considered best.

There have been several plans of ambulance cars proposed from time to time, but they have, in the writer's opinion, been too elaborate, entailing a large

expense upon the company, the officials of which could not see a proportionate benefit; and in my judgment they have taken the correct view of the case. What we need is a strong, stiff car with first-class trucks, furnished in the simplest style, without upholstery of any kind. We need a transportation room, an operating room, and a small consultation room.

A photograph of car "H" of the Plant System is handed you for inspection. This car was a second-hand express, remodeled and refitted according to the writer's suggestions. The total value of the car, as completed, is about three thousand dollars. The doors in each end are hung on the wrong side, so to speak, so that in opening they act as a screen, preventing undue draft upon the occupant of the car; this was done at the suggestion of President Plant.

Now, as to furnishings. The transportation room is furnished with wrought iron beds, with woven wire springs. Heavy, corrugated rubber tips are on the legs, which prevents slipping, and breaks the jar to a great extent. When not in use, these beds are fastened against the walls of the car, and are entirely out of the way. In addition to these, we have an air bed, which when not in use, is folded into a very small compass, and packed into a closet. It takes but a moment to inflate it with air. Lastly, there is a hammock arrangement made to suspend from the roof of the car by strong straps. This hammock has a



External view of Plant System Hospital Car "II."

device of short, strong spiral springs, which absolutely prevents any jolt or jar being communicated to the patient.

The operating room is supplied with an iron, glass-top table, and all necessary appliances for the treatment of shock, and for the performance of perfectly aseptic operations. Sterilizers, etc., are stored beneath the water tank, which is kept filled with sterilized water. All bedding, etc., are packed in the corner cupboard. Bandages, bottles containing chloroform, ether, etc., are in the center cupboard. The rest of the furnishings may be seen in the photographs.

The sitting room is intended only for a place of consultation.

The car is painted with a specially prepared paint, which may be scalded without injury, and will stand disinfection by means of super-heated steam or air.

There should be a relief car of some design for every two hundred miles of road, the car being stationed in the center, having a one-hundred mile run each way.

Gentlemen, it is my opinion that there are few

cases of injury that would not bear transportation if handled as outlined above. If you have cases that you are satisfied will not stand transportation even in the car, you have at your command comfortable quarters for them, and if necessary, you are prepared to perform any operation that may be needed, and remove them to the hospital at a subsequent time.

THE PATHOLOGY, ETIOLOGY AND TREATMENT OF PETIT MAL AND GRAND MAL.

BY FREDERICK HORNER, M.D.

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Both of these forms of epilepsy belong with tetanus and hydrophobia to diseases of the nervous system, petit mal, the congenital or mild form occurring in childhood, grand mal, the inherited and acquired, the result of traumatism and developed during some period of adult life. Both present the characteristic features of the malady, viz., irregular action of muscles usually obedient to volition, curtly defined by Cullen, "*musculorum convulsio cum sopore*." According to the theory of Dr. Carpenter, "Principles of Human Physiology," "the sensory ganglia are the primary seat of that combination of sensibility with spasmodic movements which constitutes epilepsy." The cerebrum also is implicated as occurs by the loss of consciousness preceded by confusion of intellect, impairment of memory and loss of will power over the mental faculties, followed by convulsions and maniacal excitement. There is a marked periodicity, this author adds, in the recurrence of the symptoms. Dr. Todd, "Lumlian lectures," considers there is malnutrition of certain parts of the encephalon which increases the disturbance, and this, when it has attained a certain measure of intensity, manifests itself in the epileptic paroxysms, just as a Leyden jar gets rid of its excess of electricity by a disruptive discharge, presenting like phenomena as when a current of the magneto-electric machine is transmitted through the region of the *corpora quadrigemina*, all the muscles of the limbs, the trunk and eyes will contract and be affected just as in a case of epilepsy. The epileptic by heredity may be considered to be born diseased and even condemned in advance to suffer from the effects. He has an epileptic brain and when the period for development and causes exist epileptic convulsions will inevitably follow. Hence intermarriage with an epileptic should be discouraged, since, as Dr. Brewster, of Baltimore, wisely asserts that "the predisposition in some families is such that any mental or moral strain or any great physical depression is liable to prove the exciting cause of the nervous disorder which is productive of epilepsy." The law of heredity applies to the children of inebriates, adding also to the epileptic list. In the *Quarterly Journal of Inebriety* are noted twelve families of drunkards; during a period of twelve years, there were fifty-seven children born, five of whom became epileptics, two of the epileptics became by inheritance drunkards. Dr. Blackford, Superintendent of the Virginia State Asylum for the Insane, at Staunton, in his late Report for 1894-95, says that in this institution there are 100 epileptics, a class regarded as a *bete noir* on account of homicidal impulses. It is noted as a melancholy fact that this class of unfortunates is increasing in Virginia, and the number in the United States is now 120,000; statistics show an

increase annually along with other forms of mental disease in this and other countries. For example, a writer in the London *Humanitarian*, quoting the report of the registrar general, proves from the statistics, based upon 225,000 cases of certain forms of neuroses, inclusive of epilepsy, that such diseases of the nervous system occupy the fourth rank of maladies most destructive of human life. The report, also, of the commissioners of lunacy, in England, shows that, in 1859, there were of all classes of insane, inclusive of epileptics, 36,762, which number, the London *Lancet* adds, has increased to 74,842, the figures showing, after due allowance for increase of population, 52 per cent. increase above what it was twenty-three years previously. According to the annual report of the Surgeon-General, epilepsy is rare in the navy, in the ratio of 6 per cent., in the class of diseases of the nervous system, a fact readily explained, as seamen are usually rigidly examined before they are admitted to the public service. During a cruise of the U. S. S. *Jamestown*, the writer, as one of the medical officers of the ship can only recall a single case of grand mal occurring in the person of a seaman. As an object lesson and accurate synopsis of this man's symptoms, we quote the details of an identical case as presented in the Bible, for the cure of the Savior, and thus described: "Master, I have brought unto thee my son, which hath a dumb spirit, and wheresoever he taketh him, he teareth him, and he foameth and gnasheth with his teeth and pineth away; and when he saw him straightway the spirit tare him and he fell on the ground and wallowed foaming. When the Great Physician healed the man he lay as one dead." No enlightened physician would hesitate to pronounce such a case to be epilepsy—which the famous Dr. Maudsley of London, has explained to have been aggravated in the case cited by Satanic power, but now is only partially felt by mankind.

Dr. S. E. Smith, Medical Superintendent of the Eastern Hospital for the Insane, Richmond, Ind., says in the *Southern Medical Record*, "Marriages of expediency favor the development of constitutional nervous defects, and if conception has occurred after epileptic convulsions have appeared we may with a reasonable degree of certainty depend upon the reproduction of the disease in the offspring." The habits of modern society also contribute to add to the list of epileptics, too often premature marriages are entered into in the midst of social life, especially in densely crowded cities, where late hours at balls and theaters prevail, and the votary fails to obtain needful rest and sleep and the appetites and passions are under perpetual tension, and when marriage is consummated delicate females, with their husbands, start off on long and exciting journeys, often causing anxiety and nervous disturbance, in the midst of which occurs conception, gestation and, it may be, the birth of offspring inheriting every phase of the neuroses, among which a sudden fright of the mother, renal disease or sexual excess of the marital act, there is developed epilepsy, the latter occurring, as sometimes, after a miscarriage.

The treatment of epilepsy is preventive, medical and surgical. Petit mal, when occurring in early childhood or preceding the period of puberty, if judiciously treated at home by a physician and cared for by intelligent parents, or the trained nurse, may be relieved and even cured. Such examples are referred to by Dr. P. L. Murphy, Superintendent of

the North Carolina Hospital, in the *North Carolina Medical Journal*. They should receive home care, or treatment outside of an institution, thereby escaping the stigma usually attached to a person who has been the inmate of an asylum. Among the first cases presented for treatment the writer recalls, was a robust, country male child; the mother was nervous and hysteric. Between the period of childhood and youth, symptoms of petit mal were developed. Bromids were prescribed; the cold bath; massage and shampooing and the free administration of nourishment, and feeding with milk, especially malted milk prepared by Horlick's Food Co., the more preferable, because to the gluten of wheat and malted barley are added 50 per cent. of pure rich milk, sterilized, all administered with the hope that a more healthy brain might be built up, on the one hand, and a more regular habit induced. This patient was entirely cured of epileptic spasms, though of him might have been answered the Scriptural query already quoted, "How long is it ago since this came unto him?" with the answer, "Of a child."

The treatment of a second case of petit mal may be cited as a warning to physicians and to others who fail to apprehend the importance to protect and guard the epileptic subject during a recurrence of the disease when apparently cured and in the enjoyment of a vigorous and useful manhood. The patient was a young man, aged 28, a farmer. His father was, at an early age, stricken with almost total blindness and loss of hearing, and the mother was of the nervous temperament. While on shore duty, he became my patient, with symptoms of asthma, neurasthenia and dyspnea. He was a man fully developed in height, six feet two inches, weight 140 pounds. The thought was never suggested to question him or his friends concerning his health during the period of youth; far less was there any suspicion that he was an epileptic. When he recovered, unluckily, along with his companions, in the effort to swim and dive in the deep and cold waters of a swiftly flowing river, he was seen to sink suddenly. Though an expert swimmer, he made no effort to rise, and when his body was rescued and carried to land life was extinct. After patient inquiry, I learned from a servant of the family that once while the patient was wood-chopping with him, he suddenly fell upon the ground in an unconscious condition, was speechless for a while, and finally opened his eyes with a dazed look and again began his work. The fatal dive, ten years after the above experience of a paroxysm of petit mal, and which ended his life was inductive of capillary congestion of the cerebral and pulmonary vessels, nervous shock and unconsciousness. Such a case of epilepsy, however mild, ought never to be left beyond the watchful ken of the family physician, since no class of unfortunates are more neglected than epileptics, though a large proportion partially recover and may lead useful lives. Dr. Yarrows, an eminent alienist, has rightly asserted: "Few popular errors prevail and are more prejudicial to the interests of humanity, than that epilepsy and allied disorders are incurable, since a large proportion recover." (London *Lancet*, No. 10, Vol. II.) In a case of traumatic epilepsy, after a fall of twenty feet from the flooring above, the boy landed on the lower deck, suffered no fracture, but was for hours dazed by shock and concussion of the brain and subsequent clonic spasms and epilepsy of hereditary origin. He made a good recovery.

The most successful treatment of the epileptic on a colony farm is likely to prove another grand triumph of medical science, to be consummated fully before the close of the nineteenth century. St. Clement's Hospital for epileptics, in Philadelphia, will shortly establish a colony farm, principally to provide outdoor work for such patients, being the first hospital and colony farm undertaken in America for the sole care of this neglected class. Ohio, New York and Maryland have formed colony farms, and Virginia and other States give evidence that they have a like purpose to make such provision for those afflicted with the "falling sickness," and thereby confer a great boon on the sufferer's family, and often relieving the fears of an entire community. Dr. Drewry, Superintendent of the Central State Hospital, Petersburg, Va., has vigorously prosecuted this enterprise in Virginia. The naval medical authorities fortunately have ample accommodation for the few epileptics of this arm of the public service at the various naval hospitals at home and abroad, though we have known of cases of the kind being sent to the Government Hospital for the Insane for treatment.

SOCIETY PROCEEDINGS.

Chicago Pathological Society.

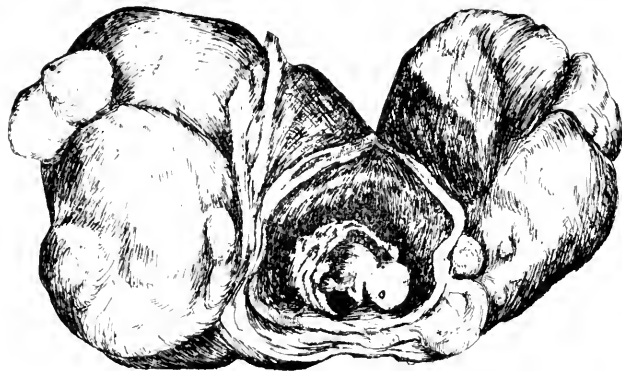
Regular Meeting, Dec. 9, 1895.

DR. WELLER VAN HOOK, President, in the Chair.

DR. J. B. MURPHY read a paper entitled: "Fibromyoma Complicating Pregnancy; Fibroma of Vaginal Wall." (See page 406.)

PRESENTATION OF SPECIMENS AND DISCUSSIONS.

DR. H. B. STEHMAN presented a *Fibroma*. The patient from whom I removed this fibroma was 35 years of age, married, and



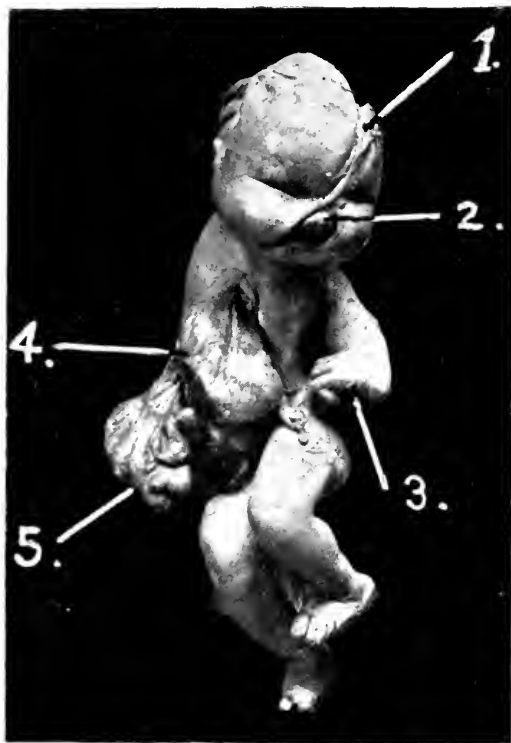
Pregnant uterus with contents, and fibromata.

had never been pregnant before. While she had been aware of the existence of the tumor, previous to within two months she had experienced no discomfort from its presence, and it is doubtful whether she would have sought medical advice except for the fact that her condition was rather to her discredit. Her family physician was somewhat in doubt as to the pregnancy, but the suppression of menstruation, morning sickness, changes in the mammary glands and the appearance of the cervix, added to the rapid growth of the tumor with the attendant pelvic discomfort, left no doubt in the matter. She was told that her choice lay between a miscarriage or hysterectomy, and taking into consideration the size of the tumor, was informed that the risk of the latter was no greater than the former, and probably a little less. At her request the tumor was removed, amputating at the cervix and bringing the stump, previously attached to the peritoneum, into the lower angle of the wound. The operation was done in August, 1893; the convalescence was uneventful, the patient returning home

at the end of five weeks. This growth had developed from the fundus of the uterus in such a manner as to completely hide it from view, but the sketch shows the lobes of tumor separated with the uterus incised antero-posteriorly upon its anterior surface, exhibiting the fetus in utero.

DR. W. T. ECKLEY presented: 1. *Anencephalic monster*, removed post-mortem from an ectopic pregnancy of eight months. The fetus presented the usual appearances of this variety of monster. At the autopsy the inferior mesenteric artery of the mother was of unusual size. 2. *Craniorhachischisis*. The fetus had but six dorsal vertebrae. There were two thumbs on one of the hands.

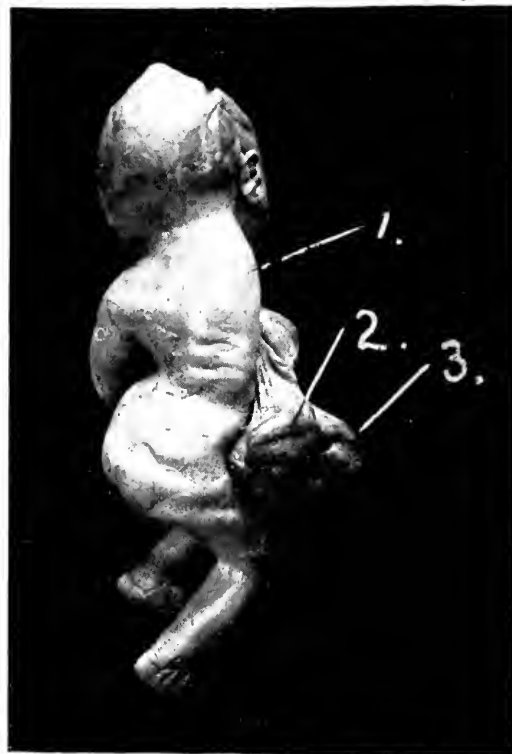
DR. A. J. OCHSNER presented a *fetus*, showing the effects of an extensive amnionitis. The specimen which I show you is interesting in that it shows in various parts the effects of abnormal pressure upon the fetus. The lower extremities show the effects of this pressure the least. The hand and arm on the left side show the effects of pressure to quite a marked extent. As you see, the hand is clubbed, and there is probably an absence of the lower end of the radius as a result of pres-



Monster, extra-uterine pregnancy. 1, amniotic band; 2, superior maxilla; 3, clubbed hand; 4, liver; 5, colon.

sure. Upon the right side the arm is entirely missing. The colon and the liver project from the unclosed abdominal cavity, from which a portion has been removed also by pressure. There is no arm upon the left side, it having been amputated probably in the same manner. The nose and forehead are deformed. I do not know what to call this deformity; there is a band extending upward from the mouth elevating the upper lip. The left eye is almost entirely closed, and there is a considerable amount of fibrous tissue extending along the cicatricial band. As to the history of this case I will only give it to you briefly. The patient was a laboring woman, 40 years of age, who had formerly borne several children. She came to the hospital in labor, so to speak; that is, she had labor pains. An examination showed that the uterus was probably empty. A diagnosis of extra-uterine pregnancy at term was made and confirmed by various practitioners, among them Dr. John Bartlett. It was decided not to attempt to deliver the child by abdominal section, one reason being this, that notwithstand-

ing we had made a diagnosis, we were not absolutely positive about it. Another reason was that the fetal heart sounds were not sufficiently strong to warrant the necessary danger to the mother. The probabilities of obtaining a living child by an abdominal section were not sufficiently strong to influence us to expose the mother to the danger that would be necessary to deliver the child at term by this method; consequently we waited for six weeks. The child died two days after the labor pains began; at least no further motion was felt, and the fetal heart could not be heard after this time. At the end of six weeks we removed the child by abdominal section. The placenta was left in place, the sac attached to the abdominal wall, and the cavity from which the child was removed was packed with gauze in the form of a Mikulicz drain. In the meantime the amniotic fluid had decreased to a very marked extent. At the end of three weeks the placenta was removed, after which the wound healed by granulation, having remained aseptic throughout. The patient returned to her home two months after the operation and carried about some sick children for two or three weeks, and as a consequence developed a ventral



Monster, extra-uterine pregnancy. 1, amputation at shoulder; 2, liver; 3, colon.

hernia, which gave us an opportunity to make an accurate diagnosis concerning the location of the fetus. During the first operation we supposed the fetus was in the broad ligament, and that the placenta was attached in the direction of the uterus. However, in the secondary operation it was an easy matter to determine the location of the extra-uterine pregnancy, because the ventral hernia had attached to it what was left of the sac which had contained the fetus. It consisted of the broad ligament which was spread out at one end. At the upper end to the right the ovary was located; consequently we then made a positive diagnosis that the fetus had lain in the broad ligament. I will say regarding the history of the mother that at about the third month she began to have repeated hemorrhages which continued for some eight weeks, confirming our diagnosis of extra-uterine pregnancy. Six weeks after the second operation the mother again became normally pregnant.

DR. JOSEPH HAVEN presented a *kyphocephalous monster*. I

do not present this little monster for the purpose of opening the old controversy as to the possibility of maternal impressions being imparted to the fetus in utero, as it would lead to a great deal of discussion, but because this little freak of nature is interesting. I will briefly give the history of the case, and ask you to compare the two specimens before you. Some twelve or fourteen years ago I was in attendance upon a family in this city, one of whose members was a little girl 8 or 10 years old, extremely nervous and high strung, who possessed an uncontrollable fear of dogs. Anything in the canine race, even the picture of a dog, would distress her. Her mother explaining the matter to me said that while carrying the child in utero she had been frightened by a dog, and that the girl had inherited that fear. As the child grew older she did not outgrow that tendency. During an attack of typhoid fever, in her delirium she had frequent visions of dogs, so that it was often necessary to employ narcotics to quiet her. The child grew up and was married, shortly after which she became pregnant. About the sixth week of pregnancy I was sent for one afternoon in a hurry. I found Mrs. D. hysterically excited. I was told that in going out of the yard a neighbor's dog jumped upon her and terribly frightened her. She was put to bed, began to flow, and a miscarriage seemed imminent. But she was tided over. I saw her daily after that for some time. She assured me that her child would be marked like a dog. I tried to disabuse her mind of this idea. Time went on and about the third month the same dog jumped on her again and bit her in the foot, inflicting a slight lacerated wound. It was some time before I could go to the case and when I reached the house a miscarriage had just taken place. I took possession of the fetus, being careful that the mother should not see it. On



Kynocephalous monster with skull of dog.

account of the peculiarity of the specimen removed I secured the dog that had been the occasion of so much trouble, and to-night I show you the skull of the dog which I would like to have you compare with the little monster.¹ Those who believe in the transmission of maternal impressions will get some consolation from examining these specimens, and those who believe such results happen as mere coincidences will have to account for this freak as best they can.

DR. JOS. B. DE LEE (by invitation) presented a *hypoplastic monster*. The specimen which I shall present to-night is a rather rare one. It belongs to that class of monsters that are described as hypoplasias, and the hypoplasia in this case occurred at an early stage of development. The fetus is well developed. You see only the upper half, but the lower half was perfectly normal. The technical name for the deformity which you see is cyclops, or synophthalmus, or another name for it is arrhinencephalus. The deformity is produced by an arrest in growth of the three anterior cerebral vesicles of the brain. The interior of this skull, if I had permission to dissect it, would show a large cyst which would represent the cerebellum, and at the base would be the cerebellum normally developed. Anteriorly there has been no distinction between the eye vesicles. They did not separate, and therefore form the eye in the median line. This monster shows a well developed single eye. Owing to non-development of the cerebral vesicles

flexion was not complete, so the nose, or the representative of it, is this process which you see above the eye. It is a beautiful specimen in that it shows one single eye which is complete.

The other specimens which have been presented by the members were interesting in several respects, and they belong also to the class called hypoplasia. One of them was a hypoplasia, the result of pressure from amniotic bands. The extra-uterine pregnancy cases are particularly liable to present amnionitis. This amnionitis has been disputed by several authorities who claim that a normal amnion can, in the absence of the liquor amnii, at an early period become attached to part of the young fetus and thus interfere with its development. Abdominal hernia is sometimes ascribable to the same cause. The non-development of the forearm in this fetus presented by Dr. Ochsner is an interesting feature ascribable also to amniotic bands. It is an anencephalus, and the specimen by Dr. Eckley was a similar one. The other was a specimen of craniorachischisis, a common deformity. None of the gentlemen have given us any points about the clinical history or course of monsters. Possibly that was because we have here no monsters that would cause obstruction in labor. A diagnosis of double monster before labor is impossible. No one has yet diagnosed a double monster before labor, and the nearest any one has come to it was to diagnose twins. A diagnosis of single monster has been made several times. In a case like the one reported by Dr. Eckley, the absence of the brain could have been diagnosed from the abdominal findings. Another anomaly that occurs in single monsters that is probably more common is hydrocephalus. That could be diagnosed. The double monsters that cause trouble do so in three ways. First, those monsters that have a reduplication of the upper half of the body, with two faces attached to one body. These are called diprosopus, or double-faced monster. These monsters cause a disturbance in labor by the marked increase in the circumference of the part. The other form of monster of this class which will cause trouble in labor is the one in which there is an increase in the lower half of the body, where there will be two individuals joined together below. This is called dipygus, and there may be three or four legs. Another form of monster for our study clinically is that in which there are two individuals adherent at the head or breech. One is called craniopagus and the other ischiopagus, or the pygopagus. Some three years ago there was an ischiopagus monster shown in the museum here in which two children, then 16 months old, were attached to each other by the buttocks. Such a case would cause little difficulty in labor, needing possibly a little traction. Thirdly, a most interesting monster is that like the Siamese twins, with two children joined together at the breast, or thoracopagus. Since this junction is very movable, anomalies can occur in which one fetus will be half delivered, and the other will apply itself transversely across the inlet. The case resembles one of interlocked twins and may cause the severest kinds of dystocia.

In the treatment of these three kinds of monsters the method to be pursued will be plain. In the first group, forceps or version and extraction, or if a dipygus extraction by all the feet that present. In the second group, traction on the body of the fetus delivered. In the third group, version of the second twin, then bring the first out, finally deliver the second by the breech. As a general rule breech presentations are more favorable in labor in monsters, and one should seek to turn, if the opportunity presents.

DR. GUSTAV FÜTTERER discussed: 1. *Metastasis of carcinoma from the labia majora*. "You know that generally carcinoma of the labia majora by metastasis make their appearance in the inguinal glands. In this case the carcinoma of the right labia was removed very early, and some time after that the patient died. I made a post-mortem examination and found a nodule in the myocardium. I examined the cells and found that they were like the cells of the upper layers of the skin containing eleidin. Perforation into the pericardial sac had taken place and from here an absorption of the cells by the stigmata of the pericardium was effected. You see the epithelial cells mostly in columns. Most of them at right angles to the surface of the pericardium, some parallel to it, all filling out the lymphatic spaces. Fresh specimens of these parts show that the cells had retained their original character entirely. As far as I know, this is the only case of its kind that has been observed or reported. It may be there are more, but I do not know of any where such a metastasis has occurred from such a superficial carcinoma of the labia majora."

2. *Histogenesis of giant cells, illustrated in a carcinoma of the cervix uteri*. "You wonder, doubtless, why I show you this because you see such cases so frequently. The reason why I do so is this, that there are large cells which contain comparatively large nuclei and I consider this important as an his-

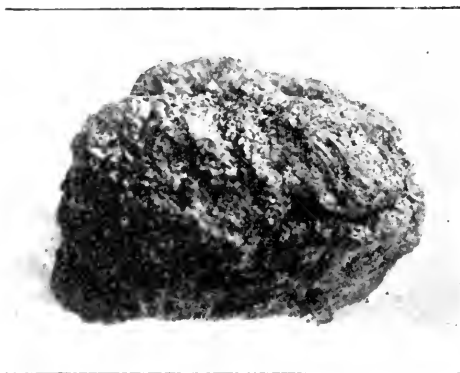
¹ The general appearances are well shown in the photograph which is reproduced here. The peculiarities not brought out by the photograph are, the extreme breadth of the shoulders, the great chest development and the caudal appendage. The tail was originally three quarters of an inch in length, but has suffered from much handling. The sulcus around the neck was occasioned by the cord originally used to suspend the specimen in the jar.

tologic fact. If you will look at the first specimen you will notice that there is extensive necrobiosis in most of the alveoli of the carcinoma. You will also notice (with low power) that in the necrobiotic parts there are large red spots, and as there has been employed an elective staining for nuclei, you must recognize that these spots are large nuclei. The second specimen, with the high power, shows that these red bodies are nuclei. What does that mean? The necrobiosis shows that there is a lack of nutrition. With lack of nutrition we have lack of water, and according to the experiments made and published by Prof. Jacques Loeb, of the Chicago University, in 1892, such a deficiency of water brings about, first a rigidity of the protoplasm, while the nuclei may multiply, and then, when increased, a rigidity of the nucleolar substances, which will prevent their division. In this case, I would say, there was a local drought, as it were, sufficient to cause a rigidity of the protoplasm, preventing its division, sufficient also, to prevent the division of the nucleoli, but not sufficient to prevent the increase in the bulk of the latter's substance. However that may be, our findings in the specimens which I show to you, and our observations on giant cells in tuberculosis confirm the results of Loeb's investigations and I believe that the latter will bring to us the long-sought-for clue as to the histogenesis of the giant cells. An excessive high or low temperature, or a lack of oxygen (vacuum), will cause the same rigidity of the protoplasm and nuclei successively and, in dealing with those matters, we must always remember, that protoplasm is also present in the nucleus. The latter fact explains the similarity of reaction of the nucleus, and the protoplasm, which only shows a qualitative difference between either."

DR. J. B. MURPHY read a paper on

INTESTINAL OBSTRUCTION FROM ENTEROLITH.

J. McC., aged 47; male; admitted to Cook County Hospital Dec. 1, 1895. Family history negative; used intoxicants and



Enterolith.

tobacco to excess. Had had gonorrhea three times. Denied syphilis. Suffered from typhoid fever when a boy. About twenty years ago was seized with sudden pain in the epigastrium. He described the pain as a cramp; says it lasted but a few hours; since that time has had many similar attacks, each resembling the present one. Present illness began five days ago. After a large bowel movement, was attacked with severe, steady, aching pain in the epigastrium. This compelled him to go to bed. The following evening he began to vomit a dark-colored material. After a few hours, the odor of the material ejected became offensive. It was impossible to produce a bowel movement. The severe pain, vomiting and inability to produce a bowel movement has continued up to the present time.

Physical examination: Patient well nourished; conjunctiva slightly jaundiced; tongue dry and heavily coated; breath very offensive; face has a pinched expression; knees drawn up. Abdomen distended; irregular elevations can be noticed in its surface; liver dullness normal. Peristalsis movement could be recognized through the abdominal wall. Auscultations revealed strong peristaltic action, most marked in the right epigastrium. No tenderness except to the left and a little above the umbilicus, where deep pressure produced pain. Pulse 90; temperature normal.

Diagnosis: Mechanic ileus without intestinal strangulation.

Celiotomy was performed Dec. 6, 1895, assisted by Drs. Beasley and Wood. Median incision. Small intestine very much distended, a coil secured and held by an assistant. Splenic flexure of colon located; found contracted and empty; advanced along the transverse colon until near the median line, where a nodule was felt in the small intestine. This nodule was drawn

into the wound. The intestine about the nodule was about two inches in diameter, and below, five-eighths of an inch. It could readily be seen that the obstruction was produced by a large foreign body in the bowel. Parallel incision was made in the bowel, and the enterolith extracted. Opening closed with Czerny-Lembert suture. Abdominal wound closed with silk wormgut suture. No drain. The enterolith weighed twenty-five grams. It measured 4.5 c. longest diameter, and 2.75 c. shortest diameter. Its circumference was 12 c. The center appeared to be composed of an old dry mass of plum-pudding, to which other material had become adherent. It would be interesting to know whether this had been the cause of pain for twenty years preceding the operation, and if it had been in the canal that length of time where it was lodged. We do know that large foreign bodies may remain in the bowel for months without producing manifestations of their presence. The differential diagnosis between strangulated ileus and obturation ileus in this case, was based on the fact that the man had suffered for five days from obstruction and still was not collapsed nor depressed, which he would have been, had the intestine been strangulated. The patient made an uninterrupted recovery.

Chicago Ophthalmological and Otological Society.

Regular Meeting, Dec. 10, 1895.

DR. F. C. HOTZ in the chair.

There were twenty-three members and visitors in attendance. The minutes of the last meeting were read and approved. The Secretary read the applications of Drs. S. L. McCreight and T. A. Woodruff, Chicago, and Dr. H. V. Würdemann, of Milwaukee.

DR. WÜRDEMANN showed the society some asbestos floss which he had been using instead of absorbent cotton, the advantage being that it can be held directly in a flame and sterilized in that way. It is very soft and more absorbent than absorbent cotton. He also showed asbestos cord which can be used for drainage, cloth of different thicknesses, and asbestos paper. It absorbs thick pus better than absorbent cotton, and is quite light even when wet.

DR. N. H. PIERCE then read a report of "Six Cases of Removal of the Ossicles for Different Causes." The report will be published.

DR. C. W. HAWLEY, some years ago, had seen several operations for sclerosing catarrh in which there was much tinnitus. The first case that he had seen was so very much improved by the operation, that he had very strongly recommended it to several patients subsequently. But in the next five cases that he saw the results were so disastrous that he had not recommended the operation for some time. In one case there was complete paralysis of the facial nerve lasting some time, and all of the five cases were not only not improved, but as a rule made worse.

DR. WÜRDEMANN had had considerable experience in doing this operation. He had had six cases of sclerosis and about thirty cases of chronic suppuration within seven years on which he had operated. The first six chronic purulent cases had a successful result. The next two cases were of the dry form. The first, a young girl, both ears were operated upon with a good result in both. At first, he had great difficulty in, and operated a number of times for, preventing the renewal of the drumhead. It grew very rapidly. At the end of a year the girl's hearing was worse than before the operation, but the tinnitus was better. In the second case, a woman of 36, the tinnitus was lessened, but the hearing grew worse. In another case, a man of 60, an Australian, all methods of treatment were tried without any result—in fact, he got worse under treatment. He was operated upon and made absolutely deaf. In three other cases the tinnitus was diminished, but the hearing not improved. In the suppurative cases about 60 per cent. were cured as far as suppuration was concerned; in 20 per cent the suppuration was not lessened, and in 20 per cent, it was somewhat lessened. Of all the suppurative cases, about one-third had the hearing improved by the operation. Dr. Würdemann has reached the point where he believes that he will not operate on any sclerosis case where the stapes is fixed; and as far as suppurative cases are concerned, the operation is justifiable only in those cases in which the suppuration comes from the attic as well as from the other parts of the middle ear. These cases usually have a necrosis of the incus or malleus; we most often find the incus diseased, when we find it at all, which is not very often, as it usually has escaped from the ear. We sometimes find the osseous canal very much roughened, and it is necessary to scrape this in order to effect

a cure of the suppuration. The point of the operation in attic suppuration is that by means of it free drainage is obtained, and the whole benefit to the case arises from this. He had done the Stäcke operation three times with immediately successful results. This operation may be considered the ideal one. A preliminary opening of the drumhead in the sclerosing form of inflammation is not apt to give any result, because these cases usually have free communication with the outer ear through the Eustachian tube, and nothing is gained by making an opening in the drumhead. This is especially the case where the drumhead is atrophic.

DR. DODD had recently operated upon two cases. One which he had followed for six weeks was a woman with exceedingly annoying and severe tinnitus. She could not sleep: she could not control herself because of the incessant and loud noise, and came to Dr. Dodd for that only. She had been treated for more than a year by different methods with no benefit: in fact, getting worse, and at the time he saw her the ear was perfectly deaf for conversation. He removed in this ear the drumhead and the malleus, the tinnitus was very much improved, and, strange to say, the hearing also. About two weeks after the operation suppuration started in the middle ear, due to some carelessness, but was easily controlled in three weeks. The amount of improvement both in the hearing and in the tinnitus in this case was very marked. Whether this continued or not, the doctor does not know. The other case was not nearly so severe a one, and the operation improved the hearing somewhat. The tinnitus had not been very severe and the patient paid but little attention to that part. It apparently was about the same.

DR. HOLINGER had had fair results from the operation where the ossicles were necrosed. In the dry catarrh, where inflation improves the hearing, he considers the operation contra-indicated. In true sclerosis improvement can hardly be expected. Where the Rinne test is negative, no results can be expected from operation.

DR. PIERCE, in closing, said that he wished it understood that in all of his cases, except one, all other methods of treating the ears were tried before operation was resorted to. Although he knew that Dr. Sexton recommended the operation indiscriminately, he had seen several cases from Sexton's hands where certainly marked improvement had resulted. One case he remembered particularly, where a lady was operated on in her worst ear some five years ago, and now the worst ear is the better one, the ear unoperated upon being the worst at present, thus establishing the claim that Sexton makes, that the operation tends to check the process. The Stäcke operation is an ideal one, but many patients will not submit to it. He asked if any of the members had had any experience with Lucae's probe?

DR. GRADLE said that he had used the probe a little, not methodically as Lucae recommended, and had no results from it.

DR. WÜRDEMANN had tried it in several cases, but without results in most of them. He did not consider, however, that he had given it a fair trial except in one case, the case of the man of 60 whom he had made stone deaf in one ear. He used Lucae's probe methodically, as recommended by Lucae, in the other ear, and had surprisingly good results.

DR. MANN showed a modified stomach tube which he had used for carrying off the water in syringing the ear. The side of the funnel-shaped end had been cut away and this was attached under the patient's ear by means of cords passing around the head.

SELECTIONS.

The Fate of Micro-organisms in Inspired Air.¹—In a communication we recently had the honor of reading before the Royal Medical and Chirurgical Society² on "Microorganisms in the Healthy Nose," we calculated that 1,500 organisms are inhaled into the nose every hour. This was the lowest estimate, and we quoted experiments to show that it must be a common event—at least, in our average London atmosphere—for 14,000 organisms to pass into the nasal cavities during one hour's tranquil respiration. The fate of the thousands of microbes which thus enter the human body is a question of great pathologic interest, and this increases when it is remembered that the expired air is practically free from germs. A study of the subject should

therefore be instructive in showing how the human economy deals with the hosts of organisms which are continually invading it through the air we are always breathing. The fact that inspired organisms do not, as a rule, reach the air cells was first pointed out by Lister. He observed that "in simple fracture of the ribs, if the lung be punctured by a fragment driven inward upon it, the blood effused into the pleural cavity from the wound in the highly vascular organ, though freely mixed with air which enters the pleura through the same orifice, undergoes no decomposition, as is clearly implied by the absence of any symptoms of pleurisy in such cases. The air is sometimes pumped into the pleural cavity in such abundance that, making its way through the wound in the pleura costalis, it inflates the cellular tissue of the whole body; yet this occasions no alarm to the surgeon, unless the openings in the parietal pleura become insufficient to permit free egress for the air, which then becomes pent up in the serous cavity and, distending it far beyond its natural dimensions, encroaches so seriously on the other lung as to embarrass or even abolish its functions."

In a postmortem examination on such a case ten days after the receipt of the injury Lister found the enormously distended pleura free from effusion and perfectly smooth and healthy. This observation was explained by the atmosphere being filtered of germs by the air passages, "one of whose functions it is to arrest inhaled particles of dust and prevent them from entering the air cells.³ Later Tyndall showed by his experiments with a ray of light in a dark chamber that expired air—or, more exactly, the last portion of an expiration—is optically pure, *i. e.*, that respiration has freed it from the particles of suspended matter with which it is laden.⁴ In 1882 Gunning of Amsterdam showed that expired air contains no microbes capable of provoking putrefaction in sterile liquids through which it has been passed,⁵ and in 1887 Strauss and Dubreuil independently arrived at a similar conclusion.⁶ They spent thirty minutes in expiring from 200 to 300 liters of air into tubes, in the bottom of which was a layer of sterilized alkaline bouillon. The greater number of these tubes remained sterile; a few showed growths of microbes and molds, doubtless due to accidents of manipulation. Grancher has made many experiments with the expired air of phthisical patients and has never found in it the tubercle bacillus or its spores. Charrin, Karth, Cadéac and Mallet have made analogous experiments with negative results. In a further series of confirmatory experiments on this subject Strauss⁷ showed that on an average of 809 bacteria and spores inhaled only one single germ is expired. Now, as the air is practically freed from all germs by the respiratory act, we have to consider where and how the thousands of organisms are arrested in the air passages. The experiments of Hildebrandt⁸ would tend to prove that the air is entirely freed from all germs before reaching the trachea. In controlling this we have examined the mucus from the trachea of all animals recently killed in the laboratory, neglecting, of course, any that had suffered from affections of the respiratory tract. The opportunities are too few to be recorded numerically, but up to the present we have always found this mucus to be quite sterile. The above shows that the fate of microorganisms must be sought for principally in the upper air passages. We therefore commenced with the nasal fossae, and our experiments are published in the paper already referred to.⁹ The result we arrived at was that "the mucous membrane of the healthy nose only exceptionally shows any microorganisms whatsoever. The interior of the great majority of normal nasal cavities is perfectly aseptic. On the other hand, the vestibules of the nares, the vibrissae lining them, and all crusts formed there are generally swarming with bacteria." These two facts seem to demonstrate that the vibrissae act as a filter and that a large number of microbes meet their fate in the moist meshes of the hair

³ Brit. Med. Jour., July 18, 1868.

⁴ Philosophical Transactions of the Royal Society, Vol. CLXVI, Part 1, 1876, p. 27.

⁵ "Werden mit der Expirationsluft Bacterien aus dem Körper entführt?" Klinische Monatsblätter für Augenheilkunde, 1882.

⁶ Sur l'Absence de Microbes dans l'Air expiré: Académie des Sciences, Séance du 5 Décembre, and La Semaine Médicale, 1887, No. 49, p. 493.

⁷ Annales de l'Institut Pasteur, 1888, No. 4.

⁸ Experimentelle Untersuchungen über das Eindringen pathogener Mikroorganismen von den Luftwegen und der Lunge aus. Beiträge zur pathologischen Anatomie und Physiologie, Ziegler und Nauwerck, Band II, 1888, p. 421.

⁹ Microorganisms in the Healthy Nose, etc.

¹ A paper read in the Section of Pathology at the annual meeting of the British Medical Association held in London in August, 1895.

² See Transactions, Vol. LXXVIII, 1895.

which fringes the vestibule. Not only does this arrangement arrest the ingress of germs, but others which have penetrated into the nose are rapidly ejected by the action of the ciliated epithelium.

To obtain an idea of how rapid a movement might be imparted by ciliary action we performed the following experiment. A frog was pithed and the lower jaw cut away, exposing the dorsal wall of the pharynx, which in this animal is covered with ciliated epithelium. On this a particle of wet cork was placed, and it was most striking to observe the rapidity with which it was conveyed along to the esophagus. We found that it traveled at the rate of 25 mm. (one inch) per minute. In the normal frog the rate is probably more rapid, as ciliated epithelium thus exposed is soon damaged. It is difficult to give an analogous demonstration, in the human subject, as a foreign body of any tangible size, even powdered magnesia, is apt to act as an irritant and produce a free secretion of watery mucus, which rapidly washes it down into the vibrissæ.

With regard to the microorganisms which may be deposited in the Schneiderian membrane, we carried out the following series of experiments on four different occasions. Cultivations were made from the vibrissæ and from the mucous lining of the nose of one of us who acted as the subject. The cultures from the vibrissæ invariably showed yellow and white colonies in abundance, while those from the mucous membrane were almost invariably quite sterile. This served to show that there was no red growth of the bacillus prodigiosus, the organism had been prepared, and a sterilized loopful was deposited on a distinct point on the septum, well within the vestibule. Cultivations made from the spot immediately, or within five minutes, showed an abundant confluent growth. When taken after fifteen minutes' interval the cultures on agar showed already a diminished growth. After thirty minutes the growth had markedly decreased; at the end of one hour it had diminished by 75 per cent. and consisted of a considerable number of discrete colonies: frequently no trace of the loopful of the bacillus prodigiosus could be detected after eighty minutes from the time it had been deposited, and after two hours had elapsed in no case did we get any growth whatever when cultivations were made from the spot inoculated. We would note that this observation had reference to a loopful of pure culture, large enough to be detected as a distinct red spot on the mucous membrane, and therefore containing myriads of organisms. What became of them all we are at present not prepared to say. During the two to three hours that the nose was kept under observation cultivations were continually being made from around the spot, but never once did they show any bacillus prodigiosus. We carefully examined the opposite wall of the nasal cavity and only once found a red growth among the vibrissæ. Wurtz and Lermoyez¹⁰ hold that the nasal mucus itself exerts a bactericidal influence on all, or nearly all, the pathogenic agents. So far we have been unable to corroborate their researches; but this may be due to our want of success in obtaining an appreciable quantity of sterile mucus. To collect this secretion it is necessary to introduce a sterilized cotton-wool plug into the nasal cavity and leave it there for some time. We have found it practically impossible to do this without contaminating the tampon with the vibrissæ at the orifice. Now, as we have shown, these are never free from germs, and the nasal mucus with which they come in contact was in no case sufficiently germicidal to prevent their free growth when sown on gelatin plates. In some cases we left the nasal mucus in a sterilized glass for from one to sixteen hours at room temperature, during which period it had abundant time to exert its destructive action on the germs which had adhered to it when passing out along the vibrissæ. Nevertheless, there was always a free growth of yellow and white colonies when gelatin plate cultivations were made from it. Wurtz and Lermoyez have only published their researches on the action of nasal mucus upon the anthrax bacillus; but still they hold that the same germicidal effect is exerted in different degrees of intensity on other microbes.

Although we have been unable to obtain any proof of bactericidal qualities in nasal mucus, we have satisfied ourselves that it is possessed of the important property of exerting an inhibitory action on the growth of microorganisms. This is shown by what we have said above and by the following experiment. A loopful of a fluid culture of the bacillus prodigiosus was mixed with a small quantity of nasal mucus. From this gelatin plate cultivations were prepared, some immediately and others at various intervals up to thirty-six hours; on each occasion the same quantity of the mixture was used for inoculating the plates. The number of colonies of the bacillus prod-

igiosus which developed in various plates was practically identical, showing that no increase in the number of organisms had taken place, and also that no germicidal action had been exerted during even many hours' exposure to the mucus.

We have made a great number and variety of experiments in order to test the bacterial condition of the air before and after passing through the nose. For a long time the conflicting and contradictory results showed us that there was some error in our methods. These were based on the plan adopted by Bloch for testing the warming and moistening influence of the nose. Finally, and only lately, we succeeded in approximating closely to the normal condition of affairs by designing the following method. A sterilized glass cannula, shaped like the tube of a post-nasal syringe, was introduced into the post-nasal space of one of us. The end of this glass tubing, projecting through the mouth, was directly connected with a glass tube passing down through a rubber cork to the bottom of a large-sized test tube. Fifteen c.c. of liquified sterile nutrient gelatin had been poured into this tube, the bottom of which was narrowed so that quite an inch of the glass tubing passed below the surface of the liquid. Another piece of glass tubing passed up through the rubber cork and was connected with a mouth-piece, through which inspirations were made regularly by the other observer so as to imitate normal breathing. In this way the air passed freely along both nasal cavities of one observer, entered the glass tubing, and bubbled through the layer of gelatin. Ten respirations were thus taken and an Esmarch roll cultivation was made. In an analogous amount of laboratory air we found twenty-nine molds and nine bacterial colonies; whereas after passing through the nose the air contained only two molds and no bacteria. On another occasion we found in nine liters of laboratory air six molds and four bacterial colonies, while the same quantity of air after passing through the nose exhibited one mold and no bacteria. We see, therefore, that practically all, or nearly all, the microorganisms of the air are arrested before reaching the naso-pharynx; probably a majority are stopped by the vibrissæ at the very entrance of the nose and those which do penetrate as far as the mucous membrane are rapidly eliminated. The nasal mucus is an unsuitable soil for the growth of organisms, and hence is an important factor in that it does not further their multiplication. The removal of the intruding organisms from the Schneiderian membrane is probably in the main due to the action of the ciliated epithelium, assisted by the trickling of mucus and the lachrymal secretion. Phagocytosis may share in the work of removal, though to a small extent, for we have only once found phagocytic cells containing bacteria.—ST. CLAIR THOMSON, M.D. and R. T. HEWLETT, M.D., in *The Lancet* (London), January 11, 1896.

Syphilis in Infants.—Boulengier denies the possibility of transmitting syphilis to the offspring by means of the spermatozoid. He thinks that syphilis in conception is an embryologic impossibility, and that where children are born with it, the disease was acquired *in utero*. Syphilis may be latent in the mother, but it finds the placenta such a fine culture medium that it develops there and infects the offspring while sparing her. Although the actual syphilis is not transmitted by the father in conception, yet all the symptoms of degeneracy that it entails are liable to appear in the child, inherited directly from him. He cites many cases to support his theory, among others a couple with no venereal antecedents of any sort. The husband contracts the disease when his wife is in the fourth month of pregnancy. The child is born with pronounced syphilis. A month later, the mother who had until then shown no signs of infection, was attacked with roseolar and papular eruptions.—*Presse Médicale Belge*, November, 1895.

Statistics of Anesthetics and Ruptures in Scandinavian Countries.—By concerted actions of the surgeons of Sweden, Finland and Denmark, determined upon at the Surgical Congress of 1893, at Gothenburg, statistics have been collected on these two subjects and published in the *Nordiskt Med. Arkiv*, xxvii, Nos. 4 and 5. Full details are given from which we cull the following: The mortality in 15,052 cases of anesthetics employed is 0.10 per cent. with chloroform; 0.15 per cent. with ether, and 0.18 per cent. where both were used. Five cases of death in the course of the narcosis from chloroform make a ratio of one in 2,257 cases. Gurlt, of Berlin, reported one death in 1,924 cases with chloroform, and one in 26,000 cases with ether, from a total of 151,000 cases of anesthesia (*Sem. Méd.*, 1894, p. 202). In statistics of surgical treatment of hernia, there were 68 deaths in 1,733 cases treated, a percentage of 3.9. This is higher than it should be, as many deaths were due to pre-existing complications. The methods of Bassini, Czerny, Macewen and Kocher were followed, with a preference for Bassini's.

¹⁰ Le Pouvoir Bactéricide du Mucus Nasal; Annales des Maladies d'Oreille, etc., 1893.

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SATURDAY, FEBRUARY 29, 1896.

DR. THOMAS DOVER, THERAPEUTIST AND
BUCCANEER.

In the *London Lancet* for January 4, Dr. WILLIAM OSLER, of the Johns Hopkins University, gives an interesting historical contribution concerning the Seventeenth Century physician who gave to the world the immortal Dover's powder. According to Dr. MUNK, librarian of the Royal College of Physicians of England, quoted by Dr. OSLER, Dr. DOVER was a Bachelor of Medicine of the University of Cambridge, but the name does not appear on the list of graduates. THOMAS DOVER was born in Warwickshire about 1660, and after studying at Cambridge and with the famous Dr. SYDENHAM, settled down at Bristol, for centuries the home port for adventurers, privateers, and slave traders. He was nearly fifty when he joined in a commercial and piratical venture with a number of Bristol merchants. Two ships, the *Duke* and the *Duchess* were fitted out for a voyage to the South Seas, from which WILLIAM DAMPIER, the circumnavigator of the world, had brought wonderful tales of Spanish riches. DAMPIER, who had come to grief in his last expedition to those regions, was taken along as pilot, while DOVER went as third in command to CAPT. ROGERS, and appears in his narrative as CAPT. DOVER. The expedition was memorable for two events. On Feb. 1, 1709, the ships arrived off the island of Juan Fernandez, and CAPT. DOVER was sent ashore in the pinnace, brought back with him to the ship a couple of days later a man clad in goat skins, who had been left on the island four years and a half before. This was ALEXANDER SELKIRK, the original Robinson Crusoe. Later the expedition sailed up the South American Coast, and found what

it was seeking in the two cities of Guayaquil, which it attacked and sacked. DOVER led the van, and cured the sailors of the plague which broke out after the capture of the cities. After cruising in the Pacific for another two years for the Spanish treasure ships they returned to England in 1711, having collected plunder to the value of \$850,000. DOVER's share made him a wealthy man, and left him free to wander about the world for some years.

He settled down in London as a physician in 1731, carrying into his practice the pugnacious habits of his buccaneer's life. To attract public attention, he published his book, "The Ancient Physician's Legacy to his Country; being what he has collected himself in forty-nine years of Practice; designed for the use of all Private Families." The book ran through eight editions, the last apparently being published in 1771. On page 18, on the section of gout, is given the formula for his famous powder:

"Take opium one ounce, saltpetre and tartar vitriolated each four ounces, ipecacuanha one ounce. Put the saltpetre and tartar in a red hot mortar, stirring with a spoon until they have done flaming. Then powder them very fine; after that slice in your opium, grind them to a powder, and then mix the other powder with these. Dose from forty to sixty or seventy grains in a glass of white wine posset going to bed, covering up warm, and drinking a quart or three pints of the posset; drink while sweating."

The publication of the book made a great noise, and brought DOVER into many quarrels with his fellow practitioners, who treated him as a quack, as they did SYDENHAM, for that matter. He carried on a bitter war against apothecaries, too, and died in 1742. His powder is still in the British pharmacopeia.

THE BRITISH ARMY MEDICAL OFFICER.

At the closing exercises of the seventy-first session of the Army Medical School, Netley, England, the prizes were distributed to the student officers by the Adjutant General to the Forces, GENERAL SIR REDVERS H. BULLER. The officers constituting the staff of the school and of the Royal Victoria Hospital were present, the principal medical officer, SURGEON MAJOR GENERAL GIRAUD acting as Chairman. The Director General of the Army Medical Department, SIR W. McKINNON was prevented by sickness from attending. Nine candidates on probation for the British Medical Service and eighteen for the Indian Medical Service passed the examinations which determined their final positions in order of rank. According to the report of the proceedings in the *Lancet* of February 8, the address of the Adjutant General did not create a favorable impression on the medical men present. He eulogized the profession of medicine and urged the young officers to be proficient in this their special work; and on the whole he gave the impression that

the professional qualification was the only one which would be regarded at headquarters in the consideration of promotions and rewards. An address of this character would have been all very well forty years ago, prior to the organization of the Army Medical School; but when it is organized, as it is now in all armies, that the ever present duty of the Medical Staff is to prevent sickness and preserve the efficiency of the fighting force the address of SIR REDVERS BULLER must be regarded as that of one who has not progressed with the age in sanitary matters but has retained the view which prevailed up to the time of the Crimean War that a doctor was of use only to cure the sick. Every military medical officer should be a good doctor, but he must be something more than this to enable him to perform the various official duties required of him; and as it was to fit him for the performance of these very duties that the Army Medical School was organized the address of the Adjutant General was particularly unsympathetic and in fact inappropriate to the occasion. Fortunately, in the United States the status of the medical officer is defined by the intelligence of the country as expressed by Congressional legislation. Fortunately also, our military officers are progressive, so that such an address by the Adjutant General or any other military officer of our Army would be an impossibility. We remember the kindly welcome which LIEUTENANT GENERAL SCHOFIELD gave to the student officers of our Army Medical School at the close of its last session and how he took occasion to impress upon them the importance and responsibilities of their position as sanitary officers, showing at the same time that by reason of their professional standing no officer of the army came into more intimate and friendly relations with others than the officers of the Medical Department.

THE ALLEGED FREQUENCY OF INSANITY AMONG FARMERS.

A homeopathic alienist down east has the credit of making the suggestion that early rising is a potent cause of insanity and is accountable for the undue prevalence of that disorder among the farming community, who are notoriously given to the practice that the old nursery rhyme so mistakenly says makes one "healthy, wealthy and wise." The suggestion contains two propositions, apart from that that early rising is bad for the mental health, viz., that agriculturalists are specially liable to insanity, and that this liability is largely due to this special cause. It is probable that most of us are not very zealous to prove the healthfulness of early rising; we are largely inclined to consider it rather as a necessary evil altogether aside from its unsanitary aspects, and the doctor's theory will be an acceptable one to a large majority. Whether it is well founded or not need not here be

seriously argued, but if it has no better foundation than the assumed greater prevalence of insanity in rural than in urban communities, it can not be said to be well supported. The statistics of American, and for that matter of foreign, asylums all indicate that the ratio of the insane to the population is far greater in the larger towns than in small ones or in country districts. Thus DR. E. B. LANE found, in discussing the Massachusetts statistics, that the proportion of insanity was twice as great in the city of Boston as it was in the small villages and rural districts, and that the ratio in the smaller cities was also greater, though less than in the metropolis of the State. Massachusetts is, however, so little of an agricultural State that it may be objected that its data hardly fairly represent the true ratio, and it is as well to take the statistics of those institutions that draw their inmates largely from a farming community. There are some of these that carefully classify their admissions, according to occupations, as well as according to rural or urban residence, and these afford some data for estimating the relative frequency of mental disorders in the agricultural population. Assuming these to be reliable, and there is no good reason for doubting them, we find that even in a State like Iowa, covering a period of over thirty years, during a large part of which the proportion of urban population was small, and which is yet very largely an agricultural community, the farmers and farm hands furnished less than a third of the insane male inmates of the chief asylum of the State. If we take other similar regions the testimony is the same, and when the wives and daughters of farmers are specified as such, their ratio in the asylums is not disproportionate to that of the males. In fact the statistics that are available indicate that the exact reverse of the popular notion, for such it seems to be, is the truth. Physical and mental degeneracy are more the characteristics of crowded centers of population than they are of the comparatively healthy country districts. The general mental and physical sanitary conditions in country dwellings and their surroundings are often bad enough, but there is not the concentration of untoward influences that exists in the cities, and the result is the better for the race. It would not seem needful to point out or emphasize these facts but for the notion that seems to be largely abroad that farmers are specially liable to insanity. It is not a teaching of the psychology manuals and monographs, nor is it held to any extent by those who from practical experience and study are best able to estimate the causes of mental disease. A number of years ago a prominent asylum superintendent called attention to the monotonous and laborious lives of farmers' wives as conducing to insanity of certain kinds, but he probably did not intend to convey the idea that they furnished any extremely large proportion of the insane. His statements, how-

ever, were reproduced and commented upon again and again in the lay journals, and it is to this in all probability that we owe the rather widespread delusion, for such it has come to be, which has been noted above. The increase of insanity in this and in other countries at the present time goes parallel with the increase of urban population at the expense of the country districts, and there is no valid evidence that agricultural pursuits and country life are in any way in themselves expressly conducive to mental disease. The belief that it is, the expression of which we see from time to time in the lay press and even as above indicated occasionally in medical journals, is due to the misunderstanding and misapplication of what was at best only a partial and rather one-sided observation, which may have been correct under the particular circumstances, but which has no general or universal application.

TRICHOMONAS AS A PARASITE OF MAN.

Trichomonas belongs to the flagellate infusoria. **BUETSCHLE**¹ says that about three species of Trichomonas are known. All are parasitic, living in the intestines of frogs, snails and other lower animals, and in the human vagina. Trichomonas vaginale was found in the vaginal secretions of women by **DONNÉ**² in 1836. While **DONNÉ**'s observations, though at first criticised, were finally accepted as true, yet it may be said that the parasites have been deemed of so little importance that they have until very recently received only scant notice.

Dock,³ of Ann Arbor, has just published a careful review of the literature bearing on this parasite in connection with the report of an extremely interesting case in which the trichomonas was found in the urine of a man. **Dock**'s case seems to be the third undoubted case of this kind in the order of publication, and the first in this country. **MARCHAND**⁴ described the first case in which the host was a man, aged 60 years, who had a perineal fistula following suppuration in the pelvis. Pus appeared suddenly in the urine, in the sediment of which **MARCHAND** found numerous hyaline bodies, which proved to be flagellates. A very short time after publishing his own case, he received from **Dr. MIURA**⁵, of Tokio, an account in manuscript of a second case in which trichomonads were found in the urine of a man, aged 52. In this case the organisms came from the urethra. Similar flagellate organisms were found in the vaginal secretions of the patient's wife and thus the source of infection became reasonably clear.

Dock's⁶ case occurred in a man, aged 27, who had been suffering with frequent urination ever since 1884, at which time he had a "congestive chill"; he

was then living in Texas and was frequently attacked with malaria. In 1892 he had pneumonia and during convalescence painful and frequent urination was marked, the urine becoming very bloody. The bleeding soon ceased but dysuria continued, exacerbations occurring at irregular intervals. At the end of urination whitish particles are passed with the urine. When examined by **Dr. Dock** caseous-like bits were observed in the urine made up of pus corpuscles, bladder epithelium of all kinds, and a number of animal parasites which were subjected to careful and repeated study with the result that they were determined to be trichomonads. In size the parasites were found to vary from 15 to 22 m.m. in length and 10 to 15 m.m. in width. The typical form is a pyriform or broad spindle with one end rounded. The outlines are usually sharp, the structure finely granular, sometimes hyaline, rarely coarsely granular. A differentiation into ecto- and endo-plasm can usually be made, the inner layer having a finely vacuolated appearance when examined by high powers. The parasites were hard to stain; killed by sublimate in methylen blue solution or stained alive in acetic carmin, a nucleus appears which can not be seen in unstained preparations. In acetic carmin the nucleus appears as a long, narrow, somewhat irregular body about one-fourth to one-third the length of the organism. At the anterior end of the parasite are the flagella which are four in number and from one to three times the length of the body. Often the posterior end of the body is prolonged into a long tail-like process that seems to be due to a soft pseudopod, which is frequently adherent to various neighboring objects. In many organisms an undulating membrane is present that extends from the insertion of the flagella backward usually for about two-thirds of the body. **Dock** did not find any sign of a mouth or other digestive organs.

Among the physiologic characteristics of the parasite may be mentioned motion, the phenomena of which are very interesting. Parts of the body may contract, lobes may be projected, but truly characteristic ameboid movement is not present. Pseudopods may form and move at any part of the body. These pseudopods seem to act as organs of support, the animal making abrupt, rapid, bobbing movements resembling that of a duck diving for food, the flagella and membrane being then in active motion. The flagella are capable of a whip-like motion, but may also present moving spiral waves. In an incubator the parasites were found to remain alive for six to seven hours; at room temperature they die an hour or two earlier. The organisms occur only in acid urine. Efforts to cultivate the trichomads anaerobically failed. Animal inoculations also failed.

Reproduction is regarded as occurring by longitudinal division in all flagellates. The mode of infec-

¹ Bronn's Klassen und Ordnungen des Thierreichs, Bd. I, Protozoa.

² Comptes Rendus de l'Académie des Sciences, 1836, Tome III, p. 385.

³ American Journal of Medical Sciences, January, 1896.

⁴ Centralbl. für Bakt. und Parasit., 1894, Bd. XV, p. 709.

⁵ Centralbl. für Parasit., 1894, Bd. XVI, p. 67.

⁶ Loc. cit.

tion is not known. In Dock's case the facts point to an indirect entrance into the urinary tract.

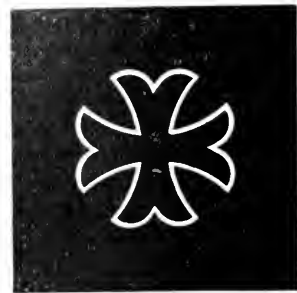
Have these organisms any pathogenic powers or are they simple "commensals?" DONNE⁷ thought the trichomonas vaginale characteristic of vaginal blennorrhagia, but later he concluded it had no specific importance. SCANZONI and KÖELLIKER⁸ did not believe the parasites had any pathogenic power. The prevalent opinion among recent writers is that the organisms in the vagina are "commensals." The intestinal parasites of this group can, it is thought, keep up a diarrhea. EPSTEIN⁹ shows that some of the intestinal flagellates can produce diarrhea.

In MARCHAND's and MIURA's cases the flagellates were associated with bacteria, but in Dock's case the conditions were simpler. In his patient the process was distinguished by an exudation of leucocytes and epithelial desquamation without any sign or history of stone and no evidence of any bacterial infection. The urine was invariably sterile as regards bacteria. The conclusion consequently seems warranted that the parasites produced the anatomic alterations. The hematuria which was present in Dock's case shows that trichomonas can not be left out of consideration in future investigations of this important subject, concerning the malarial nature of which there is always much discussion in our malarial districts.

INSIGNIA OF THE MEDICAL DEPARTMENT U. S. A.

The board of officers of which COLONEL CHARLES H. ALDEN, Assistant Surgeon General, U. S. A. is president, convened some time ago to consider and report on the insignia of the Department to be worn on the shoulder knots of the full dress uniform and on the collar of the fatigue blouse instead of the shield in gold worn at the present time, has concluded its labors and rendered its report and recommendation to the Surgeon General. The board called for suggestions from medical officers of the Army and of the National Guard, all of whom showed the greatest interest in the subject. Many in reply sent drawings of their views of the appropriate insignia, and not a few forwarded their propositions in gold embroidery on dark blue cloth or braid. The board was at first embarrassed by the multiplicity of the suggestions; but on careful consideration it was found that about ninety per cent of the replies were in favor of a cross as opposed to any other devices, and a larger proportion called for a cross in gold or in gold embroidery than for the Red Cross of the Geneva Convention which is worn upon the arm brassards in times of war. As expressing the views of the majority the board decided on recommending a cross, differing somewhat from that of the Knights of St. John, of the accompanying form, seven-eighths of an inch

over all, in dead gold bullion with plain center. It is understood that SURGEON GENERAL STERNBERG has



Seven-eighths inch over all; dead gold bullion, plain center.

approved the report of the board and submitted its recommendations to the SECRETARY OF WAR. On the approval of this functionary the cross will become the regulation insignia of the medical officers of the Army. The Medical Departments of the National Guard will no doubt remodel their insignia, and in progress of time this cross will have as intimate an association with the military surgeons of modern times as that of Malta has in history with the Hospitaller knights of nine hundred years ago.

THE ATLANTA MEETING.

The members of the ASSOCIATION will find the Annual Announcement of the Permanent Secretariat in this issue. Every indication points to a large and successful meeting. Gentlemen from the Northwest attending the meeting will find it pleasant to join the JOURNAL special train, which will leave Chicago March 3, arriving in Atlanta Monday afternoon, May 4.

CORRESPONDENCE.

Concerning Lombroso.

BRECKENRIDGE, MO., February 20, 1896.

To the Editor:—Having carefully read your editorial "The Italian School of Criminal Anthropology," in the JOURNAL of February 15. I can not resist the impulse to write you a few words of congratulation for your able and elaborate defense of Professor Lombroso and his modern science of criminology. The Italian professor, as the founder of the new science of criminal anthropology, has been severely criticized by many of our alienists and optimists of religion and science but it was not surprising that the views he enunciated, relating to problems of no ordinary difficulty and complexity, should meet animadversion and strictures, even among our thoughtful men. You are doubtless correct in saying, "that much that is felt by excellent men on this subject is prejudice (if the word is not too severe) springing from a superficial knowledge of the works of the Italians themselves and their coadjutors in France and Germany." Prejudice is the first-born of ignorance and never outlives its father. Professor Lombroso has taught us that the criminal is worthy of study and almost everybody, at the present time, is at least in accord on that point that he is an abnormal person, both mentally and physically, whose responsibility should be considered from another point of view than that to which we had been accustomed in former times. In regard to these abnormal peculiarities of the criminal, the following terse and vigorous language of I. Elam ("A Physician's Problems") meets with my hearty

⁷ Loc. cit.

⁸ Beiträge zur Geburtskunde, Bd. II, 1855.

⁹ Prager Med. Wochenschrift, 1893, Nos. 38, 39, 40.

proval: "I do not hesitate to say that these constitutional defects may be (and *daily are*) so combined as to produce almost complete irresponsibility under a rational system of judgment; even in cases where the intellect, *such as it is*, remains coherent, and its possessor is accounted sane. Hence arises, in great measure, that strange insoluble problem of our race, the existence of what are called the 'Dangerous Classes,' a people who seem set apart to fill our jails, our penitentiaries, our houses of correction, and penal settlements; a people at war with their kind, natural enemies of their brethren; a leaven leavening, and infecting and drawing into the vortex of its own corruption even the comparatively sound elements of society; the pariahs of humanity, the despair of philanthropists, the approbriums of legislation. It will not be by constantly repeated corrections that these classes will be reformed—'Why should ye be stricken any more? Ye will revolt more and more'—but by a patient repetition of the means by which man as a race, has been civilized." This new conception of the criminal which is in a fair way to change our ideas and customs regarding criminal justice, is due almost entirely to the agitation provoked by Professor Lombroso and his pupil, Dr. Max Nordau, by his celebrated work on "Degeneration." The readers of the JOURNAL are under many obligations to you not only for your many valuable editorials, but for the many important improvements in it during the last year.

Yours truly,

M. BOTTOM, M.D.

Has Edson Scooped the Record?

TECUMSEH, MICH., Feb. 18, 1896.

To the Editor:—The following clipping is taken from the Detroit Free Press and certainly speaks very plainly for itself:

"TO PHYSICIANS IN REGULAR PRACTICE will be sent free by mail a sample bottle of Dr. Edson's Aseptolin, the new discovered treatment for consumption, etc., together with Dr. Edson's paper, reprinted from the New York Medical Record of Feb. 8, 1896. Those who have patients suffering from consumption are urged to test this remedy. None but physicians can use it. Address, etc., etc."

We are living in a decidedly fast age.

Respectfully,

J. F. JENKINS, M.D.

Information Wanted.

DETROIT, Feb. 25, 1896.

To the Editor:—Will you kindly inform me through the JOURNAL what the requirements are for the practice of medicine in Minnesota? If there is a State Board, and the address of the Secretary? How often and where the examinations are held? You will greatly oblige your reader,

297 Brush Street.

R. Y. FERGUSON, M.D.

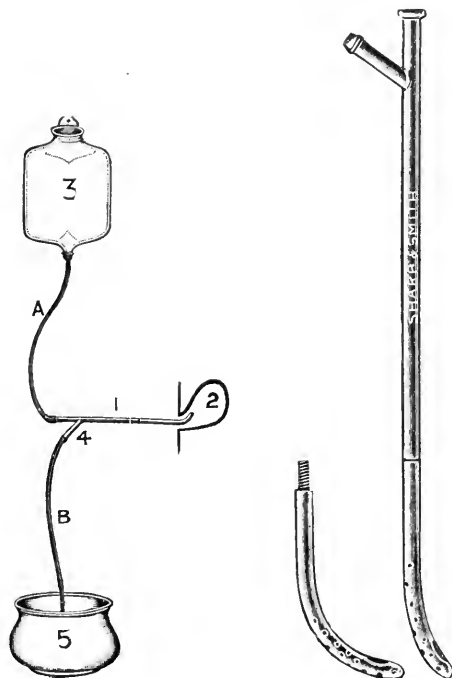
NEW INSTRUMENTS.

A NEW BLADDER IRRIGATOR.

BY J. M. G. CARTER, M.D., PH.D.
WAUKEGAN, ILL.

The instrument here described was prepared to meet the requirements of some cases of vesical catarrh. The simplicity of the apparatus is its chief feature, yet it meets all the indications where douching or washing out the bladder is desired. It consists of an ordinary No. 9 metallic catheter, jointed, so that a male or a female point can be attached as required. The points are perforated to facilitate the inflow and outflow of the water used in the douche. Near the end of the stem is a reflow-pipe, as indicated in the diagram. It is thus used: The irrigator, 1, in diagram is introduced into the bladder, 2; a fountain syringe, 3, is filled with the solution the physician wishes to use and the tube, *a*, attached to the irrigator. 1: a rubber tube, *b*, is attached to the reflow pipe, 4, and passes to a vessel under the bed. The rubber tube, *b*, is closed by the

pressure of the fingers or by a clip like those used on the tube of an ordinary fountain syringe tube; the tube, *a*, is opened by removing the pressure, and the fluid flows into the bladder. When the viscus is full, tube, *a*, is closed and tube, *b*, opened. In this manner by refilling and emptying the bladder as thorough washing as is desired in catarrhal and calculous condi-



tions can be quickly and easily accomplished. The fluid in this method touches all parts of the vesical wall. The degree of pressure can be readily controlled by elevating or lowering the fountain bag, and the same act will control the effect of the impact of the water on the wall of the bladder.

The instrument is made by Sharp & Smith, 73 Randolph St., Chicago.

PUBLIC HEALTH.

Camel's Flesh for Paris.—The Algerian butchers, says the *Petite Republique*, of Paris, have made a contract with two Paris houses to supply a large quantity of camel's meat, which will be sold in the capital during the carnival time. According to the official report of the Algerian sanitary inspector, the meat resembles that of the ox, but is not so fine in its fiber. It is as tender and as nutritious as veal. The camel's hump has been esteemed by the *gourmet* as an especially dainty morsel, so toothsome as to cause regrets when the last mouthful is eaten.

Preventive Vaccination of Cattle.—Prof. Hutyrá's report on the diseases among cattle in Hungary during 1894, is a grand testimonial in favor of preventive vaccination in epizootics. The mortality from the anthrax diseases has fallen from 5 per cent. in cattle to 0.024 per cent. and from 10 per cent. to 0.032 per cent. in sheep. Swine plague is the special scourge of the Hungarian farmers, and they are correspondingly elated to find that preventive vaccination has reduced the mortality from 20 per cent. to 0.28 per cent. in hogs. Six hundred and eighty-one thousand one hundred and eighteen hogs were vaccinated, 222,684 sheep and 110,739 heads of beef.

Rabies in England on the Increase.—According to a report quoted in *Public Health*, rabies became very prevalent in England in 1889, particularly in London and the surrounding counties, and in the more densely populated parts of Lancashire, Yorkshire and Cheshire. During that year no less than 312

cases among dogs were reported to the authorities, but, so soon as suitable muzzling regulations were brought into operation, the number of cases suddenly fell, until in 1892 only 38 were reported. In January 1894, nine cases among dogs were reported. The number became larger month by month, until it amounted to thirty-four in November and fifty-eight in December. The total for the year was 248, against 93 in 1893, and 38 in 1892.

Reform in Match Factories.—The French government has appointed a committee to investigate the subject of matches, in the attempt to discover a substitute for the white sulphur now used, which is so injurious to the workmen. There would be no injury from the use of this substance if the public would consent to use what is called the "Army" or "Swedish" match, which will only ignite on a special surface. It is the combination of chlorate of potash with the white sulphur that is so injurious, and in this match, the two substances are kept separate, the chlorate in the match and the phosphorous on the igniting surface. Red phosphorus makes matches which ignite from the slightest friction and burn out inside the boxes, while white phosphorus will not burn without air. The committee appeals to the inventors and manufacturers of the world to join in this attempt to evolve a perfect match with no injurious effects upon the workmen. The *Bulletin de la Soc. de Pharm.* of Bordeaux, December, 1895, contains the detailed account of the committee's experiments with different substances.

Quarantine Disinfection in New York Harbor.—Dr. A. H. Doty, the health officer of this port, has devised a plan for disinfection which has been highly recommended by the national health officers and will be put into operation when a bill appropriating \$6,000 for the purpose has been passed by the legislature. It provides for the only floating disinfecting plant in the world, and is calculated to do away with the long delays which are common in disinfection, besides being much more thorough than the present methods. When Fire Island was purchased by the State a few years ago at the time of the cholera scare, a steamboat was bought, and Dr. Doty has recently taken her to quarantine, with the view of utilizing her on his new plans. When the steamboat is ready for use, she will steam out to any ship where disinfection is necessary and make fast. The sailors and passengers will be transferred to her, and the work begun at once. The entrance to the disinfecting quarters will be in the afterpart of the boat, there being a little corridor with a door on each side, the women using the entrance on the left, and the men that on the right. In the two rooms they will remove all of their clothing, which will be placed on a tray, which will be run into a heated chamber where the temperature will be raised above 220 degrees, and remain there for an hour. In the meantime the owners of the clothing will go into bathrooms, where they will get a shower of salt water, followed by a plunge in fresh water, all of which will take about ten minutes, after which pajamas will be furnished to the men and woolen gowns to the women, and they will wait the rest of the hour for their clothing. After dressing they will go on deck to await the disinfection of the ship bedding, etc., which is to be carried on at the same time: the bedding being placed in the heated chamber on steamboat, and the ship being washed down with bichlorid of mercury solution, and smoked with the fumes of burning sulphur. It is expected that all this work can be done in a few hours with a ship of moderate size, and that in any case the delay will not be more than two days.

Mortality of New York State in 1895. By a summation of the twelve monthly bulletins of mortality, published by the State Board of Health, the very large total mortality of 121,735 is arrived at for the year. This is 3,500 more than in 1894, but less than any previous year since 1890. Delayed returns not recorded in the Bulletin, to the number of 4,500 deaths, make

the actual reported mortality for the year 126,235. The estimated reported population is 6,650,000 which makes a death rate for the year of 19.00 per 1,000 population; in 1894 it was 18.75; in 1893, 19.50; in 1892, 20.78; in 1891, 21.43; and in 1890, 19.65. There was an average daily mortality of 336, against 324 in 1894, and 340 in 1893. The Maritime district had a death rate per 1,000 population of 21.20; the Hudson Valley, of 18.70; the Mohaw Valley, the East Central and the Lake Ontario and Western districts, each of about 15.50, while the other more sparsely settled and perhaps not fully reporting districts have a rate of from 12.00 to 13.40 deaths per 1,000 population. The mortality under the age of 5 years was 34.5 per cent. of the total; for the past six years this has varied from 31.6 to 38.6. In the summer months 45.5 of the deaths occurred in early life; in the spring 33.1; in the fall 29.5; and in the winter 28.7. The zymotic mortality constituted 16.55 per cent. of the total during the year: in 1894 it was 18.56 per cent. and in preceding years it has been from 17 to 20.60. Typhoid fever caused 1,720 deaths, about 25 per 100,000 population, which has been the rate for several years past. The Hudson Valley district has a higher rate of mortality from it than any other. Diphtheria caused 5,000 deaths, which is less than for several years. Its decrease occurred in all parts of the State, but chiefly in the maritime district where there were 1,200 fewer deaths from it than in 1894. Scarlet fever caused 850 deaths, which is less than half the average yearly mortality from it for the past eight years. From measles and whooping cough the mortality was excessive, and especially in the eastern part of the State, but becoming more generally distributed in the last of the year. Diarrheal diseases caused 9,000 deaths, which is, with little variation, the yearly average in this State. There were 546 deaths reported from cerebro-spinal meningitis, and 406 from malarial diseases, the latter showing a yearly decrease in reported mortality for eight years. From grippe there were 5,100 deaths in the four first months of the year. Consumption caused the usual yearly mortality, a little over 13,000 deaths, and a little more than 10 per cent. of the total deaths.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Arizona: Hirschaw, February 17, 10 cases.
Illinois: Cairo, February 15, 1 case.
Louisiana: New Orleans, February 8 to 15, 18 cases, 1 death.
Michigan: Detroit, Ionia Township, Imlay Township, Rega Township, Saginaw Township, week ended February 14, small-pox reported present.
New York: Brooklyn, February 15 to 22, 1 case.
Pennsylvania: Finleyville, February 11, 1 case; Gilberton, February 13, 1 case; Maltby, February 17, 1 case; Brookville, February 18, 1 case.

SMALLPOX—FOREIGN.

Alexandria, January 15 to 21, 2 deaths.
Cairo, January 15 to 21, 1 death.
Canton, February 1 to 8, 4 cases.
Corunna, January 25 to February 1, 3 deaths.
Guayaquil, February 1 to 7, 2 deaths.
London, Eng., January 25 to February 1, 74 cases.
Madrid, January 7 to 25, 16 deaths.
Montevideo, January 11 to 18, 1 case.
Nogales, February 8 to 15, 1 case.
St. Petersburg, January 25 to February 15, 15 cases, 3 deaths.
Southampton, February 1 to 8, 1 case.
Swansea, January 25 to February 1, 5 cases.
Taxpan, February 1 to 8, 2 deaths.
Warsaw, January 25 to February 1, 3 deaths.

CHOLERA FOREIGN.

Austria-Hungary: January 21 to 27, 1 case, 3 deaths.
Egypt: Alexandria, January 15 to 21, 7 deaths.
Russia: December 28 to January 4, 28 cases, 19 deaths; January 25 to February 1, 7 cases, 7 deaths; Kiev (government), December 15 to 21, 12 cases, 6 deaths.

YELLOW FEVER—FOREIGN.

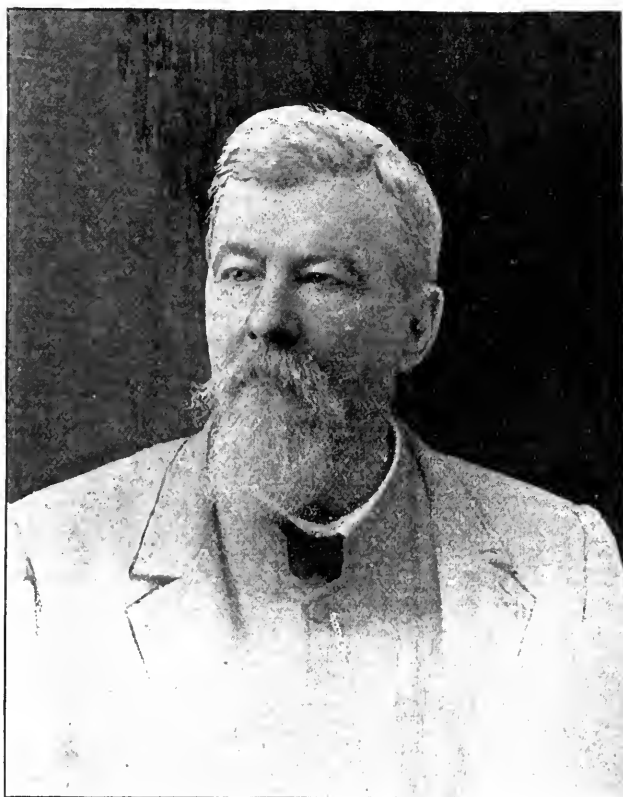
Cuba: Sagua la Grande, February 1 to 8, 3 cases; Santiago, February 8 to 15, 7 deaths.

NECROLOGY.

JOSEPH JONES, M.D., LL.D.,* of New Orleans, La., February 17. He was born in Liberty County, Ga., in 1833. His father was the Rev. Charles Colcock Jones, D.D., a distinguished Presbyterian divine and author of "God." His maternal grandfather was Capt. Joseph Jones, of the "Liberty Independent Troop," who served in the war of 1812: his great-grandfather on the paternal side was Maj. John Jones, an officer in the Continental Army, who fell before the British lines around Savannah during the memorable assault in October, 1779, and himself connected with the Pickneys, Haines, Swintons and Legarés of the Palmetto State. His early education was in the main acquired through the aid of private tutors at the paternal homes, Montevideo and Maybank plantations, in Liberty County, Ga., and in 1849, when he was 16 years of age, he repaired to South Carolina College, at Columbia. Having completed his freshman studies in this institution, he matriculated at Princeton, in the sophomore class 1850. He received his A. B. diploma from that college in June, 1853. Dr. Jones subsequently entered the medical department of the University of Pennsylvania. Shortly after the award of his doctorate, in 1855, he was elected Professor of Chemistry in the Medical College of Savannah in 1856. In 1858 he became Professor of Chemistry and Geology in the State University, at Athens, and in the following year was called to the chair of Chemistry in the Medical College of Georgia, in Augusta. This office he retained during the period covered by the late war, except when interrupted by active engagements in the field. In 1866 he was tendered the professorship of Institutes of Medicine in the University of Nashville. His connection with that university terminated when he removed to New Orleans, in the fall of 1868. It was there his labors in behalf of the medical department of the University of Louisiana, now Tulane University, began. Dr. Jones was appointed visiting physician to the Charity Hospital of New Orleans, on his arrival in that city. His long service in this capacity has proved valuable alike to the State of Louisiana and to the cause of medical science. He was the chemist of the Cotton Planters' Convention, in 1860, and the compiler and author of the first report submitted to that body touching the agricultural resources of the "Empire State of the South." When the Southern Historical Society was founded in New Orleans, in May, 1869, he became the first secretary of that organization, the framer of its original constitution, and an intense friend of the movement which gave it birth. To his individual efforts the sustenance of its vitality in the infant stage of its history, was to a large extent due. The organization was subsequently transferred to Richmond, Va. The officers of the Southern Historical Society, as first founded in New Orleans, were: Rev. Dr. B. M. Palmer, President; Gen. Braxton Bragg, Vice-President; and Dr. Jones as Secretary and Treasurer. In April, 1880, Professor Jones was made president of the Board of Health of the State of Louisiana, which had been reorganized in accordance with the provisions of the State constitution of the preceding year. His administration of the affairs of the board were characterized by ability, fidelity and industry. In April, 1887, Dr. Jones was elected president of the Louisiana State Medical Society. He bore a prominent part in the deliberations of the Ninth International Medical Congress, which convened in Washington City, in the summer of 1887, and was president of the Fifteenth Section. Public and International Hygiene. In 1890 he was made Surgeon General of the United Confederate Veterans. Dr. Jones was commissioned surgeon in the confederate army in 1862. His duties as such ceased in 1865. For some months prior to receipt of his commission, he had regularly discharged the functions of the office to which he was afterward promoted. As early as January, 1861, he volun-

teered in the Liberty Independent Troop, and entered upon active service in October of the same year. During his connection with this cavalry troop he acted as surgeon to several kindred organizations doing duty on the Georgia coast.

Professor Jones was a member of leading medical and scientific societies, both in this country and in Europe. His chief claims to recognition rest upon his achievements in the field of original investigation, and upon his reputation as an authoritative and exhaustive writer. Omitting several minor publications, his first production was "Investigations, Chemical and Physiological, Relative to Certain American Vertebrata." It was comprised in the eighth volume of the Smithsonian "Contributions to Knowledge," and appeared in 1856. In the same year his "Physical, Chemical and Physiological Investigations upon the Vital Phenomena and Offices of Solids and Fluids of Animals" was given to the public. This was followed by his "Observations on Malarial Fever," in the *Southern Medical and Surgical Journal*, of Augusta, Ga., for 1858-59, and his



JOSEPH JONES, M.D., LL.D.

"Observations on Some of the Physical, Chemical, Physiological and Pathological Phenomena of Malarial Fever." These latter observations were published in Vol. xii of the Transactions of the AMERICAN MEDICAL ASSOCIATION. Subsequently appeared his "Suggestions on Medical Education;" "First Report to the Cotton Planters' Convention of Georgia on the Agricultural Resources of Georgia," (Augusta, Ga., 1860); "Investigations into the Diseases of the Federal Prisoners Confined in Camp Sumter, Andersonville, Ga.;" "Investigations into the Nature, Causes and Treatment of Hospital Gangrene, as it Prevailed in the Confederate Army" (New York, 1866); "Researches upon Spurious Vaccination in the Confederate Army" (Nashville, 1867); "Sanitary Memoirs of the War of the Rebellion" (New York, 1866-1868); "Molities Ossium" (Philadelphia, 1869); "Outline of Hospital Gangrene in the Confederate Armies" (New Orleans, 1869); "Surgical Memoirs of War of the Rebellion" (New York, 1871); "Observations upon the Treatment of Yellow Fever" (Louisville, Ky., 1873); "General Conclusions

*Abstracted from "Eminent Physicians" by R. French Stone.

as to the Nature of Yellow Fever" (New York, 1873); "Hospital Construction and Organization" (Baltimore, 1875), and "Explorations of the Aboriginal Remains of Tennessee," which was published by the Smithsonian Institution at Washington, in 1876. The last-named represents the author's principal contribution to the science of archeology. Articles and pamphlets discussing the modes of burial, burial caves, earth-works, mounds and relics of the Southern Indians have likewise been furnished by his pen. In the year 1876, appeared the first volume of his "Medical and Surgical Memoirs," containing investigations on the geographical distribution, causes, nature, relations and treatment of various diseases, and embodying results to the attainment of which more than twenty years had been devoted. The concluding volume of these memoirs dates its appearance since 1890. In the second volume are published Professor Jones' latter-day labors and researches, as recorded in a series of monographs, among which his "Physiological Principles of Education and their Scientific Application to the Development and Perfection of Medical Science," takes foremost rank. His observations and researches upon sanitary matters form a unique chapter in the medical history of an eventful period. During his presidency of the Board of Health the quarantine and sanitary measures instituted and perfected by Dr. Jones were effectual in excluding yellow fever from the Valley of the Mississippi. His last important work was published in the JOURNAL last year as a serial, and contains a vast amount of information of the subject of yellow fever, and an almost incredible number of original investigations. Dr. Jones was twice married. In October, 1858 he married Miss Caroline S. Davis, of Augusta, Ga. His marriage to Miss Susan Rayner Polk, a daughter of the Right Rev. Leonidas Polk, Bishop of Louisiana and Lieutenant-General in the Armies of the Southern Confederacy, occurred June 21, 1870. In the same year he went abroad, visiting England, France and Wales, and making a careful tour of the hospitals and museums of those countries. Professor Jones was an earnest student of American archeology and to his reputation as a writer on archeology he had the distinction of being an extensive collector. In times to come, his volume of memoirs, and his last work on yellow fever, will be referred to as a vast storehouse of information on the subjects treated. America has never produced a more earnest student, or a more painstaking and diligent scholar.

L. H. JOHNSON, M.D., died of neurasthenia on Thursday, the 30th ult. He was a well known physician and one of the most prominent leaders of the colored race of Detroit. The doctor was a successful practitioner, not only among his own race, but among those of German and Polish nationality. He was active politically, but never aspired to office. Until last month he was president of the Douglas Frontier League, a member of the Detroit Medical and Library Association, an Oddfellow, and a member of St. Matthew's Episcopal church. He was born Sept. 16, 1842, in Uniontown, Pa. Through his own efforts he worked up until he became a conductor on the M. C. R. R. He accumulated enough money to push himself through the Chicago Medical College, where he graduated in 1880, ever since practicing in Detroit. He leaves a widow and two sons, Dr. A. H. and W. E. Johnson.

ALEXANDER S. HUNTER, M.D., died at his home in Spuyten Duyvil, New York City, February 14. He was born at Conesville, N. Y., in 1839. He was graduated from the Albany normal school. He then became a trader in Albany and pursued the study of civil engineering. He then went to Great Barrington, Mass., and became professor of mathematics at the Sedgwick Institute. Then he came to this city and entered the New York University Medical College, from which he graduated in 1863, and at once entered upon his career as a physician, opening an office in Broome street. He became con-

sulting physician at the New York Dispensary. He invented Hunter's speculum, which has been much used. He also invented Hunter's forceps. In 1890 he was elected president of the New York County Medical Society. He was the first president to succeed himself since the organization in 1807. For six years he was chairman of the obstetric section of the Academy of Medicine. He was also a member of the New York Medical Society, the State Medical Union, the Neurological and the Medical Jurisprudence Societies.

JAMES E. NOYES, M.D., of Providence, R. I., February 16, aged 79.—C. H. Donaldson, M.D., of Sterling, Ill., February 13, aged 71.—John Howard Ripley, M.D., of New York, February 14.—H. J. Saunders, M.D., of Kingston, Ont., February 19, aged 49.—James A. Holman, M.D., of Pittsburgh, Pa., February 18, aged 38.—H. Newberry Hall, M.D., of Chicago, February 23, aged 32.—W. H. Dickie, M.D., of Lincoln, Neb., February 18, aged 83.

ASSOCIATION NEWS.

Railroad Rates to Atlanta.

PHILADELPHIA, Feb. 21, 1896.

To the Editor: I just received from the Southern Passenger Association a promise of a fare and a third, on the certificate plan. As this Association has charge of the lines in the locality where we meet, I presume that the others will agree to the same. All who go to Atlanta will pay full fare, and take a certificate of the railroad agent: this is signed by me at Atlanta and by the agent there, who will be at the place of our sessions, and on this a return ticket can be bought for one-third full fare. The AMERICAN MEDICAL ASSOCIATION is pledged to redeem any such in hands of those who were not the original purchasers, and the certificates are not good more than three days after adjournment.

Your truly,

W. B. ATKINSON.

For annual announcement see page viii.

MISCELLANY.

Where He Was Hit. A Baltimorean being injured, was asked if he was hurt near the pelvis. "Why, no," he said, "it was near the monument."

Prizes for Diligence. The late Dr. Duesterhoff, of Berlin, Germany, left in his will the sum of \$25,000, as a capital sum, the interest of which is to be used as an encouragement to diligence on the part of the medical students of the university. The half-yearly interest is to be paid as a prize to each of the two students, who, at periods six months apart, is approved as having been the most diligent student in his semester.

New York University Medical Department.—The medical faculty of this University has reported in favor of extending the course from three to four years. This action will probably receive the endorsement of the council at an early date, the medical faculty having essentially the entire control of and responsibility for reforms of this nature. It is not impossible that before three years have passed by, all the large medical colleges of New York city will have adopted the four-year system.

Abortion. On an appeal from a conviction of having committed an abortion which it affirms, the supreme judicial court of Massachusetts holds that the averment of pregnancy was in that State unnecessary. If, being alleged, it was necessary to prove it, it was not necessary to go further, and prove that the fetus, at the time of the defendant's acts, had vitality, so that in the course of nature it could mature into a living child. Even if the child had then ceased to have such vitality, pregnancy would not cease till the woman was delivered.

Hunting a Lost Ball. The Roentgen ray and the location of bullets brings to mind an old army story about a general officer, who having been wounded in the fleshy part of the leg, the surgeons made many incisions. At last growing tired and worn with pain, he asked if they were nearly through dressing his

leg. "I am looking for the ball," said the operating surgeon. "Why the devil did you not say so before?" roared the officer. "I have the ball in my pocket."

A New Thaumaturgic Physician in Germany.—The physician who is attracting thousands of patients from all over Europe at the present time is Herr Ast, the shepherd doctor, who lives at Radbruch. For a uniform fee of about 25 cents he diagnoses disease by examining a lock of the patient's hair. It is said that his clients wait patiently in line all day to see him, and often, when their number is large, until midnight.

Public Improvements in Mexico. We read in *Progrès Médical* of January 25, that the French Chargé d'Affaires at Mexico has supplied his home government with the detailed information relative to the great public works soon to be inaugurated in the City of Mexico and elsewhere. Among these an entire new system of sewers for the capital is contemplated. The officer asserts that the Mexican government would be pleased to have the French offer their assistance in the new enterprises.

Hemiplegia in Hepatic Lesions.—Levi has been studying reflex patellar action during the course of hepatic lesions. Normal in fourteen cases, in eight he found it suspended. He considers this paralysis due to the disturbance in the peripheral nerves which accompanies the lesion, and not to the lesion itself. In one case the right reflex action was exaggerated and in two cases suspended altogether. These facts can be explained by the edematous hemiplegia on the right side in hepatic disorders, described by Hanot.—*Gaz. Méd. de Paris*, January 25.

Paris Overcrowded with Medical Students.—There are 6,300 medical students in Paris this year, one-fifth of whom are foreigners. It is difficult to procure cadavers and the facilities of the amphitheaters, etc., are limited to 3,000. In order to relieve this congestion, all the foreigners who ask for their "Equivalence," which is almost equal to a baccalaureate, are informed that it is no longer granted except on the condition that the receiver will leave Paris and conclude his course in some other town or city. The French home students have been protesting most vigorously for some time against being crowded out by outsiders, to whom, they assert, special favors are extended, and further restrictive regulations may be expected. The foreign graduate is no longer allowed to remain and practice in France unless he becomes a naturalized citizen.

Should not Require Administration of Anesthetics. In a personal injury case where the defendant requested the court to make an order requiring the plaintiff to submit to an examination as to the condition of his arm, the latter consented that an examination be made in open court, provided no anesthetics or drugs or harsh methods were used. The physicians appeared to deem it necessary to administer anesthetics in order to make a complete examination. Under these circumstances the supreme court of Michigan holds, *Strudgeon vs. Village of Sand Beach*, decided Dec. 24, 1895, that the circuit judge was right in refusing to require the plaintiff to submit to the administration of anesthetics.

The Country Doctor in France.—The London *Lancet* contains an item illustrative of the trials of the country doctor in France. A young physician settled in a community whose paupers he attended for \$10 per annum. One night, soon after his arrival at this Eldorado, he received an urgent summons to visit a patient who lived at a distance of six kilometers from the village. On reaching the cottage it was then 11 p.m.; he found the doors closed and the lights extinguished. In reply to his knocks the door was opened by a sturdy peasant, who laughingly informed him that there was no illness in the house, but that his wife had wished to see if, when anyone was ill, he would come if sent for! The unfortunate medico since died from overwork. The following lines would not be without their relevancy to the unfortunate French country doctor, although

they were written for, and to-day are cut upon the tombstone of a Virginia physician:

"He started on his travels,
Many, many years ago,
For the place where life unravels,
And dividing waters flow:
So I hope he has reached the haven,
Where no Anchor ever drags,
And has landed safe in Heaven,
With his shiney saddle bags."

The Campaign of the French in Madagascar.—According to an eye-witness, the statistics of this expedition are: Killed by the enemy, 7; wounded under fire, 94; death from disease, 6,000; on the sick list, 15,000. The *Union Médicale* commenting on these sad figures recalls another similar expedition, when Gen. Leclerc left Brest in 1802 for Jamaica with 60,000 men, and the yellow fever killed 50,000 in four months. Of the 10,000 left only 300 ever saw France again, and they did not reach home for seven years later. Since this frightful disaster this century has not witnessed another of the kind until this Madagascar campaign. In 1802 the authorities responsible for it were more unfortunate than guilty, but in 1895 they were more guilty than unfortunate.—*Prov. Médicale*, January 11.

Arterial Pulse in the Saphenous Vein.—The *Jour. des Sc. Méd. de Lille*, December 14, reports a case of arterial pulse wave in the inner saphena, which it notes as a curiosity. A woman was being examined for a tumor in the lower abdomen, under the influence of chloroform, and in the obstetric position. Suddenly a wave-like motion was observed on the left limb, following the course of the saphenous vein, which had quite a varicose appearance, and feeling like a pulse to the fingers. It was evidently an arterial impulse, proceeding counter to the current in the vein. As no trace of cardiac nor vascular trouble had been discovered that could explain it, and as it ceased when the limb was in a horizontal position, the conclusion seems evident that the saphena and the artery must have been squeezed together so closely by the tumor and the position of the limb that the arterial pulse wave was communicated to the vein. It could be followed to the calf of the limb and even to the ankle, but never occurred again after that occasion.

Improper Answer of Expert.—In a personal injury case, a medical expert was asked to state, from his knowledge as an expert, the treatment and what would be the course of chorea in the plaintiff's case. The witness entered into a general discussion of the disease, the various causes producing it, and some of the possible ultimate results thereof. Nowhere did he state or intimate or express an opinion as to what the course of the disease would be in the plaintiff's case, or the probability or improbability of her recovery. On the contrary, his answer was confined to the possible effects attending the progress of the disease in general, and its probable duration, and the results that might ensue to some person or other afflicted with the disease, and those results dependent on the producing cause of the disease. This the general term of the city court of Brooklyn holds, in *Swenson vs. Brooklyn Heights R. Co.*, decided Dec. 13, 1895, was wrong. It improperly placed before the jury results that might ensue, future consequences that were possible, and on this account the court orders a new trial.

Record Not Admissible to Prove Sanity. In a criminal prosecution, where the defense of insanity is relied on, the supreme court of Indiana holds, *Naanes vs. State*, decided Jan. 10, 1896, that the record of the proceedings of an examination by a competent commission as to the sanity of the accused is not admissible to show that the latter was sane at the time of committing the alleged offense. The court explains that it may, in reason, be said that a person found upon the inquiry of a commission not to be a fit subject for admission to an insane asylum, may, nevertheless, be of such mental unsoundness as to have immunity from punishment for crime. Furthermore,

if the evidence of the witnesses as recorded in the proceedings of the commission, and whom the accused had no opportunity to cross-examine, should be held to be admissible against him upon the criminal charge, it would manifestly result in a denial of his right, upon his trial, under the constitution, to meet witnesses adverse to him "face to face."

The Present State of our Knowledge of Diseases of the Spinal Cord.

Dr. Obersteiner recently addressed the Vienna Doctoren-collegium on this subject, and reviewed the wonderful progress made since the sixties, when the text-books only listed five, and only discriminated between the gray and white matter, where we now distinguish seventeen components. We owe to Nissel and to Weigert's new staining method much of our better information in regard to the more delicate nerves. To Marchi's method is also due Schmaus' discoveries of the changes in degenerate nerve fibers. We have learned how hypnotism deadens organic pain by its stupifying action on the functional system. We know that there is no dividing line between diseases of the peripheral and central nerves, as Landry's disease, for instance, commences with the former and ends with the latter. He enumerates seven inflammatory and seven non-inflammatory primary diseases, with several secondary, and adds "etc." to each. Unfortunately our knowledge how to treat them has not kept pace with knowledge of their pathology. Suspension has proved beneficial in tabes, but not on account of the hyperemia it produces in the spinal cord, as was supposed at first, but owing to the way in which it stretches and loosens the nerve fibers. *Wiener klin. Rundschau*, January 26.

Pharmacy Law Changes in South Dakota. Section 4, chapter 132, session laws of South Dakota of 1893, headed "Who entitled to be registered as pharmacists," was amended in 1895, to read: "Any person of good moral character and temperate habits who shall pass a satisfactory examination before the State board of pharmacy shall be entitled to a certificate of registration as a licentiate of pharmacy." A law was also passed which provides that any regular graduate over 18 years of age who has received a diploma for the pharmacy course in South Dakota Agricultural College, and who has before or after graduation practiced pharmacy for one year under a regularly licensed druggist in South Dakota in a drugstore where physicians' prescriptions are compounded, shall, upon passing a satisfactory examination by the State board of pharmacy, receive from the board a license entitling him to practice pharmacy in any county of South Dakota: and said board shall grant said license to said applicant without unnecessary delay. Any person who has had one year's work in said pharmacy course and two years' work in an accredited drugstore, shall be entitled to a druggist's license upon passing a satisfactory examination before the State board of pharmacy.

Gas Asphyxiation Treated by Oxygen Inhalations. Before the Canadian Medical Association a case of the above description was reported by Dr. J. W. Shillington, of Ottawa. The principal point of interest, according to the *Montreal Medical Journal*, was in the prompt success following the administration of oxygen when other means were failing. An interesting point was the face becoming black during the inhalation, which he supposed was due to the increased quantity of carbon dioxid formed in the presence of oxygen and circulating in the blood. Dr. T. W. Mills did not agree with the explanation offered by the President. Some years before he had suggested the method of treatment used by Dr. Shillington, but experiments upon animals had shown oxygen to be more efficient than air in cases of asphyxiation. Dr. S. R. McKenzie related the account of a case of an old woman asphyxiated by illuminating gas, who was brought to the Montreal General Hospital in a comatose condition. The patient did not react to the Faradic current. After the forced inhalation of many gallons of oxy-

gen the patient revived in about four hours. About a year previously, Dr. McKenzie stated, a much more favorable case had been lost, a young man who died after twelve hours continuous treatment by artificial respiration and stimulants. He had no oxygen to give him, but he now kept over one hundred gallons and applied it with a nitrous oxid inhaling apparatus.

Prescriptions for Intoxicating Liquor in West Virginia.—Under section 7 of chapter 32 of the West Virginia Code, the supreme court of appeals of that State vs. Berkeley, decided Dec. 4, that if a physician gives a prescription to enable one to obtain liquor from a druggist as medicine, either stating that it is, or that he believes that it is, absolutely necessary as a medicine, and not as a beverage when he either knows, or believes, or has reason to believe it is not so necessary, or when he does not know it to be so necessary, he violates said statute, and is guilty of the offense it creates. The physician must act in entire good faith. It is his duty to examine and ascertain whether the liquor is absolutely necessary as a medicine. And where a prescription names a certain person as the one needing such liquor, when he does not need it, and the physician knows he does not need it: but the person so named is getting it for the use of another, the statute is violated, though that other person may so need the liquor as a medicine. The prescription must name the person for whom the liquor is prescribed.

Puerperal Tetanus; Argument against Vaginal Douches.—Drapier writes to the *Jour. des Sc. Méd.*, December 28, describing a case of typical and fatal tetanus commencing nine days after a successful confinement which was progressing rapidly to permanent recovery without the slightest difficulty or complication, and never a trace of fever. Antiseptic vaginal injections had been ordered, phenolized or boiled water, which were carefully administered by the woman's husband. His business brought him in contact with horses, and the tetanus bacillus must have been on his hands or finger nails, or was already in the chamber, which had a direct passageway communicating with the stable. The writer asserts that this case confirms his growing disinclination to vaginal douches after confinement, except in special cases. He quotes Pinard (*Jour. de M. et de C.*, July 10, 1895), who states that they are always useless and frequently a source of danger; also Lucas, Sebilleau and Champnière. All agree that except in special cases, retention of membranes or fetid discharges, they had better be omitted, especially in the country, where antiseptic precautions are so little understood. In the case above noted, the closest scrutiny failed to discover the slightest abrasion on the woman's body where Nicolaïer's bacillus could have infected her, which limited the local seat to the uterus.

"Disease" or "Bodily Infirmary" in Law.—An accident insurance policy excepted injuries, fatal or otherwise, resulting directly from "any disease or bodily infirmity." In an action thereon, the jury were instructed that they must accept the word "disease" as meaning some ailment or disorder of a somewhat established or settled character, some physical disturbance to which the insured was subject, and of which the attack that caused his fall was in some manner a recurrence; that a mere temporary disorder, that was new or unusual with him, arising from sudden and unexpected derangement of the system, though it produced or caused unconsciousness, would not be a disease, within the meaning of the policy, and would not exempt the insurance company from liability. This the supreme court of Iowa sustains. *Meyer vs. Fidelity and Casualty Co.*, decided Dec. 13, 1895. It says that it thinks the words "disease" and "infirmity" as used, mean practically the same thing, and should be given no broader meaning when used by an insurance company in a clause of its policy than they are given in ordinary speaking and writing. And, on principle and authority, if the disorder which caused the fall was temporary and unexpected, the injury was "violent,"

"external," and "accidental," within the meaning of these words as used in an insurance policy.

Unchastity and Credibility.—For a considerable time the rule permitting a witness to be impeached by proof of general reputation for unchastity was confined, in Missouri, to females. Then the supreme court of that State held, in two cases, that the rule applied alike to both sexes, and that such reputation might be shown to discredit a male as well as a female witness. Now, in the case of *State vs. Sibley*, decided Dec. 10, 1895, the court, with three justices dissenting, overrules those two cases and reverts to its original position. Especially in a case where the defendant's character for chastity is directly involved, does the court think that such evidence is inadmissible for the purpose of impeaching his character as a witness. It is a matter of common knowledge, the court goes on to say, that the bad character of a man for chastity does not even in the remotest degree affect his character for truth, when based upon that alone, while it does that of a woman. It is no compliment to a woman to measure her character for truth by the same standard that you do that of man's predicated upon character for chastity. What destroys the standing of the one in all the walks of life has no effect whatever on the standing for truth of the other. Quotations are made from *Bank vs. Stryker*, 3 Wheeler, Cr. Cas. 332, *Dr. Johnson and McCauley*, to substantiate this.

Not Attendance of Physician.—A mere calling at a doctor's office for medicine to relieve a temporary indisposition, not of a serious nature, or his calling at a person's home for the same purpose, the supreme court of Michigan holds, in *Plumb vs. Penn. Mut. Life Ins. Co.*, decided Dec. 30, 1895, can not be considered an attendance within the meaning of a question in an application for life insurance. To constitute an attendance, it must be for some disease or ailment of importance, and not for any indisposition for a day, or so trivial in its nature, such as all persons are liable to, and yet are considered to be in sound health generally. "Sound health," as used in the same connection, it is held, means a state of health free from any disease or ailment that affects the general soundness or healthfulness of the system seriously, and not a mere indisposition, that does not tend to weaken or undermine the constitution of the insured. Having had syphilis at the time of the application, constitutionally or otherwise, and denying it, or representing oneself to be of sound bodily health, will constitute a breach of warranty. Prescriptions appearing to be in a certain physician's handwriting are not admissible in evidence to prove that he treated a person for a certain disease so long as the druggist is unable to state that such person brought them to his drug-store to be filled.

Modified Privileged Communications.—The *American Medical Review*, January, has the following medico-legal novelty:

"The question of privileged communications to physicians has recently been before the court of appeals of New York in a new form; an interesting decision thereon has just been handed down. The case, that of *Morris vs. the New York, Ontario and Western Railroad Company*, came up on appeal, by the railroad company, from the general term, where the plaintiff had had a decision in her favor. Judge O'Brien, of the court of appeals, in his opinion, which was concurred in by the full court, and which reverses the decision of the lower court, holds, that when the plaintiff called one of two physicians who attended at the same examination, to prove what took place, or what he learned, the considerations and reasons on which was founded the statute against disclosure of facts professionally ascertained, no longer existed as to this particular case, and the plaintiff's act operated as a waiver of her right under that statute to object to the testimony of the other physician."

In this connection it may be added that a modified form of privilege will probably soon be put in operation in the courts at the capitol, for it is reported by the press agencies that Senator Morrill has introduced a bill in the Senate providing that in the courts of the District of Columbia no surgeon shall be permitted, without the consent of the person afflicted, to dis-

close any information which he shall have acquired in attending a patient in a professional capacity, and which was necessary to enable him to act in that capacity, whether such information shall have been obtained from the patient or his family, or from the person or persons in charge of him; provided that this act shall not apply to evidence in criminal cases where the accused is charged with causing the death of or inflicting injuries upon a human being, and the disclosure shall be required in the interest of public justice.

Practical Notes.

Effects of Ouabain.—Gley reports to the C. R. Soc. de Biol., January 19, that less than 1-100 m.g. of ouabain is enough to produce in the frog's heart absolute systolic cessation of pulsation by the direct action of the poison on the heart. Strophanthin, we know, produces a similar effect. Ouabain has also a paralyzing effect on the spinal cord, and is, like strophanthin, a local anesthetic.—*Centralbl. für Phys.*, Oct. 5, 1895.

Pericarditis Accompanying Gonorrhea.—Blennorrhagia is frequently accompanied by pericarditis, commencing about six weeks after the former is under way. It does not last long and usually terminates by resolution. A writer in the *Progr. Médicale*, January 11, has been studying this subject and concludes that the pericarditis is not a secondary infection, but merely an extension of the gonorrheal processes, testifying to the important part played by Neisser's microbe and the close relation between the gonococcus and blennorrhagia.

External Antipyretics.—The substances used for this purpose are cocain, solanin, helleborin, spartein, or guaiacum, with which the skin is painted after first having been washed with soap and frictioned with alcohol. The most favorable surface for the application is the front upper part of the thigh. The solutions vary in strength, cocain and solanin at 1-20, helleborin 1-100 and spartein 1-20 only. Two to four grams are used at each application. *Revue Int. de Méd. et de Chir.*, January 25.

Local Treatment of Tuberculosis.—The *Gazette de Batkine*, 1894, No. 28, describes a case of pulmonary gangrene in a 16 year-old girl with a cavity on a level with the scapula, expectoration fetid and general condition serious. None of the usual remedies afforded relief, and finally an injection of 0.25 c.c. of iodoform was made into the cavity. Immediate relief ensued and general health improved. Twenty injections were made into the cavity, which decreased in size; patient lost her cough and gained in weight, and left the hospital very much benefited by the treatment. *Journal de Méd. de Paris*, January 19.

Mentholized Oil in Chronic Pharyngitis.—Fongueray writes to *Méd. Mod.*, Dec. 18, 1895, recommending the use of a 10 per cent. mentholized oil in chronic cases to relieve the cough and the sensation of a foreign body in the throat. He uses it: Menthol 1 gm.; oil of sweet almonds, 10 gm. The patient dips a water-color brush into this solution and paints the inside of his nostrils with it, throwing the head back and breathing deep. Then with an elbow-shaped handle and larger brush he paints the pharynx copiously with it reaching down as far as possible, and painting up into the nose.—*Revue Internat. de Méd. et de Chir.*, January 25.

Effect of Strychnin on the Pulsations of the Heart.—Meyer's experiments with dogs in 1871 convinced him that the sulphate of strychnin retards the action of the heart through its influence upon the moderating center of the spinal cord. Löwit and Richet, since then, reported as their conclusions from a series of experiments on frogs and dogs that the effect of a powerful dose was to annul the influence of the pneumogastric nerve on the heart. Lahousse writes to the *Arch. de Pharmacodynamie*, Vol. 2, No. 1, that he has been experimenting recently with the same animals to settle the question more definitely, and he finds that a 1 to 1,000 solution of sulphate of strychnin applied directly to the heart prolongs the diastole

and thus makes it pulsate less frequently. Careful study of all the phenomena produced lead him to assert that the action of the strychnin in retarding the rhythm of the heart is due to its effect on the intracardiac motor centers. *Nouveau Remède*, January 24.

A New Reaction for Antipyrin and Quinin. Professor Carrez writes to the *Journal des Sc. Méd. de Lille*, Dec. 14, 1895, in regard to a new reaction of antipyrin and quinin, resulting in a red coloring matter which he calls quinerythropyrim. It is made by adding *eau de brome* to a dilute solution of antipyrin and a quinin salt, until it assumes a slight yellowish tint, then adding ammonia, and the red color is obtained. The same process with quinin alone produces green. It can be taken out of the ammonia and water solution by shaking it up immediately with chloroform, in which it easily dissolves, as also in alcohol, but not in pure water. Acidulated water dissolves it readily and also frees it from the chloroform solution. Acid solutions of the new red produce an orange pink; alkaline solutions, a violet pink. Spectroscopic tests show that it allows all the rays to pass except the green ones. This reaction will be found a useful test to discover antipyrin in the urine, and in toxicology in general as well as in pharmacology.

Sambucin as a Diuretic. The *Journal de Méd.*, Jan. 19, 1896, remarks that in our enthusiasm over the new remedies, we are neglecting the vegetable medicines which often prove best after all for certain purposes. Lecocq has been experimenting with the *sambucus nigra*, whose reputation as a diuretic has been in eclipse lately. Lemoine found that the diuretic properties were in the innermost bark and that it lost them as it became less fresh, so he always ordered fresh bark, a handful boiled in a liter of water, of which the patient took from half a liter to a liter and a half during the twenty-four hours. Lecocq uses the ordinary syrup extract, prescribing 10 to 15 grams a day. According to the formula, this is equivalent to 10 to 15 grams of bark. Administered in this way it supplements the diuretics now in use: it is safe, agreeable, and can be continued a long while. It increases the appetite and also the digestive power. It may supplement advantageously caffeine and digitalis and has been known to succeed where the former failed.

Radial Paralysis of the Brachial Plexus.—*L'Union Médicale* of January 18 contains a careful study of this subject with a review of what investigators have contributed to our knowledge of it; prominent among whom are Klumpke, Duchenne and Erb, and quite recently Raymond. The differentiation is often difficult, as seven other troubles present somewhat similar symptoms. The apoplectic variety is usually followed by incurable atrophy. The reflex always persists a long while, with recovery doubtful. The variety caused by laceration or section of the plexus, is incurable, but obstetric paralysis usually passes away. The treatment is of course first to discover and remedy the injury to the nerve. Revulsion is often useful in paralysis of apparently spontaneous origin, especially if used promptly. But the one main reliance is electrotherapeutics. It requires perseverance for months at times, and this is the *sine qua non* of success. The electric treatment must not be limited to the nerve, but applied also to the muscles to restore their contractility and retard the reaction of degeneration, while favoring their nutrition, as they undergo rapid dystrophic changes when no longer under the control of their trophic centers.

Symptomatic Paroxysmal Tachycardia. Desplats had a patient come to him at intervals during the last two or three years, with every clinical indication of paroxysmal tachycardia, which were each time relieved by digitalis. The man had worked for twenty three years for the same firm without ever losing a day before he first applied for treatment, and he had no bad habits. The last time he came to the hospital, he died in a couple of hours, without speaking. The necropsy showed that death had been caused by acute pneumonia, but the heart and pleura had

grown together in such a way that at each systole the heart had to drag the neighboring organs along with it; a case of true mediastino-pericarditis. There were also evidences of an old endocarditis and abnormal adherences in the abdominal region, and also around the stomach, in which a cancer was found, as large as the palm of the hand. With all these lesions, the clinical picture was that of typical paroxysmal tachycardia, which is *not* relieved by digitalis as this case was. Desplats suggests that digitalis may thus be found valuable to differentiate symptomatic from true tachycardia.—*Journal des Sc. Méd. de Lille*, January 11.

Modern Treatment of Metritis.—Douriez has just published a work with this title, which the *Jour. des Sc. Méd. de Lille*, Dec. 28, 1895, commends and quotes as follows: In acute cases, absolute repose in bed, "as for a fractured thigh," vaginal irrigations; if blennorrhagic, dilation of the uterus and iodoform pencil or swab; if puerperal, scraping (Pinard) or continued intra-uterine injections (Budin); if chronic, copious vaginal douches for three days, mechanical dilation of the uterus for five or six days; cleansing of the uterine cavity and insertion of a large drainage tube, size of a thumb. This is removed a few minutes every other day to make an application of iodine inside the uterus. After three of these applications have been made the drain is removed and replaced by a vaginal tampon left for four days. This treatment lasts for twenty days, when the patient may leave her bed. Any special treatment indicated by the neck of the uterus or the pelvic basin must be studied also.

Treatment of Chronic Gonorrhea in the Male.—To prevent an acute attack of gonorrhea from leaving an inflammation of the urethra which may become chronic, Janel aborts it in the acute stage with potassium permanganate. The parts should be thoroughly cleansed with this to remove all the gonococci and prevent any secondary infection. To ensure the latter a dilute solution of sublimate should also be used. Superficial and fresh lesions in the bladder should also be treated with careful washings, and also with a solution of nitrate of silver administered a drop at a time. Not until this has been done and the infective germs thus destroyed, is it proper to commence the instrumental examination. Superficial and fresh lesions of the urethra and bladder are treated with washings, etc., as above; deeper and old lesions with dilatation besides; localized inflammations with the urethral endoscope. Both parts of the urethra must be treated, even when only the penile portion shows any lesions. —*Ann. des Mal. des Org. g. u.*, No. 6, quoted by *Centralbl. f. Chir.*, Jan. 25, 1896.

Serum Treatment of Erysipelas. The official report of the erysipelas hospital at Paris for the past year, is an interesting contribution to our knowledge of serotherapeutics. Patients were treated by different methods, but the percentage of cures was very much larger with the serum treatment. When the supply of serum ran short, the cures grew less. When an abundant supply was on hand the mortality fell to 1.03 per cent. Total number of patients treated, 1,055; with serum, 501. Large doses of serum proved most effective; one patient with purulent pleurisy had 300 c.c. injected in a fortnight without the slightest inconvenience from its use. The average dose is 20 to 40 c.c. and the beneficial results are directly proportionate to its preventive strength. The general health improves after first injection; delirium and nervous symptoms disappear; fever rarely persists as long as two to three days; pulse grows at once less rapid and stronger; if albuminuria is not present it does not develop, and it is cured where it exists, in forty-eight hours at farthest. Small doses of the serum, when a relapse threatens, prevent it in many cases.—*Rev. Internat. de M. et de C.*, January 25.

For and Against Antipyretics. The last meeting of the Paris Société de Thérapeutique was enlivened by a discussion of the

value of these remedies. One member announced that Charrin's recent experiments tend to show that it is best not to combat the fever, at least in septicemia, as it helps the organisms to resist the intoxication. Others recounted Richet's recent experiments, which seem to prove the reverse, viz., that by lowering the temperature the animal could support much larger quantities of poison without intoxication than at the normal temperature. Weber responded by the experience obtained from injecting artificial serum in certain peritoneal troubles which depress the temperature below normal. The injections brought it back to normal and above, and the patient is saved. Some believed with Charrin that antipyretics have a pernicious effect on the vital processes of the cells. Vogt mentioned that he had obtained the maximum of antithermic results with the least possible chance of toxic complications, by the use of the following:

R Antipyrin.	2 50
Phenacetin	1
Acetanild.	50
Misce.	

To be made into eight powders. Four to be taken in one day as largest amount.—*Revue Internat. de Méd. et de Chir.*, January 25.

Apparent Cure of Phthisis Treated by Neurotic Remedies. In the *University Medical Magazine*, December, Dr. William Pepper reports a case of phthisis, the treatment of which was signalized by a complete omission of all purely routine pulmonary medication, and by the apparently satisfactory result. Strychnin nitrate (1-100 of a grain) with atropin sulphate (1-1,000 of a grain), was administered every two hours hypodermically, together with strychnin nitrate (1-50 of a grain) and the double chlorid of gold and sodium (1-12 of a grain), by mouth every two hours. After a few days the dose of the latter was increased ($\frac{1}{8}$ of a grain). Egg albumin was well borne and this was increased until two dozen eggs (whites) were consumed per day. Cod-liver oil inunctions and passive massage were employed once daily. When the patient showed signs of strychnin intoxication the dose was reduced. Dr. Pepper's conclusions are summed up by himself thus: "The notable points in this case are: The sudden onset, quite like general miliary tuberculosis; the large number of bacilli; the rapid recovery, all the more remarkable with a pronounced tubercular family history; the complete disappearance of consolidation and bacilli; the acute reappearance after two years of the whole train of symptoms, with signs in the base of the left lung directly following an attack of pneumonia located in that vulnerable part; the large number of bacilli and their early complete disappearance in the second attack; the abatement of the consolidating process, and rapid recovery of the general health after the second attack; the absence from the treatment of all cough-medication and antiseptics, and the large dose of strychnin nitrate and the double chlorid of gold and sodium, with which the system was kept literally saturated."

The Surgical Treatment of Retro-Deviations of the Uterus.—Augustin H. Goelet, M. D., in a paper upon this subject read before the State Medical Society and the Society for Medical Progress, New York, declared that displacements of the uterus demand more careful consideration than is usually accorded them, and that the routine plan of inserting a pessary and dismissing the case from further attention is a serious error. He thought that the majority of cases, especially those of long standing where structural changes have taken place in the wall of the organ require surgical intervention for their cure. The pessary alone is not sufficient except in recent cases, because of the concomitant metritis and endometritis which must be overcome before a radical cure can be effected. After discussing the merits of Alexander's operation and the intraperitoneal methods of shortening the round ligaments and vaginal fixation he described a method which he had employed with success for

the past twelve years. The Alexander's operation which is only appropriate in movable retro-deviations is unnecessary, its chief disadvantage being the length of time it requires and the prolonged convalescence it entails. Where the uterus is fixed by adhesions he advocated opening the abdomen by means of a small incision and suspending it from the anterior abdominal wall, not fixing it. This was preferred to intraperitoneal shortening of the round ligaments because it consumes less time and it had given very satisfactory results. It is preferable to ventrofixation because the uterus is not fixed but movable. Vaginal fixation he thought objectionable because it substituted a fixed ante flexion for a movable posterior displacement. The recent unfavorable reports concerning complication during labor following it affords another very serious objection to this operation. The method of procedure which he advocated in place of Alexander's operation in movable retro-deviations, has this to recommend it, viz., that it aims at a cure of the coexisting metritis and endometritis, the maintaining cause of the displacement, and requires but a week's confinement in bed. In retroversion he dilates the canal, packs the cavity with iodoform gauze and tampons the vagina with the same gauze in such manner as to throw the uterus into a position of anteversion. This dressing is removed every day the cavity is washed out with a 1 per cent. solution of lysol and it is reapplied. This is done for a week and the patient is confined to bed. Then a vaginal pessary is fitted to hold the uterus in a correct position. The cavity is irrigated twice a week until a healthy endometrium is reproduced. In retroflexion the same procedure is adopted but instead of packing the uterus with gauze he uses a straight glass drainage stem which serves the purpose of a splint and keeps the uterus straight. It is then maintained in a position of anteversion by means of vaginal tampons of iodoform gauze. At the end of a week a vaginal pessary is inserted and the patient is permitted to get up. The success which he has obtained with this method leads him to believe that the other more complicated operations designed for movable retro-deviations are unnecessary.

Hospital Notes.

THE NEW ENGLAND Deaconess Hospital at Boston, Mass., was formally opened February 4.—An application has been presented for a charter for St. John's General Hospital, of Allegheny City, Pa.—The annual election of the Saturday and Sunday Hospital Association of St. Louis took place February 17.

Society Notes.

THE SIXTEENTH ANNUAL MEETING of the Atlantic County Medical Society was held in Atlantic City, N. J., February 5. The following officers were elected for the ensuing year: President, Philip Marvel; Vice-President, W. Blair Stewart; Secretary and Treasurer, Walter Reynolds.—A regular meeting of the Columbus (Ohio) Academy of Medicine, was held in that city February 17.—The annual meeting of the World's Congress of Medico-climatology was held in San Antonio, Texas, February 20, 21 and 22.—The annual meeting of the surgeons of the St. Joseph and Grand Island Railway was held in St. Joseph, Mo., February 20. The following officers were elected: President, Noah Hayes; Vice-President, Robert Dinsmore; Secretary, D. Morton, of St. Joseph.—The annual meeting of the Tennessee State Medical Society will be held in Chattanooga April 13. On account of the excellence of the program the largest attendance in the history of the society is expected.

Detroit Notes.

THE WAYNE COUNTY MEDICAL SOCIETY at its regular meeting Thursday, February 20, listened to a very interesting paper by George Andrew Lewis, entitled, "The Origin of Stammering." Mr. Lewis exhibited before the society sixteen patients which exemplified the methods of his teaching and the results.

AT THE REGULAR MEETING of the Detroit Medical and Library

Association held Monday, February 17. Dr. H. A. Gerry read a paper entitled, "The Gehrung as an Expedient."

HEALTH OFFICE report for week ending Feb. 22, 1896. Deaths under 5 years 35, total 98. Births, male 61, female 51, total 112. Contagious diseases: Diphtheria, last report 9, new cases 7, recovered 2, died 2, now sick 12. Scarlet fever, last report 12, new cases 5, recovered 2, died none, now sick 15. Small-pox, last report 5, new cases 5, recovered none, died 7, now sick 3.

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT. From the report of the Health Officer for the week ended February 15, the following observations are obtained: A slight increase in the mortality of the city took place during the past week. According to reports received at the health department, there were 112 deaths, with an annual death rate of 21.13. In the corresponding period of last year, the deaths numbered 103, with a rate of 19.8. There were in the District, at the close of the week, twenty premises placarded on account of diphtheria. During the week twenty deaths occurred from this disease, twenty-one cases were discharged from quarantine, and eleven new cases were reported. Nineteen premises were placarded for scarlet fever, twelve cases were discharged from quarantine and eleven new cases reported. There were no deaths.

PUBLIC HEALTH MEETING.—A meeting of the Board of Trade was held on the 25th inst. The subject for consideration was the public health and sanitation of the city. Addresses were delivered by Drs. S. C. Busey, W. W. Johnston, Geo. M. Sternberg, U. S. A., J. J. Kinyoun, M. H. S., and others.

MARRIAGE LAWS IN THE DISTRICT TO BE AMENDED.—The Senate bill relating to marriages in the District has brought out much interesting debate on the diversity of marriage laws now in force here. Mr. Hoar offered an amendment forbidding marriages when one of the parties is an alien, unless a minister or consul representing the country of this alien certifies that the marriage is valid according to the laws of that country. Mr. Hoar said his purpose was to protect American women, attractive by beauty and accomplishment, from the rapacity of foreign adventurers, whether titled or untitled. The Senator cited instances of American marriages being repudiated in Germany when the parties returned there. Mr. Hoar's amendment was agreed to, also one making eighteen years the marriageable age for women, also permitting civil as well as religious ceremonies of marriage.

CONTAGIOUS DISEASE LAW INADEQUATE. Dr. J. M. Parker, who was tried in the police court last week for alleged violation of the contagious disease act, was discharged, the Government failing to establish its case. The judge in dismissing the case said that it was with great reluctance that he had to dismiss the charge, but he had to do so because the law was inadequate to meet the case. He sincerely hoped the law would be amended to cover every phase of contagious diseases, and said that when doctors can not agree the laymen ought to take the matter in their own hands.

MEDICAL SOCIETY. At the regular meeting of the Society held on the 19th, Dr. McGuire read a paper entitled, "Freaks as Pertaining to Diseases of the Skin," the subject was accompanied with illustrations. Dr. James Kerr reported a case of "Supra-malleolar Osteotomy for Deformity following Pott's Fracture." Dr. Acker presented a case and specimen of tumor of the heart and lungs. Dr. J. Ford Thompson presented a specimen of myoma of uterus and a tumor removed from the submaxillary space.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the 241st meeting of the Society Dr. J. F. Scott read an essay entitled, "Gonorrhea in Women." Dr. J. T. Johnson presented a uterus he had removed per vaginam for cancer.

SCIENTISTS DISAPPROVE THE ANTI-VIVISECTION BILL. The anti vivisection bill (S. 1552) now in Congress was discussed on the 20th inst., at a meeting of the joint commission representing scientific societies. The joint commission is composed of the officers and executive committees of the seven scientific

societies of Washington, i.e., the Anthropological, Biological, Chemical, Entomological, Geological, National Geographic and Philosophical societies, representing a total membership of nearly 2,000. Dr. Charles Dabney, assistant secretary of agriculture, gave a résumé of the anti-vivisection bill, and proposed resolutions, which were unanimously adopted. The resolutions declared "That the joint commission of the scientific societies of Washington, composed of officers of the several scientific societies of the city, most earnestly opposes the legislation proposed by Senate bill 1552, entitled 'A bill for the further prevention of cruelty to animals in the District of Columbia'; that in the opinion of this commission the proposed legislation is unnecessary, and would seriously interfere with the advancement of biologic science in this District; that it would be especially harmful in its restriction of experiments relating to the cause, prevention and cure of the infectious diseases of man and of the lower animals; that the researches made in this department of biologic science have been of immense benefit to the human race; and that, in general, our knowledge of physiology, of toxicology and of pathology, forming the basis of scientific medicine, has been largely obtained by experiments upon living animals, and could have been obtained in no other way; that physicians and others who are engaged in research work having for its object the extension of human knowledge and the prevention and cure of disease are the best judges of the character of the experiments required and of the necessity for using anesthetics, and that in our judgment they may be trusted to conduct such experiments in a humane manner, and to give anesthetics when required to prevent pain. To subject them to penalties and to espionage, as is proposed by the bill under consideration, would, we think, be an unjust and unmerited reflection upon a class of men who are entitled to our highest consideration."

It was decided to send a copy of the resolutions to each member of the committees on the District of Columbia in the House of Representatives and Senate of the United States and to the District Commissioners.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from February 15 to 21, 1896.

First Lieut. William W. Quinton, Asst. Surgeon, is relieved from temporary duty at Ft. Logan, Colo., and ordered to Ft. Grant, Ariz., for duty at substation, San Carlos, Ariz., relieving First Lieut. Paul F. Straub, Asst. Surgeon. Lieut. Straub, on being thus relieved, is ordered to Angel Island, Cal., for duty at that post, relieving First Lieut. Charles E. B. Flagg, Asst. Surgeon. Lieut. Flagg, upon being thus relieved, is ordered to Ft. DuChesne, Utah, for duty at that post, relieving Capt. Henry D. Snyder, Asst. Surgeon. Capt. Snyder, upon being thus relieved, is ordered to Ft. Ethan Allen, Vt., for duty at that station.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending February 22, 1896.

Surgeon D. M. Guiteras, detached from the "Montgomery" and granted six months' sick leave.
P. A. Surgeon L. W. Curtis, detached from duty at Indian Head proving ground and ordered to the "Montgomery."
Asst. Surgeon L. Morris, detached from the naval hospital at Philadelphia and ordered to the Indian Head proving ground.
Medical Inspector Dwight Dickinson, ordered as member of the retiring board February 28.

Change of Address.

Barrie, Geo., from 1269 O St. N. W. to 1355 Cochran St. N. W., Washington, D. C.
Brauns, E., from 416 E. North Ave. to 3 Lincoln Ave., Chicago, Ill.
Rowe, S. B., from 2908 Gamble Ave. to 925 Bayard Ave., St. Louis, Mo.
Shms, S. N., from Philadelphia, Pa., to St. Joseph, Ill.

LETTERS RECEIVED.

Alma Sanitarium Co., Alma, Mich.; American Sports Publishing Co., New York, N. Y.
Brassell, T. C., Stroman, Texas.
Caldwell, F. D., Sanford, Fla.; Cowan, C. S., Fort Jones, Cal.
Davis, Geo. S., Detroit, Mich.; Drake, Elwood L., Philadelphia, Pa.
Dreyer Mfg. Co., New York, N. Y.
Eagleson, J. R., Seattle, Wash.
Flint, Eddy & Co., New York, N. Y.; Friend, Samuel H., Milwaukee, Wis.
Hendley, E., Indianapolis, Ind.; Hall, Humes, New York, N. Y.; Harris, Thos. C., Raleigh, N. C. (2); Hawley, D. C., Burlington, Vt.; Henrotin, F., Chicago, Ill.; Hines, F. M., Auburn, Ind.; Hummel, A. L., Adv. Agency, New York, N. Y.
Loewenthal, M., New York, N. Y.
Maltine Mfg. Co., The, New York, N. Y.; Maytum, W. J., Alexandria, S. D.; Mereness, Dwight, Milwaukee, Wis. (2); Mewborn, W. A., Macon, Tenn.; Miller, A. B., Syracuse, N. Y.
Nanacade, C. B., Ann Arbor, Mich.; Nicholson, J. L., Richlands, N. C.; Payne, Geo. F., Atlanta, Ga.; Preston, R. J., Marion, Va.; Publishers Collection Agency, St. Paul, Minn.
Randall, F., New York, N. Y.; Rutland, J. B., Fredonia, Ala.
Savage, G. C., Nashville, Tenn.; Sawyer, W. H., Hillsdale, Mich.
Small, Edward H., Pittsburg, Pa.; Smith, S. E., Richmond, Ind.; Stiebel, F. G., Louisiana, Mo.
Thompson, R. L., Spokane, Wash.; Turek, Fenton B., Chicago, Ill.
Wells, Geo. F., Nacotta, Wash.; Wisdom, W. A., Brooklyn, N. Y.

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ADDRESS.

ADDRESS ON OBSTETRICS.

Read before the State Medical Society of Pennsylvania at Chambersburg, May 23, 1895.

BY W. B. ULRICH, M.D.

CHESTER, PA.

In taking up the evidences of recent progress in obstetrics, I wish first to call your attention to the growing appreciation in all civilized communities of the services of the skillful accoucheur. Then we remember that when Dr. Wm. Shippen, Jr., began his lectures in Philadelphia, in 1765, a little over a century ago, the practice of midwifery was entirely in the hands of nurses, mostly of the Sairy Gamp style so graphically described by Charles Dickens, and the physician was only called in after some grave emergency had arisen and the life of the patient imperiled. When we recall the fact that it was not until 1808 that the trustees of the University of Pennsylvania created an independent Chair of Obstetrics in the faculty, and made the attendance upon the lectures obligatory upon the students, we begin to realize the great strides that have been made in this, the latest born department, the most vigorous child in the entire medical curriculum. Very much light has been thrown upon this subject by recent advances in bacteriology and in antiseptic surgery. We no longer discuss the question of the contagiousness of puerperal fever; but, when sepsis unfortunately occurs, we proceed at once to determine the source of the infection, eliminate the poison, and check its pernicious activity. Increase of knowledge brings increase of responsibility. The obstetrician of the present day is a man of vastly more information, has a higher appreciation of the importance of his chosen department, and consequently has a keener sense of the grave responsibility resting upon him than those of earlier times. Carelessness, ignorance and neglect can no longer be tolerated in the lying-in room in view of the serious consequences which result and which may, almost in a moment, convert the house of rejoicing into a house of mourning.

I hold strongly to the opinion that labor is a purely physiologic function, and strictly a normal process of the organism. There is no such thing as unnatural labor, and I am entirely opposed to that mental attitude which would divide presentations or deliveries into those which are natural and those which are not natural. Given certain conditions, certain contingencies must arise, but even the most difficult and complicated labor is still a natural one. It is true, however, that the conditions attending the parturient state may be those which we recognize as being the most favorable to the expulsion of the child, or, on the other hand, various obstacles may be encountered which more or less interfere with delivery and produce difficult labor. A logical division, therefore,

would be into, 1, ordinary or uncomplicated labors, and, 2, exceptional or difficult labors.

With regard to the first group, which comprises more than nine-tenths of all the cases, the present teaching of obstetric science is simply to secure cleanliness and to interfere as little as possible. Many a normal case has been converted into a pathologic one by too frequent digital examinations, especially where the examining finger has been the bearer of infection. Many a natural labor has been complicated by lacerations, owing to the desire of the attending obstetrician "to hurry things up" so that he could get off to keep some other engagement not always professional. Many a physiologic parturient process has been rudely checked and converted into a pathologic one by the over-zealous attentions of a physician who seems bent on demonstrating the truth of the old aphorism, "Meddlesome midwifery is bad." In the majority of cases nature is perfectly competent to accomplish the delivery of the mother without assistance.

Just consider for a moment the logical import of the teaching that a woman after confinement is in the same condition, as a case of amputation with a supposed infectious wound, and that blood-poisoning will develop unless vigorous antiseptic measures are taken to protect her from it. If nature had, with inconceivable malignity, laid a trap, from which there was no escape for any parturient woman, unless the antiseptic art of the obstetrician should release her, how could the human race have survived all these dangers, while waiting for the doctrine of antiseptics to be developed and carried into practice? If these precautions and attentions are necessary in every case, how is that savage races with their rude midwifery methods do not perish from the face of the earth? When I practiced medicine in the State of Louisiana, a woman stopped and spent the night at my house who had been captured by the Comanche Indians with her husband and two sons. The husband and sons were killed in her presence. She lived for three or four months with the Indians and, during this time, she was pregnant and miscarried at the sixth month, while in captivity. She told me that the Indian women marched with their husbands until they were taken in labor, and then they were helped to the nearest pool of water. As soon as the child was born it was plunged into the cold water. If it struggled vigorously it was allowed to live, if not it was drowned. The mother also went into the cold water as soon as the after-birth was thrown off. The child was then strapped upon her back and she followed the tribe and resumed her work as if nothing unusual had occurred. The point that I make is not that this is the best treatment for the lying-in patient, but it is that, even with the neglect of everything that we regard as essential, nature does the work and the great majority of mothers actually do survive the perils of childbirth.

I am also strongly opposed to the resort to instru-

mental delivery merely to suit the convenience of the physician. Now, I do not want to be misunderstood. I look upon the forceps as the most humane of instruments, and do not stand aside and hesitate when they are to be used in the interest of the mother or child. Some years ago, by invitation, I went to hear my friend, Dr. Albert H. Smith lecture before the Philadelphia County Medical Society on the use of the forceps, and in the discussion of the paper I expressed my disappointment, and said that "I had come up to learn when not to use the forceps." He thought that the forceps should be used whenever there was the slightest delay to the passage of the child in the second stage of labor, that the patient should not be allowed to suffer. It requires good judgment to recognize when to refrain from using the forceps. There is oftentimes too much haste to resort to their powerful aid; traumatism may be thus produced, and a dangerous chain of consequences be initiated. My conviction is that the obstetrician has no right to consider himself at all, but only his patients, in the process of labor. In other words, I would state the duty of the obstetrician, in attending a case of normal unobstructed labor, is to be summed up in the words "cleanliness" or "asepsis." He should be on the alert, ready to render assistance should occasion arise, but otherwise he should practice a policy of non-interference. I believe the old country doctor, who boasted that he had never used the forceps and stated that plenty of good fresh lard and a good deal more patience were all the instruments he wanted, is far safer than many of the present day who seem to feel called upon to use instruments in nearly all their cases. Even at any time in the most skillful hands, there is always more or less danger to the integrity of the soft parts, and when used to save time for the doctor, or magnify his importance, I consider it a crime.

While insisting upon the usefulness of a warm soap and water bath at the beginning of labor and a preliminary douche to cleanse the birth canal, if the patient does not seem to be cleanly, especially in lying-in hospitals, I am opposed to subsequent repeated douching and especially to irrigation of the uterus after labor except where absolutely indicated to overcome an actual septic condition, due to retained placenta, or other cause. Chemic disinfectants are not required to obtain and maintain a condition of asepsis, and their routine use is to be deprecated in the parturient woman. On the other hand, I would commend the practice of rendering the hands of the obstetrician and all instruments used by him, as aseptic as possible by the abundant use of soap and hot water, followed by a rinsing with solution of bichlorid of mercury (1 to 2000). By the universal adoption of this plan of treatment, puerperal septicemia may be eliminated from among the risks of childbirth. By carrying it out at the Preston Retreat and in private practice, Dr. Joseph Price claims that he has not had a case of this character in nearly ten thousand labors. Moreover, there is an incidental advantage by the adoption of this method, which deserves our serious consideration. It is the abolition of ophthalmia neonatorum. Dr. Price has recently stated that infantile ophthalmia has been banished from his practice by the adoption of asepsis in the conduct of labor, and it has been claimed that three-fourths of the blind asylums could be closed for want of inmates, if this plan of conducting the obstetric procedure were universally followed. I have never kept a record

of my obstetric cases, but in a very active practice of forty-six years they have run into the thousands. I do not remember to have had a dozen cases of sore eyes and not a single infant lost its sight. I conscientiously assert that I never lost a patient in labor, or as the result of labor. I do not say this in a boastful spirit, for I feel that I have been more blessed than skilled, but I say it because it is a fact, and I think my scrupulous regard for cleanliness has had something to do with it.

During the past year, a law has been very carefully framed by a committee of this society and has now passed the legislature, which has for its object the prevention of blindness. It makes it incumbent upon midwives, obstetricians and health officers to see that an infant with sore eyes shall receive prompt attention, in order that its sight may not be lost through neglect. While we thoroughly approve of the humane motive which inspired this legislation and anticipate great benefit from its enforcement, we still think prevention better than cure, and insist upon the prophylactic value of absolute cleanliness in the conduct of labor, as conducive to the best interests of both mother and child.

Just here I want to frown upon the fad of the routine use of anesthetics in labor to save suffering. Who can tell what the effect of these God-given pains, the result of nature's force, may have upon the mental economy of the mother? The use of anesthetics and the hasty removal of the placenta by traction are most fruitful sources of post-partum hemorrhage, and of asphyxiated infants. I do not intend to discuss the medical treatment of the puerperal period; but would simply offer a word of protest against routine. Unless there is good reason to be given, the fluid extract of ergot should remain in the bottle, likewise the castor oil, quinin and the malt liquors. Meddlesome midwifery is bad and so is officious medicine-giving. There is a principle in letting well enough alone and it takes some experience and good judgment to know when to do it. Oliver Wendell Holmes, in speaking of the abuse of physical diagnosis, said that some patients "are done to death with the pedantic foolings of the specialist," and the remark applies with peculiar force to midwifery practice. In connection with this subject as a collateral branch, I may refer with commendation to a recent communication to the Philadelphia County Medical Society by Dr. W. Reynolds Wilson on the treatment of ophthalmia neonatorum by irrigation with distilled water.¹

It is gratifying to note that with an increasing familiarity with the conditions of delayed labor, there have been devised methods which are favorable to the preservation of the life of both the mother and the infant and that the dreadful alternative involving the sacrifice of human life by craniotomy is now rarely presented. In case of eclampsia at term and also in the condition of placenta previa, requiring rapid evacuation of the contents of the uterus, I must speak in terms of high commendation of the method of rapid manual dilatation and delivery devised by Dr. Philander A. Harris, of Paterson, N. J., first described in the *American Journal of Obstetrics* last year.² In a discussion of the subject of "accouchement forcé" before the Philadelphia Obstetrical Society, Dr. Harris recently reported³ his entire experience with his

¹ Medical News, April 13, 1895.

² Vol. xxix, p. 37.

³ Annals of Gynecology and Pediatrics, Vol. viii, p. 476.

method in placenta previa and eclampsia, and stated that in all cases in which there were no labor pains or partial dilatation of the os uteri before he attempted delivery, he had not lost a single case. This certainly marks a great advance over the older methods of treating these great complications of pregnancy.

Since the introduction of aseptic methods of operating an expedient in cases of contracted pelvis devised over a century ago, by a Frenchman, M. Sigault, symphysiotomy has been revised, and is being largely practiced with increasing amount of success. An able paper on this subject was read at the last meeting of the Society by Dr. Horace Fox, of Philadelphia. Dr. Robert P. Harris, of Philadelphia, the well-known statistician and recorder of the Cæsarean and Porro operations, is now enthusiastically in favor of symphysiotomy, the mortality of which according to the authority in the last seventy-five cases has been less than 10 per cent. In one of the recent cases in the State of Washington a child of fifteen pounds in weight was delivered by this method which only a few years ago might have been sacrificed. Symphysiotomy may be an operation of election or of necessity; the former when the patient is seen during the progress of pregnancy; the latter when the obstetrician is called in to attend the case after labor has been initiated. The simplicity of the procedure as compared with the Cæsarean section, or any mutilating operation, and the brilliant results obtained by it with proper management, certainly warrant its general adoption in appropriate cases. The method of performing the operation is given by Professor Farabœuf as follows:

"The woman is placed in the dorsal position with the thighs abducted and flexed upon the abdomen and held in that position by two assistants. The pubic region is shaved and this, with all the adjacent parts, is washed first with soap and water, then with sulphuric ether and finally with a solution of bichlorid, or of biniodid of mercury (1-2000). The patient is then fully anesthetized, catheterized and a vaginal douche given. The length of the incision varies with the length of the symphysis in different subjects and must be made, vertically, midway between the two spines of the pubis beginning at the level or a little above the superior border of the symphysis and descending to its inferior border, deviating in the neighborhood of the clitoris without touching the superior part of the vulva. Then cut through all the soft tissues down to the cartilage and do not stop to seize any bleeding vessels. Then upon the index acting as a guide, with the scissors divide the fibro-cartilage at the level of the anterior surface and superior border of the symphysis. Then we make two small incisions transversely beginning at the median line close to the superior border of the symphysis in such a way as to cut through the aponeurotic tissues in order to make a passage for the index, which is then introduced along the posterior surface of symphysis. The finger then feels very well the posterior prominence of the fibro-cartilage of the symphysis. Left in this position it serves as a protection to the organs lying posterior to the symphysis. With a straight scapel, begin cutting the cartilage from before backward and from above downward and finish the section by means of a blunt pointed bistoury. At the moment of cutting through the sub-pubic ligament by means of a sound introduced into the bladder, an assistant pulls the urethra out of the way. The incisions,

through the cartilage are kept up as long as the knife continues to creak, for the latter indicates the resisting cartilage and ligaments giving way. The operator feels the structures slowly giving way, and, finally, when all is cut, the iliac bones in a measure separate. The assistants now practice slow and progressive abduction of the thighs. The surfaces of the divided cartilage separate from each other and we are thus enabled to introduce between them one or two fingers, according to the degree of separation. Experience teaches us that no damage to the sacro-iliac articulations can be brought about by a separation of 7 centimeters. The separation can be brought about by the operator himself with the assistance of the *écarteur* designed by Prof. Farabœuf. When that degree of separation which the operator deems sufficient is obtained the assistants must be warned not to move, but to hold the limbs in that position thus attained. A tampon is placed in the wound, and this may be either a sponge, absorbent cotton, or iodoform gauze. The operation being completed, we now proceed to the extraction of the fetus. The extraction of the fetus is done artificially. We apply the forceps according to classical rules, *i.e.*, on the parieto-malar region of the flexed head. We pull and the head easily descends, separating the pubis as it advances, provided the latter separation have not been sufficient. If any great resistance is experienced, we must not exercise too much force, but continue to separate the pubis to the limits allowable. As the head descends transversely in the excavation we must subject it to a rotary movement so that it may pass through the inferior muscular and osseous tracts. Here a most important maneuver, advised by Dr. Varnier, must be resorted to in order to avoid the many injuries to which the anterior vaginal wall is liable in the hands of inexperienced operators. If we examine the vulva and soft parts while the iliacs are separated, we find that they no longer present an orifice, longitudinal from above downward and from before backward, but one which is stretched transversely, with a large transverse axis, and whose superior part now lacks support, since the bones are separated. The head, which has been subjected to the rotary movement above mentioned, now presents its largest diameter longitudinally to the largest diameter of the orifice, which is directed transversely. The head presenting itself in this position, any effort to extract the fetus would undoubtedly produce rupture of the vulva and of all the soft parts, where support is lacking, *i.e.*, where the pubis has been separated. A tear of the anterior vaginal wall is a most inevitable result. In order to obviate this Dr. Varnier advises the following method of procedure which is most simple: When the head has effected its rotary movements the assistants approximate the thighs, thus causing the separated iliacs as well as the transversely stretched vulvar orifice to resume their normal position, and the head as in any normal confinement is delivered without producing any injury to the inferior osseous and muscular straits or vulvar orifice. The operation is now terminated as to its essential parts. The umbilical cord is tied or compressed and divided, after which the new-born child is given to an assistant or nurse. A vaginal injection is now given and artificial delivery of the placenta is performed. The vagina being well packed with iodoform gauze, we next devote our whole attention to the pubic wound. The tampon which was previously placed in the wound is removed and the wound is irrigated with

a 5 per cent. carbolic solution, or biniodid of mercury (1:2000). The assistants approximate the iliacs by continued pressure on the hips, and the operator proceeds to suture the tissues with two or three buried sutures and as many superficial ones to keep the parts in perfect apposition. The wound is then covered with iodoform gauze and antiseptic absorbent cotton. A tight bandage is then placed around the pelvis and this covered over with a second one in the form of a T. A third bandage intended to give support is then applied, and for this plaster of Paris is used. We must apply this in oblique directions so as to leave the pubic region free, and so allow freedom for future dressings. These latter dressings must be renewed very often, at least twice a day, because they are always soiled during micturition. The vaginal dressing may be allowed to remain for two or three days, as it insures the perfect antisepsis of the vagina, and thus we can dispense with the injection which would otherwise be necessary during this period. It is necessary also that the limbs should be immobilized by strapping them together. Of course, under these conditions, it is difficult to give injections, so that it is quite sufficient to wash the vulva after each micturition. About the eighth day the wound has become cicatrized. Often enough you will find that edema of the pubes has caused the sutures to cut through the tissues. These may be taken out at the rate of one or two a day."

Now the merit of this operation is that it saves the child with a minimum risk to the mother. Notwithstanding the operation has sometime to be hurried so as to complete it before the child has been naturally delivered, I look upon it with more favor than the Cæsarean section or craniotomy.

I find that I have dwelt at such length upon the operation just referred to that I have no time to discuss delayed labor due to unusual presentations or positions of the fetal organism. In occipito-posterior position it has lately been advised to manipulate the head before the second stage has begun, so as to convert it into an occipito-anterior position. The change was advocated by Baudelocque, Dewees, Hodge, Meigs and others, Dewees going so far as to say that "a physician was incompetent to practice midwifery in the best manner who could not detect and change the malposition of the head and thus abridge by several hours the misery and pain of his patient." In my own experience I have not always found this an easy thing to do. With present methods of securing asepsis this method of changing vertex posterior into vertex anterior positions should be more commonly practiced, or at least attempted.

In the treatment of many of the mechanical causes of delayed labor due to foreign growths in the uterus or vagina, and in the conditions complicating labor, such as ruptured uterus, hematoma, etc., and some of the sequelæ such as pelvic abscess, pus tubes and uterine sepsis, as much technical knowledge, special training and sound judgment are required as are demanded in any other department of medical science. An encouraging amount of progress toward the satisfactory solution of these many unsettled questions of practice, is shown by the proceedings of our special societies and the pages of our medical journals. The scope of the questions suggested by these topics, goes beyond my present opportunity and I find that I have no time to devote to the consideration of these important problems and the manner in which they are being

solved. I would only make a plea not only for careful diagnosis but also for more individualizing of patients in deciding questions of prognosis and treatment, and not too much zeal for manual and mechanical interference.

ORIGINAL ARTICLES.

FIBROID TUMOR OF THE UTERUS: DIAGNOSIS.

BY FRANKLIN H. MARTIN, M.D.

PROFESSOR OF GYNECOLOGY POST-GRADUATE MEDICAL SCHOOL OF CHICAGO; SURGEON TO WOMAN'S HOSPITAL.

A knowledge of the existence of a fibroid tumor of the uterus may be gained by the diagnostician by first obtaining the symptoms as appreciated by the patient, the subjective symptoms; and further by acquainting himself with the actual physical changes by direct personal examination of the patient, the objective symptoms.

SUBJECTIVE SYMPTOMS.

Pelvic Symptoms.—Among the early local symptoms of fibroid tumors of the uterus may be enumerated an irritable bladder amounting frequently to positive dysuria; rectal pressure; sensation of pelvic fullness; low backache or sacralgia, and frequently pain on cohabitation. These symptoms are all produced by a gradually enlarging uterus, and resemble many of the pelvic disturbances of early pregnancy, from which they must be differentiated. As the tumor enlarges the sensation of fullness extends to the lower abdomen, the pressure on the nerves to the lower extremities causes pain in the line of the nerves on the anterior or posterior aspect of the thigh, or on both. Even edema of the extremities may occur from pressure on the veins extending to them, and the appendages are frequently pressed upon, resulting in severe pain on one or both sides, while as the tumor begins to fill the abdomen symptoms of painful pressure on many or all the important organs of the pelvis will be experienced.

Symptoms due to Functional Disturbances.—The most important symptom under this head is that due to the disturbance of the function of menstruation. In 75 per cent. of all fibroid tumors of the uterus the menstrual flow is increased, on account, 1, of increased area of the endometrium due to interstitial enlargement of the uterus, 2, of increased vascularity of the uterus due to the demands of the hypertrophied tissues, and 3, to the venous blood congestion due to pelvic pressure. In a large majority of cases pain is an accompanying symptom. This dysmenorrhea is caused, either by the abnormal contractile power of the changed uterus, by submucous projections into the uterine cavity, exciting painful contractions of the organ, or by a frequently accompanying endometritis. The development of the tumor influences decidedly the change of the menstrual function. In the early stages of the fibroid the patient will notice but a slight lengthening of the menstruation, but as further development is made the quantity of the flow will be increased. This changed condition, while at first it may attract the attention very slightly, as it gradually increases, will at last convince the patient that something serious is afflicting her. The flow will increase rapidly, not only in length of period, and in quantity at a given time, but finally it will frequently become irregular and occasionally almost continuous. At the

same time pain will often gradually develop, so that with the exhaustion of depletion will come the agony of physical suffering. These pains if caused by endometritis, will be of a dull aching character, accompanied occasionally with slight uterine contractions; if caused by the effort of the uterus to expel submucous masses or polypi, it will be like those accompanying the uterine expulsive pains of a miscarriage or confinement; if caused by a pressure of the inordinately congested hypertrophied uterus upon the tubes and ovaries it will be severe and of an almost continuous character in the ovarian regions.

The function of the bladder suffers from direct pressure of the enlarged uterus, or from a subperitoneal enlargement. Frequent urination will first be noticeable, while the tumor is yet small, and later painful micturition, with severe lasting pain in the bladder, as a direct result of traumatism produced by the encroachments of the uterus. Complete stoppage of the urine and painful distention of the bladder may finally occur from impaction of the increasing tumor.

The function of the rectum is frequently impaired by direct pressure of the tumor upon that organ. Obstinate constipation will be complained of, while the interference of the tumor with the circulation will favor the development of hemorrhoids and their painful symptoms. Temporary impaction of feces in the large and small intestines occur as a direct result of the pressure of a large tumor.

Deformity Produced by Fibroids.—One of the most embarrassing symptoms to many patients, who are afflicted with fibroid tumors, and frequently the first to attract their attention, is the change in the contour of the abdomen, which is enlarging. Upon closer observation and examination of the lower abdomen, they discover the unwieldly mass, the tumor, which, as it gradually increases in size, produces a deformity that no device can conceal, while the patient, in order to maintain an upright position, must throw her shoulders back in a manner to make the tumor appear most embarrassingly conspicuous.

General Constitutional Disturbances.—Reflex nervous disturbances are early symptoms in many of these cases. Nausea, palpitation of the heart, indigestion, gaseous distensions of the bowels, flashes of heat due to vasomotor disturbances, headache, dizziness, occasionally spasmodic cough and all the symptoms accompanying nervous storms, irritable temper, despondency, and lack of control, finally developing into typical hysteria. These symptoms are precipitated ordinarily by irritation caused by the long-continued local disturbances already described, and by loss of blood due to excessive menstruation.

Anemia naturally, in a large number of cases, becomes a conspicuous subjective symptom. The patient will complain of loss of flesh, her skin has become pale, lips pale and blue, muscles loose and flabby. She tires easily, and all exercise induces shortness of breath and heart palpitations. Frequently it is necessary to remain in bed a large part of the time from weakness, which is much more pronounced immediately following the great waste of the menstrual period.

OBJECTIVE SYMPTOMS.

Diagnosis.—Under objective symptoms methods of diagnosis will be considered. Objective symptoms are determined, and their diagnostic value recognized,

by pelvic examination, abdominal palpation and auscultation, and general examination.

Pelvic Examination.—The patient should be placed on her back on an operating chair or table, in the recumbent position, with limbs well flexed upon the abdomen, and feet supported by short stirrups. The clothing should be loose. After the vagina has been well douched with an antiseptic fluid, the examiner should proceed to make a bimanual pelvic examination. The index finger of the left hand is employed to make the preliminary vaginal examination, the right hand being left free for external manipulation. The cervix is first sought and its location often gives one important information. If it is in normal position, well up in the vagina, within an inch and a half of the sacrum, any enlargement of the uterus is liable to be uniform, or any growth is located anteriorly in the body of the organ. If it is low in the pelvis and anterior to its natural location, any enlargement of the uterus is quite likely to exist in the fundus, or the uterus is retroverted. If it is anterior to its normal position and is crowded well up behind the symphysis, the tumor is liable to be located in the posterior wall of the uterus, very low. If it is drawn well up posteriorly, almost if not quite beyond reach, the tumor will usually be found in the anterior uterine wall. The location of the cervix, however, is of small importance when considered alone.

Bimanual Examination.—By combining with the digito-vaginal examination, external palpation with the hand, a knowledge of the general contour of the uterus can be at once definitely obtained. If it is enlarged, that fact is apparent; if there are any irregular projections or developments from any portion of its walls into the abdominal cavity, or into the broad ligaments, they can be recognized; and if it is enlarged so as to produce a prominent tumor a knowledge of its source of development can usually be determined by taking into consideration its relation to the cervix. If the tumor is of a subperitoneal variety, its relation with the cervix and uterine body will indicate its source of development. If the cervix is thin and stretched over a projecting mass, protruding through it from the uterine cavity, the knowledge of a uterine polypus or a submucous tumor is imparted. The sensation of solidity or fluctuation of the growth is usually satisfactorily obtained by this examination. Thus, the size, contour, consistence, direction of development and variety of tumor may all be determined by a simple bimanual pelvic examination.

A bimanual examination, however, is frequently unsatisfactory, until one has resorted to a rectal examination, combined with the abdominal palpation, and made either with or without an anesthetic. This latter enables one to examine the posterior aspect of the uterus much higher than is possible per vaginam, and with less intervening tissue. An anesthetic, when given, permits of a much more prolonged examination, renders the procedure painless, and eliminates the muscular fixation and strain which is inseparable from an examination without it. The abdominal muscles, the sphincters of the rectum and vagina are relaxed, allowing much freer and more complete exploration, when an anesthetic is employed.

Instrumental Examination.—Pelvic examination for fibroids is often not complete without instrumental examination. While a speculum is not often needed as a direct means of diagnosis, in these cases, it is frequently required to aid in determining sec-

ondary changes which may have occurred in the vagina or cervix uteri. It may also be employed to explore the cervix where the vaginal vault has been distorted by a complicated tumor, before using the uterine sound. The uterine sound is occasionally used to measure the uterine canal. It may be employed to locate the canal when palpating the uterus for the purpose of ascertaining in which portion of its mass a tumor is situated. And it will also give valuable information in regard to the location and size of submucous fibroids. When a uterine canal is so distorted that a metal sound does not possess the necessary flexibility to traverse its course, an ordinary male flexible bougie, with a bulbous tip, can frequently be successfully insinuated to its entire depth, and give very valuable aid in diagnosis. The uterine dilator is an important instrument in diagnosing the condition of the interior of the uterus. It enables one to explore the cavity of the uterus with the finger and thereby materially assists in revealing the position and character of submucous fibroids.

Abdominal Palpation.—Abdominal palpation and auscultation can best be accomplished with the patient under the influence of an anesthetic. By palpation the tumor can be outlined; any subperitoneal projections noted; its consistency ascertained; abscess or presence of fluctuation considered; its relations to the surrounding organs recognized and the absence or presence of adhesions learned. In auscultation we have an important means of distinguishing fetal heart sounds in the differential diagnosis between a fibroid tumor and a natural or tubal pregnancy.

General Examination.—In the general examination of a patient who has a fibroid tumor, points of change in outlying organs, which may have been the remote result of the tumor and which may have an important bearing on the form of treatment to be adopted, are to be noted. These changes may be found in the heart, the kidneys, the lungs, the digestive tract, the nervous system and the vascular system; but as similar changes may also occur from any form of wasting disease, as diagnostic signs they are not of great importance, and therefore, their consideration here is out of place.

DIFFERENTIAL DIAGNOSIS.

We are often called upon to differentiate between fibroids and the following conditions, which simulate them to a puzzling degree: Ante- and retro-flexions, subinvolution (metritis), cancer, floating kidney, pregnancy, tubal pregnancy, tubal cysts and ovarian cysts.

Ante- and retro-flexions are differentiated from fibroids by the comparative smallness of the uterus, and the lack of characteristic hardness of the fibroid. The sound clears up the condition. If it is that of a normal uterus with projecting fibroid, the mass will be easily palpated in front or posterior to the sound, while if it is ante- or retro-version the sound will follow the canal to the center of the flexed fundus.

Subinvolution (metritis) is distinguished from a fibroid by its history, by its symptoms and by physical signs. The history of subinvolution is that of recent child bearing or miscarriages with subsequent endometritis, while a fibroid seldom immediately follows pregnancy, and when small is rarely accompanied with endometritis. The symptoms of the two conditions differ in the amount and character of the leucorrhea, being profuse in chronic metritis; in the

amount of hemorrhage at menstruation, being profuse in fibroids, while in subinvolution it may be absent immediately following child birth for several months, and of a more normal character when it does exist. Subinvolution in physical signs differs from a fibroid in being of a softer character, resembling the normal uterus in being of uniform contour and in containing no distinct centers of development. With a condition of subinvolution will almost invariably be found an accompanying lacerated cervix and frequently a lacerated perineum. Finally, uterine curettement, antiseptics and a restoration of a torn cervix, will cause a subinvolved uterus to involute to its natural size, while such will not be the case with a similar treatment for a fibroid.

A cancer (uncomplicated) is usually easy to differentiate from a fibroid. Microscopic examination should be made, if practicable, at the earliest possible date. An uncomplicated carcinoma seldom presents a large tumor. If it is of the cervix, a well-defined ring shows the line of demarkation between it and the healthy tissue. An offensive, watery discharge, characteristic of carcinomatous degeneration, is of diagnostic value. Carcinoma of the body of the uterus gives rise to more pain than a fibroma. It, too, ulcerates early, giving rise to the afore-mentioned offensive discharge. The cancer cachexia will also aid in arriving at a differentiation. A carcinomatous tumor is much more liable to give rise to an ascites than a fibroma.

A floating kidney might, under exceptional circumstances, be mistaken for a subperitoneal fibroid. But its position, and especially the discovery of its place of attachment, would dispel all doubt of its being a fibroid. To obtain this knowledge, however, might require a most careful abdominal and bi-manual manipulation.

Normal pregnancy should be differentiated from fibroid tumors first by bearing in mind the subjective symptoms of the two conditions, and second by physical examination. In pregnancy menstruation almost invariably ceases; in fibroids it is almost invariably increased. The history of pregnancy is definite and uniform, with a given size of tumor, while with fibroids the time of growth varies greatly with tumors of the same size. Morning sickness and breast changes are classic symptoms of pregnancy which rarely occur with fibroids. In the physical examination the pregnant uterus is uniform in its development, giving a soft, semi-fluctuation feel on palpation. Fibroids are frequently irregular in outline, and on palpation appear solid and often present distinct centers of hardness. The cervix is soft and patulous in pregnancy, and the neck of the uterus sometimes thin, forming a decided constriction, while in fibroids the cervix is unyielding and the constriction of the neck is absent. The vagina in pregnancy is blue, a rare occurrence in fibroids. Finally, as the pregnancy progresses ballottement, fetal movements and fetal heart sounds remove all doubt of the condition.

Tubal pregnancy would rarely be mistaken for a fibroid of the uterus. It presents many of the signs of normal pregnancy. There is frequently a slight show at menstruation, the tumor is of a semi-fluctuating character, and lies, as a rule, to the right or left of the uterus; while a subperitoneal fibroid, located in the position usually occupied by a tubal pregnancy, would be hard and unyielding. In tubal pregnancy

the normal uterus may be distinguished by a line of demarkation between it and the tumor.

Ovarian cysts are usually easy to distinguish from fibroids by their fluctuation; by the lateral development when small; by the slight menstruation accompanying them; by the normal size and depth of the uterus and by the absence of the uterine souffle distinguishing a fibroid. As a rule, ovarian cysts are of a rapid growth and give a short history, while fibroids are years in maturing.

INTERSTITIAL KERATITIS.

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On account of the transparency of the corneal tissues, enabling us to observe accurately and follow up faithfully any changes which take place in its structure, inflammations of the cornea have for the pathologist more than the usual amount of interest. This is especially so in regard to interstitial keratitis, where the changes are so slow as to be easily followed in part, while some of the phenomena are so completely concealed as to make us even more curious in regard to them. The anatomic seat of the affection is not peculiar to it; the clinical course is, however, and interstitial keratitis presents a well-defined and characteristic picture. In the majority of cases it attacks both eyes, though seldom both at the same time, and usually several weeks, or months, or even years, intervene between the attacks. Owing to this feature the opportunity often presents itself of observing the beginning of the attack in the second eye. The progress of the disease may be very satisfactorily observed as it spreads itself throughout the cornea. In the beginning stages two forms are clinically distinguishable, but these later on can not always be differentiated. In one series of cases the process begins near the center of the cornea and spreads outward toward the periphery, which it usually takes several days to reach. The corneal border may remain quite clear for a time and may appear to be perfectly healthy.

A careful observation of the corneal structures from day to day will reveal the following phenomena: A number of small, dim, grayish maculae make their appearance near the center and in the deeper layers of the cornea. These spots are not clear-cut opacities, with well-defined borders, but are rather diffuse and gradually shade off into the surrounding tissue. They slowly increase both in size and in number, and finally become confluent, forming a large central patch, or in some cases a more or less opaque circle or ring-shaped opacity. At the same time, by the appearance of fresh maculae, the infiltrated area extends toward the periphery. By focal illumination it can be seen that these infiltrated patches have their seat in the deep layers of the cornea, while the surface of the membrane is lusterless and dull, because of a very definite stippling from partial loss of its epithelium. In time, generally several days, the infiltrated area reaches the limbus corneae. The entire cornea is now more or less uniformly white, gray, or even yellow (depending upon the depth of the infiltration), with here and there points of more decided shading, presenting the well-known "ground glass" appearance. Vascularization now begins. Here and there along the corneal margin, as if arising from beneath the limbus, tufts of minute vessels make their appearance. They spring

from the deep episcleral network surrounding the cornea and are therefore branches or offshoots of the anterior ciliary arteries. They run parallel to one another in the deep layers of the cornea and on account of being covered by its clouded superficial layers are usually very indistinct. They are hardly to be distinguished as separate trunks with the naked eye, but are readily recognizable by a strong convex glass—say 20 diopters—behind the mirror of the ophthalmoscope. They produce the appearance of congested areas, usually of a dirty red or grayish red hue, which are familiarly known as "salmon-colored patches."

In the second group of cases the affection is first seen at the limbus and spreads inward. At one spot along the corneal margin the tissue becomes lusterless and clouded. On close and careful examination with a magnifying lens the dull area is seen to be deeply situated and to resolve itself into a number of separate parallel cloudy streaks or maculae. At other spots along the corneal margin similar areas of cloudiness soon appear and push their way concentrically toward the pupillary area of the cornea. At the same time the corresponding portions of the limbus become injected and swollen, and the superficial zone of vessels at the corneal margin begins to develop. As the areas of deep infiltration extend laterally, by increase in number, as well as in extent, until the entire cornea is opaque in its peripheral zone, so do the areas of superficial injection extend in a corresponding manner from the original foci. This development of vessels is confined to the marginal loops of the cornea—those little twigs which extend forward from the posterior conjunctival system to turn on themselves and connect with the anterior ciliary arteries. The entire cornea finally becomes encircled with a raised fleshy ring-like mass of closely pressed vessels, which stop short, however, just within the limbus. In extreme cases it may actually overhang the limbus, and is sometimes called "epaulet-like swelling" of the limbus. The deep vessels, however, which come from beneath the limbus do not stop short with the superficial ones, but continue in the track of the opacities—which they seem to be following up—toward the center of the cornea. Like the vessels in the first form, these vessels run parallel to one another, are very fine and close together and produce the same dull grayish-red appearance of the cornea. Frequently the vessels do not quite reach the center of the cornea and the pupillary space retains its bright gray look.

It must not be supposed that the abnormal action in interstitial keratitis is limited to the cornea, although in most cases the marked visible changes are corneal. There is no doubt, however, that the corneal phenomena are generally secondary. Berry refers to the affection as a secondary infiltration, depending on foci of inflammation in the neighboring tissues. In contra-distinction to this, however, Von Hippel¹ contends that in some cases the affection of the cornea may be primary and propagate itself backward to the uveal tract. It is possible that in some cases in which the center of the cornea is the apparent starting point of the disease the peri-corneal tissues are affected later, but these cases are not of the usual type. At any rate the point is still unsettled. The absence of active inflammation, abscess formation or ulceration of the corneal tissue, all favor the view of the affection being a secondary infiltration. It is

probable that the iris is always more or less involved, although it may be difficult to determine with certainty on account of the opaque condition of the cornea. After the cornea has regained its transparency it is quite common to find posterior synechia, even when iritis had not been suspected, and also in cases where atropin had been faithfully employed from the start to guard against such a contingency. The mydriatic penetrates the thickened cornea with difficulty and probably reaches the irritable iris in insufficient quantity to exercise its physiologic effects. The pupil consequently remains small. Accumulations of cells are frequently found on the posterior surface of the cornea. It is probable that they are seldom or never entirely absent, though it may require a very careful examination with focal illumination and a magnifying lens to determine their presence. Of course this is only practicable during the stage of resorption. Intra-ocular tension is frequently found diminished. The anterior chamber is often deeper than usual, due to an increased secretion of aqueous humor. These changes with the deposits on Descemet's membrane show that the uvea proper is almost universally involved, although it may not otherwise be clinically demonstrable. Its participation may be extremely slight, or on the other hand so marked as compared with the process in the cornea, that the inflammation assumes the character of an irido-cyclitis. We have all the intermediate degrees between a well marked irido-cyclitis, with a few slight opacities in the posterior layers of the cornea, and the densest corneal infiltration without demonstrable extension backward. Hypopyon is very rarely observed even in the worst cases of iritis and uveal involvement. After the cornea has again become sufficiently clear we frequently see foci of vanishing choroiditis. These manifest themselves by numerous black spots in the anterior segment of the choroid. This inflammation of the choroid is much commoner than generally supposed, because of the difficulty of making an ophthalmoscopic examination during the progress of the disease. We have to wait, therefore, for the cornea to clear up in the resorptive stages. Sometimes we have the opportunity of watching this process of anterior choroiditis in the other healthy eye before the cornea has suffered. In some cases scleritis occurs as a complication, confined to the peri-corneal and præequatorial zones. It is diffuse, as a rule, and may result in softening and ectasia. In one case which I saw the entire cornea was pushed forward *in toto*, by a stretching of the sclera in the ciliary region. The cornea had regained its transparency almost completely, the anterior chamber was shallow and the eye had become blind from secondary glaucoma. It is probable that in most cases there is a tendency toward involvement of the scleral tissue, indeed, careful observation will often detect a deep peri-corneal injection of a mild type before the cornea shows any opacity. It is usually a difficult task to ascertain if any deep-seated inflammation complicates the corneal trouble. As however, even in the worst uncomplicated cases, the movements of the hand close before the eyes should be visible, the inability of the patient to see such should lead one to suspect it. The visual acuity should correspond to the condition of the cornea. The field of vision also should be of normal extent. Therefore any limitation of it would indicate some deep complication.

Interstitial keratitis may be accompanied by more or less marked symptoms of irritation, as lachryma-

tion, pain, photophobia, redness and rarely swelling. As a rule they correspond to the amount of vascularization. In some cases they are extreme, in others hardly noticeable, and the patient only seeks medical aid on account of the disturbance in vision. In mild cases this may be so slight that no inconvenience is caused until the second eye is attacked. In severe cases, and in the later stages of some cases with a mild beginning, the disturbance in vision may be so pronounced that movements of the hand can only be recognized a few feet, or even inches, distant.

The course of the disease is extremely chronic. As a rule it is protracted for months and even years. The two eyes are seldom attacked simultaneously, but as before mentioned, a long interval usually elapses. Schmidt-Rimpler² even mentions a case observed by him in which one eye had been healthy for more than a year when the other was attacked. It is rare indeed that both eyes are not attacked at some period of the disease. In mild cases the duration may be short and the changes not marked. A few maculæ may make their appearance, remain a short time, and gradually subside again, without any marked inflammatory symptoms. The opacity may remain confined to the marginal zone, or even to the particular section in which it started. These mild cases may clear up so completely that hardly a trace is left of the disease. Still it is rare that, on a thorough examination by oblique illumination and a magnifying lens, no trace of the disease is discovered. Unfortunately, however, all cases do not run this simple benign course. The intensity of the process and amount of infiltration may be such that the corneal tissue becomes softened, and, yielding to the intra-ocular pressure, becomes ectatic and permanently opaque. As already stated, the surrounding sclera may also suffer in this way. Organization and shrinking of the exudate, with consequent flattening of the corneal surface and dense opacity of its tissue is also to be dreaded in these severe cases. Fortunately such deplorable cases are rare. Between these two extremes we have all grades of intensity. While the physician may find his resources taxed to the utmost to conserve the flagging courage of his patient, on account of the long duration of the disease, he can on the whole give a good prognosis so far as the ultimate recovery of vision is concerned. While a certain amount of vascularization is necessary for the resorption of the exudate, still, when extreme, the vascularization itself is to be dreaded on account of its failure to disappear completely. It is worthy of note that keratitis interstitialis never results in destruction of tissue, so that neither corneal abscess nor ulceration is to be feared.

The pathology of the disease is still somewhat unsettled. The opportunity for making a post-mortem examination has occurred in but a few cases, and in these the disease was in its advanced stages. We are still in doubt, therefore, in regard to the changes at the very beginning of the disease. Von Hippel¹ (speaking with reference to the eye alone) states that parenchymatous keratitis may be primary, *i. e.*, have its origin or point of distribution in the cornea or sclera directly adjoining, from which it is propagated to the uveal tract, or it may be secondary, *i. e.*, first appear in the ciliary body or anterior choroid or iris, from which it extends forward to the cornea. The exten-

¹ E. Von Hippel: Ker. Parenchymatosa Graefe's Archives XXXIX, III, p. 204.

² Schmidt-Rimpler Ophthalmology and Ophthalmoscopy, Translation, N. Y., 1889, p. 412.

sion occurs by way of the ciliary vascular system. The microorganisms are passed through these small vessels, the lumens of which they may partially block, or the vessel walls themselves become affected, and the resulting impeded circulation is followed by failure of nutrition of the corneal tissues. Leucocytes in great numbers make their way through the vessel walls and the corneal tissue becomes infiltrated and loses its transparency. He cites Wagenmann's experiment in support of his views. The latter cut through the two long ciliary and in part the short ciliary arteries. Following this a grayish opacity developed at the corneal margin and overspread the corneal surface. A dense vascularization soon appeared along the border of the cornea and gradually spread inward. This in turn was followed by a gradual return of more or less complete transparency in the corneal tissue. These three stages of infiltration, vascularization and resorption, correspond with the phenomena observed in the actual disease in man. According to this the affection has its seat primarily in the coats of the blood vessels, the corneal trouble being a direct result.

In an autopsy made by Krüchow³ there was vascularization of the deep corneal structures, the vessels had adventitial membranes and contained extremely large numbers of white corpuscles. Mayer⁴ examined a case in which the cornea was much thickened. The deep layers were infiltrated with large round and polygonal cells, which in places were collected in nodules. There was congestion of the deep tissues with perivascular cell aggregations. The epithelium of Descemet's membrane was thickened and covered by masses of cells. Nodular masses also appeared in the iris. The anterior portion of the sclera was thickened, vascular and infiltrated. Choroid normal. The cell accumulations resembled tubercles but no giant cells were visible. Fuchs⁵ saw a case where the continuation of the infiltration into the deep layers of the cornea extended into the ligamentum pectinatum, iris and ciliary body. He found these parts filled with small-celled nodules which much resembled tubercles, but no tubercle bacilli or microorganisms were found. There is a unanimity of opinion with regard to vascularization and cell infiltration, but the initial changes remain unknown.

The etiology of interstitial keratitis is as a rule not obscure. The underlying cause in the majority of cases is syphilis of the hereditary type. Noyes contends that some cases also owe their origin to acquired syphilis. He quotes Horner⁶ in support of his views. Many cases are undoubtedly scrofulous, a few malarial, and probably rheumatism and gout furnish a small quota. Interstitial keratitis belongs to the later manifestations of hereditary syphilis. Hence it often appears as late as the age of puberty and but rarely in infancy. The vast majority of cases occur between the sixth and the twentieth years. To Hutchinson is due the credit of delineating the facial characteristics of hereditary syphilis. What were formerly thought to be evidences of a scrofulous taint, we now know to belong to syphilis. Patients with hereditary syphilis will almost always present some or all of the following peculiarities: The forehead is prominent, with overhanging frontal eminences. The nose on the contrary is flat, with a sunken bridge, producing, on account

of a more or less degree of epicanthus, an apparent increase of distance between the eyes. The upper jaws are ill developed and the teeth will require careful inspection. The upper central incisors are ill developed. They may be stunted as a whole and are abnormally shaped. The cutting edge is short and shows a semilunar indentation. Fine linear cicatrices exist at the angles of the mouth. Old eschars may disfigure the hard and soft palates. Numerous, small, hard, painless, glandular enlargements can be made out in the cervical regions. Nodular, hard, painless swellings occur on the long bones, especially those of the leg. These patients may be otherwise in an apparently robust condition.

As might be supposed from a consideration of the causes, treatment is both local and general. The constitutional dyscrasia must be combatted, although it must be admitted that in constitutional syphilis the results of medication are not encouraging. Mercurial treatment is much less effectual than in the acquired form, and its use should be restricted to the severe cases. It may be given by inunction, using the oleate of mercury 20 per cent. or the usual blue ointment. In children the internal administration of corrosive sublimate (1 to 4,000, a teaspoonful three times a day) is useful. The condition of the gums should be carefully observed. In the milder cases remedies containing iodine appear to be more useful. Syrup of the iodid of iron, cod-liver oil with iron. Blancard's pills of iodid of iron, are all useful. Small doses of calomel 1-10 gr. three times a day have also proved valuable. In weak and cachectic individuals general tonics may be required, as quinine, iron, nuxvomica, etc. Errors of digestion must be corrected. The patient should have an abundance of good, plain food, and should be encouraged to live as much as possible in the fresh air. In the local treatment we endeavor to combat the uveal complications, and later on to encourage the rapid and complete clearing up of the corneal opacities. The moderate use of atropin is always indicated in the early stages; a $\frac{1}{2}$ to 1 per cent. solution may be instilled once to four or five times daily. Formentations with hot water or chamomile infusion often ameliorate the symptoms of irritation. They may be employed for twenty or thirty minutes at a time, several times during the day, until the acute symptoms are over. Later the irritant remedies may be tried cautiously, but *no astringent or irritating remedy should be used while any signs of irritation exist*. Calomel, Pagenstecher's ointment, laudanum, are all good. The yellow ointment may be rubbed in well once daily. These tend to promote absorption if properly and timely used. To the same end Schweigger⁷ recommends the employment of massage of the cornea. Of course at all times the eye should be properly protected from strong light by the use of colored glasses. In severe cases, indeed, the patient should be confined to his bed in a darkened room. Treatment may be demanded for months or even years, especially the use of means to clear up the cornea.

The Bicycle.—The bicycle is still the topic of discussion in many a medical meeting, and a note of warning is constantly sounded against the wheel and its use by persons with any heart trouble. Physicians abroad are almost all devoted to the wheel as a health-giving pastime, but they all assert that rowing is superior to it in every way, one reason being the lack of dust which bicyclers inhale into their lungs.

³ Zehender's Monatssch. f. Augenheilkunde, 1875.

⁴ Inaugural dissertation: Göttingen, 1887.

⁵ Fuchs Text-book, American Ed., 1892, p. 172.

⁶ Jackolowleena Pulcheria—Ueber Keratitis interstitialis diffusa, Zurich, 1873.

⁷ Schweigger—Handbuch der Augenheilkunde, 1893, p. 270.

A WORD ON THE MODERN USE OF THE TERMS INFECTION AND CONTAGION.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

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COLUMBUS, O.

With the advance of the germ theory and its practical application to disease, no small amount of confusion has arisen in our text-books in the use of the word infection.

Dunglison's dictionary, published in 1860, defines the word infection as synonymous with contagion and defines contagion as being the transmission of a disease from one person to another by direct or indirect contact. It also states that the term has been applied by some to the action of miasmata arising from dead animal or vegetable matter, bogs, fens, etc. It says that contagious diseases are produced either by a virus capable of causing them by inoculation, as smallpox, cowpox, hydrophobia or syphilis, or by miasmata proceeding from a sick individual, as in plague, typhus gravior, measles, scarlatina, scrofula, phthisis pulmonalis, or cancer.

By these definitions, you will readily see that the same term is applied to widely different conditions and we are almost justified in saying diametrically different causes.

Thomas, in the edition of his dictionary for 1886, defines infection as being "the communication of a disease by personal contact with the sick or by means of effluvia (whatever that may be) arising from the bodies of the sick; contagion; the transmission of disease from one individual to another of the same species, or from one animal to another of a different class." He concludes his definition by saying the term is sometimes used as synonymous with contagion or agent by which a communicable disease is conveyed.

In the same dictionary he defines contagion as "the communication of a disease by contact or by inhaling the effluvia from one already effected—often used as synonymous with infection." Here, again, we have diametrically different conditions defined as synonymous terms.

Keating, in his edition of 1892, says that infection is the contamination with a poison or virus which has the power of invading and multiplying in living tissues. Communication of disease; contagion; atmospheric contamination. He also defines contagion as being the process by which specific diseases are communicated from person to person. Specific disease may be communicated by contact or by near proximity of the sick to the well, when the process is termed direct contagion. He concludes by saying that if communicated indirectly, by means of clothing, food, etc., infection is the more correct term.

In the 1893 edition of Dunglison's dictionary, we find infection defined as material essential to, and concerned in, the propagation and spread of communicable diseases. The process by which disease is communicated to an individual by diseased germs from the external atmosphere. In the same edition the definition of contagion varies little from that given in the edition published more than a third of a century ago.

Prof. Pepper, in his work on diseases of children published in 1874, defines scarlet fever as being an

epidemic and contagious eruptive fever; and yet we all know that scarlet fever will be communicated from one person to another without the necessity of direct contagion or personal contact. In the same work he states that syphilis may be contracted by direct contagion. Here we have the same definition given in two diseases. The one, syphilis, we know is never contracted except by direct contact, and the other is a disease which is seldom contracted by direct contact, but the germ of which is carried in the air, and if carried in the clothing must be inoculated and thereby the disease introduced into the circulation.

Roberts, in his Practice, published in 1874, defines measles as a distinctly infectious disease; which, according to the definition given to infection by our dictionaries, would mean that it is absolutely necessary to have a healthy person come in direct contact with another afflicted with measles in order to contract the disease, and I am sure there is not a practitioner here this afternoon who will admit that that is necessary. Coming down to our more modern authors, Whittaker, of Cincinnati, defines chicken-pox, in the American Text-Book of Theory and Practice of Medicine, published in 1893, as an acute infection of children. Now, what are we to understand by this? If infection means contagion, and contagion means contact, are we to understand that chicken-pox is transmitted from one person to another only by actual contact? If the definition is intended to mean this, certainly clinical experience proves the contrary, and it can be readily demonstrated that actual contact is not necessary to convey chicken-pox from one person to another. In the same volume, the same author defines smallpox as being a highly contagious disease; and yet, we know that smallpox will be conveyed from one person to another in exactly the same manner as chicken-pox is conveyed from one child to another; yet in the one instance it is called infection and in the other instance contagion. In the same volume, Thompson defines syphilis as a chronic infectious disease; but who is there to-day who will not admit that acute syphilis is only contracted by direct contact? Again, Bartholow, in his Practice, published in 1880, defines hydrophobia as a specific disease due to the inoculation of a poison. If this be true, why should not the same definition be applied to syphilis, when we all know that it is produced by the inoculation of a specific poison?

We might multiply these quotations indefinitely. Our text-books and dictionaries are filled with contradictory definitions of the same conditions, and is it any wonder our students come to us to define what we mean when we refer to infection, and what somebody else means when he speaks of contagion? By these few quotations from accepted authors it is evident that the same terms are used in medicine for entirely different conditions, and applied to diseases which are contracted under, we might say, almost diametrically different circumstances. Owing to this Babylonian confusion of terms, sanitarians in making laws to cover the sanitary condition of States and municipalities, have included both infection and contagion without endeavoring to define what is meant by either, so that the transgressor can not escape on a technical definition of terms. It seems to me, however, that the day has come when a more distinct and definite nomenclature should be applied, and terms should be used which have a definite meaning and which indicate certain definite conditions. Especially

is this true in surgery, where accuracy of language is so essential in conveying a proper idea of the meaning intended by the writer.

The generally accepted term "infection," as applied in surgery, means the introduction into the human economy of some microorganism by inoculation or direct contact. Clinical experience, as well as experimental research, have long since taught us that the infection of a wound by pus microbes means the development in that wound of pus; and if that means anything it means that a specific microbe has been introduced into the wound, and there has found a suitable culture medium for multiplication. We do not as surgeons expect a patient to become infected with pus microbes by reason of the presence of another patient in a distant part of the ward suffering from pyemia, so long as proper care is taken to avoid the conveying, by actual contact, of these microbes. But does that hold good in cases of measles, small-pox, scarlet fever or whooping cough? Certainly not. The presence of a case of any of these in a ward, without actual contact, is liable to produce an epidemic, not from direct contact but from what our old authors called "infection of the air," which is an entirely different method of carrying these diseases from that by which pus microbes are conveyed from one person to another, but which is called infection.

Having briefly reviewed the confusion in the use of the words infection and contagion in medical literature, let us turn for a moment to surgical literature and observe the conditions under which these terms are used in it.

Senn, in his "Principles of Surgery," in speaking of tetanus says that the infectious nature of the disease was well known and established before the discovery of the bacillus tetani. In speaking of the etiology of this disease, he says further that the bacteriology of tetanus is the essential cause of the disease; the remaining causes are accidents, the condition which results in the formation of an infection atrium. In speaking of this infection atrium he says that it is a well-known clinical fact that punctured, lacerated and gun-shot wounds of the hands and feet are most liable to be followed by tetanus. Again, the same author, in the same work, in speaking of pyemia, says that it is a general disease caused by the entrance into the circulation of pus or some of its component parts. In referring to the bacteriologic experiments of Klebs, he says that in his experimental research during the Franco-Prussian war he found this microbe invariably present, notably at the primary seat of infection. In speaking of the etiology of this disease, he says that the location and anatomic structure of the tissue in which the primary infection has taken place exert an important influence in the production of the disease. From these and many other statements by the same author, it is clearly shown that the word infection is used to indicate the introduction into the economy through some form of wound, or some form of bacterial or chemic poisoning, as the case may be. If this be true, then how are we going to harmonize the use of the same word to imply the carrying of a disease in the air and its introduction into the human economy, without a wound of some kind, as is the well-known fact in measles, scarlet fever and diseases of that class?

In "Tilman's Principles of Surgery and Surgical Pathology," by Rogers. Published in 1894, we find the author speaking of the existence of infectious dis-

eases of wounds, and he says that these infectious wound diseases are all caused by bacteria, and gives as examples anthrax, hydrophobia, glanders, etc., which are diseases communicated from animals to man. Actinomycosis, tuberculosis and syphilis, he says, are also due to infection by microorganisms. He further states that bacilli are capable of gaining access to the tissues or fluids through any wound, even the smallest interruption in the continuity of the skin or mucous membrane.

Warren, somewhat in contradistinction to other modern authors, refers to contagion and uses it as identical with infection. In referring to erysipelas, he says it is one of the most frequent of traumatic infective diseases, and further on states that the most frequent point of entrance of the virus is through a wound. In speaking of erysipelas, he says that the occurrence of several cases of the disease in a certain locality, or in a hospital ward, is not necessarily evidence of its contagiousness, for such a concurrence of events may be due to a common cause from which each case has taken its origin. Again, he says: "There are, however, undoubtedly cases which are contagious in the highest degree." The same author in the same work, in speaking of hydrophobia, asserts that it is a disease caused by inoculation, and speaks also of the propagation of syphilis by inoculation. Tetanus, he says is an infectious disease, and yet, it has been clearly demonstrated that tetanus can be produced by inoculation just as well as hydrophobia.

In the "American Text-book of Surgery," published in 1892, the author divides this subject into three principal divisions, and speaks of mixed infection, which, he says, includes all the ordinary septic wounds and likewise those special wounds which are, at times, accompanied with marked tendency to spread inflammation and gangrene; second, the chemic poisons, the result of bites of insects and reptiles; third, microbial infection, such as rabies, glanders, etc.

From these few quotations it will be observed that authors differ very much as to the use of these terms and their application to certain conditions. It is the varied use of these terms and the ambiguous meaning attached to them, that are daily causing confusion among students of both medicine and surgery. It seems to me there should be a revision of our nomenclature and that proper terms should be employed to convey definite meaning. For example, some authors refer to primary infection as being the primary point at which some microbe has entered the economy, and secondary infection as meaning the second atrium occurring in the same person, instead of using multiple infection to show that there are multiple atria of the same germs. For example, in pyemia we have the absorption of pus from a primary point of infection, and we have a dozen or more atria of pus microbes forming as many different abscesses throughout the economy. This is strictly multiple infection and not primary, secondary or tertiary, which is an entirely different thing. Primary infection occurs where there is an introduction of a certain microbe, such as pus, and secondary infection occurs where there is the addition of another microorganism, for example tubercular bacilli, producing mixed infection; yet we find authors using these terms synonymously, and thus confusing students as to the real meaning to be conveyed.

The complicated nomenclature in reference to infection, contagion and inoculation has long since

impressed the author with the importance of having a clear and more specific use of the terms than we have at present. Since I commenced to prepare this paper, and after giving the matter more systematized thought, I am astonished at the irregular use of the same terms in our various text-books. While I feel that I have given the matter but incomplete investigation, yet I am fully convinced that it is high time something should be done to bring order out of chaos. At present we do not feel justified in recommending to the medical profession what particular terms should be used in this connection, but we would recommend that a nomenclature be adopted and terms used that will be definite and which will enable a writer to state clearly what he wishes to convey and will enable the reader to understand without question what is meant.

In closing this paper I would suggest that the Academy appoint a committee of three to consider this question and that a request be sent to the proper officers of the AMERICAN MEDICAL ASSOCIATION and the American Surgical Association to appoint a committee of three from each of their bodies with instructions to form a joint committee from the three associations whose duty it shall be to consider this question and recommend a nomenclature that will be more exact and modern.

It was moved by DR. REED and seconded by DR. L. E. LEMEN, Division Surgeon U. P. R'y, Denver, Colo., that those present who are not Fellows of the Academy be invited to participate in the discussions of the papers. Carried.

DISCUSSION.

DR. H. J. MAYNARD, of Wyoming—I think there is no discussion possible in this case, because I agree with the Doctor that there is great confusion that ought not to be allowed to exist. There has been for years a mixing of terms. You write one word and you are understood, perhaps, to mean another; you write the other and you are understood to mean the first. I think attention should be called to the matter by the different medical societies of the country, so that order may be brought out of chaos in the literature of the profession for the years to come. The suggestion is a good one and well taken, and I do not see how we can discuss it; we certainly can not quarrel with it, and can not object to it.

DR. L. E. LEMEN, of Denver—I am a great deal like my friend from Wyoming: I simply rise to compliment and agree with Dr. Reed in his paper and second his suggestion for a committee of three to be appointed. I know whenever I use one term and mail my communication I am very sorry I did use the other term.

DR. WM. TUOMSON, of Philadelphia—The literal meaning of the word contagion is "to come in contact," and I think if we would adhere more strictly to the literal meaning of those two words, not that I can give you a literal explanation of the meaning now, though I have looked it up several times, it would be of great assistance to us. If a disease we have contracted by coming into actual contact with the wound, like syphilis, would be classed as contagious, and the other as infectious, I think it would help us out materially. The literal meaning of the word contagions is, "coming in contact," and I think everybody will understand, if you come in actual contact with the sore, as you do in syphilis, it would be a contagious disease.

DR. C. B. KIBLER, of Corry, Pa.—It seems to me as if the suggestion offered by the author of the paper is a very wise one and should be considered; that is, that a committee of three be appointed to confer with the other societies on this question. I therefore make such a motion.

DR. E. GRISWOLD, of Sharon, Pa.—The paper seems to deal with facts and the statements the doctor makes are, I consider,

facts, and there ought to be a differentiation between the meaning of infection and contagion. Now, I have differentiated in my own mind, but I have never seen it done in the literature of the profession, or in text-books; and I believe it is important that the word "infection" and the word "contagion" should be defined strictly as can be done by the suggestions made by Dr. Reed. I think it would be a very fine thing, and no doubt be a great benefit to students. I presume Dr. Reed is finding trouble from that source. Students get confused and naturally enough do not know what distinction to make between infection and contagion. I think we had better carry out Dr. Reed's suggestion, which I think is a very good one.

The motion made by Dr. Kibler was seconded by Dr. Maynard, that in conformity with the suggestion made by the author of the paper, a committee of three be appointed to confer with the American Surgical Association and the AMERICAN MEDICAL ASSOCIATION, to confer with like committees from those bodies to take up the subject of the matter suggested in the paper.

DR. REED—I would suggest an amendment to that, that in addition to having a committee appointed here the Secretary be instructed to request those bodies to appoint similar committees to confer with this committee relative to this matter, setting forth the reason for such a committee.

DR. KIBLER—In order to make this thing quite clear, I would like to amend that motion a little, that Dr. Reed, our President and the Secretary be that committee if Dr. Maynard will agree.

DR. MAYNARD—I accept.

The resolution was then reduced to writing as follows:

Inasmuch as there is much confusion as to the proper use of the terms infection and contagion, be it

Resolved, that a committee consisting of Dr. Reed, the President and Secretary of this Academy, be appointed to confer with a like committee from the American Surgical Association and the AMERICAN MEDICAL ASSOCIATION, with the idea of coining a new word that will meet with the approval of the profession.

DR. WM. T. DALBY, of Salt Lake City, Utah—The question of infection and contagion is a question that was brought up and discussed in its entirety by Dr. Hammond, of New York, some ten years ago, and seems to be a very difficult one to handle. Some diseases seem to have both the condition of infection and contagion. After a lengthy essay on this topic he came to the conclusion which we are at the present time, that is a condition of confusion. The question as I understand the resolution is, that a committee be appointed consisting of three Fellows, to confer with like committees of the AMERICAN MEDICAL ASSOCIATION and the American Surgical Society that would represent the three associations. I believe it would be almost impossible to get these nine men together. I think it would be a better idea if this Association, the Academy of Railway Surgeons, would themselves make some effort to define, if there can be a definition at all, between these two terms. If we expect to have a conference with a committee of these other two associations, I am afraid when we meet again a year hence we will be in the same condition as we are now.

DR. REED—Before submitting this proposition, in the paper, I have taken the pains to consult with quite a number of the prominent members of the profession throughout the country relative to this matter, and I have been unable to find any one member who felt that he was able to offer a substitute for the terms used that would be satisfactory from a surgical standpoint; at the same time, every member of the medical profession that I have consulted agreed that the terms were exceedingly confusing. Now if a term is decided upon, if some particular name is suggested, it would be well, it seems to me, to have the indorsement, not only of the American Academy of Railway Surgeons, which you all know is a child, so to speak,

in the arena of American medical and surgical associations, but also the indorsement of the American Surgical Association and the AMERICAN MEDICAL ASSOCIATION. I agree with the gentleman who spoke last, that it would probably be somewhat difficult to get a committee together on the subject, but it is highly important that we should get them together. If we adopt a term, with a membership of one hundred, and start out to use this term, we may find some difficulty in getting this term adopted and we will still remain in confusion. My idea is to have it adopted by the leading associations and especially the AMERICAN MEDICAL ASSOCIATION, that this term may go out and be used by these members, and very soon the terms that are now in use will become obsolete, practically, and the new term as adopted will be taken up. The questions that we are considering now more particularly are those from a surgical standpoint and it is certainly exceedingly confusing to use these old terms. Ten years ago the matter from a medical standpoint was scarcely considered, and it is only since the question of aseptic and antiseptic surgery has become prominent that the term infection has come into use. Unfortunately, it seems to me, we have accustomed ourselves to the habit of saying that a wound is infected, when in fact we mean that something has come in contact with that wound and is introduced into it either a specific poison or a microbe of some character. For us to say that a wound is contagious would sound quite bad, hence we have as a consequence dropped on the word infection, and we say that a wound has become infected when we do not mean to use the word as interpreted by our dictionary. We have used the word abstractly, and for that reason I think it necessary as has been suggested by prominent men, to coin a new word. It has been suggested that we get some parties on this committee from one of the associations who are Latin and Greek scholars; they might be able to coin a suitable word that will express our views on this point more accurately. I concede that while there is a great deal of confusion in this matter there is going to be no small amount of trouble to get a word that will be convenient and will mean just what we want it to mean when we desire to describe the introduction of foreign germs into wounds in surgical practice.

DR. A. D. BEVAN, of Chicago—I am opposed to the resolution. I do not believe that it comes within our field of action. Work of this kind, if it is done by medical men at all, should be done by pathological and bacteriological societies, societies which have a wider scope of action than the Academy of Railway Surgeons. We might as well devote all our time to taking up the many points in contest in the nomenclature of any other line of medical work, and I do not believe that it is wise for us to take up a subject of this kind; I do not think that it would be any great credit to this Association to attempt work in this line. I should like to see the resolution voted down. Work of this kind certainly belongs to lexicographers and biologists and not to railway surgeons, and I believe we should limit our work here to railway surgeons.

DR. REED—I fully appreciate the force of Dr. Bevan's argument, yet at the same time I do not think that the Doctor probably comprehends the difficulty in the suggestion that he makes. Take our pathologists and very few of them are in active surgical practice, with now and then an exception. We who are using the term every day feel the necessity of having something that will give us a definite idea of what a writer is saying when he uses a certain word. I do not think it is right for us to continue to use the word infection when it does not mean what we intend it should. It is not scientific, it is not scholarly, and yet if we wait for the pathologists to come to the front, who care little perhaps as to the use of the word, because they are not using the word in the sense surgeons are, I think we will wait till the snows of Iceland cover Chicago. I think it would be perfectly right, when it comes to the appointment of a committee from the AMERICAN MEDICAL ASSOCIATION, that they

should appoint pathologists on their committee, and it is perfectly in harmony with the resolution that the pathologists should take a hand in solving the question.

DR. MEYERS, of Meyersdale, Pa., spoke in favor of the resolution, which was then read and adopted.

PREVENTION OF TUBERCULOSIS BY FEEDING.

Read by Title in the Section on State Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY EPHRAIM CUTTER, M.D. HARV. 1856, UNIV. PA. 1857.
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Introduction.—Tuberculosis is clearly the disease whose chief anatomic lesions are tubercles, *i. e.*, little tubers ("small potatoes" indeed) whose dire results are very great. They are minute, ovoid, obovoid or globular bodies, the products of biologic tissue invaded and preyed upon by a parasitic fungus whose infant state is generally deemed to be a bacillus and the mature form to be the mycoderma aceti, which generates acetic acid or vinegar. In other words, the action of the acetic acid of the vinegar plant itself and of the vitality of the invaded tissues result in hard little tubers (tubercles) as is well known. Like, but *large* tubers, are seen in plant biology; for example, the tumors on pear trees invaded by a fungous parasite, whose bacteria, mycelia and fruit (sporangia) penetrate the profoundest depths of the dense woody tissue, cambium and bark, as some twenty years ago I demonstrated by direct solar projections to members of the Massachusetts Horticultural Society at Boston.

In general terms, *tuberculosis* includes: 1, consumption of the lungs, oftenest recognized and is meant when the word "consumption" is used; 2, consumption of the bowels is, in my opinion, the most frequent form and most unrecognized. Foster's dictionary disposes of it in two words, *i. e.*, "tuberculosis intestinalis;" 3, tuberculosis of the joints; 4, visceral tuberculosis. While it is not intended to quarrel with nomenclature here, the writer thinks that the following definition of tuberculosis is most expressive, to-wit: "Partial paralysis and interstitial death."

By feeding is meant the prehension of outside substances that enter the body and become normal parts and parcels of that body, or confer the force needed to sustain life, thus including air as food. This very old idea needs to be revived, as so many now believe that tuberculosis is propagated by inhalation in air unpurified by sunlight and damp with abnormal moisture, in which foreign bodies more easily float in their aerial flight.

Feeding causes Tuberculosis.—One thousand cases of evidence are enough. See "Relation of Alimentation and Disease," by J. H. Salisbury, M.D., 1888. J. H. Vail & Co., New York. Ten hundred and twenty-six healthy swine were fed on sour whisky distillery slop until all were ill; 250 died and 104 autopsies were done in which were found tubercle bacilli. *Per contra*, 600 healthy swine were at the same period of time kept in pens next adjoining the above 1,026 swine, and fed on good sweet maize. None contracted tuberculosis, as they ought to have done according to late dicta adduced in support of the isolation of clinical tuberculosis. The evidence shows that 600 healthy swine penned next to 1,000 tuberculous swine, fed on proper food and breathing air laden with tubercular bacilli from a regiment of tuberculous hogs, *did*

not take tuberculosis. Apply this to man, and you have the proposition that *if you feed healthy people on proper food they will not contract tuberculosis in their vitiated air food.* More of this later, as we wish now to insist that tuberculosis prevails in those who feed on food that ferments in the alimentary canal with the acetic acid fermentation, or are fed on food that contains vinegar in excess before eating. When the mycoderma aceti is confined to the alimentary canal, as it is in very many cases of tuberculosis, consumption of the bowels occurs and constitutes a large majority of the cases of chronic diarrhea. Innate or other strengths of the intestinal epithelia constitute such a barrier that the vinegar yeast does not get into the blood. But when the villous epithelia are paralyzed by the CO₂ gas or made drunk by the alcohol formed in the alimentary canal (unless special means are used to prevent, alcoholic always runs into vinegar fermentation) then the said epithelia lose their power of resistance (much as an intoxicated person does) and suffer the mycoderma aceti to traverse them and enter the blood, where it is easily detected by the microscope, any time within a year before lung necrosis ensues sufficient to be positively recognized by the usual signs furnished by auscultation and percussion. And this microscopic inspection becomes a *sign* of the *pre-tubercular* state. (See essay submitted to the AMERICAN MEDICAL ASSOCIATION, "On a New Physical Sign of the Pre-tubercular State," 1877.)

Why the lung apices are the favorite site of tubercles is well explained by the facts:

That the lung capillaries are very sensitive to, and contract from, the application of cold.

That when in "catching cold" these capillaries contract, catch and detain collections of mycoderma aceti which otherwise would harmlessly pass through the capillaries.

That these form emboli which obstruct the circulation.

That the lung apices being near the outside air are most accessible to cold.

That because of their position in a comparatively inelastic part of the thorax, the apices are not very expansible, save by forced respiration, and thus are an easier prey to tuberculosis than the other parts of the lungs.

And that the troubles caused by the plant and animal tissue in this embolism, retard circulation and produce tubercles somewhat as in the pear blight aforesaid.

To me, the above is evidence ample to prove that improper feeding produces tuberculosis.

In his study of "Evidence," Ram says that "Fact is eternal." A finger put into the fire burns, as a rule. The burned finger is a fact. It makes no difference as to the witness who testifies that "fire burns"—whether an angel from heaven or devil from hell—whether a liar or truthful person—whether a virtuous or unvirtuous man—bond or free—yeoman or nobleman. The fact is eternal that "fire burns." Let doubters try it and see. So I affirm, if the facts as to the 1,000 swine are disbelieved, the doubters must upset the evidence by repeating these experiments. *This has not been done.*

I testify that I have yet to see a case of human consumption where its cause could not be traced to improper feeding more than anything else. The fact is, that society ethics exalt to highest plane, foods which, if not digested, ferment at once with alcohol

and vinegar plants. More than 25 per cent. of the deaths of civilized man are from tuberculosis—the same proportion as in the hogs aforesaid.

Proper Feeding Cures Tuberculosis.—Or, rather, feed properly and, other things being equal, nature cures tuberculosis. To prove this, it is my privilege to refer to the Transactions of the AMERICAN MEDICAL ASSOCIATION, 1880, in which I reported twenty-five out of seventy cases of consumption, cured by stopping causes (improper food): oiling the machine with medicines and by hygiene—nature healing, as she usually does, no matter what you call the means of cure, even in cures by humbug! Nature is the healer, if she has a fair chance, regardless of diagnosis or conventional medical nomenclature. As with the gospel so with medicine: "I," Paul, "have planted, Apollos watered, but God gave the increase." "Nature" means something born. God is the father of nature. Nature, then, is but another term for God's power. Indeed, physicians are but as husbandmen planting and watering, while the cure is nature's.

This item of cure is introduced to complete the full grasp and circuit of the subject. The synthesis and restoration of tuberculosis makes, we think, a ring completely environing the subject in every part. As these caused and cured cases of tuberculosis, though long made known in print, have not been upset, we will show that tuberculosis can be prevented by:

1. Special feeding, avoiding causal foods. This axiom needs no explanation, but for the once fashionable treatment on the principle of homeopathy that tuberculin is the cure for tuberculosis, meaning the treatment of results by results. But is it not a better principle to avoid the causes beforehand? Certainly this is according to everyday ethics and the Section on State Medicine, the keystone of whose arch is *prevention*. Avoid fire and there is no burning. I avoid the food that produces tuberculosis and I have *no* tuberculosis. Or, to put it differently and concretely, the 600 swine avoided the sour food of the 1,000 swine and hence did not have tuberculosis as the 1,000 had. On the rules of evidence these facts are not disproved. It must be admitted that healthy swine fed on good sweet maize and avoiding the vinegar slop of the 1,000 *did not have tuberculosis*.

But you say: "Men are not hogs." That may be, and yet there are lots of humans who are voracious hogs, making swill tubs and vinegar yeast pots of their alimentary canals, so that their feces have raised bread, a sample of which is in my possession, made at my instance, confirming the experiments of Salisbury. Said 1,000 swine could not help themselves. Men can. They can prevent tuberculosis by avoiding all foods that ferment with the common alcohol (*saccharomyces cerevisiae*) and vinegar (*mycoderma aceti*) plants. Such are all vinegars and vinegar liquids—starches and sugars in excess—all composite foods (made up of many articles) sweetened with sugar, glucose, maltose, levulose, frugulose; in fact any animal, vegetable or mineral foods that ferment with alcoholic and vinegar fermentation. Foods that ferment into sulphydric acid and phosphydric acid are admissible, but must be used so that they will not ferment, else nerve palsies will occur. The judicious use of hot water prevents these paralyzes by maintaining a downward peristalsis.

Celery, lemons, horseradish, butter, pepper and salt may be used as relishes. Hot water, clear tea, coffee and cocoa serve as drinks. Avoid corn-meal prepara-

tions, beans, soups, sweets, pies, cakes, pickles, sauce, preserves, fruits, vegetables, greens, pancakes, fritters, crullers, griddle cakes, salads and mush. Vinegar should be carefully avoided. This list is for patients, not healthy people; still it would be well to remember it.

2. General rule for feeding to prevent tuberculosis in healthy people: By bulk, two-thirds animal food to one-third food from the vegetable kingdom. Liquids at will, save sugars in excess. See "Food in Motherhood," E. Cutter: David Stott, 370 Oxford Street, London. Mothers on this diet, before and after pregnancy, have children with good constitutions. Lactation is full, free and not cut off prematurely. This is written advisedly. Children are a joy, not a sorrow nor nuisance in the house. Motherhood on this proportion of foods presents the most lovely spectacle seen on earth. Nothing more beautiful can arrest the gaze than a properly fed and kept motherhood, the "*ne plus ultra*" of domestic, social and "State medicine" bliss! Human beings thus raised will have the least tuberculosis. In fact, such constitutions will resist the invasion of tuberculosis by their very strength and integrity. Little fear would there be of tuberculosis by contagion or by infection, or the introduction of tuberculous matter under the skin of perfectly healthy animals. If so, then healthy kine tested with tuberculin infection would all have tuberculosis. Dr. R. L. Watkins was thus tested harmlessly a few years ago. Some unprotected persons have passed through life without having smallpox or measles, or scarlatina or diphtheria, though very much exposed. Even malaria needs a subject ill from malfeeding or some other depressing cause. The immunity of healthy nursing infants is a matter of observation. A perfect roof does not leak. Leaks come where roofs have solutions of continuity, *i. e.*, holes. A well made carriage goes over unhurt almost any kind of road, when one with loose bolts or tires or spokes, or cracked journals—to name no more—breaks down. Thus much for communication by *infection*. Now for *contagion* by the air.

Careful students of the morphology of the air realize what a vehicle the atmosphere is for all sorts of substances. Take the dust that gathers on top of railroad station advertisements for example. Most observers will readily agree that tuberculous bacilli or pavement epithelia invaded with bacilli or with the zooglea form or the mycelial form of the animalized mycoderma aceti, invade the air passages of almost every one, perhaps daily and hourly. The universal presence of alcohol in the atmosphere from decaying organic substances results from nature's means to rid the world of unused and useless fruits and vegetables, else we should live in a vast charnel house defiled by dead and dying organic substances. So that as vinegar is made from alcohol by artful use of air, it must be there are more or less vinegar plants in the atmosphere, and hence we must be more or less surrounded by aerial tuberculous bacilli. But sunlight and healthy secretions destroy these bacilli, or form a sterile nidus or soil for them wherein they do not develop. Hence the healthy body offers no habitat for this or other noxious vegetations. So we return to where we started from, to-wit, that proper feeding immunes from tuberculosis.

Domestic contagiousness of tuberculosis is explained by the fact that families generally live on the same foods now known to be causal, and the reason why all do not die is that some members resist more

than the decedents. Lawn hose pipes do not go to pieces all at once like Dr. Holmes' famous "one horse shay," simply because their structure is not homogeneous, but weaker in some points than others. For one, I do not think that the average healthy person contracts tuberculosis by inhaling dried or other consumptive sputum. For something like twenty years, I have studied such sputa, *con amore*, with an Amici pattern microscope where my breath constantly passes over tuberculous expectoration. I have no consumption of the lungs. And this, too, when during childhood and youth I was disabled by consumption of the bowels! Had I lived on the foods here laid down to be avoided, doubtless I would have contracted lung tuberculosis, and dying might have served as a fine example of the contagiousness of tuberculosis by inhalation! To me the State legislation proposed for the seclusion of consumptives is unwise, because I believe that simple, plain rations of wholesome food can stop the dissemination of this disease. As to contagiousness by the alimentary canal, it may be said that all tuberculous food cooked to a temperature of 212° F. will destroy its power by coagulating the albumin of the germs, so that they will not propagate on a favorable soil any more than bread baked at 285° F. and showing automobile bacteria afterward, will raise dough. (See essay on "Leavens and Man" in archives of the Philosophical Society of Great Britain, deposited 1882.) Were it not for baking, common bread, eaten as dough, would soon produce tuberculosis of all eaters. It is a wonder that pumpernickel bread does not kill more Germans.

Finally, since air food is eaten about twenty times a minute during man's existence, since air is so vital an article that we are named "animals," and since our beloved and honored Dr. Lewis A. Sayre found that forced respiration cured cases of lung tuberculosis (and some tell the same story for vocal culture), *go in for air food* freshened by sunlight and purified by the winds of heaven. Let patients take in full breaths of such air. Have the whole lungs, apices and all, fully expanded. Keep the lung capillaries well dilated by easy voice culture or by the passive effect of music, as shown by Professor Doziel, of Kazan, Russia. Feed the right solids, semi-solids and liquids. Maintain good hygiene and thus do much to prevent tuberculosis in a common-sense, rational way.

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HYPNOTISM NOT A GAIN.

BY H. L. GREEN, M.D.

MT. PLEASANT, IOWA.

To the ordinary orthodox medical student the production of hypnotism may immediately arouse the thought of some tangible, comprehensible agent, such as chloral, chloroform, ether or sulphonal, something if not ponderable and palpable, yet perceptible in some way. The laity generally ascribe the power of the hypnotist to an imaginary animal magnetism. Electricity, which has been classed imponderable, can be felt; and why also should not this claimed potency have its volts and milliamperes? To the scientific student or psychologist this vague claim is too mystic, savoring too much of the imagination and is found in the present onward trend of knowledge, not to have a sufficient basis. Hypnotism, in the opinion of the writer, can mean only a more or less perfect sleep having

its expression primarily in the condition, physiologic and pathologic of the brain and nervous system; secondarily in other parts of the body system. The mind is not dependent, be it understood, on the brain alone for its seat but on the ganglionic system as well.

The physiologic and pathologic state of the mind may be illustrated in dream phenomena. Why not approach this subject through that of dreams as well as any other way? These have not in our day the same importance and significance they had when they determined the conduct of kings and the fate of nations. Dreams are apt to resemble the thoughts of the day or days immediately previous to them, or sometimes of a more remote period, and things which are familiar objects of thought or of observation of the times; in other words our night thoughts, occurring as they do when our mental control is partially suspended, are very much outlined and colored by the scenes and events of the wakeful day.

A person retires and falls more or less soundly to sleep. His brain, with most of its departments and cells, goes into a complete repose. A few cells, however, may continue to act, or keep up a limited activity the product of which is called a dream. The thoughts composing it may be as disconnected as the cells are disassociated. One idea suggests another; a single thought calls up a whole scene, a mental picture like unto reality. Since our controlling judgment is suspended, time and distance are annihilated. The dreamer blindly follows suggestion across oceans and continents; even decades and centuries present no obstacle.

Now this self-same suggestion is the magic word of the hypnotizer. Suggestion is more of a stimulant than depressant to the cells of thought. Through the agency of suggestion the performer makes an ally of the subject in overcoming the latter's will, disturbing and further widening the chasm of cell harmony and activity. The sensory centers may, as well as other parts of the brain, be affected and influenced in the same manner.

The writer knows an instance where an individual was so far affected that with his unaided hands he could and did tear out his testicles without the pain causing him to desist. It is well known that a speaker or performer has the advantage over an individual in the audience. The latter, even if opposed to the representations of the former, may have no set line of argument or tactics or rebuttal, whilst the former is loaded. This need not necessarily be so, but embarrassment one way or another, condition and circumstantial facts of the individual, and sometimes knavery, go to help out the operator. It is well known the foregoing conditions of the nervous system have their influence on the solids and fluids of the body, even to the constituency of the blood. Running thoughts in a general conversation suggested by one subject to another, is a good illustration of suggestion, and some of these running thoughts in a given seance taking on their natural or unnatural expression in acts constitute the gyrations of the hypnotic subject.

The relation of hypnotist and subject may now be not unaptly described in the words of an Irishman who said to the writer: "The Irish are so thick in Ireland they can hear each other think." But perhaps the best illustration of suggestion is given to us by Rabelais in "L'Episode des Moutons de Panurge," in which he relates that on a sea voyage Panurge to get even with the merchant, M. Dindenaut, who had injured him gravely, bought of him one of his sheep

and threw it overboard into the sea. The example and bleatings of this sheep drew in all of its companions, which in line precipitated themselves one after another into the sea. The merchant himself was drawn in by the last one, which he tried to retain, and was himself drowned with his flock; they were all lost: *l'extravagance imitative de la foule*.

The expenditure of much of the energy (Might we not say waste of energy?) in hypnotism, if devoted to an effort for the discovery of a better hypnotic remedy, might result in a great boon to the profession and to the world at large. For the truth is the medical profession stands in great need of a better hypnotic medicine than we have. Indeed, we have comparatively few such remedies: hydrate of chloral is still probably in the lead as a clear hypnotic, but it requires considerable of a dose, with a taste by no means so agreeable as its smell and the danger line often very fine.

WHICH ANIMAL HAS THE MORE "COMMON SENSE," MAN OR BEAST?

A PLEA FOR MORE MODERATE LIVING.

Read before the Academy of Medicine, at Syracuse, New York
May 21, 1895.

BY GEO. A. EDWARDS, M.D.

SYRACUSE, N. Y.

For what is man living? In the scale of being he is supreme; endowed in the highest degree with the wonderful power of reason—intellectuality, and clothed with responsibilities affecting nothing less than the future of the human race. In view of this, I assume it to be fit and proper to interrogate after such manner.

For what are *you* living? Stop, for a moment, the average, practical man of to-day, no matter what his profession, trade or calling, with this query. After a little confused reflection, he will very likely exclaim: "I'm blessed if I can tell: I believe I know less and less every day I live: haven't accomplished anything of moment thus far in life, and the issue of all my present aims and undertakings is uncertain; I reckon, sir, I'm just about a total failure."

Yet, this man is fairly well educated, bright and intelligent, a hard worker, enjoys some of what he terms pleasures and comforts, presents a good appearance, and is deemed, as the world goes, quite successful.

Pressed further and more closely for a true and thoughtful response to the question, and he will finally admit that he is living and laboring for the *means* which will enable him to satisfy his desires.

Living and laboring to satisfy his desires! And they are very many. Goaded by the "spirit of the times," with all its evil fashions, customs and habits; a loose rein, perhaps, on his appetites and passions; poisoned by selfishness, and envious of his more prosperous neighbor; he rushes on in the struggle, to win the empty prize of a false ambition; reckless of self and his dependents, with only delusive hope to cheer him on his way. And so this life continues to the end. Few achieve the goal of their longings, and if so, at what cost, with all their capacity for enjoyment gone!

How did Heaven ordain man should pass his allotted time on earth; what daily plan decree? With all reverence, perchance some such scheme as this: Work, alternating with rest, and recreation through innocent and beneficial amusements; regularity in

habit of both mind and body; moderation in all things; "friendships, content, progressive virtue, and approving conscience."

Is this an extravagant and ideal design for man's temporal sojourn? No; experience teaches its practicability, truthfulness and value; "common sense" will indorse it; reason, surely, should commend and proclaim it.

But does the boasted civilization and enlightenment of this almost the dawn of the twentieth century of our Christian era, preclude any approach to such an even-tempered, sensible existence? Alas! it seems too true. And must we roll back "the tide of years to the life led by primeval ages," or, bitter humiliation,—look down in the scale of creation for an example of a well regulated life? Let us see.

It has been well and truly said that we are living in the age of electricity,—the synonym of all that is intense and rapid in mental and physical activity. The "vital spark" has, indeed, enabled us to "girdle the earth in forty minutes," a prophecy more than fulfilled. The sea and land may pay tribute to commerce. Giant strides are being made in most of the arts and sciences. The genius of invention and discovery, twin offspring of supreme creative power, is gradually subduing the earth to man's domain and will. In the fine arts, painting and sculpture are transforming all animate life into imperishable images of striking naturalness.

And the art divine, music, "born with the morning stars," man's solace and charm, seeks to soon complete her tender sway by bringing all the flying discords into tune.

Wherefore all this intellectual activity and progress? Oh, it is simply an index of human development, the higher civilization of the times! But how does it profit man's physical well-being? To become a factor in such an economy of existence must he sacrifice health, long life, and entail his infirmities upon successive generations? Let us particularize for a moment.

The merchant, or, it may be, the manufacturer, with inordinate selfishness and greed, anxious to outstrip his neighbor, and assuming upon ill-advised conditions great financial responsibility, we frequently see mourning over his losses and with blanched countenance tossing upon his pillow the livelong night from the specter of a large note due on the morrow, with no money in the till to meet it. All this followed by loss of appetite, indigestion, and probably a fit of nervous prostration.

The banker, or broker, is ever lost in the whirl and din of the exchanges, until he is or well nigh, a fit subject for the mad-house, asylum for paretics, or a victim to apoplexy.

The traditional artist, chained to poverty, struggling after reputation, often faints, ever suffers, and betimes dies by the wayside.

Your statesman, possibly, reaches the topmost round in the ladder of fame, but at great expense, certainly, to his moral sense, from the practice of strange political methods for advancement, and finally exclaims: "It's a bauble; emptiness!"

And to think of our favorite hero of a hundred battles (to borrow a subject from the early part of the century), dying in humiliating banishment, and with distressing disease, at the early age of 52, and in his last moments weeping that he can make no more crimson history!

Emperors and kings have become victims to the festive board alone.

What volumes of sad comment these few illustrations suggest, bearing so closely upon the health, happiness and longevity of mankind, and that may be justly charged to our super-civilized methods of living.

Why, there seems an insidious contagion abroad in the land, and to which we are all more or less susceptible, and which tends to stimulate humanity toward a brief lurid existence, crowded with work and worry and inordinately spiced with luxurious dissipation, as contrasted with a quiet, temperate, useful life, filled with happiness and content and rounded by a green old age with its soul-satisfying retrospection.

In this mad rush made by man after success, whatever this term may mean,—riches, fame, or what not, he can spare, strange to relate, no time to look after, or care for, what to him is of the utmost importance—his *physical condition*.

There is no methodical season for rest and refreshment of the body, so necessary to sustain its normal vital energy, and to the numberless ills which will ever supervene upon such a continuous round of labor and excitement, he gives very little consideration. And, yet, man is such a *rational* being!

Sleep, the necessary factor in the recuperation of the nervous system, is crowded out, virtually repelled, by business and professional engagements after working hours: innocent (?) amusements; social requirements; until exhausted nature rebels and, many times, issues her alarmingly peremptory orders. But, man is an *intellectual* being!

Man eats when he is hungry, or not hungry, any time, day and night, and what? Not always *simple, plain, nourishing* food! Drinks when he is thirsty, or not thirsty (especially on invitation), at all hours, and what? *Not always water!* Then there is that vile weed, tobacco; why, a brute will suffer death rather than receive it in any form, and yet man apparently can not do without it.

Oh, how wonderfully constructed, beautiful and valuable are man's reasoning faculties; "to know the right and still the wrong pursue!"

So with all man's superior (?) intelligence, by indulgence in food and drink, with utter disregard as to quality, quantity, or regularity, together with a continuous deprivation of sleep in proper season, and sensible outdoor recreation, is it small wonder that he suffers from such diseases, some one or all, at different times, as troubles with the digestive tract—dyspepsia, indigestion, bilious conditions, diarrhea, constipation, hemorrhoids, the various neuroses, neuralgia, pneumonia, rheumatism, gout, lithemia, alcoholism, the baneful effects of tobacco, impairment of the senses, especially vision, and indirectly or secondarily, affections of the kidney, particularly Bright's, diabetes, and degenerative changes in other important organs, the circulatory and nervous systems.

Now, strictly speaking, most of the common and prevalent diseases affecting man, and this is quite true of the brute creation, should occur, if at all, from accidental causes; that is, the acquisition thereof, be due to conditions he is ignorant of at the time, or beyond his control. He would then be an innocent sufferer deserving of some sympathy like his fellow, the brute, under similar circumstances, and secure and guiltless of the charge herein made.

Hence the statement can safely be made as a fact, which same I believe will be very generally acknowledged, certainly by physicians, that the diseases above mentioned, in a great measure at least, are acquired by man through faulty practices and methods of living or no method at all, and consequently by the non-exhibition of his reasoning faculties, to say nothing of the exercise of "common sense," supposed to be possessed by all humans.

Moreover, if the truth of this premise be recognized, all disease contracted under known conditions and circumstances is preventible. And so it follows that man himself virtually becomes the author of all the miseries of much of his own ill health and often the crime of untimely death: his own executioner, as it were. Ignoble being! for such he proves himself, representing a human paradox! in significant contradistinction to the "equine paradox," of which we have all heard, if not seen, and fulfilling the truthfulness of the common expression that "Man is his own worst enemy."

At the expense of a little digression, perhaps, may not the question be here well put, if it is not just as plainly injurious and suicidal for the well-to-do gentleman to overwork, or do none, overeat and undersleep, with the sure result of fatal disease following sooner or later, as it is for the poorly paid laboring man having, perhaps, a large dependent family, to seek the only relief and oblivion from his troubles and hopelessness in the flowing bowl of the dramshop, with the sequence of alcoholism, the almshouse and death? The manner of acquiring disease and court-ing death may not be quite so dignified and honorable in the one case as the other; but there is a similarity to the final issue, and about the same small amount of good sense displayed in each.

The question naturally arises: Why does not man, when the principles and practice upon which health and life depend are so plainly obvious, exercise his faculties to secure the desired result? Are the reasoning powers at fault? "Common sense," at all events, would seem to be sufficient to teach him the proper course to pursue, and he ought to have a little of this in his make-up.

After all, this incongruous element to man's mental equipoise may possibly be accounted for on the supposition that originally and at best he is provided with very little "common sense," but being easily susceptible to vast quantities of knowledge and nineteenth century wisdom, he rapidly becomes the educated fool—the worst of all fools. The latter, we know, always turn to excesses and die young.

Let us now turn for a moment to examine the beast, its chief characteristics and habits of life.

Physically there is no essential difference between man and the brute creation. Bone, sinew, muscular and nerve tissues, if examined macroscopically or microscopically are found to be identical. The vital organs and senses are the same, perform the same functions and serve similar purposes. Resolved into its ultimate elements, we find the same food sustaining life in the beast as in man; and under like conditions of causation, most of the diseases affecting the two or three higher orders of animals under consideration present the same clinical features.

Now the beast unless inhumanly interfered with and maltreated by man is proverbially healthy (always excepting accidental disease) and lives its allotted time. To be sure, the beast leads a somewhat more outdoor existence, and hence gets the benefit of more

pure air and sunshine. But man, I take it, has an equal privilege to appropriate more of these life-giving attributes and would, if he had enough "common sense" to take advantage of it.

In truth, I know of but one reason why man should not be as healthy and long-lived as the brute. It is this: civilization compels him to wear clothes! That he is immensely handicapped by this specialty I will freely admit. Yet, even with this great drawback, I shall still assert he has a fair chance to attain and preserve the strength of true physical manhood. Perhaps many of you do not realize what a curse clothing is to man—I mean as regards his physical well being. And for the benefit of those who possibly have never investigated this subject, I will relate in brief the experience of the missionaries Sterling and Bridges, men who have had much to do with civilising and christianizing the natural product of the *genus homo* in far off and almost unknown lands. It will serve to illustrate the point I wish to make and may be strengthen the seemingly audacious statement just made.

In 1869, Rev. W. H. Sterling, now a resident of Buenos Ayres, and Bishop of the Church of England for South America, established a mission with the Yahgans, a large, healthy and powerful tribe of native Indians inhabiting one of the islands near Cape Horn. He selected for his residence and labors Ushuaia Bay, a tiny settlement on the narrow channel which bounds Terra-del-Fuego on the South. Mr. Sterling subsequently returned to England to be ordained in the episcopate, and in 1870 his work at Ushuaia was resumed by the Rev. Thomas Bridges and wife, who still live at this little place, on the shores of Beagle Channel.

It is from the latter's experience I quote chiefly: "A tribe of Indians that lived naked in a climate where snow storms raged in every month of the year, was to be transformed into a community of farmers. A people who had in all their wonderful language of 40,000 words no term or idea of God or a future existence, were to be taught and Christianized. Instruction began. The Yahgans who would work were given food. Navy bread for breakfast, meat stew and hard-tack for dinner, hard-tack for supper, with refreshing drinks of milk and water slightly thickened with flour, and sweetened. Clothing was also supplied them as fast as the mission was able." This work continued regularly and finally in 1881, eleven years after Mr. Bridges began his work, "in spite of sterile soil such progress had been made, that the mission reported a Christian village, with cottages instead of wigwams, and an extemporized church in the midst. Much ground had been cultivated, and cattle, sheep and goats had been introduced. Moreover, every Yahgan wore clothes. Great was the change at Ushuaia Bay."

"The missionaries had some 'significant contrast' photographs taken, and they were reproduced in an English magazine. But a more marvelous change than anything photographed was even then in progress. The natives began to get sick. Then they died. The race had been hardy and vigorous. They had actually increased in numbers while living naked and smeared with grease from head to foot. But when put to work as farm laborers, and washed and clothed like white folks, they complained of being 'tired and sore' and they had to be nagged into working steadily. They had slept in the freezing rain, but now, if they sat down in their shirt-sleeves while at work, they caught cold that developed into fatal disease.

Consumption and pneumonia appeared and assumed frightful aspects. Little children that had been round-limbed and bright-eyed when naked in a canoe, were wasting rapidly away in excessive languor, though clothed in woollens and living in a warm house. They continued to waste and die and from that day to this, not one child, in dozens born, has survived its first year! Of a tribe 3,000 strong, healthy, hearty and happy, fewer than 300 can now be found." But I spare you, and will not press the moral of all this.

Passing on and to resume the argument, suppose we inquire if the brute really does possess "common sense"; that sense or faculty, which is recognized as the simplest action of the brain, the organ of the mind; in other words, we will say the lowest grade of reasoning power.

We have all seen, if we ourselves can not exercise a similar function, exhibitions of good, common, or "horse sense" as the expression goes, and no one I fancy will wish to deny this distinguishing characteristic to that noble animal of the *genus equus*.

Some may still say that the beast is governed by instinct. I do not know how most comparative physiologists of the present day speak on this subject, but it seems difficult to conceive how such a term can be justly used to express the power of comprehension so frequently manifested in the brute.

Even in the apparent automatism of lower forms of life, an occasional flash of intelligence is easily discerned, and as we rise in the scale of being, and witness in the brute creation positive evidence of the intentional adaptation of means to ends—the offspring of thought, we must here acknowledge reason as the governing and controlling power.

Professor Huxley goes further, and, in summing up on this subject, says (and I need not quote higher authority, if it were possible to do so): "I have endeavored to show that no elaborate structural line of demarkation can be drawn between the animal world (brute creation) and ourselves; and I may add the expression of my belief that the attempt to draw a psychical distinction is equally futile, and that even the highest faculties of feeling and intellect begin to germinate in the lower forms of life."

On the whole, we may safely declare every living thing to be endowed with sufficient intelligence to direct its individual efforts toward doing and obtaining what is needful for its safety and best physical good.

In all the varied forms of life on this great earth, each and every creature, with one exception, makes use of this priceless gift for the purpose just indicated. Why the "crowning work of creation" is the exception is an unsolved problem.

Now, if we are quite ready at this time to grant the brute even common sense, does he exercise it?

In the daily contact with our best friends, the animals (brute creation), how often is one seen to suffer from any ill effects whatever from over-eating? Very, very seldom. And many animals enjoy gormandizing as well as man. There must be some simple secret to account for their invariable escape from the "seven devils" of dyspepsia and indigestion. Can it be plainness of diet? If so, man will do well to make a note of this. I can not say precisely what the effect would be on the most sturdily specimen selected from among our dumb fellow-creatures; if it were senseless enough to indulge night after night in a bill of fare

consisting of ham sandwiches, lobster salad, escalloped oysters, cake, candy, pickles, ice cream, strong coffee, champagne, etc., and all in addition to its daily allowance of customary food and drink; but think it would "fetch 'em—the gripes," sure and quick enough.

Why, the incomprehensible, indestructible digestion of "McClusky's goat" (that much abused animal), would, I believe, be somewhat disordered by frequent repetitions of such a festive *menu*. But the brute creation does not commit such crimes against itself.

Again, did you ever see a beast that did not know enough to prepare and go to rest and sleep at night-fall, if it were allowed to do so? I pause for a challenge to this assertion. Oh, ye creatures of superior intellectual capacity, canst thou gather no moral from this?

As might be expected, animals with such regular and exemplary habits in eating, drinking and sleeping are seldom sick. Indeed, very rarely, I believe, unless by accident, or ill treatment.

What an amusing innovation it would be to learn that your horse had an attack of acute dyspepsia! Is it very common to hear of a cow suffering with nervous prostration? A dog with rheumatism? A sheep with diarrhea? And did anybody ever see a cat, no matter of what age and in any emergency of its feline life, when it was thought to be in great need of spectacles?

We might press the inquiry on this line much further, and endeavor to seek in creatures so clearly allied to us the diseases commonly affecting ourselves, but I am very certain the effort would be quite barren of results.

In the condition thus revealed of man by contrast with his fellow creatures, proud as he ever is of being chiefest in this world of life, would it be too humiliating for him to admit that he might gather lessons of much value to his physical happiness and well-being from the plain and simple habits of a lower order of animals?

And what, if any, are the axioms to be deduced from the argument, and which man should keep ever near to his counsel, if he would retain his health and be long lived? They are, seemingly, self-evident: he should live frugally; avoid intoxicants; seek sufficient rest and sleep at the proper time, and the more pure air and sunshine he can expose himself to, the better.

Furthermore, and to repeat a little old and true philosophy, he should remember and take warning, that even to be able to exercise good "common sense," he must have a healthy body. That "haste makes waste." That wealth begets luxury, luxury begets idleness, and idleness breeds crime. And, finally, that there is no ambition worthy to be cherished, which leads him away from a conscientious duty he owes to himself, his fellow-man and his Maker.

With your kind indulgence, I have conducted both sides of the argument of this discourse (if it can be dignified by such a title), in a simple (I am not bold enough to say humorous), yet truthful way, and shall ask still further for the extraordinary privilege of acting the part of judge, as well as of advocate in the controversy. So if appealed to for an opinion on the merits of the question as stated at the outset, "which animal has the more common sense, man, or beast," I must, in view of the preponderancy of evidence herein offered, in the shape of a formidable array of facts and of which we are all, perhaps, too familiar, decide in favor of the brute.

Still, I believe there is hope for man, if he has not much "common sense;" and trust the startling revelation you have so meekly and patiently listened to will cause no one to despair of his own condition, or think that the future promises less for the nobility of true physical manhood. For, in the language of another, we may be consoled by the reflection that, "there is still a vast gulf between civilized man and the brute." "The power of knowledge; the marvelous endowment of intelligible and rational speech; the conscience of good and evil; the pitiful tenderness of human affections; raise us out of all real fellowship with them, as a mountain top, far above our fellow-beings, and transfigured from our grosser nature by reflecting here and there a ray from the infinite Source of all Truth."

CALCIFICATION.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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Calcification is a process by which organic tissues become hardened by a desposition of salts of lime within their substance. In the intercellular tissue and in the substance of the cells themselves, these salts are deposited by the rich blood supply always near. They are deposited in minute particles and in such fine subdivisions that it makes it difficult to demonstrate many of them even with the higher power of the microscope. The intercellular substance, either a protoplasmic or gelatinous fluid or semi-fluid, contains the lime particles. In it they change their chemic nature, uniting with the organic substance of the part and form small globular bodies which have been called calco-spherites; and these blending or coalescing into a mass form a substance called calco-globulin. This calco-globulin, which is a lifeless matter, has been deposited through the cells into a gelatinous substance, and in some cases into the substance of the cells themselves, where by a further hardening process, it becomes the fully calcified matrix. Most of us are more or less familiar with the experiments of Mr. Rainey, and later of those of Prof. Harting and Dr. Ord. But, as an essay on this subject would not be complete without a brief quotation, I introduce some of their experiments. "If a soluble salt of lime be slowly mixed with another solution capable of precipitating the lime, the resultant lime salt will go down as an amorphous powder, and sometimes as minute crystals." But when the lime salts are precipitated in gelatin or albumin, the character of the lime salts is materially altered. Instead of a powder, there were found various curious, but definite forms, quite unlike the character of crystals or powder produced without the intervention of the organic substance. Mr. Rainey found that if carbonate of lime be slowly formed in a thick solution of albumin, the resultant salt has changed its character, it is now in the form of globules, laminated like tiny onions. These globules when brought in contact with one another become agglomerated into a single laminated mass, it appearing as if the laminae in immediate opposition had blended with one another. The globular masses at one time of mulberry-like form, lose the individuality of their constituent smaller globules and become smoothed down into a single mass, or layer, and Mr. Rainey suggests as an explanation of the laminated structure, that the smaller masses have accumulated in concentric layers,

which have subsequently coalesced; and in the substitution of the globular for the amorphous or crystalline form in the salt of lime, when in contact with organic substances. Mr. Rainey claims to find the clue for the explanation for the development of shells, teeth and bone. At a more recent date, Prof. Harting took up this line of investigation and found that other salts of lime would behave in a similar manner, and that by modifying the condition of the experiment very various forms might be produced. The most important addition to our knowledge made by Prof. Harting lay in the very peculiar constitution of the "calco-spherite," by which name he designated the globular forms seen and described by Rainey. That these are built up of concentric laminae, like an onion, has already been stated, and Mr. Rainey was aware that albumin actually entered into the composition of the globule, since it retained its form even after the application of acid. But Prof. Harting has shown that the albumin left behind after treatment of a calco-spherite with acid is no longer ordinary albumin; it is profoundly modified, and is become exceedingly resistant to the action of acids, alkalies and boiling water. For this modified albumin, he proposes the name calco-globulin, as it appears that the lime is held in some sort of chemic combination, for the last traces of lime are retained very obstinately when calco-globulin is submitted to the action of acids. Now it is a very remarkable fact that microscopic glistening specks and globules are constantly seen at the edges of tissue where enamel, cementum, dentine or bone are to be formed or are forming. Robin and Magitot have described isolated spherules of lime salt as occurring abundantly in the young pulps of human teeth, as well as those of other animals, and Tomes suggests that perhaps all deposits of lime salts commence in this way. These microscopic, globular bodies have been called calco-spherites, and it appears as though some such process as described by Prof. Harting is transpiring within the substance of the tissues where bone, dentine or enamel is to be formed. It will be noticed that near this point of formation there is always to be found a rich, capillary blood supply, and from this the lime salts are given out. As I have said, near the forming matrix the tissue is seen to be full of these microscopic, glistening bodies, the minute atoms which are often spoken of as granules. The abundant appearance of these globules at the time of the formation of the enamel and their entire absence at earlier stages is to me an indication that the globules are an enamel substance, the matrix-forming calco-spherites, and following up their future confirms this. Many of them are so small as to be scarcely measurable; they are almost always spherical. The lower part of the cell toward the dentine contains the larger globules. The growth of the enamel rod once begun takes place by additions of these globules. I am convinced that the larger ones are composed of hundreds of the smaller ones, which have coalesced into the main mass. When enamel is commencing its process of calcification, if we examine carefully with high powers a tissue that has been properly prepared so that there shall be the smallest amount of shrinkage, we shall find in that slight amount of the enamel organ that is directly over the calcified point of dentine, in what remains of the stellate reticulum and in the stratum intermedium principally, a very large number of glistening points. Most of these are minute, micro-

scopic, in fact. They are the calco-spherites in process of formation, or rather, they are the minute particles of lime from the blood supply, changing their chemie nature as they pass into the protoplasmic juices of the part. These appear to be passing into the formative cells and these cells superintend their formation into enamel rods, that is, they are laid from the cell against the forming rod. Within the substance of the ameloblasts they are seen to be growing larger by the smaller ones coalescing with others. If at this point of their development the layer of enamel cells is pulled away from the cap of formed dentine, we shall see that the cap of dentine is everywhere covered with quite regularly formed globular bodies. If on the other hand, the layer of enamel cells is against the formed cap of dentine the masses are assuming block-like forms, as though taking the form of the future enamel rod. They appear to be in a gelatinous substance which is between the dentine and the enamel cells, and here, by an unknown chemie hardening process, they become the hardened columns of the enamel, as I have formerly described in a paper read at Berlin, 1890. In dentine the calcifying process goes on in much the same manner. The odontoblasts are merely masses of protoplasm, and appear to have no membrane; as is the case with the ameloblast, it has a nucleus at a point farthest from the calcifying matrix. In forming the dentine matrix, the odontoblast, or the pulp tissue through the odontoblast, gives out a rich gelatinous substance about as wide as the layer of odontoblast cells. Everywhere between the odontoblasts, as Mummery has demonstrated, is found a rich supply of connective tissue cells, whose function appears to be the forming of a net-work of connective tissue fibers into this gelatinous substance, this net-work seeming to be a scaffolding upon which the calco-spherites, which are to form calco-globulin, are to be deposited. Into this layer the odontoblasts are also superintending the placing of the minute globules which are within them, and which have been given to them by the rich blood supply found everywhere near their pulp ends. Into the gelatinous substance the globules form against the calcified matrix, where, fusing with others, they form a mass, entirely filling the gelatinous substance. This gelatinous substance with its mass of globules now becomes calco-globulin. By some natural hardening process, it then becomes calcified matrix, and thus another layer of calcified matrix is formed. We must remember that it takes a large number of sections to show these various stages of growth. Each section shows the picture at the point where death of the part has left it; another section will show another stage, and so on. In one section we shall see the odontoblasts against the gelatinous layer with the globules within it. Another section will show an entire absence of the gelatinous layer, with pear-shaped cells a little away from the calcified matrix and with portions of cells clinging to the calcified matrix found here and there, that look like odontoblasts. Another section will show the globular masses filling up the gelatinous layer just before a new layer of calcified matrix is formed. It is only by studying these various stages of growth that we can come to any correct conclusions. In the cementum, a tissue I have not studied as carefully as I have the others, I am convinced that the calcifying process is much the same. The first cemental calcification takes place by the cementoblasts giving off these globular bodies near the neck

of the tooth against the forming dentine of the root, into a gelatinous substance, this also being given off by the cells. It assumes the form of plates or scales. Afterward the cells themselves appear to fill with the globules and lose their identity in the forming matrix. That peculiar tissue which we call "tissue on the borderland of calcification" is composed of globular glistening bodies which have coalesced and formed a layer within a gelatinous substance previously given out by the formative cells; in this condition it is a tissue indestructible both in acids and in caustic alkalies, and only in this condition is it true calco-globulin. The conclusions here given on the subject of calcification are arrived at after many years of original investigation, made at such times as could be spared from a busy professional life. They are, I believe, with slight modification, accepted by most of the more recent authorities. It is my object to have presented my views in as clear and simple a manner as possible, that I might enable those of us who are not intimately familiar with the natural processes concerned in calcification to form a clear idea, that they might draw their own conclusions as I shall review very briefly some of the, to me, erroneous views presented in a very recent work. I refer to a work entitled "The Anatomy and Pathology of the Teeth." The author and his associates, in a chapter describing "The Calcification of the Enamel" make these statements. They observe "that the more we turn to the center of the cup [enamel organ] the more shall we be struck by the presence of glistening, homogeneous lumps in the epithelia, until we have reached the center of the cup, where we observe that epithelium has been transformed into a number of such lumps in a regular arrangement, which reminds us of their origin from previous epithelia. The original epithelia [enamel cells] gradually become enlarged and are at last split up into a number of medullary corpuscles." "Medullary tissue develops into connective tissue of a decidedly fibrous character." "There is good reason for the assumption that the medullary tissues sprung from the previous external epithelium [of enamel organ] is the source for the completion of such enamel as we observe upon temporary teeth when they emerge from their sockets." And again, "if we examine the lower edge of the cup of the enamel organ at about the sixteenth week of embryonal life, we observe a peculiar change in the columnar bodies of the internal epithelium, which consists in the appearance in a more or less row-like arrangement, of highly-glistening globular bodies, replacing the previous columnar epithelia. These bodies are either solid or slightly vacuolated and are formations of living matter such as we are accustomed to look upon as medullary, embryonal, or indifferent corpuscles, in their earliest stages of appearance. Obviously, these glistening globules have originated from the reticulum of living matter of the columnar epithelia [enamel cells] themselves. We feel justified in this conclusion from the fact that we can trace step by step the growth of these glistening granules up to the formation of glistening lumps such as we have termed medullary corpuscles. . . . The lumps, I wish to repeat, are extremely glossy, with a high degree of refraction. They are arranged at first irregularly in a layer of considerable breadth, and higher up in rows, and by their coalescence and prolongation give rise to small columns, the ameloblasts. . . . These [medullary] corpuscles or the liquids

contained in their reticulum become solidified into basis substance and immediately infiltrated with lime salts. . . . "The enamel rods are built up of rows of such calcified or petrified medullary corpuscles."

These observers in regard to the calcification of the dentine endeavor to show that the odontoblasts are split up at their distal ends into these glistening bodies which they call medullary corpuscles. "These medullary corpuscles are lumps of protoplasm, in which living matter is stored up in different shapes, the glistening globules of small size having arisen from protoplasm, and that these represent a juvenile condition of living matter in its most compact aggregation which enter directly into the formation of the basis substance of dentine, while at the same time, continually superadded to the proximal ends of the odontoblasts are medullary corpuscles derived from the living matter of the papilla. Thus the continuity of the odontoblasts in dentine is established." They assert a similar proceeding from the ameloblasts, in a reverse direction. Thus, the ameloblasts being broken up at their proximal [dentine] ends into medullary corpuscles, which are directly transformed into blocks of enamel rods, are superadded to at their distal or peripheral ends by medullary corpuscles derived from the stratum intermedium. "The indifferent corpuscles serving to supply additions to the ameloblasts, exhibit all intermediate stages between small, globular, glossy and compact nucleated, protoplasmic lumps." "Nothing but a transmutation of solid, globular lumps of living matter in delicately reticulated medullary corpuscles seem to be required for the building up of the minute blocks of the enamel rods without the intermediate stage of ameloblasts. . . . The first appearing enamel is made up of irregular, angular, glistening lumps, greatly varying in size."

In these few selections from a chapter in this work on "Calcification," I have given some of the points which they present, and these I propose to briefly review. No one can be more clearly aware of the patient and persistent effort, and of the immense amount of labor and earnest research which the author has given to his work than myself, and great credit from his profession is due to Dr. Bodecker for this labor. I am not in accord with his views as to calcification of the dental tissues or the views of his master, Prof. Heitzmann, or of Dr. Abbot, on this subject. To some of us, "the reticulum" and the "medullary corpuscles" are bug-bears. We are familiar with, and have had many a conflict over these peculiar theories. To the earnest investigator who did not know the author, it would seem from their description of the calcifying processes, as if a tissue had been built up to fit a theory. So far as I am aware, photo-micrographs of these tissues, as described in this chapter on calcification have never been shown. There is no absolute evidence to prove the correctness of their assertions. Heitzmann, as an illustrator of histologic or pathologic tissue, is an artist, but however beautiful these drawings may be, the photo-micrograph is the picture with the stamp of truth that is convincing. The charge of "personal equation" could not be made in such an illustration.

In the May *International Dental Journal*, Dr. F. A. Roy, one of Heitzmann's students, writes to the editor, thus:

"In your review of Bodecker's book, you charge that there is no real evidence to prove the correctness of the theories advanced; and that the views are based solely on drawings in which

the personal equation is a prominent factor, for the drawings are all by Heitzmann. And you state that 'drawings, however beautifully done, can not carry conviction. A few photo-micrographs could have accomplished far more.' Also, 'it leads to the suspicion, whether justly founded or not, that either the slides can not be represented or that they have no real existence.' And 'it would seem that no expense should have been spared to meet this demand.' . . . A section must necessarily be examined at high powers of the microscope in order to see the reticulum. But no photograph yet produced of a section at such high powers can show what the eye can see. Even the thinnest section has a thickness that is very great when magnified by a high power, and the filaments of the reticulum do not lie on the surface, nor all in one plane but are in planes at immeasurable angles with the line of sight. The reticulum is not an open network, but is imbedded in a material not altogether transparent. We hope at an early day to succeed in making a photograph just as the drawing is made, by composite action of a number of negatives at different focal distances. Then we will have some astonishing revelations, such as we have synthetically in Marey's, or the kinetoscopic photographs of objects in motion. Certainly with the wonderful improvement in high power microscopes and in rapid photography the correct combination will come soon. Meantime Heitzmann's master drawings are not only better, but better evidence than present photographs. Heitzmann's answer no doubt is the only correct one—come and see. Come to his laboratory and learn how to see. Anyone who is unable to see the reticulum does not know how to see it. He that will not accept Heitzmann's drawings will not accept even the coming photographs, and probably he that will not accept these evidences is not willing to go to the expense of time and trouble to learn how to see for himself; certainly that individual expense should not be all saddled on Heitzmann or Bodecker, *et al.*

(Signed)

F. A. Roy."

I have made a quotation of this letter simply because I wish to show you on the screen to-night that it is possible to photograph any reticulum which was to be seen, if it were there. This reference to a composite photograph is to me very interesting; such a process, in my judgment, can never be effected. Besides it does not seem necessary. With our present knowledge we can show anything that is to be seen. Some years ago Professor Heitzmann and his New York friends were said to have gone to considerable expense in procuring an electric lantern with which they were to show the reticulum. It is now something over four years, and nothing has been shown confirming their peculiar theories. In fact, a denial of the existence of Heitzmann's reticulum comes to us from the best European authorities. This we shall find, among others, in Butschli's work on "Protoplasm and Microscopic Forms," a recent standard work of great value on this subject; and there are others. The whole chapter of Bodecker's work on "Calcification" is decidedly out of harmony with the teachings of modern investigation, and it seems to me to have been hasty and unwise on the part of the Association of Dental Faculties to have recommended this work as a text-book to the students of our colleges at this early date, especially as the work has no practical value. To one who is familiar with the subject, it is extremely doubtful that the glistening homogeneous lumps seen in the epithelial layers of the enamel organ have their origin in the reticulum of living matter of the epithelial layers, and it yet remains to be proven that this epithelium does split up into a number of medullary corpuscles of a fibrous character, and then become formations of living matter. It is an assertion that can not be proved true; that these glistening lumps, by coalescing and prolongation, give birth to the ameloblast. No; their so-called lumps of living matter—their medullary corpuscles—are but masses of a lifeless lime matter known to be calco-globulin. These masses are not medullary corpuscles;

they do not arise from protoplasm, nor do they represent a juvenile condition of living matter in its most compact aggregation. I wish to repeat: their medullary corpuscles, as represented in their illustrations, are nothing more nor less than lifeless lime globules, having nothing whatever to do with the origin of the ameloblasts. Years have passed since the peculiar views of these authors have been given, yet they have never been accepted by any acknowledged authorities. On the other hand, there are many who regret the action of the Association of Dental Faculties recommending to our students a work that has no practical value, as a text-book; a work of new and strange theories, as yet doubted and unproven; a work that will only mislead and confuse the earnest student searching for the truth. The work has a value, a great value, perhaps; but it is not for the student; it is solely as a work of reference and comparison in the library of the investigator.

INTERESTING CASES OF PERINEAL SECTION, WITH REMARKS.

BY G. FRANK LYDSTON, M.D.

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During my seventeen years' experience in surgical work, it has been my fortune to perform a large number of external perineal sections. Among them, as might naturally be expected, operations for serious deep strictures have preponderated. I have selected from my cases a series of the most interesting of which I have records. Some of the most interesting cases have not been recorded because of various circumstances surrounding the operations which have made it at least impracticable, if not impossible, to do so.

I will first present the cases in their salient features, reserving my comments for the conclusion of the article.

Case 1: Traumatic Stricture. A lad, 15 years of age was brought to me by his parents with a history of urinary obstruction dating back one year. There was no history of gonorrhea, but of a blow upon the perineum, received some fourteen months prior to his consulting me. This injury was not followed by hematuria, but the perineum, it was claimed, was slightly swollen some days after the accident and there was a little difficulty in micturition, not sufficient, however, to necessitate medical attention. The obstruction to urination had entirely disappeared until about two months after the injury, when a slight increase in frequency and slight obstruction were noticed. This had increased to a mild degree until within three months, when an attack of retention came on. This was relieved by the passage of a catheter, but had recurred at intervals of three or four weeks since that time, the caliber of the urethra meanwhile rapidly getting smaller, until at the time of his consulting me I found it impossible even to pass a filiform into the bladder. Perineal section was proposed and performed a few days later. Much to my gratification I found that a few days of preparatory rest, restriction of diet, the administration of urinary antiseptics put the urethra in such a condition that I was enabled to pass a filiform at the time of the operation, thus simplifying subsequent operative procedures. The urethra was restored to a caliber of 30 French, a preliminary meatotomy being necessary for this purpose. The patient was up and about at the end of ten days, the perineal wound being soundly healed at the end of two weeks. Patient has since carefully followed directions regarding the introduction of the sound and is now thirteen years after operation in excellent condition.

Case 2: Irritable Gonorrheal Deep Stricture of Long Standing.—Referred by Dr. F. B. Norcom, of Chicago. Age, 40 years; occupation, conductor. Obstruction to urination of fifteen years, duration. Symptoms first noticed after a third severe attack of gonorrhea. No history of traumatism. Numerous attacks of retention had occurred, after which the patient

would have dilatation practiced for a short time. His habits since the beginning of the obstructive symptoms had been decidedly bad. Numerous attacks of more or less severe urethritis had been experienced since the beginning of the stricture symptoms. Dilatation was commenced at once, but was badly tolerated, each séance being followed by chill and fever. Perineal section was suggested and accepted.

As the stricture readily admitted a small guide, the operation presented no especial difficulty. The stricture was found to involve the bulbo-membranous and the larger portion of the perineal urethra. Especial care was taken to thoroughly divide the indurated tissue upon the roof of the canal. The meatus was freely incised and several senile strictures divided. When the operation was completed a 36 French sound passed easily into the bladder.

This case was last seen one year after operation and was then in excellent condition, there having been no recontraction.

Case 3: Irritable Deep Stricture with Remarkable Irritability of the Vesical Neck. Gentleman, 30 years of age, referred to me by the late Dr. A. Reeves Jackson, consulted me regarding an obstinate gleet with irritability of the vesical neck. There was a history of gonorrhea dating back some ten years. The attack, however, was apparently considerably aggravated by the patient's habit of indulgence in intoxicants. Examination shows that the penile urethra was of normal caliber, but all efforts failed to pass an instrument into the bladder. At the end of twenty-four hours another attempt was made, the patient meanwhile keeping perfectly quiet in bed. As the patient was desirous of avoiding a radical operation, attempts at dilatation were repeated at intervals of twenty-four to forty-eight hours for several weeks, with no results save the production of great discomfort to the patient. Perineal section was performed and the perineal urethra sufficiently enlarged to readily admit 35 French. Some little trouble was experienced in this case from hemorrhage for the first twenty-four hours, after which there was no further annoyance. The patient was last seen ten years after operation; the urethra was found contracted so that it would not admit a sound larger than 30 French, this size being quite satisfactory, especially in view of the fact that the patient had been somewhat careless and had had a sound introduced only at long and irregular intervals.

Case 4: Traumatic and Gonorrheal Stricture with Multiple Fistulae. Man, 45 years of age, referred to me for stricture involving the penile urethra at a short distance from the meatus and in the bulbo-membranous region. This stricture, originally traumatic, had become greatly aggravated by several attacks of gonorrhea. Numerous fistulae had formed in the perineum, one of which had burrowed into the scrotum. The stricture was hard and nodular, as is characteristic of traumatic strictures as a rule. As the patient objected to operative measures and attempt was made to restore the patency of the urethra by gradual dilatation. This comparatively mild measure, however, was a failure, and at each séance the patient's life was endangered by a typical attack of chill, fever and sweat. Eucalyptus was finally administered internally and the symptoms of urinary fever disappeared. The progress of the case under the dilatation method was so slow and uncertain that a perineal operation was decided on, the urethra being restored to a caliber of 39 French. No chills were experienced after the operation and the temperature did not at any time rise over half a degree. This patient was seen two years after the original operation, at which time the urethra retained its patency. The fistula to which allusion has been made healed kindly and promptly.

Case 5: Multiple Penile and Resilient Deep Stricture.—Man, 18 years of age, referred by Dr. F. B. Norcom, consulted me for difficult micturition, which was first noticed six months previously. There was a history of gonorrhea at 15 years of age, which lasted for nearly a year and was treated by very powerful injections, prescribed by an obliging druggist. No attacks of retention had been experienced. There had been a gradual increase in the urinary obstruction. Examination revealed a contracted meatus and two penile strictures at a depth of two and one-half and four inches respectively. The largest instrument admitted by the penile strictures was a No. 20 French. I succeeded with great difficulty in passing a filiform bougie. A faithful attempt was made during a period of nearly two months at gradual dilatation. The stricture, however, proved to be very irritable and resilient, and operation was finally suggested and consented to. Perineal section and internal penile urethrotomy were performed, the urethra being enlarged to a caliber of 35 French. The patient experienced a chill on the fifth day following the operation, a sound having been passed on the fourth day. This was followed by a moderate fever and acceleration of the pulse, which rapidly subsided and did not again recur. This patient was last seen

twenty months after operation, sounds having been passed at intervals of two or three weeks, after which the patient was discharged from my care. On exploration no recontraction was perceptible.

Case 6: Deep Perineal Stricture: Multiple Penile Strictures: Severe Cystitis, Vesical Calculus. Man, 53 years of age, with a history of urinary trouble dating back to the age of 15. First attack of gonorrhea had occurred at the age of 20. He stated that he had more or less blood in the urine at intervals, and frequent and painful obstruction long before he contracted gonorrhea. He also stated that the urine had contained more or less matter before he had ever suffered any urethral trouble. He had been treated by irrigations for chronic cystitis prior to the development of his gonorrhea. His bladder had been explored on numerous occasions, but with a negative result. Urinary obstruction began six or seven years before I saw the case, and it gradually increased, but had never become marked until about one year before, at which time an attack of retention came on which was relieved by catheterization. Within six months past he has had several attacks of retention, which were relieved in a similar manner. For several months he had had recurrent slight chills with fever, and was considerably run down in his general health. On examination I found it extremely difficult to introduce a filiform into the bladder. This manipulation resulted within six hours in a very severe chill, and although there were no further attempts made for several days, the chills followed by fever recurred. In view of the condition of the bladder and the possible existence of a foreign body, a radical operation was in my opinion the only thing to be thought of. The operation proved an easy one, and under an anesthetic I was enabled to introduce a good-sized guide into the bladder. After thoroughly freeing the urethra from contractions, I passed my finger into the bladder and encountered a calculus as large as a small plum. This was extracted without great difficulty and without further cutting. It was composed of a small uric acid nucleus crusted by the usual concentric layers of phosphates. After the operation a No. 35 sound was passed into the bladder without any difficulty, slight incision of the meatus being necessary for days. Perineal drainage was kept up in this case for four weeks, during which time the bladder was treated alternately by iodoform emulsion and irrigations with nitrate of silver. Improvement in the condition of the urine was remarkable. At the end of ninety days there was scarcely a trace of pus to be found. The perineal wound was soundly healed at the end of six weeks. It is interesting to note that in this case there were no chills or rise in temperature after the operation.

An interesting feature of this case is that four years later I operated on the same patient for appendicitis, which, as far as I know, completes his surgical experience up to date. I have seen this patient within a year, and his urinary apparatus is apparently in perfect condition.

Case 7: Deep Stricture with Multiple Fistulae.—Man, 45 years of age. Stockman: had experienced a number of attacks of gonorrhea, none of which had occurred within ten years. There was also a doubtful history of traumatism. Various attempts at treatment by dilatation had been made, with temporary relief. Peri-urethral abscess had developed some years before I saw the case and had left several fistulae, one of which involved the scrotum. The history of urinary obstruction dated back some fifteen years. For some time the patient had been rapidly failing in his general health. Attempt at exploration had been followed by chill and sharp "urinary fever." Urinalysis revealed nothing definite regarding the condition of the kidney, but more or less advanced disease of these organs was taken for granted. After careful preparation by dieting, baths and the administration of urinary antiseptics, perineal section was performed, operation without a guide being necessary. Ether was the anesthetic used. All sinuses were carefully followed out and laid freely open. Hemorrhage from small vessels was unusually profuse, necessitating the Paquelin cautery at some of the deeper points in the divided sinuses and fistulae. The urethra was found only after prolonged search, and at the completion of the operation the patient was greatly exhausted. He reacted fairly well, however, the urethra admitting 32 French and the perineal wound having closed, when, two weeks after the operation, anuria developed, uremia followed and death occurred within forty eight hours.

Autopsy revealed good condition of the operative field. The kidneys were pyelo-nephritic and showed evidence of recent acute inflammation. I will remark in this connection that death is often superinduced by the anesthesia, even where chloroform is given, but especially when ether is used, but the fatal result occurs so long after the operation that the real cause is overlooked. I desire to insist on this point, because we are often unfair to chloroform. The latter drug declares itself in speedy

and unequivocal fashion, as a rule, while ether often destroys life so remotely that the true cause of death is lost sight of.

Case 8: Man of 30; mechanic by occupation. Successive attacks of gonorrhea had been experienced, the last occurring one year before consulting me, and the first at about the age of 18. Stricture of the deep urethra developed at about the age of 25. Numerous attacks of retention had occurred and had been relieved with increasing difficulty. Two days before I saw him retention had come on and while straining violently to urinate he felt something give way in the perineum, after which he said he felt better for a time. On examination I was unable to get a guide into the bladder. The scrotum and perineum were brawny, discolored and infiltrated. Septic cellulitis was evidently impending. The temperature was 101.5 degrees F. and the pulse 120. The general condition was fairly good. Perineal section without a guide was at once performed and free incisions made into all swollen points. Several penile strictures of moderate caliber were left for future attention. Free drainage by iodoform gauze and perineo-vesical tube was provided for. The operation was well borne and the subsequent course of the case unexceptionable. There was some sloughing of the perineo-scrotal tissues, but the application of charcoal and iodoform poultices soon brought about a healthy condition. Three weeks later the penile urethra was restored to a caliber of 35 French. At the present time, two years after the operation, the patient easily passes a 31 French upon himself at long intervals.

Case 9: Impermeable Deep Stricture—Urethral Calculus.—The patient, a young colored man of 30 years of age, was referred to me by Dr. J. G. Reid, of this city, for operation upon a deep perineal stricture of gonorrheal origin. The stricture had existed for some ten years and during this time had given rise to attacks of retention from time to time, but there had been no serious difficulty of micturition until within a year. In operating on this case I found it absolutely impossible to pass a guide and was compelled to operate without it. The operation proved a tedious and bloody one, and I was seriously contemplating supra-pubic section and retrograde catheterism, when I succeeded in entering the bladder. The patient suffered from pronounced urinary fever for about ten days after the operation, the condition evidently being of a septic character. Recovery, however, finally ensued and the patient is now, a year after the operation, in good condition. Subsequent history unknown. At the time he was discharged from my care he took a sound of caliber 32 French with comparative ease.

An interesting feature in this case was a calculus the size of a pea which was found in the dilated portion of the urethra behind the stricture at the bulbo-membranous junction. It was composed of uric acid nucleus with phosphatic laminae. There was no history of renal colic; hence the stone probably formed in the bladder and lodging upon the stricture became enlarged by subsequent accretions of phosphatic deposit. Another noteworthy point was the extreme dilatation of the veins ramifying in the mucous membrane about the vesical neck, a condition which I have observed in one other case of a similar character.

Case 10: Impermeable Deep Stricture with Chronic Prostatic Abscess, Recontraction and Reoperation.—Gentleman, 45 years of age, referred to me by the late Dr. A. Reeves Jackson for the relief of retention due to surgically impermeable stricture in the perineal portion of the urethra. There was the usual history of a succession of attacks of gonorrhea, the most of which were in early youth, none having been experienced for some years. The urinary difficulty had existed for several years. There was a history of recurrent prostatic abscess. The patient's general health was considerably impaired in spite of a natural rugged constitution. Perineal section was suggested in this case, and the patient was afterward operated upon by his own physician with the assistance of several other surgeons of recognized ability. Some weeks after the operation I was called to see the patient in consultation, and found that it was with extreme difficulty that sounds could be introduced. As my experience has been that where sounds are difficult of introduction soon after a perineal section, reoperation is necessary, I made the suggestion to the attending physician, who not only accepted it but courteously turned the case over to me for operation. I operated a few days later and restored the caliber of the urethra from meatus to bladder to 36 French. The case did well and was discharged from the hospital at the end of about four weeks. No further trouble was experienced for several months, when the patient consulted me for an attack of acute retention of urine. A linear obstruction had reformed at the bulbo-membranous junction as a consequence of inattention to the passage of sounds after operation, the patient having been upon the road for some

weeks and compelled to neglect himself. It is possible that the recurrence was favored by several pockets which existed in the prostate as a result of the old-time prostatic abscesses. These pockets I hid open quite freely at the time of the operation, but on operating the second time I found that one was still perceptible, requiring a second division of its upper wall. An attempt was made to relieve his condition by dilatation of the stricture and irrigation of the bladder, but without success, retention with overflow coming on just as soon as the use of the catheter was stopped. Another operation was proposed and consented to. A very slight linear band was found at the point of obstruction and a reformation of one of the pockets was found to have occurred. The urethra was cut to a caliber of 40 French, the anterior urethra which had been freely cut at the previous operation having maintained its patency and taking without much difficulty a 40 French, although its caliber had been increased at the previous operation only up to 36. The urethra, however, was quite supple and the contractions which previously existed, having been removed, were readily dilatable up to 40. The progress of the case after the second operation was uneventful. The patient is now, some six months after the operation, in excellent condition. There is, however, at this time a slight tendency to recontraction, the patient having allowed himself to go two months without the introduction of a sound in spite of the most impressive warning of the danger of neglect.

Case 11: Irritable Deep Stricture of Large Caliber. This case presents some rather peculiar features. A man, 25 years of age, consulted me regarding an obstinate gleet which was found to be dependent upon several penile strictures. An obstruction of the deep urethra was also noted, but inasmuch as the stream of urine was alternately reduced in size and free during micturition, the deep obstruction was considered to be chiefly spasmodic. The entire urethra was exquisitely sensitive, so much so that it was not considered wise to attempt the passage of an instrument into the bladder. Internal urethrotomy was performed and the penile urethra restored to a caliber of 37 French. Within a week after the operation it was found that a 20 French sound could be introduced into the bladder, but the deep urethra was still quite sensitive and there was a distinct spasmodic grasping of the instrument by the deep urethral muscles during its withdrawal. Exploration with the rubber bulbs showed a distinct linear contraction in the bulbo-membranous junction. An attempt was made for a period of nearly three months to restore the caliber of the deep urethra by gradual dilatation, but without success. After nearly every introduction of the sound intense irritation of the vesical neck was produced. This vesical irritation could not be prevented or controlled by any method of treatment. The patient's gleet which had been very annoying continued, and perineal section was finally decided upon and performed with a most gratifying result. When dismissed a 35 French sound could be readily introduced into the bladder. I have not seen this patient since six months after the operation, but a letter received three years later informs me that a 30 French is readily introduced into the bladder, despite the fact that the patient has not been particularly assiduous in his care of the urethra. The gleet in this case proved quite stubborn and persisted for some months after the operation, but finally disappeared. The patient informed me that he has since had a slight attack of urethritis from indubitable infection, but that no recontraction of the urethra was noticed after its subsidence.

Case 12: Irritable Deep Stricture with Perinephritic Abscesses.—Man, 28 years of age, salesman. This man had an irritable spasmodic stricture for some years. The stricture was located deeply and was of gonorrheal origin, the patient having had several attacks of urethritis. The caliber of this stricture was by no means large, but it was so irritable and resilient, and the chronic inflammation and sepsis behind it were so marked that recurrent attacks of vesico-prostatic inflammation were experienced. I advised perineal section, which was refused, and I consequently did the best I could for the case by dilatation. I found it practicable to introduce sounds the size of 20 French, but all further attempts at dilatation resulted in chills and fever. This case subsequently underwent a most extraordinary course. A perinephritic abscess formed on the left side, and subsequently one on the right. These were treated by free incision and drainage, and were evidently due to infection from the deep urethra. Why the kidney should escape serious disease I am unable to say.

A similar case came under my observation at one time in which, through inattention on the part of the patient, there was a condition of suppuration of the kidney. This case was afterward operated on by Dr. Tiffany, of Baltimore, for double perinephritic abscess, and the patient eventually died from

some other condition which, so far as I could learn, was independent of the old-time genito-urinary difficulty.

Some time after the development of the perinephritic abscesses (in the case under consideration) the patient consented to an operation which was performed and followed by prolonged perineal drainage. The urethra was restored to a caliber of 35 French, several penile strictures of large caliber receiving attention at the same time, and meatotomy being performed. The patient was up and about at the end of three weeks, and when last heard from (one year after the operation) was in excellent health.

Case 13: Impermeable Stricture at the Penoscrotal Angle.—Application of the "String Saw" Principle to the Urethra. Man, 25 years of age, with a history of gleet of four years' duration. For about one year the patient had noticed obstruction to micturition; this had gradually increased until the stream became so small that evacuation of the bladder required from fifteen to twenty minutes with severe straining effort. Examination revealed in this case a narrow meatus and a tortuous stricture which practically occupied the entire penile urethra. The ballooning of the perineal urethra during micturition suggested that the obstruction in all probability originated at the peno-scrotal angle. After several attempts I succeeded in passing a filiform bougie. Retention followed and an emergency operation became necessary. Under anesthesia I attempted to pass a guide through the urethra for the purpose of performing internal urethrotomy, a proceeding which I found impossible of accomplishment, the passage of the instrument being obstructed at a point below the peno-scrotal angle. I proceeded to perform perineal section. I found the perineal portion of the urethra extremely dilated behind the obstruction a little anterior to the peno-scrotal angle. The deeper portion of the urethra was free from contraction. After repeated attempts I succeeded in passing a filiform bougie from behind forward. I found it impossible to pass the urethrotome upon this bougie as a guide without incurring the danger of serious injury to the urethral walls. It so happened that I had been recently perusing Dr. Abbe's interesting cases of division of stricture of the esophagus by means of a string, so the idea occurred to me that the same method could be adopted here. I therefore tied a silk ligature to the bougie and drew it from below through the urethra. Drawing the penis well up over the abdomen, I then proceeded to draw the string back and forth with a sawing motion through the stricture, with the result that in a few seconds I was enabled to draw the cord to quite a good size through the canal. A few seconds later the cord was withdrawn and the canal rapidly dilated with bougies until I could readily introduce the blades of the urethrotome. All of the contractions were divided to a caliber of 35 French. The subsequent history of this case was uneventful. The patient at the present time, six years after operation, is in excellent condition and passes a 31 French upon himself with perfect ease.

Case 14: Tortuous Perineal Stricture. Gentleman, 38 years of age, consulted me regarding a hard, tortuous perineal stricture. There was a history of a number of attacks of gonorrhea. The patient's habits were very intemperate and there was a distinct history of gout. The urine, according to this patient's account, had been from time to time loaded with urates and uric acid for a long period of years. Perineal section was performed without a guide being necessary, as not even a filiform could be introduced. The operation proved quite tedious. The caliber of the urethra was restored to 28 French. Convalescence was uninterrupted. The patient was seen two years after the operation and very little recontraction was found to have taken place, the urethra still admitting 35 French. Recent advices from this patient state that there has not been any further recontraction, the patient now being in excellent health.

Case 15: Resilient Deep Stricture of Moderately Large Caliber, with Fistula.—Man, 40 years of age, consulted me regarding a small perineal fistula of several years duration. The patient gave a history of several attacks of gonorrhea, the last of which had been experienced some four years before he consulted me. During the progress of the last attack of gonorrhea a small abscess had formed in the perineum. This was opened, much to the patient's discomfort, and it was found to communicate with the urethra. A permanent fistula eventually formed. There had been no marked obstruction to urination at any time, although the patient was subject to attacks of frequent and rather painful micturition. A moderate amount of gleet was present. Exploration revealed a contracted meatus and a hard resilient bulbo-membranous stricture of fairly good caliber. Systematic attempts at dilatation were made but without effect, the perineal stricture proving irritable and resilient and consequently resistant to treatment.

Perineal section was decided upon and performed, the caliber of the urethra being restored to 35 French. The patient was kept under observation for about a year, but no examination has since been made. At the time the case was last seen there had been no recontraction. The patient was in excellent health.

Case 16: Multiple Penile and Perineal Strictures. Young man, 24 years of age, was referred to me by Dr. J. N. Dixon, of Springfield, Ill., for operation for a deep urethral stricture which had become obstinate and intractable. Exploration revealed several strictures in the penile urethra and at the meatus in addition to the deep contraction. Although persistent efforts were made, even filiform bougies failed to pass for some days, during which time the patient was kept confined to his bed, rigid dietetic precautions being taken and hot sitz baths prescribed. When the operation was finally performed there was little difficulty in getting a small guide into the bladder. The normal urethra in this case was very large, and perineal contractions were enlarged to a caliber of 40 French. The subsequent course of the case was very favorable, and when the patient was discharged from the hospital he could still take a caliber of 38 French. At the present time, about two years from the date of operation, there has been no recontraction.

Case 17: Resilient and Irritable Perineal and Penile Strictures with Urinary Fistula. Young man, 24 years of age, consulted me regarding a stricture which he referred to an attack of gonorrhea experienced at the age of 18. Several slight attacks of urethritis had occurred since. On inquiry a doubtful history of injury at the age of 15 was elicited. Examination in this case showed a stricture just within the meatus and a surgically impermeable contraction at the bulbo-membranous junction. There was a small fistula at the perineo-scrotal angle, which could be traced back to the bulbo-membranous region by exploration of the tract with a filiform bougie. Being desirous of avoiding a cutting operation the patient submitted to frequent attempts at dilatation of the stricture for several weeks, at the end of which time a filiform bougie was passed. I succeeded in dilating the stricture up to a caliber of 10 French, when it became very irritable and resilient. All attempts at further dilatation caused more or less sharp attacks of urethritis with coincidental urethral chill. An operation was suggested and consented to. The case was cut to a caliber of 36 French. This case was seen at the end of a year and no recontraction had occurred, the patient passing from 30 to 34 French upon himself without the slightest difficulty.

Case 18: Extensive Deep Cicatricial Stricture with Multiple Fistulae. A man, 40 years of age, referred to me by Dr. E. P. Murdock. This case was referred to the Railway Brotherhood Hospital for surgical relief and was kindly referred to me. There was a history of numerous attacks of gonorrhea, none of recent date. Numerous urinary abscesses had occurred in the perineum with the usual resulting fistula. Perineum was hard and almost cartilaginous in consistency throughout its entire extent. Several fistulae had burrowed in various directions, some of them appearing as far back as the ischio-rectal fossa upon one side, upon the other a fistula was present burrowing well out upon the nates. The penile urethra was free from contractions except at the meatus. Treatment by gradual dilatation was not to be thought of in this case, hence perineal section was determined upon. Under ether I succeeded in introducing a small perineal guide with a central groove, this greatly simplifying the operation. The stricture was found to involve practically the entire perineal urethra down to the bulbo-membranous junction. Free division was made, the roof of the canal being found to be extensively infiltrated by cicatricial deposit. The fistulae were laid freely open, and a large-sized sound was now readily introduced into the bladder. On the fourth day after the operation examination of the perineal wound showed several bridges of cicatricial tissue upon the roof of the urethra which had escaped division. These were freely divided. The subsequent history of the case was uneventful and the rapidity of healing was quite remarkable considering the extensive incisions which were demanded by the fistulous tracts in various directions. I have not heard from this case since he was dismissed from the hospital, at which time Dr. Murdock informed me he was in excellent condition.

Case 19: Multiple Perineal and Penile Strictures. Man, about 45 years of age, patient of Dr. P. H. Anderson. This patient had had numerous attacks of gonorrhea with resulting intractable penile and perineal strictures. At the time Dr. Anderson called me in consultation the patient had been troubled for some days with attacks of retention, which were relieved with extreme difficulty. There was some elevation of temperature, and while it was possible to introduce very small

bougies, the stricture was so hard and cartilaginous and the danger of urinary fever apparently so great that I believed perineal section to be the wisest course. This was accordingly performed and the urethra restored to a caliber of 35 French. The operation was not attended by any particular difficulty. Dr. Anderson informs me that considerable fever followed the operation. The case finally recovered, but after a somewhat tedious convalescence. I understand that at the time the case was dismissed by Dr. Anderson it was possible to introduce sounds of fairly good size. The present condition of the case is unknown.

Case 20: Impermeable Deep Stricture, Secondary Suture of Perineal Wound. Man, 40 years of age, referred to me by Dr. Van Riper, of New Carlisle, Ind. This case was distinctly traumatic, being referable to an injury experienced at about the age of puberty. There was a history of recurrent attacks of retention, and from time to time mild attacks of urethritis. The patient had greatly emaciated and was suffering from pronounced urinary fever. Experience had shown the futility of dilatation, and perineal section was suggested. It was found impossible to introduce a guide even under anesthesia. The meatus was contracted and a deep stricture was found in the membranous urethra. There was a moderate amount of difficulty in finding the proximal portion of the urethra after opening the perineum. After a somewhat tedious dissection, however, this was accomplished. The urethra was restored to a caliber of 38 French. The patient did badly for a week or ten days after the operation, and the wound was very slow in granulating. At the end of three weeks a permanent fistula (perineal) seemed to be highly probable. Two silkworm gut shotted sutures were therefore introduced into the perineum, bringing the sluggish granulating surfaces in close apposition. A retained catheter was placed in the urethra for forty-eight hours, at the end of which time it produced so much vesical irritation that it was removed. Not a drop of urine escaped via the perineal fistula after the suturing, and within a week the perineal opening was soundly healed. At the present time, four months after the operation, I find a 35 French passes with great ease. The patient has regained his health and strength. This case aptly illustrates the serious constitutional disturbance which sometimes result from pronounced stricture.

Case 21: Deep Stricture with Retention.—Young man, 23 years of age, occupation laborer. This patient denied venereal infection. He stated that he was thrown from a wagon at the age of 18 and landed in a sitting position upon some rocks that lay in the roadway, which was followed by bruising of the buttocks and perineum. The buttocks were severely contused, but according to the history there was a moderate amount of perineal swelling and ecchymosis. The urine was passed with moderate ease for the first two or three days. After the operation inflammation and additional swelling of the injured structures came on, with a resulting attack of retention. This was relieved by the introduction of the catheter several times daily for about ten days, after which the urine was passed in the normal manner. Sounds were not passed subsequently until urethral obstruction developed and the patient found some difficulty in passing water. Instruments were passed thereafter at varying intervals, but with increasing difficulty and of smaller size. At the time the patient consulted me it was found impossible to pass anything larger than a filiform. The urine was trickling away constantly. For several months the patient had experienced a chill, followed by some fever, which came on every day or two. The temperature at the time I first examined him was normal. The anterior urethra was found free of obstruction, the meatus being more than ordinarily capacious. Perineal section was advised. Under anesthesia a moderate degree of dilatation was secured, and as a consequence it was found possible to introduce a grooved guide of moderate size, upon which the stricture was freely divided with no difficulty whatever. There was found to be a considerable amount of cicatricial tissue impinging upon the roof of the canal. This was freely divided, the urethra being restored to a caliber of 35 French, which was approximately the patient's normal size. The usual course of after treatment was resorted to. The patient was heard from six months after the operation and was still passing Nos. 29 to 32 French weekly. There was no chill or elevation of temperature in this case after the operation.

Case 22: Deep Stricture with Retention; Retrograde Catheterization. Patient 40 years of age, commercial traveler, with a history of repeated attacks of gonorrhea. He had within two weeks experienced several attacks of retention. When I was called I at first succeeded in passing a fine catheter and relieving the retention. Within twenty-four hours, however, the obstruction increased to such an extent that I found it impossible to introduce an instrument. As the patient objected to perineal section, I aspirated several times in the hope of re-

lieving the retention, and after a time treating the case by dilatation. At the end of forty-eight hours, finding my efforts unsuccessful, I suggested an operation, which was consented to. I found it impossible to introduce a guide, even under an anesthetic. The meatus was markedly constricted. There were several strictures in the anterior urethra. On opening the urethra and perineum I found the urethra was tortuous, and so markedly impinged upon by both old and recent exudate, that after a prolonged search of the urethra I deemed it advisable to perform retrograde catheterization through the suprapubic opening. This was quickly performed, the guide passed from above. On cutting down upon the point of the guide in the perineum, I was enabled to open the urethra posterior to the stricture with great facility, and followed my usual custom of free division of all constricting bands, dividing the roof of the urethra with especial freedom. The anterior urethra was freed from contraction with a dilating urethrotome. Through and through drainage from supra-pubic opening to perineum was instituted, and strands of gauze drawn from the meatus to the perineal wound, through which they were allowed to emerge. On the fifth day the tube was removed, and the case subsequently treated by the systematic introduction of sounds. At the end of three weeks both supra-pubic and perineal wounds were closed. Patient was dismissed from my immediate care at the end of the fourth week. There was a slight rise of temperature in this case, which, however, had not at any time exceeded 100 F. I have not seen this case subsequently, but the patient writes me that he has not been compelled to consult a surgeon since, as he is enabled to pass a 30 French into the bladder with the greatest ease.

Case 23: Deep Stricture with Fistulae and Sinuses. Man, about 43 years of age, stock clerk by occupation, giving a history of numerous attacks of gonorrhea, the last one of which occurred about six months before consulting me. During the last attack he had used very strong injections and he thought with deleterious effects. He stated that he had had for some years, exactly how long he did not know, more or less obstruction to urination. On several occasions he had had attacks of retention from what was termed by several physicians spasmodic stricture. These attacks of retention yielded readily to opiates and hot baths, which according to his story, had been very judiciously used. During the course of his last gonorrhea he had had no distinct attacks of retention, but there had been a progressive diminution in the size of the stream of urine. There is no history of trauma. Some three months before I saw the case a small abscess had formed in the perineum, which had been opened with resulting urinary fistula. Several other small abscesses had formed in the neighborhood at first, so that when I saw the case the perineum was pretty well riddled with sinuses and fistulae, through some of which the urine escaped in considerable quantity during micturition. The patient's general health had remained excellent. On exploration I succeeded in introducing a filiform bougie into the bladder, and within three weeks I succeeded in dilating the stricture up to No. 35 French. The stricture now became resilient and irritable, and all efforts at further dilatation produced well-marked chill and fever. In view of the behavior of the stricture under manipulation and the presence of the fistulae in the perineum, it seemed advisable to perform perineal section. My suggestion to this effect was accepted. The operation presented no special features of interest. There was no difficulty in introducing a small guide on which the stricture was freely divided. All sinuses and fistulae in the perineum were thoroughly laid open. Several strictures in the penile urethra were freely divided, the caliber of the urethra being restored to 40 French, a size which the canal readily admitted after the urethrotomy. Perineal drainage was instituted for four or five days, at the end of which time the perineal tube was removed and the patient allowed to pass the urine through the wound. There was at no time any elevation of temperature. On the fifth day sounds were introduced, this being repeated every three or four days thereafter until the end of the third week, after which time they were introduced once every fifth day. The perineal wounds were soundly healed at the end of the fourth week. I saw this patient a short time since and found the urethra a little smooth and free from contractions, there being no difficulty experienced in introducing a 35 French.

Case 24: Traumatic Rupture of Urethra: Extravasation of Urine.—A boy, 14 years of age, while climbing a fence slipped and fell a distance of five feet, striking astride an iron railing. He sustained a severe contusion of the perineum, and at the same time an injury of one testicle. There was a moderate amount of shock at the time and the lad stated he vomited shortly after the injury. In about half an hour, the pain having passed off, he rejoined his playmates. A short time there-

after he experienced an intense desire to urinate, and while straining to perform the act he felt something give way in the perineum, and there was at the same time a moderate escape of blood which, from the history, was probably mingled with more or less fluid from the meatus. A neighboring physician was called who, after numerous unsuccessful attempts to catheterize, relinquished the case, suggesting that a surgeon be called. I saw the case about eight hours after the injury and found the patient comfortable, he having received a hypodermic of morphia a short time before. The perineum was greatly swollen and ecchymosed, the scrotum being involved in the infiltration. I made no attempt to catheterize, but passed a medium-sized sound down to the penile portion of the urethra and performed perineal section upon it. I found the urethra extensively lacerated and the proximal end of the divided urethral tube with considerable difficulty. I endeavored as far as possible to unite the lacerated portion of the urethra with fine catgut sutures. A hard rubber drainage tube was inserted into the bladder, the wound being packed about it in such a manner as to facilitate free drainage. The scrotum and perineal tissues were freely divided by multiple incisions, permitting the escape of the extravasated urine. The usual antiseptic dressings were applied. Considering the extent and nature of the injury in this case, it was rather remarkable that there was no elevation of temperature following the operation. The favorable course of the case was uninterrupted. At the end of four weeks the patient was up and about. At the present time, one year after the operation, the patient's urethra admits a No. 30 French with perfect ease, and there appears to be no tendency to contraction at the present time.

Case 25: Deep Organic Stricture: False Passages; Perineal Fistula Closed by Plastic Operation.—Man, 45 years of age, with a history of repeated attacks of gonorrhea. Had been troubled with organic stricture since the age of 30. This was dilated from time to time and gave no trouble until he was about 40 years of age, when an attack of retention came on. This was relieved by the catheter and the stricture treated for a short time. He again relapsed into the customary negligence of his case and was practically untreated for several months, when recurrence of the retention occurred. He stated that he had had seven or eight attacks of retention at various times. On several occasions it was found impossible to introduce an instrument into the bladder; the condition subsequently became spontaneously relieved. On at least two occasions the patient stated that false passages had been made, an assertion that was verified by the conditions which I found on examination. It has rarely been my fortune to see such a case with such extensive and tortuous strictures as was present in this man. The meatus had been greatly deformed by a phagadenic chancre with resulting meatal stricture. Beginning about an inch from the meatus the canal might be said to be completely strictured clear to the musculo-membranous junction. Careful examination revealed at least two false passages, one of which opened into the penile urethra and the other at about the perineo-scrotal angle. As the urine had been dribbling away as a consequence of overflow for several weeks, a radical operation seemed urgently necessary. Perineal section was performed without a guide. The perineal portion of the urethra was found to be the seat of an extensive stricture involving its whole length. So extensive was the induration that the urethra was, as the patient expressed it, "very much like a gas pipe," as felt through the perineum. After opening the perineum, I attempted to pass a filiform guide from the meatus to the perineal wound, but found it impossible to do so. By retrograde catheterization, however, I finally succeeded in passing an instrument through the entire penile urethra. A strand of fine silk ligature was tied tightly to the perineal end of the filiform and drawn through the penile urethra from behind forward. A larger and stronger ligature was now fixed to the first and pulled through in the same manner. By a sawing motion—an imitation of Abbe's saw method—the canal was soon freed sufficient to enable a bougie No. 8 French to be drawn through. Increasing sizes of bougies were now introduced until the urethrotome could be passed easily, and the entire length of the urethra was divided upon its roof. The meatus was at the same time freely incised. The canal was thus restored to a caliber of 35 French. My usual perineal drainage and iodoform tamponade were applied. The patient did very nicely until the fifth day, when an abscess formed in the scrotum. The incision had been necessarily made pretty well forward, thus facilitating infection from the operative field, which was necessarily septic, in spite of efforts to obtain asepsis. On further examination I found that the false passage, already alluded to as opening anteriorly into the penile urethra, opened posteriorly into the scrotal tissues. The subsequent

course of the case was very annoying. Numerous operations on tissues of the scrotum were necessary to obtain free drainage. The posterior portion of the perineal wound healed very kindly, but in spite of all efforts to bring about repair, a fistula resulted in the anterior angle of the wound. After about five months' futile efforts to obtain union, the suppurative condition of the scrotum having meanwhile resolved itself into a single sinus at the site of the old false passage, I performed a modified Szymanowski operation on the fistula with, I am pleased to say, the most gratifying results. The patient is now—at the end of two years—able to pass a 28 French with comparative ease, and is in better health than he has been for years.

Case 26: Impermeable Deep Stricture: Retention with Overflow; Combined Supra-pubic and Perineal Section: Through and Through Drainage.—Man, 35 years of age, was referred to me by Dr. Liddy of this city, suffering from retention of urine of several days' duration. Overflow had occurred. The patient was in very bad condition, having been but a few weeks convalescent from a severe attack of pneumonia. There was a history of gonorrhea some eight or ten years previously. The urinary obstructions dated back several years and had been treated with greater or less persistency at spasmodic intervals. On examination I found the bladder so markedly distended that it was almost on a level with the umbilicus. The escaping urine was strongly ammoniacal. The patient had a temperature of 101 degrees and was greatly prostrated. After an hour's careful endeavor to enter the bladder without success supra-pubic aspiration was resorted to and over a pint of ammoniac urine withdrawn. Perineal urethrotomy was proposed and consented to, but at the time of the examination it was nearly dark, consequently operation was postponed until the next day. The patient was seen the following day and immediate operation was declined, with the understanding that it should be performed the following morning in case a second aspiration failed to give permanent relief. I sent the patient to the hospital with instructions to prepare for the operation. The operation proved one of the most tedious that I had met with in my experience. No guide could be introduced. The stricture was extremely tortuous and the perineum extensively infiltrated and indurated. After an hour's fruitless search, during which considerable hemorrhage was encountered, the patient began to act badly under the anesthetic, and I followed the plan which I believed to be best in such cases, and opened the bladder supra-pubically. Retrograde catheterization enabled me to secure a perineal guide, when I found that I had just missed cutting through the stricture into the proximal side of the urethra. The subsequent steps of the operation were quite simple; several slight contractions of the penile urethra were divided and the urethra restored to a caliber of 40 French. Through and through drainage was temporarily instituted. Infection of the cavity of Retzius with considerable subsequent sloughing occurred. There was a succession of slight chills, temperature rising at times as high as 102 degrees F. for several days. At the end of this time the sloughs began to clear away from the supra-pubic wound and the patient's general condition rapidly improved. At the end of about five days perineal drain was removed, and it was found that incontinence of urine existed. This lasted for about two weeks. At the end of three weeks, however, the supra-pubic opening had entirely closed. The perineal wound was practically healed and the patient had regained control over the bladder. He was last seen six weeks after the operation, at which time he expressed himself as being in better health than he had been for fifteen years, and stated that for the first time in many years he was enabled to do his work in a satisfactory manner. The subsequent history of this case is quite sad. Some four weeks after leaving the hospital the patient, who was employed upon a railroad, was caught between two freight cars and instantly killed.

Case 27: Perineal Stricture of Gonorrheal origin with Perineal Fistula from Previous Operation. Man, 38 years of age; occupation, dry goods merchant; suffered from numerous attacks of gonorrhea, first occurring about the age of 20. Ten years later stricture developed. This was followed by successive attacks of retention of urine, which were relieved by catheterization. An attack of retention finally came on, for the relief of which an attempt was made to pass a catheter, but without success. The practitioner in charge of the case did an emergency operation on the perineum and succeeded in relieving the retention, but apparently did not incise the infiltrated tissues in and about the strictured portion of the canal sufficiently freely. Patient stated that at no time subsequent to the operation was it possible to pass a sound larger than a No. 15 French. The perineal wound remained open and a permanent fistula formed as a consequence, in all probability of the

lack of thoroughness of the original operation. The penile urethra was extensively strictured. Three distinct points of well-marked contractions existed, it being impossible to pass a bougie larger than a No. 10 French. The patient consulted me for the relief of the fistula, supposing that his strictures had been cured by the previous operation. I divided the strictures in this case to No. 35 French, a sound of this size being readily admitted into the bladder. The case progressed nicely, excepting that there was a perineal fistula which absolutely refused to heal, the opening corresponding with that of the original fistula. I secured union in this case in a very simple manner by cauterizing the fistulous tract with equal parts of tincture of iodine and carbolic acid, after which two strands of silkworm catgut were passed in such a manner as to include the fistulous tract well down to the urethra, just external to the mucous membrane of the canal. These sutures were shot and although no retained catheter was used the fistula at the end of two weeks was soundly healed.

This patient was last seen six months after the operation, at which time a 32 French could be readily admitted into the bladder. The patient was entirely free from any symptoms referable to the genito-urinary tract.

Case 28: Multiple, Penile and Perineal Stricture; Chronic Cystitis and Retention with Overflow.—Man, 21 years of age, had an attack of gonorrhea at the age of 17, from which he had never recovered, the gleet having been continuous since the original infection. Symptoms of urinary obstruction had existed about a year. Chronic cystitis and follicular prostatitis had resulted from deep infection. At time I first saw the patient retention with overflow had existed some days. The patient was very much run down, with a moderate amount of urinary fever, temperature rising to 101 in the evening. Recurrent chills occurred every few days, followed by the usual fever and sweating. Temperature in the morning was normal, but the greater part of the time there was more or less fever, there being an exacerbation following the chill. Although the condition of the patient was by no means promising, perineal section was proposed. I deferred the operation, however, for twenty-four hours, at the end of which time I gave the oil of eucalyptus in 10-drop doses every three hours with, it appeared to me, a distinct effect upon the temperature. I found it possible to introduce a filiform guide into the bladder. The meatus and several penile strictures were divided; on account of the condition of the bladder prolonged drainage was instituted, a hard rubber drainage tube being used for two weeks after the operation. The patient bore the operation very well, and contrary to what might have been expected did not develop chill at any time thereafter. The evening temperature, however, remained at 101 F. for perhaps four or five days and gradually fell, at the end of ten days being perfectly normal. The urine gradually became clear under alternate treatments of iodoform emulsion and nitrate of silver solution.

I have not heard from this patient since a few weeks after he was dismissed from my immediate care. At that time, however, he was still in excellent condition, was regaining his weight and strength very rapidly, and was a thorough convert to the efficacy of perineal urethrotomy.

Case 29: Recent Traumatic Stricture of the Urethra with Extravasation. Man, 35 years of age, laborer by occupation, received a severe kick upon the perineum during a drunken brawl. Retention came on within a few hours, and according to the history there was evidently at that time considerable extravasation with a good deal of ecchymosis and swelling of the scrotum and perineum. The physician who was called succeeded in introducing a catheter and relieved the tension, catheterization being repeated several times for a week, at which time the patient could pass his urine without assistance, regarding himself entirely well. The physician omitted to apprise him of the necessity of subsequent dilatation of the urethra, so the patient neglected himself and about six weeks after the original injury he noticed that the flow of urine during micturition was beginning to become obstructive. This obstruction rapidly increased until finally an attack of retention came on which the physician was unable to relieve. At the end of thirty-six hours he consulted me, and I found that I could not introduce an instrument into the bladder even under an anesthetic, the stricture being recent and a traumatic one. The condition of the genito-urinary organs being therefore inferentially good, I proposed perineal section. I found that the urethra was completely closed with a fairly well organized exudate, which extensively involved the perineal portion of the urethra. The cord-like band of cicatricial tissue in the center of the perineal urethra appeared to indicate the site of the laceration of the perineal deviation of the urethral walls. The anterior urethra was perfectly normal. The stricture in this case was divided to a caliber of No. 32 French.

which was approximately the normal caliber of the canal. The patient was under my observation for about eight weeks, at the end of which time the urethra admitted a No. 30 sound with perfect ease. The perineal wound was soundly healed at the end of the tenth day. I have had no further information in regard to this case.

Case 30: Linear Stricture of Large Caliber: Fatal Hematuria, probably of Malarial Origin.—A man 40 years of age, a commercial traveler by occupation, consulted me regarding follicular prostatitis and vesical irritation of many years standing, which had followed an old-time gonorrhea. There was also a history of traumatism of the deep urethra experienced during boyhood. The patient had had syphilis and was suffering from chronic malarial poisoning, he having had from time to time quite severe chills, followed by the usual phenomena of ague. Examination showed an extremely irritable urethra, with a stricture in the bulbo-membranous junction. This was irritable, resilient and elastic and admitted a 26 French, but with considerable difficulty and pain. There was a moderate amount of vesical infection; there was no history of hematuria. The patient was extremely neurasthenic. This case had been treated by dilatation from time to time for a period of years, and inasmuch as I believe gradual dilatation to be ineffectual in cases of this kind, I suggested urethrotomy. According to my usual custom I counseled against internal incision of the stricture, believing as I do that in such deep contractions external section is by far the safer. The operation was consented to and duly performed. There were no special features worthy of mention in connection with the operation. The amount of hemorrhage was trifling; the extent of the incision in the perineum and urethra much less than in the usual perineal urethrotomy. There was slight oozing of blood for the first twenty-four hours, and a moderate amount of hematuria from reflux of blood from the tube back into the bladder. This disappeared in several days; the urine was clear; the dressings were changed on the third day and the tube removed, after which time the urine was passed via the ordinary wound. Sounds were passed up to the size of 35 French without provoking hemorrhage, at which time the patient was passing urine quite comfortably through the normal channel. The patient was attacked by a congestive chill, followed by a temperature of 106, with the usual typical sweat; there was at the same time considerable vesical tenesmus; the urine became very scanty and high colored, and within a few hours contained a small amount of blood. Under appropriate treatment the patient became very comfortable by the next day, the temperature within thirty-six hours subsiding to normal. The hematuria, however, continued to a slight extent. At the time the chill came on the patient had a severe nose bleed, and within a few hours several attacks of vomiting, during which blood was vomited. The patient appeared very much alarmed about his condition and seemed to be of the opinion that a fatal issue was impending. I laughed at his fears, as indeed I felt myself justified in doing, as the death of the patient was farthest from my thoughts. On the evening of the tenth day the patient was suddenly taken with vesical tenesmus, apparently due to an accumulation of fresh clots in the bladder. These clots were extruded with such force as to tear open the perineal wound, and following the clots came a profuse discharge of urine and blood. The bladder was frequently evacuated, but was rapidly refilled. Within the space of half an hour the patient had lost an enormous quantity of blood and became almost exsanguinated. I was sent for, but the hemorrhage had apparently stopped, the bladder being evidently filled with clots. I put the patient under the influence of opium and remained with him during the night with the understanding that if necessary a suprapubic section with tamponing of the bladder should be performed in daylight. The patient passed the night quite comfortably. There being no attempt at micturition, there was no hemorrhage. When he awoke in the morning a straining effort at micturition came on, a catheter was passed, with the result that a free hemorrhage with expulsion of large clots began. I immediately opened the perineal wound and tamponed it tightly, then placed the patient on the table and performed suprapubic section. I found the bladder full of clots. The patient acted so badly under chloroform that I found it impossible to ascertain the precise source of the hemorrhage, and so hurriedly tamponaded the bladder and returned the patient to bed. There was profound shock, and the shock in combination with the immense loss of blood he had sustained proved fatal in about three hours after the operation. Transfusion with saline solution and hot rectal enemata containing stimulants, with hypodermic injections of digitalis and strychnia failed to bring about reaction. No autopsy was permitted, which is unfortunately too often the case in private practice.

In reviewing this case I am confident that the hemorrhage was due to causes only indirectly connected with the operation. In this, I think, the reader will agree, when we take into consideration the fact that the course of the case was that of the ordinary successful perineal section up to the time of the development of the congestive chill above described.

Case 31: Irritable Deep Stricture: Repeated Operations.—Man, 45 years of age, referred to me by Dr. F. C. E. Mattison, of this city. There was a history of urinary obstruction of some years duration. This had increased to such an extent that there appeared to be urgent necessity for operative interference. A continuance of attempts at dilatation was advised, but as it subsequently transpired without success. As the patient understood clearly that perineal section would be necessary in case dilatation failed, this was subsequently performed. Through the courtesy of Dr. Mattison I was called to see the case some weeks later, and found that recontraction had occurred. Dr. Mattison turned the case over to me at this time for reoperation. I divided the perineal stricture, at the same time operating upon several penile contractions which in part explained the obstruction to the passage of sounds after the perineal operation. A 35 French was readily introduced into the bladder after thorough division of the contracted points. Subsequent introduction of the sound required considerable manipulation, but could be accomplished with a moderate degree of success. The final result seemed to be very satisfactory, and the patient resumed his business trips upon the road. At the end of about three months, during which time the sound was passed again at intervals, the patient reported to me with an attack of acute retention of urine. There seemed to be very little difficulty in the introduction of the sound, and it was impossible for the patient to voluntarily evacuate the bladder. This condition continued with occasional periods of improvement for several weeks, during which time the patient took a trip to West Baden Springs at the suggestion of some of his friends. He finally returned without any perceptible improvement. I suggested reopening the perineal wound; the operation was performed and the urethra enlarged to a caliber of 40 French. It was found that the penile urethra still retained its patency, and although at the previous operation it had been incised and dilated only up to a caliber of 35 French, as indicated by the register of the urethrotome, at the final operation it was found to admit 40 French without any difficulty. The patient is now, some six months after the last operation, doing nicely. There has been a slight recontraction recently on account of his omission to have a sound passed for nearly two months. A No. 35 French can be introduced into the bladder at the present time, and without doubt a 40 can be introduced within a few weeks.

Case 32: Deep Stricture, Retention and Extravasation.—A man, 30 years of age, mechanic by occupation. Successive attacks of gonorrhea had been experienced, the last occurring one year before consulting me, and the first at about the age of 18. Stricture of the deep urethra developed at about the age of 25. Numerous attacks of retention had occurred and had been relieved with increasing difficulty. Two days before I saw him retention had come on, and while straining violently to urinate he felt something give way in the perineum, after which he said he felt better for a time. On examination I was unable to get a guide into the bladder. The scrotum and perineum were brawny, discolored and infiltrated. Septic cellulitis was evidently impending. The temperature was 101.5 Fahr., and the pulse 120. The general condition was fairly good. Perineal section without a guide was at once performed and free incisions made into all swollen points. Several penile strictures of moderate caliber were left for future attention. Free drainage by iodoform gauze and perineo-vesical tube was provided for. The operation was well borne and the subsequent course of the case unexceptionable. There was some sloughing of the perineo-scrotal tissues, but the application of charcoal and iodoform poultices soon brought about a healthy condition. Three weeks later the penile urethra was restored to a caliber of 35 French. At the present time, two years after the operation, the patient easily passes a 31 French upon himself at long intervals.

(To be continued.)

Small, Troublesome Tumor in Throat. At the last meeting of the Berlin Medical Society a tumor about the size of a pea was shown that had been removed with the tonsil on which it had been growing, mounted on a flexible stem. The patient had been unaware of its growth, but every little while she would choke, cough and exclaim that something had flown into her throat, as the tumor was drawn in with her breath.

SOCIETY PROCEEDINGS

Chicago Academy of Medicine.

Regular meeting held at the Union League Club, Feb. 14, 1896.

Dr. A. H. FERGUSON was chosen chairman.

Dr. B. M. RICKETTS, of Cincinnati, read a paper (by invitation) entitled

A NEW OPERATION FOR RECTAL PROLAPSE AND HEMORRHOIDS.

The great frequency and unsatisfactory treatment of rectal prolapse and hemorrhoids had prompted him to devise means more simple and radical than had yet been employed. Hemorrhoids, both internal and external, together with the two combined, can alike be cured by a submucous ligature applied with a semicircular needle. The pile is first returned and full division made. Only a portion of the varices are caught with the ligature which may be either silk, silk-worm gut, catgut, kangaroo tendon, or silver with the ends protruding at the point of entrance which should also be the point of exit. Any size or number may be ligated without much pain, no hemorrhage, sloughing, or infection. Prolapse in either of the three degrees may be entirely relieved by the same process, while there is a question as to the fourth degree. It may be necessary to make the operation in two or possibly three sittings.

DISCUSSION.

Dr. WM. CUTHBERTSON I have listened with a great deal of interest to the paper read by Dr. Ricketts. Those of us who have had experience in surgery know that hemorrhoids are of common occurrence, and the method which Dr. Ricketts has devised of obliterating the varices is an ingenious one. But I fail to see where the operation can be applied to all cases. I further fail to see how it is an advantage over the common method of applying the ligature. Dr. Ricketts says he objects to the use of the ligature in the treatment of hemorrhoids because it causes too much pain. My experience with the ligature has been that where the mucous membrane has been entirely cut around the hemorrhoid and the ligature applied in the groove made by the incision, there is little or no pain connected with it. He further objects to the ligature on account of the length of time which it takes for the pile to slough off. Where the pile is amputated within a reasonable distance of the ligature, it does not require any longer time for the pile to slough off and heal than it would with Dr. Ricketts' plan. Furthermore, Dr. Ricketts says that his method causes little or no sloughing. Where the plan is used indiscriminately in all classes of hemorrhoids, I should think the cutting off of the circulation in the varices would be as liable to cause sloughing and consequently to cause stricture eventually as by the use of the ligature. I do not think the ligature is applicable to all cases of hemorrhoids; nor do I think the clamp and cautery are applicable to all cases. My plan has been, where the hemorrhoids have been extensive, to use the ligature, particularly where the hemorrhoids have surrounded the bowel. In the smaller hemorrhoids I would advocate the use of clamp and cautery.

Dr. Ricketts condemns the method of injection of hemorrhoids as unscientific and unsurgical. Probably it is. Nevertheless I have injected a large number of cases of hemorrhoids with a mixture of carbolic acid and glycerin, and I have not had any greater proportion of sloughing by the use of these injections than I have by the use of any other means in curing hemorrhoids. I certainly have obliterated varices. Of course, I do not resort to these injections in large hemorrhoids. But in the small, painful, internal hemorrhoids I have used injections of carbolic acid and glycerin with gratifying success. While this method of treating hemorrhoids is discarded by Kelsey and many other rectal surgeons, yet I think there is virtue in it.

Dr. H. K. ADAMSON, of Maysville, Ky. I have listened with pleasure to the remarks of Dr. Ricketts on a new operation for hemorrhoids, although I do not see any special advantage in it over the use of the ligature in the treatment of them. I shall be glad to see the results from time to time of Dr. Ricketts' work, and when he gets his instruments completed I shall use them. In regard to the remarks of the gentleman who preceded me, and who believes in the injection treatment of hemorrhoids, I think if the doctor keeps up this treatment he will have more or less trouble. There is danger of the formation of abscesses by resorting to the injection of hemorrhoids with carbolic acid and glycerin. The danger attending it is too great when we can accomplish the same results more easily with other methods.

Dr. E. H. DORLAND I am exceedingly pleased to be here to night to meet Dr. Ricketts and to have heard his paper. I have read of the submucous ligation of hemorrhoids, but I have

not tried it. I can corroborate the statements made by Dr. Cuthbertson in reference to the injection of hemorrhoidal tumors by a suitable styptic. I have used 10, 20, and even 50 per cent. solutions of pure melted crystals of carbolic acid with the finest salad oil, which is better perhaps than ordinary olive oil, and I have had very satisfactory results. But for several years I have used a prescription that Dr. Foster (as I remember the name) from Texas sent me. He wrote me making some inquiries in reference to a series of articles I published a little while ago in a Philadelphia paper. He gave me a prescription for a styptic, and I like it very much better than carbolic acid, and I undertake to say that I can furnish 500 cases that have been treated from one to ten years that have remained permanently cured of hemorrhoids that were treated solely by the injection method. I am surprised to hear Dr. Ricketts say that he had never used the injection method and condemns it on general principles as "unscientific and unsurgical." Dr. Andrews has done the same thing, but he does not pretend to have treated any cases by this method. He also says it is unscientific and will not treat a case by injection. He looks upon it as a dangerous thing. The opponents of the injection method say that abscesses are formed by it, but if the pile tumor is properly injected with a solution composed of 3 grains to the drachm of salicylic acid, 3 grains to the drachm of boric acid, and 3 grains to the drachm of carbolic acid, and those three heated together into a pure solution of glycerin, and you inject all the way from 5 to 60 drops into the hemorrhoidal tumor; if it has been "scientifically" done, it will not make a slough, and it will obliterate the tumor. I can demonstrate that in five or six cases which are at the Lakeside hospital now. I do not use the injection method where I have an opportunity to treat the case and can keep the patient two or three weeks in bed. I do not use the ligature in the manner of which the doctor speaks; I do not put the ligature around the hemorrhoid at all. I do not use the clamp and cautery, but I dilate the sphincter muscle and cut the pile tumor off. I have yet to see a fatal case from hemorrhage treated in this way. This is to be done under favorable circumstances, and about one-sixth of the pile tumor cut off with a pair of scissors will obliterate the pile. You do not need to go away down into it. By putting in a silk plug filled with absorbent cotton inside of the sphincters, with a cord or double thread attached to it, pulling one thread out upon the perineal side and the other above, and into the bifurcation of these cords pack a few pieces of sterilized gauze across the rectum, place a small roll of gauze and tie the two cords together over this roll of gauze, and it will control any hemorrhage within the pile-bearing part of the rectum. Of course, if you should go deep enough to cut one of the larger vessels it may become necessary to take it up at the time of the operation, otherwise it does not need to be done and the hemorrhage will not be serious. I have not been required to redress a case but twice in three years from hemorrhage, and I have operated on a large number of cases. The difficulty attending the more complicated operations is that they are not practical for the general practitioner with ordinary facilities to treat hemorrhoids. The injection of pile tumors with a styptic, injecting one pile at a time and allowing the man to go about his daily business and curing everyone of the pile tumors, is an established fact, and that beats any surgical operation that has been devised, because patients will be treated in this way if you do not detain them from their business. This is the very best thing that can be done in my estimation. A great many practitioners make the unfortunate statement that they have never tried the injection method because it is unscientific. Isn't anything in the practice of medicine scientific that will cure a case easily? We do not have to say in our school of medicine that we use the ten-millionth of a drop of something to cure a certain case, but we give a ten-millionth or even a teaspoonful, if we think it is necessary. Either one is scientific. I deprecate the use of the word unscientific in the treatment of pile tumors by the injection method.

The clamp and cautery to my mind is as barbarous an operation as one can make on a human being. A man ought to be prosecuted for using the clamp and cautery to cure piles; it is a perfect terror in this day, considering that the method of injecting these tumors with a styptic is far superior to the use of the clamp and cautery. With Dr. Cuthbertson, I fail to see wherein a ligature put around under the mucous lining, drawn tight and tied, will cause much less pain than when put on the outside of the mucous membrane and tied tight. The nerves are not all involved in the mucous membrane of the rectum. It occurs to me that this method, which has been outlined by Dr. Ricketts, is intended to be so difficult that but few of us can use it.

I am very much interested in the male and female needles of which the doctor speaks, and I want to see how they are going

to work in connection with operations for the removal of hemorrhoids. I have never seen an external pile tumor in my life but what could be the easiest treated, for the patient and surgeon, to take a sharp instrument, cut it right open, and let the clot out. There is nothing more to do with it. Slit an external hemorrhoidal tumor down, dress the case, and let the patient go, whether the tumor is as large as a hazel nut or a small hen's egg. It occurs to me it is unscientific to ligate an external pile tumor, equally so to inject it. The gentleman from Kentucky speaks of abscesses being formed. In not a single instance have I had an abscess formed where the pile tumor only has been injected with the styptic. If you keep the needle well into the pile tumor from the base and carry it up to and not out of the apex, draw it back and inject clear down to the point of exit, as you withdraw the needle, you will seal up the pile tumor and not a single drop of blood will escape, and you will never have the formation of an abscess.

DR. W. A. PALMER, of Evanston—I must protest against the censure of the last speaker upon the clamp and cautery method. My experience has not been as extensive perhaps as some others, but the cases in which I have used this method have been attended with brilliant results. I fail to see how it is more painful for an internal pile, as the patient must have an anesthetic during the operation. After the operation has been performed and the rectum properly packed, the patient given small doses of morphin or opium powder, he can be made quite comfortable. This method has worked beautifully in two cases. With regard to prolapse, I have had no experience whatever.

DR. A. H. FERGUSON—I am very pleased to have been present to hear the remarks of Dr. Ricketts in the presentation of his new operation for the cure of hemorrhoids. The production of any operation for pathologic conditions, in order to be ideal, it must remove those conditions with the greatest safety to the local tissues and to the patient, that is, to secure union by first intention without sepsis. The remark has been made that asepticity in the rectum can not be positively secured, and that it should not be attempted. I must say, that we can in a number of operations in the rectum secure union by first intention. By taking all antiseptic precautions we can prevent the local septic infection in the majority of cases. It is true that asepticity is only a comparative thing on the skin in any part of the body; the resistant power of the tissues overcomes a minimum amount of sepsis in the rectal tissues, and we frequently get union by first intention.

The ideal operation to me for the cure of hemorrhoids is to amputate the hemorrhoid as you would a diseased finger, to tie the vessels by themselves and to sew the mucous membrane over it, and then put the sphincters at rest, with a rectal tube well protected with iodoform gauze. In at least 75 per cent. of the cases treated in this way I have secured union by first intention. In doing this we should use such material as will be absorbed, and that is aseptic catgut. I regard it as the ideal material of all buried sutures. The pathologic conditions in hemorrhoids are varied, and I do not believe we can lay down any single operation that will meet them. For instance, we have an external pile and an internal one. The treatment that is suitable for an external pile is not always suitable for an internal one. The treatment that is suitable for the strawberry or capillary internal hemorrhoid is not suitable for a hemorrhoid in which arterial supply predominates, or a hemorrhoid that may predominate with venous dilatation. When there is a simple hyperemia or slight dilatation with very little or no pathologic condition in the region of the rectum, many cures can be effected by dilatation alone. The method brought forward by Teale years of dilatation of the rectum and emptying the vessels, putting the sphincter at rest so that the circulation returns, when there is no pathologic condition within the dilated piles, has been the means of effecting cures in a number of cases. That treatment might have been supplemented with massage, and patients need be detained but a short time from their work. In certain cases the injection treatment is admirable, particularly in that form of pile which is principally composed of capillaries, where the method can be used safely and successfully. But the form of pile which has large arteries running through it is not so suitable for the injection treatment; nor is it suitable in those cases where the veins are considerably dilated, having large cavities or lacunae on the inside, from which the injection material may be absorbed and cause grave constitutional effects. It is in cases of hemorrhoids with extensive pathologic conditions that the injection treatment does the least amount of good. But, as Dr. Dorland has said, it depends a great deal upon the operator, the amount injected, where it is injected in order to avoid large vessels, and if the surgeon can surround the pile tumors so as to constrict them with cicatricial tissue following the injection, then good and

well. But to indiscriminately recommend the injection treatment for all cases of hemorrhoids is not good practice. It has its place, however. The ligation treatment has its place, too. Ligation is very suitable where there is a large artery passing through the pile tissues. I very frequently apply a clamp and cut the pile off, if it is a large one, and if there is a large vessel or vessels coursing through it, I then make a flap of mucous membrane on each side of the clamp, tie the vessels, sew the mucous membrane over it, or else apply a ligature in the usual way. There is the same objection to the application of the silk ligature that there is to the subcutaneous ligature, namely, local infection and secondary hemorrhage which come on after pathologic changes have taken place through the introduction of septic material. The hemorrhage comes on from the sixth to the twelfth day. How does it come on? It comes on by local infection, causing ulceration, the ulceration extending to the white embolism inside of the vein and breaking down that which nature throws out in the vein to close it up, and hemorrhage occurs. The same objections apply more forcibly to the subcutaneous ligature than to the open ligature. When we can go to work and treat with clamp and cautery hemorrhoids of almost every character and get first-class results, then I should say that this method has its place in surgery. It has its peculiar advantages in that it wards off sepsis from the tissues at once, that is, it forms an eschar immediately which is not capable of absorbing for a few days, and by that time nature will have thrown out a wall of granulation tissue, and this granulation tissue is the best fighter nature has against germs. I should say, therefore, that the clamp and cautery are applicable to all cases where the hemorrhoid is mostly composed of veins or capillaries. I do not believe in Whitehead's operation. I would simply say that the evil results which have followed Whitehead's and Pratt's operations have been clearly pointed out by Dr. Andrews of this city and others, and are procedures which may be characterized as very unsurgical, in that they are apt to cause strictures and other subsequent conditions which I need not mention here. I would only do Whitehead's operation in connection with epithelioma of the rectum, where, at the same time, we have hemorrhoids to deal with. Then we have to remove both the pile and cancerous area. I have resorted to Whitehead's operation in such cases with excellent results as compared with other operations for cancer in this locality.

With reference to the crushing operation I am not in favor of it.

Coming now to Dr. Ricketts' subcutaneous ligature for the treatment of hemorrhoids. The history of subcutaneous ligatures in the other parts of the body, in varicose veins of the legs, and in varicocele before the days of asepsis was not very good. After local puncture, which was often through the veins, very frequently asepsis was carried at once to the tunica intima of such veins, finding ready access to the constitution, causing septic phlebitis and death. We find the same history in connection with varicocele that not unfrequently death took place in a similar manner. We may carry subcutaneous ligatures around the veins in the extremities and scrotum and antiseptically seal these punctures up again, but we have better methods now. In inserting a subcutaneous or submucous ligature, what does it do? It passes in, it is true. You do not know but what it is passing through the middle of an enlarged vein; you do not know but that you are tearing through an artery. You bring it out and tie it. What does that do? It constricts the part within the ligature, but it leaves a small hole through which sepsis is bound to take place in the rectal region and the hole is not large enough for efficient drainage. It does more—it shuts off the nutrition to the mucous membrane on its surface. What does that do? It causes gangrene, or sloughing, followed by ulceration, cicatrization and contraction. The silk ligature has to come away by a process of ulceration and, you can not have the latter condition in this locality without local pus formation. You have all the dangers of both local and constitutional infection, one being immediate and the other remote. Following the sloughing there is the danger of stricture.

With regard to prolapse and its treatment by the subcutaneous ligatures there are many objections. I should try to keep it back with the use of astringents, careful regulation of the diet and supportive treatment, restoring the function of the levator and sphincter ani muscles. These muscles are very much relaxed in rectal prolapse. This treatment failing, a good old method is to canterize the mucous membrane in longitudinal strips about half an inch or three-quarters of an inch apart, and then replace the bowel. By doing this we cause inflammation and plastic material is thrown out. The cauterization wards off infection until we get sufficient contraction of the redundant mucous membrane, and we do not run the risk of

infection. The operation is not followed with the same degree of shock that attends any of the cutting operations. That failing, excision has been done with success. But I would not favor it except in tissues that are already sloughing and where we have to resort to it on account of ulceration and sloughing. A treatment of prolapse of the rectum, as brought forward and practiced by Bryant, is to give the rectum complete rest, to perform colostomy, to treat the rectum locally until it is in a proper condition to perform its function again, and then closing the opening in the colon. I see no reason why, in the fourth degree of prolapse where we get invagination, we can not treat it successfully by laparotomy. This may be done with greater safety than operating from below. The upper part of the rectum and the sigmoid should be fastened to the abdominal wall.

DR. CARL BECK. I regret that I did not hear the paper of Dr. Ricketts. Not having heard it, I am at a loss to know what to say in the way of discussion. But with reference to the remarks of Dr. Ferguson as to prolapse of the rectum, I would like to mention a case of very extensive prolapse. The woman has been treated for prolapse by three different (eminent) surgeons in Europe, and each time by a different method. One operator stitched up the prolapsed portion of the rectum into the retrorectal excavation, excision of the lower portion of the rectum was performed by a surgeon from St. Petersburg, whose name I can not recall, and the third operator did a laparotomy. The last operation was performed about a year ago. The prolapse has recurred after every operation. The patient has been under my observation for nearly six months, and the prolapse is now at least eight inches from the orifice. When she stands up it is impossible to retain it by any apparatus. It is a constant source of pain, etc. I shall in a short time try another laparotomy, and I have devised a plan to stitch the flexure all along the abdominal wall as far as it is movable. From the letter I received from the last operator I judge that he only put in three or four sutures in his operation, and that these sutures had given way. As I understand, he has sutured the lax parts of the intestine to the lax parts of the abdominal wall, and the sutures have formed long bands, then giving away and prolapse recurring. Cases of such extensive prolapse as this are extremely rare. In such cases nothing will do good except to firmly unite parts of the muscles or abdominal fasciae with sutures that go deep down. These sutures should be silk that will not be absorbed, and not catgut.

DR. RICKETTS (closing the discussion) I am under obligations to you for the manner in which you have considered my paper. It pleases me very much, but I can assure you that I have never before fallen into the hands of such Philistines. I did not come to Chicago to try to teach you anything. That was not my object, but to tell you what I have been doing. I do not believe the members of the Academy have understood what becomes of the ligatures. The ends of them are allowed to remain exposed, in that way we secure drainage. I do not propose to bury any ligature in this operation, as I think that would be unscientific. I have never resorted to the injection method in the treatment of hemorrhoids, because I have seen and known of several bad results. Quite a number of malpractice suits have been instituted as a result of the injection method. As to the classification of hemorrhoids, I am frank to say that no operation should be resorted to, to the exclusion of others. No one will deny that there are dangers in connection with the injection method, and shall we subject our patients to those dangers? I understand that a surgeon of this city lost a patient a little over a year ago after using the clamp and cautery from hemorrhage, the hemorrhage occurring on the tenth day, and at the end of the twentieth it was fatal, so that we can not deny the fact that the clamp and cautery have their dangers. As to the loss of time in making the operation which I have suggested, if it is done on Saturday afternoon the patient is able to attend to his business on Monday, and so the loss of time is practically nil.

As to infection, it has not taken place in any of the cases. I have operated upon, nor have I heard of its having occurred in cases operated on by others, for the simple reason that the ligature is allowed to remain exposed and to come away *ad libitum*, or to be taken away at the end of ten days after it has served its purpose. It is not necessary to make the ligatures very tight, but the constriction should be sufficient, however, to obliterate the vessels.

As to the injection of external piles, it is in such cases that we usually have abscess, and they are the most dangerous. I have been told that the cases that caused Dr. Brinkerhoff the most trouble were the cases in which the piles were external.

As to the use of the cautery, there are cases now and then where we can use it. There are also cases now and then where we can use the injection method; but where we have so many remedies for a disease we must rest assured that none of them

are satisfactory. So it is with operations. There are many ways of treating hemorrhoids. We are trying to find the best method of dealing with them.

As to the 25 per cent. of failures which Dr. Ferguson speaks of, or rather 75 per cent. of successes in which he says union by first intention is secured, I would say that 25 per cent. is sufficiently large to put us on our guard. It is in these cases that the risk of infection is very great.

As to secondary hemorrhages, I have had none in my experience. There might be danger of such hemorrhage. I am aware that we might puncture an artery or divide it; we catch up part of it and leave the other part out. If we are going to have hemorrhage it is most liable to occur at the time of the operation. In the case reported by Dr. Beck the methods that were resorted to have been unsatisfactory, and it seems to me we must do something more than we have been doing.

There is one matter that has been entirely overlooked, namely, the position of the sigmoid in quadrupeds. It lies parallel to the spine. There are no adhesions; it is perfectly free. When we get up upon our hind parts or stand erect, we find the sigmoid falls down and the intestines above the sigmoid vessels run around it, while in the rectum they run perpendicularly with it. If you examine a case in the dead room you will find the sigmoid falls forward and becomes adherent to the anterior parietes. I have not heard this condition spoken of before. I have found it myself, and I find that anatomists who have given the subject any thought tell me the same. We find from investigation that bipeds are the only animals that have hemorrhoids. Monkeys have hemorrhoids, and, of course, human beings have them, but we do not find them in quadrupeds. The sigmoid of animals is not corrugated like the sigmoid of a human being, a thing that changes the aspect of the pathology and the anatomic relations very materially. As to what we shall do in cases of prolapse, we are as yet undecided, and in the case Dr. Beck speaks of in which three different operations were performed by eminent surgeons, are we not convinced that something more should be done than has been done for these cases? What is it? We can not very well cut down and take out a section of the sigmoid; but if there is any part of the alimentary tract where we ought to be able to do this it is from the sigmoid, because the stenosis is not as great. The lumen should be greater, allowing plenty of room for fecal matter to pass down. I would therefore suggest, as pointed out by Kraske, that we anchor it above or go above and make an abdominal section. So far as I have been able to determine I have not found a patient who has been relieved of prolapse in the fourth degree. I speak of this and throw out the suggestion that we may be able in the future to remedy this defect by the injection of any of the solutions that will enable us to get up adhesions and anchor the part there. Dr. Beck's suggestion might possibly be carried out and this trouble relieved, but I think it would be impracticable for him to suture the descending colon to the abdominal wall. It would have to be done to such a great degree, and if pulled upon itself, now, what will it do if we have the whole cecum with its contents behind it pulling down? Does the remedy for relief lie in the excision of a portion of the sigmoid, say of five or six inches, or as much as necessary, or does it lie in the injection of solutions for the purpose of getting up adhesions?

With reference to the operation that has been suggested of using the cautery in the prolapsed rectum, that it will answer the purpose in the first and perhaps second degrees I have my doubts. If we are to sear the rectum perpendicularly with the cautery and rely upon it as a remedy, it seems to me very unsatisfactory. I understand that Kelsey (I got my information from a student) in cases of prolapse takes the round ball of the Paquelin cautery, red hot, introduces it into the rectum and draws it backward and forward two or three times. I can not conceive of anything more cruel and not in keeping with the principles of surgery than to use a red hot iron in the rectum, expecting stenosis to result from it.

In closing, I would suggest that in the future you go to the dead room and study the condition as we find it in the human being. If you take the dog or the sheep you will not find hemorrhoids, but in monkeys you will find this pathologic condition.

DR. ROSA ENGELMANN read a paper entitled

ANTITOXIN IN ONE HUNDRED CASES OF DIPHTHERIA.

(See the JOURNAL, February 22, page 374.)

DISCUSSION.

DR. WM. L. BALLENGER. I have been especially interested in the facts and figures presented by Dr. Engelmann, one of the important points being the value of the early administration of antitoxin in cases of diphtheria. I read recently some statis-

tics which were very interesting to me, corresponding very well with those given by Dr. Englemann. Out of 1,445 cases under the old method of treatment, there was a death rate of 45 per cent.; 2,740 cases were treated with antitoxin, this number including laryngeal cases and other types of the disease, with a death rate 18.5 per cent. Of the cases in which antitoxin was administered on the first day there were no deaths. Its administration on the second day was followed by a death rate of nearly 3 per cent., on the third day 10 per cent., on the fourth 20 per cent., on the fifth 33 $\frac{1}{3}$ per cent., on the sixth and later days, 41 per cent., showing a gradual increase in the rate of mortality with the lateness of the administration of the antitoxin. Its early administration is exceedingly important, and yet we should not refuse to administer antitoxin even in the later stages of diphtheria. I know of repeated instances in which it has acted with very prompt and gratifying results after four to six days development of the disease.

Dr. Palmer, who is present to-night, had a case of laryngeal stenosis due to diphtheria which I saw in consultation with him only a few days ago. The stenosis had existed for four days, the breathing being quite labored most of the time. Antitoxin was administered and inside of nine hours there was great relief and the child is now perfectly well. In the family there had been a number of cases of diphtheria preceding this one some three or four weeks. Bacteriologic cultures were made and verified in all the cases. The patients were all treated with autitoxin, making good recoveries. In this case there was also a bacteriologic examination made and the true bacillus found. Although we could not get at the membrane to touch it. A culture was made from a specimen secured low down in the throat and showed the existence of the Loeffler bacillus.

There are some points we should remember in treating these cases beside the administration of antitoxin, and which have a great influence upon the recovery of the patient. One of these is the surroundings of the patient. The patient should have plenty of sunlight. The germs grow in dark, damp places, but an abundance of sunlight and fresh air is unfavorable to their development. In one of the great children's hospitals in London during an epidemic of diphtheria, it was the custom to remove the diphtheritic cases to the non-diphtheritic wards two days after the membrane disappeared. In no instance was there an outbreak of the disease in these wards, although there were undoubtedly germs still in the throats of the convalescents. In the meantime an adjoining building was being torn down and such clouds of dust were entering the hospital that the management closed the windows and shutters to keep it out. A few days later a violent epidemic of diphtheria broke out in the wards which had heretofore been exempt. This circumstance indicates very clearly the advantages of fresh air and sunshine in controlling the disease. I understand that Klebs has made some experiments with the toxin of the germ itself, making cultures in some fluid media, then filtering the germs from the fluid leaving the toxin as the remedial agent. This treatment is similar to Koch's tuberculin, and in fifty-one cases which he has treated the death rate was 13 per cent.

If we will remember that every germ manufactures an excrement made from its own environment and for a moment consider ourselves germs, the excretions of our bodies being the manufactured product, we can easily understand how life would be very short under such circumstances. The same thing may be said of germs and their toxins. I understand that Klebs is now using the toxins of the Loeffler bacillus in the treatment of diphtheria and while the serum treatment is probably the best at our command, it will be of great interest to know the results of his experiments. Medicine is upon the threshold of a new era. As the laws of physiologic chemistry, and of pathologic processes become better understood, treatment will be more in harmony with physiologic laws, and toxins and antitoxins will find a larger place as remedial agents.

Dr. Wm. Cuthbertson After being strongly opposed to the use of antitoxin I have become a convert. In some cases of diphtheria which occurred in this city in my practice, when antitoxin was first introduced, my brother and I used it in several cases. Our results were bad. I am inclined now to attribute the bad results at that time to the imperfection of the antitoxin. My reason for being converted to the use of antitoxin was a case I had several months ago of diphtheria in which the membrane extended down to such an extent that there was laryngeal stenosis, and it seemed as if intubation or tracheotomy would have to be done. I made up my mind to try the antitoxin which had been lauded so highly. I therefore injected, on the fourth day, 600 units of the antitoxin, and still kept up local treatment and free stimulation. The laryngeal stenosis was stopped and the child began to breathe freely

on the next day, and eventually recovered. I might say that a microscopic examination was made in this case and the Klebs-Loeffler bacillus found. The next case of diphtheria I had, which was several weeks afterward, and in which the bacillus was also found, showed signs of laryngeal stenosis at the very outset, and having had such good results in the other case from antitoxin, on the second day of the disease I injected 600 units of antitoxin. The laryngeal stenosis did not get worse, but gradually cleared up. The effect of the antitoxin in each of these cases was to produce almost total anuria. The kidneys were acting freely in both cases before I had injected the antitoxin, an immediately after the injection they stopped secreting, or for the first thirty-six hours after injection of the antitoxin there was not more than three or four ounces of urine passed. I made an examination of the urine in each case and found it loaded with albumin. After the application of hot poultices and diuretics the kidneys began to secrete and gradually kept on increasing until the normal amount of urine was voided. Had the cases been placed on a liquid diet from the start the amount of urine might have been normal throughout the disease. Ten days after the injection of the antitoxin an urticarial rash appeared, and the temperature in each case rose to 100.

Dr. Englemann has referred to the part which the staphylococcus might play in this connection. We know that when the staphylococcus comes in contact with a surgical wound gangrene is set up, a slough is formed and gradually thrown off. In a case in which the staphylococcus comes in contact with a lesion of the mucous membrane, either in the larynx or pharynx, I see no reason why it should not act in the same manner in a case of throat trouble as it would in a surgical wound.

Dr. Englemann made further reference to the apparent interchangeability of these germs. Those of us who can look back to the time before the Klebs-Loeffler bacillus was discovered can recall to mind cases of scarlet fever where there had been angina associated with it. The disease would be well marked in one case, and in other members of the family who had been exposed to the contagion we would find trouble set up presenting the clinical picture of true diphtheria. I have seen the same happen in cases of measles where there has been sore throat connected with the measles, and in the other members of the family disease would be set up which would present a true clinical picture of diphtheria.

Dr. PALMER I would ask Dr. Englemann about the febrile reaction.

Dr. ENGELMANN—In some cases I have gotten it, in others I have not. It is the rule to have a rise of temperature after the administration of antitoxin.

Dr. MOYER Have you observed cardiac paralysis following the use of antitoxin?

Dr. ENGELMANN—I have seen cardiac paralysis twenty-four hours after the use of antitoxin in two cases, and whether it was due to the antitoxin or toxemia is a question; and faucial paralysis in one case.

Dr. PATRICK How long after its administration?

Dr. ENGELMANN—About eight or ten days.

Dr. ENGELMANN (closing the discussion)—I would like to speak of the manner in which the membrane sloughs after the use of antitoxin. An absolute necrosis takes place, and if you watch the throat you will see the edges of the membrane curl up, and within twenty-four hours it is extruded *in toto*.

Another question that arises is, Shall all children exposed to diphtheria be immunized? I find there is great objection among practitioners to immunize children not exposed. When it comes to the question of adult immunization I think we can leave it, because adults are not so prone to infection, unless they are in the midst of it all the time, as children are.

Dr. Ballenger has referred to hygienic measures. There is no question but that we should use antiseptics, tonic and stimulant treatment in connection with the use of antitoxin. Baginsky, of Berlin, makes a good argument in that he says we must effect a reduction of the toxin *in loco*, because it is the toxin that is doing the bad work. Therefore, if we reduce the production of toxin we will have to use less antitoxin.

As to the subject of toxin injections, it seems to me that the use of antitoxin is a more reasonable procedure, because in a normal case of diphtheria the blood of the patient itself is trying to manufacture antitoxin. Heretofore, when a patient got well, the antitoxin produced enough vitality to offset the toxin that was formed. Why should we put extra work upon cellular organism by introducing toxins when we can lessen the labor of the organism by using antitoxin?

Dr. Cuthbertson is not the only convert to the use of antitoxin. I find that the greatest number of objectors are those who have never used it and will not use it. Practitioners seem to object to the use of antitoxin upon general principles.

Dr. Cuthbertson reports a case of beginning laryngeal stenosis in which he used 600 units of antitoxin. My experience has taught me that small doses do not always prevent the use of intubation or tracheotomy, and in my later experience I learned to use antitoxin in more heroic doses, thus averting tracheotomies and intubations. Another point I wish to make is this, that the practitioner should not wait for stenosis to manifest itself before using antitoxin. I would ask Dr. Cuthbertson whether he found albumin before or after the administration of antitoxin?

DR. CUTHBERTSON Immediately after its injection.

DR. ENGELMANN The only way to reach a conclusion in reference to this matter is to examine the urine both before and after the administration of antitoxin. In twenty-one cases recently immunized an examination of the urine was made before and afterward, and no albumin was found to be present.

As to the interchangeability of the bacilli, I meant the interchangeability of the pseudo-bacillus with the Klebs-Löffler bacillus.

DR. REILLY Don't you mean by interchangeability that the germs change from virulency to benignancy, or *vice versa*?

DR. ENGELMANN Yes, I tried to convey that idea. It is supposed that the pseudo-bacillus is an attenuated form of germ.

As to the question of rashes, when I began to get out statistics I did not take the opus of each bottle of antitoxin I used. But now I take the opus, the date of manufacture, in order later to possibly trace it to the opus. I think New York men have done some of that work, but I do not know that it has been considered conclusive.

As to administering antitoxin in the late stages of diphtheria, I should not hesitate to use it, although we can not expect so much from it. Still I have seen it used in the late stages when it has done good.

DR. PATRICK Have you noticed any unpleasant effects from the immunizing dose only?

DR. ENGELMANN Yes, in some cases. I have seen the development of a rash due doubtless to the immunizing dose. For instance, a brother and sister received a dose of antitoxin from the same bottle. The brother developed a mild urticaria; the sister an erythematous rash of one extremity, attended with swelling of the knee and a great deal of arthritis. Why in one case the rash was mild, and in the other it produced such a profound impression, I do not know.

DR. PATRICK Have you noticed any cases of cardiac failure?

DR. ENGELMANN One case which occurred since writing my paper, in which I noticed a lighting up of a previous chronic heart trouble, or at least an exaggeration of it. It is the only case I know of.

DR. PATRICK What was the previous heart condition?

DR. ENGELMANN The girl had mitral stenosis, and after the injection of one part of the No. 3 for the diphtheria, she having refused to be immunized, she developed urticaria, muscular pains and a little arthralgia, and about three weeks after the injection of antitoxin complained of heart trouble.

SELECTIONS.

Influence of Lecithin on the Growth of Organisms. Experiments with dogs and other animals show that subcutaneous injections of lecithin increase notably the number of red corpuscles in the blood. They rise to 800,000 or a million and more above the normal, and the hemoglobin is also increased. This improved condition of the blood comes immediately and lasts a long while. The scientists who have made a special study of this subject are Danilewsky, Selenski and Sostin, and their report to the Académie des Sciences is full of interest. Experiments on the egg and larvæ of frogs showed that it produced an extraordinary growth in the tadpoles, and these tadpoles showed much less pigment than the others. Lecithin does not act like a food. It is not an organo-plastic substance. It increases the assimilation of the food, and has a direct stimulating influence of great importance on the processes of multiplication among the cellular elements. The improvement of the blood, we know, is the most important condition to stimulate the growth of the organism, that is, the multiplication of its morphologic elements and their development. And this, lecithin accomplished in these experiments. *Semaine Médicale*, January 8.

Amygdophenin, the new Remedy for Rheumatism.—The effect of this new remedy in acute articular rheumatism has been carefully studied by Stüve (*Centralblatt für klin. Med.*, Nov. 16, 1895), who also observed incidentally its effect on fevers and neuralgia. Amygdophenin (ethylamygdophenin) is a derivative of paramidophenol, in which, in the amid group, an atom of hydrogen has been replaced by the amygdalic acid group, and the atom H of the hydroxyl group, by the carbonate of ethyl. It is a light whitish gray, crystalline powder, hard to dissolve in water. After administering it, a derivative of paramidophenol is found in the urine, the reaction of the indophenol. Stüve administered it in twenty cases of articular rheumatism, eleven of which were attended with fever. In seven cases in this group a notable improvement manifested itself in two days after commencing its use. The local symptoms and fever had disappeared entirely by the end of four to six days. With the exception of one patient, who brought on a relapse by leaving his bed too soon, the cure was permanent in all. One patient had been annoyed by the buzzing in his ears caused by salicylate of soda in former attacks, but when amygdophenin was given him, there were no attendant annoyances, but recovery in less time than ever had been caused by the salicylate of soda. In the other four cases in this group the result of the use of amygdophenin was not the same in all. The effect was not very successful in two cases, one with cardiac trouble, and extremely tardy recovery in another. On the other hand, fine results were obtained in one case where there was serious aortic insufficiency; marked improvement followed the administration of 3 grams of amygdophenin, which cured completely an intercurrent and slightly febrile attack of acute articular rheumatism. The only absolute failure in the use of amygdophenin was in a case of pain in the joint of one knee. But this was probably a blennorrhagic rheumatic trouble, in which all the other antirheumatics have less efficacy. In the four cases of febrile articular rheumatism the amygdophenin produced a complete and rapid cure, with one exception. This was a case of simple pain in the joints without objective phenomena of any kind. In one case the amygdophenin was replaced for a few days by salicylate of soda, which did not have the slightest effect, and not until the amygdophenin was restored did recovery continue to a permanent cure. As an antipyretic it was tried on some phthisic patients with fever. One-half gram had no effect upon the temperature. One gram lowered the temperature 2 degrees C. in one case with profuse perspiration, but in others the same dose only lowered the temperature one-half to one degree C. and not at all in others. It is therefore impossible to count upon amygdophenin as an antipyretic at this dose. In neuralgia it produced good results in several cases, but of course its effect is only palliative. However, it was noted that it acted favorably even in cases where the pain had a central origin, as in tabes, sclerosis, etc. It was administered in one gram doses from one to six times a day, at first in powders and later in compressed tablets. One gram doses never produced any attendant annoyances of any kind in the series of observations noted, amounting to about one thousand in all. In one, the patient after taking 5 grams in twenty-four hours, complained of a slight vertigo; another who had taken 6 grams noticed a buzzing in his ears, but both of these vanished at once when the amount administered daily was reduced. No exanthema was observed in any case, nor dyspeptic troubles, nor renal inflammation. Three cases only had sweats. Stüve sums up the result of all his observations in the announcement that in amygdophenin we have a most valuable remedy for rheumatism, reliable and entirely innocuous. It acts in cases where the other antirheumatics, such as salicylate of soda, produce no effect, or must be discontinued on account of attendant disturbances. As to its use in pyrexia and neuralgia Stüve does not consider the limited number of observations on record as sufficient data upon which to found an official opinion. *Ther. Woch.*, 1895, No. 47.

Infective Inflammation of the Parotid Glands. The *Journal de Méd. de Paris* of Jan. 19, 1896, contains a study of three cases of this kind interesting on account of their etiology and treatment, by Regnier, surgeon at the Lariboisière. He says that until recently we have always considered these parotid inflammations as caused by some secondary inflammation of the lymphatic glands. We are now becoming aware of the fact that it is the glandular pockets of the gland itself that are involved, resulting from a primary inflammation of the excretory canal. The infection starts in the mouth and passes up through the excretory canal to the pockets of the gland.

Chassaignac first called attention to this variety, which he called canalicular, characterized by swelling of the parotid region followed by pus discharging through the duct of Steno. Virchow and Weber also observed cases where the pus and the lesions were in the excretory canals and the alveoli. But Crocq as early as 1873 tried to prove that every case of parotid inflammation with a general cause is preceded by some inflammation in the mouth, which extends into the gland through the duct of Steno. The recent histologic and bacteriologic researches of Claisse and Dupré confirm this view. In a large number of cases they were able to trace directly the upward extension of the infection from the mouth up into the gland. It is in this way we know that infection finds its way into the liver, the kidneys, the bronchial tubes and the breasts, through the excretory ducts and it is the same with the parotid gland, probably. But this opinion must not be regarded as absolutely settled, although it has been verified in a large number of cases. Duplay, in his *Treatise on Pathology*, suggested that the infection might arrive by way of the lymphatic glands, and in that case it is not the parenchyma of the gland but the lymphatic ganglia that are affected. This location of the inflammation must be borne in mind as possible when diagnosing, but if it is of lymphatic origin an abscess will form, the opening of which will show an accumulation of pus. But if the inflammation is in the glandular pockets and is being infected through the excretory duct, the lancet only brings out a few tiny drops of pus, contained in the pockets of the gland, into which it penetrates, while the edema, the swelling, and the sensation of fluctuation, would have made you confident that there was a considerable accumulation of pus there.

It seems as if lancing it had done no good, but in reality it is followed by a fall of temperature and local improvement, and the issue of pus later through the duct of Steno explains the above phenomena, and proves that it is a glandular inflammation with the pus secreted in the acini or excretory canals.

My first case was a woman recovering from typhoid fever, who became very much swollen in the parotid region, with edema, and fluctuation accompanied by fever. Convinced that there was a large collection of pus, I opened straight into the parotid gland, and found to my surprise that scarcely anything issued from the incision, a few tiny drops of pus being distinguished with difficulty in the blood that followed. The temperature decreased however, and a couple of days later I saw pus exuding from the duct of Steno. The swelling diminished and a permanent cure ensued. Another case was a man of 45, large, alcoholic, suffering from multiple articular rheumatism and acne. The parotid region began to swell, there was edema and fluctuation and I opened the abscess as before, using a grooved director and passing through the whole gland, without finding any accumulation of pus. But the temperature fell afterwards, and a couple of days later pressure on the swelling discharged pus through the duct of Steno into the mouth.

A patient came to me suffering from a urinal abscess which I lanced. Convalescing from this he was attacked with erysipelas of the face, for the second time in his life. One injection of Marmorek's antistreptococcus serum was made, and the erysipelas passed away, as it might have done without the injection, perhaps.

An abscess next formed at the spot where the serum had been injected, which I opened and found full of streptococci. A few days later the parotid region began to swell, puffiness and fluctuation ensued and I opened the swelling, out of which poured a large quantity of pus, also full of streptococci. Evidently in this case I had lanced a ganglion abscess, infected through the lymphatic gland.

These three observations show that infection may reach the parotid glands, through the excretory canals or the lymphatic glands producing in one case what Chassaignac calls a canalicular parotid inflammation, or acinous adenitis, and in the other a simple adenitis. In the latter case a certain amount of pus will follow the knife, but in the former case you will not have the satisfaction of seeing the pus escape. But you need not fear that you have made a mistake in your diagnosis. The pus is scattered through the gland, contained in the acini and excretory canals. Lancing always brings relief, lowers the temperature and promotes recovery.

Tablet Triturate Incompatibilities. Since our presentation of the pharmaco-therapeutic relations of the tablet triturates last year there has been in some quarters an awakening to the dangers that threaten medical practice through an extension of this form of medication.

Despite the fact that some manufacturers are exploiting the tablets "for all they are worth," they are being severely let alone by many physicians who were at first attracted by this "machine made," "cut and dried," "dicase to fit the remedy" plan of "doctoring made easy." The firm that enjoys the dubious distinction of having first introduced the tablets to the medical profession has replied to our criticism in their "Notes," but instead of answering a single one of the arguments advocated against the tablets, have laboriously endeavored to misrepresent our positions relative to the numbering of tablets. This firm proudly boasts that one of our statements relative to the use of the tablets by physicians, viz.: "That they are popularizing the form of self-medication; the tablets now being put up and numbered according to the disorder for which they are recommended," does not apply to its (the firm's) make, but that these observations are "based upon tablets which have gained prominence in the last few years." The statement was based upon the observation that non-medical persons select various combinations of remedies from titles by which these tablets are designated, as indicated by the particular disease for which they are recommended. Furnished with a catalogue containing description of remedies from "absorbent dyspeptic" to "vaginal astringent," it does not require much ingenuity on the part of any fairly intelligent member of the laity "to pick the winner," without paying the physician for making a selection for him.

In a recent catalogue issued by a certain firm there are about one thousand formulas, nearly one-half of which are designated by therapeutic titles. Most of these formulas show either a profound disregard for pharmacy, or a willful desire to mislead the medical profession. Some of these examples are of a character to bring the dispenser within the pale of the pharmacy law or an anti-adulteration act. A number of these formulas purport to contain highly volatile liquids, which to anyone the least familiar with pharmacy is shown on its face to be either a physical impossibility to combine in the form of a tablet, or after being combined or prepared, would from their very character rapidly volatilize and leave a more or less inert tablet.

Of this class are the tablets containing:

Ammonia, aromatic spirit of, in: Acetanilid 3 grs.: spirit of ammon. arom. 5 min.: soda mint, spirit ammon. arom. 2 grs.

Camphor combinations, in which the camphor sublimes on the sides of the containers: Anodyne: coryza Nos. 1, 2, 3: rhinitis: diarrhea.

Camphorated tincture of opium in the following: Astringent comp., 6 min., No. 2, 5 min.: croup, spasmodic, 5 min.: dys-

peptic (fermentative): camph., 10 min.: throat tablets, 10 min.

Heart stimulants, nitro-glycerin with tinctures of strophanthus, cactus grandif., belladonna, digitalis, etc.

Inflammatus, about 5 min. of tinctures, including Norwood's veratrum viride.

Sun cholera mixture, 3 min. each of tincts. opium, capsicum, rhubarb and spirits camphor and peppermint: 12 min. in one tablet. Will the *Sun* (N. Y.) recognize in this tablet its famous offspring?

It will be said that the medical constituents are present in such proportion as to represent these respective tinctures, spirits, etc.: this is the rankest kind of misrepresentation. But how about preserving nitro-glycerin in the tablet form, or tinct. valerian ammoniated?

The following are specimens of rank incompatibilities and "shotgun mixtures":

Anti-asthmatic: Potass. iodid, pot. brom., ea. 2 grs. Fl. ext. euphorbia pil. 3 min.: tinct lobelia, 2 m. Nitro-glycerin, 1-200 gr.

Antiseptic dyspeptic: Pepsin, bismuth and salol.

Cholera infantum: Lactopeptin, calomel, bismuth subnit., salol, zinc sulphocarbolate.

Imagine the advantage of nitro-glycerin with iodids and bromids, or digestive ferments with antiseptic phenol derivatives in the presence of free hydrochloric and lactic acids!

Mercuric chlorid, the most sensitive alkaloidal reagent known is combined with alkaloids, alkaloidal drugs in the following: Belladonna comp., bismuth opium comp., bronchial No. 2 (merc. iod.): diffusive malarial, "diphtheria and grip:" kali comp.: mercurius comp.

In the following a weak compound of phenol, salol, is combined with hydrochloric acid, producing new compounds, liberating phenol which no doubt in many instances has produced the most serious systematic disturbances if not fatal consequences: Bismuth catechu comp.: Bismuth subnit., salol, ea. 2½ grs.: powd. opium, catechu, ea. ½ gr.: oil cinnamon ⅛ m., acid hel. dil., ½ gr.

This is without doubt the worst specimen of a formula that has ever been perpetrated. Similar to these we find:

Hypophosphites with creosote, iron albuminate and arsenic; iron mercury comp. with quinin and strychnin; and "sore throat:" Tr. ferric chlor., 5 min., mercuric chlorid, 1-64 gr. in each tablet.

Blaud's in which ferrous carbonate is decomposed: also combined with arsenic: chlorodyne with nitro-glycerin, but without any chloroform.

As will be observed from these few examples every well-known pharmaceutic and chemic principle is violated. The fundamental therapeutic principle is also violated. Tablets when not composed of substances to be dissolved before they are administered, as "hypodermic tablets," etc., should be combined with such drugs as will exercise their local effect through the viscid vehicle that results from the solution of sugar, gum, etc., of which the tablet is formed: resinous and disagreeable tasting remedies are therefore not adapted to this form of medication. In the face of this we have tablets intended to be dissolved in the mouth composed of copaiba, aloes, extracts of hellebore, gossypium, ferrous sulphate, Venice turpentine, etc. Are there any remedies so repulsive to the palate?

But as though this were not enough, there are also listed "blank tablets:" white, yellow and pink, presumably to afford physicians an opportunity to try the "color cure" of the celebrated Vienna Institute. This "color therapy" is a relic of the "tabula smaragdina" of Hermes Trismegistus and has never been outranked in the history of charlatanism.

So it will be observed that not content with violating every principle of pharmacy and therapy some tablet manufacturers have also adopted the methods of the "fakirs." How any intelligent physician can countenance or permit himself to be per-

sueded by these adventurers and mountebanks to use these tablets in his practice passes comprehension. *Prof. C. S. N. Hallberg* in the *Graduate*.

A Foreign View of Our Mineral Waters. The *Deutsche med. Wochenschrift*, of January 23, contains an interesting and comprehensive study of the mineral springs of this country, with an array of statistics culled from the earliest work on the subject, 1831, to the latest report of the U. S. Geological Survey, which announces 8,843 mineral springs, with 785 analyzed. The writer, Dr. Beissel, of Aix-la-Chapelle, does full justice to the abundance and variety of these healing waters, but he says that only a few of them are regarded with confidence yet, as the country lacks physicians with the requisite knowledge and perseverance to exploit them. He also asserts that the American is not adapted to this kind of cure. He never will stay long enough at the place, and when he is there he lounges in an easy chair all the time. Those who understand how to derive the most benefit from a resort of this kind are not deterred by the trip across the Atlantic, and go to Europe for what they can not find yet at home. We have long known that our people are simply neglecting the great good that nature has so bountifully provided in our own mineral springs.

Fractures of the Clavicle.—The treatment of these fractures has recently entered upon a new era, that of surgical intervention and even wire sutures. Hassler writes to the *Lyon Médical*, Nov. 2 and 3, 1896, in regard to this, and offers the following suggestions:

First, he condemns absolute immobilization in an immovable apparatus, because it can not be done with any simple apparatus, because it leads to atrophy of the muscles to a greater or less extent, and also because it is not necessary to have absolute immovability in order to produce consolidation. We all know that there can not be a more difficult fracture to manage than a broken rib, and yet it grows together again very rapidly under a band of diachylon or a bandage around the body, notwithstanding the incessant movements of the thoracic region. He indorses and recommends early massage and relative immovability in an apparatus, in fractures from a direct cause, and in almost every case. In fractures of the outer or inner third there is the least displacement and attrition, and this method insures the most perfect cure. In fractures of the middle third, it is also the best method, for any phenomena resulting from compression of the blood vessels and nerves are absolutely exceptional. In fractures from a direct cause, in the outer and inner third early massage is indicated. Fractures of the middle third require this even more surely. The latter are the only fractures which indicate suture of the bone.

An operation and early suture of the bone are called for:

1. When there are serious primitive accidents, compression, contusion, laceration, inflammation of the vessels and nerves.
2. To forestall multiple complications resulting from an exuberant and vicious callus, which often appears from a direct cause involving the middle third, and especially where there is necessity for a more or less speedy return to work.
3. Where the bones lap very much and there is reason to fear a shortening of the whole bone, which would interfere seriously with the strength and movements of the arm.
4. When a fragment has been pressed down and can not be raised, or will not stay raised.
5. When the periosteum has been so crushed and mangled that blood has settled in and around the broken parts in large quantities, or when by the absence of any sound of friction between the ends of the bone there is cause to fear the interposition of some fibrous or muscular tissue or growth.
6. When the fracture is complicated with an open sore, probably infective. Surgical operation is indicated in this case, as much to secure disinfection as to insure proper coaptation with the suture.

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SATURDAY, MARCH 7, 1896.

SCHOOLS AND ANTI-SCHOOLS.

The system of public schools is perhaps the one institution in which the American citizen takes especial pride. He considers it the corner-stone of the Republic, and for its preservation is prepared to make any sacrifice of blood and money. The traditional palladium has come to be invested with such a sacred character, that it is felt a sacrilege to criticise it; nevertheless, it is well for us to look at the conditions of to-day and inquire whether theoretic considerations as to universal education are really any longer practical possibilities.

When communities were small and luxurious establishments comparatively few, when wage-earners readily found employment and the children of the poor became prosperous men and women by insensible gradation, when reading, writing and arithmetic were the fundamentals of education and the methods of teaching were comprehensible by the mass of the young, there were plausible reasons for universal education; but the eve of the Twentieth Century finds enormous aggregates of human beings in which the refuse of dissimilar races, inheriting generations of degradation, bigotry and superstition, is in an immense proportion, and it is not possible to satisfactorily educate the offspring of such antecedents in the numerous branches which now form parts of the curricula of even low grade schools, especially by the complicated schemes of instruction elaborated by conventions of rival school teachers. Most of these children struggle through a term or two in a slipshod fashion and then go out to labor in sweat-shops, factories, and the huge retail stores, with no other practical result than perhaps a greater knowledge of English than they

could have acquired in their own wretched homes, where only the language of their parents is habitually spoken. As abject laborers and drudges, hewers of wood and drawers of water, they have in fact little need or desire for other knowledge than that of the language of the country and its minor currency, so that the perfunctory work of instructors in the de-tested school has been wasted in the attempt to teach them what they only imperfectly acquire and soon forget. The few who care to read apply their accomplishment to demoralizing literature that were better never read, and have no interest in this world or the next beyond what the priest or rabbi impresses upon them. For the half dozen in whom natural aptitude asserts itself, among the hundreds, the awakened intellect breeds contempt for the squalor and ignorance of their parents. The girls, moth-like, are attracted to the bright lights of the brothel and variety stage, where they find fine clothes, good food and more congenial associates than with their mothers and elder female kin, whose lives are daily toil and rough usage, the lot to which marriage in their own sphere surely dooms them. Even the children of the mechanic class, if ambitious, learn to spurn the vocations of their fathers, despise all manual occupation, and aspire to knowledge which unfits them for callings wherein they might find employment suited to their station.

How far the public school is responsible for the disappearance of the apprenticeship, through which boys grew to the mastery of the trades, can not be stated, but the older masters of every mechanical handiwork complain that their crafts are no longer recruited by well-trained and skillful young men. Proficients in Grecian history, algebra and physical geography do not care to learn how to handle a saw, mix paints or wipe a joint. Nor is over-education the only reprehensible tendency of modern schooling. Over-crowding with attendant faulty ventilation, bad light, constrained posture, protracted confinement and mental strain are doing their best to deteriorate the bodies of children, besides making their brains less able to digest and assimilate the over-seasoned food with which they are crammed. Dazzled by the beautiful mysteries of uranography and astronomy, puzzled by equations of two or more unknown quantities, and worried by intricate geometric theorems, they are left in blind ignorance of the beautiful structure and mysterious functions of their own bodies, or taught an expurgated infantile physiology, which, like the omitted Odes of Horace, stimulates a vicious prurient curiosity.

It is the legitimate office and imperative duty of the medical profession to indicate the remedy for a state of affairs that compromises the future of the people. If schools as organized and conducted hazard the health of the growing child and interfere with its nor-

mal development, they are objectionable; if they are to blame for the defective eyesight, crooked forms, nervous irregularities, and menstrual disturbances of girls, they had better give place to open air gymnasia and public play-grounds; if they tend to diminish the number of the artisan class, develop contempt for illiterate parents, aversion for their humble home and dissatisfaction with their station in life, and excite yearnings for meretricious finery and display, they are doing irreparable harm, and were better wholly supplanted by the monitory Sunday school and practical industrial school; if their results are only temporary, so that simple grammatical precepts make so little lasting impression that "You can't do no better," "I aint had no order not to go," and "Me and him was not in it," drop unconsciously from the lips of real-estate agents, clerks and others (the words are quoted as uttered) after their pupilage is over, the time thus wasted were better employed in the acquirement of some honest trade. It is only necessary to listen to the masses, ex-pupils of the public schools, to realize that the tuition they have received has been thrown away upon them. The veriest Chinese cooly, rapidly making the complex characters of his language in india ink, shames the labored, clumsy mis-spelled efforts of our corresponding lower classes. The province of the physician grows apace with the development of civilization. He may be powerless to compel individuals to do as they should and leave undone what they should not do, but he ought to direct the legislator, or himself fill the rôle of legislator, and indicate what is best for the several classes of the community.

The wretched home of the pauper alien child is, however, less potent an anti-school, operating to undo what the [State seeks to accomplish, than the grog-shops with which chiefly alien rum-sellers dot the main avenues of our great cities. Where there is one school house in many blocks, all four corners of intersecting streets have their anti-schools, offering resorts and lounging places for young and old, alluring them by their glaring lights and boisterous crowds from their cheerless homes, which fretful, overworked and ailing women unconsciously make more repellant. Whether as public health officer or member of special excise boards, the physician's voice should be heard in condemnation of the corner dramshop, which the political press indirectly sustains as a source of revenue for the nominal support of public charities. Pictures of brilliant red linings of the stomach, by which the public school health primer seeks to affright the pupil, are forgotten with the taste of the first sweetened exhilarating draught, and so long as this is accessible on every thoroughfare, the results of the school house, rational and useful, or specious and futile, are of no avail. Hence the school question involves the anti-school, and the medical sanitarian will properly insist upon considering them together.

THE SPECIFIC NATURE OF THE ANTITOXIC
SUBSTANCES IN THE BLOOD OF ANIMALS
RENDERED IMMUNE AGAINST THE
BACILLUS TYPHOSUS AND THE
BACILLUS COLI COMMUNIS.

The question of the identity of the bacillus of typhoid fever and the bacillus coli communis has been discussed and studied by bacteriologists for quite a long time without reaching conclusions that have seemed perfectly satisfactory to all interested. These two microorganisms are so similar morphologically and culturally that one is often spoken of as a variation from the other, both being either identical or very closely related. It is true that the colon bacillus produces gas in glucose media, causes an acid reaction with caseation in blue litmus milk, and that its bouillon cultures give the indol reaction; whereas the typhoid bacillus does not give these reactions, but every now and then one meets with bacilli that, from the manner in which they respond to these differential tests, seem to form connecting links between the colon bacillus, which is a normal inhabitant of the intestinal canal, and the typhoid bacillus, which is found in the body in typhoid fever. The question consequently presents itself in this light: Is the typhoid bacillus merely a variety of the colon bacillus group, the result of certain peculiar conditions or environments, or is it a microorganism strictly *sui generis*?

One of the fundamental principles of acquired immunity is that the antitoxins are specific; that is to say, they protect only against the microorganism by which they are produced. The antitoxin of diphtheria operates only against diphtheria bacilli, the antitoxin of tetanus only against tetanus intoxication. Consequently bacteriologists generally have become interested in the problem as to the specific nature of the antitoxins of typhoid bacilli and of the bacilli coli communis. Experiments in this direction have been made by a few investigators, but the results have not been absolutely uniform and finally decisive. Very recently LÖFFLER and ABEL have made this question the subject of a long series of careful, painstaking experiments, and the protocols of these experiments and the conclusions to be drawn from them are published in the *Centralblatt für Bakteriologie und Parasitenkunde* for Jan. 23, 1896. The results from their investigations may be summarized as follows:

1. The injection of increasing doses of virulent typhoid bacilli or colon bacilli into dogs produces in the blood of these animals certain substances that possess a specific protective power against the kind of bacillus by which they are produced.

2. The ordinary blood serum of untreated animals possesses a protective power against the ordinary fatal doses of typhoid and colon bacilli, and also against small multiples of the fatal doses. The exact dose depends upon the quantity of serum injected beforehand.

3. The specific action of the antitoxin in the blood of animals injected with bacilli becomes evident when such quantities of bacteria are injected as are multiples of the quantity against which normal serum protects.

4. The specific antitoxic action is also evidenced when a mixture of bacteria are injected with the serum.

5. The typhoid serum protects against a somewhat larger dose of colon bacilli than normal serum and, *vice versa*, the colon serum protects against a somewhat larger dose of typhoid bacilli than normal serum. This fact would seem to indicate a family relationship between the two kinds of bacteria.

6. The specific serum does not protect against the substances contained in the bodies of dead bacteria in any higher degree than does normal, ordinary blood serum.

7. Injection of normal serum into the peritoneal cavity of guinea pigs and then, twenty-four hours later, injection of twice the fatal dose of dead bacilli, produce in two weeks immunity against 100 times the fatal quantity of living typhoid bacilli.

THE MILK SUPPLY OF CITIES.

The Report of Drs. S. C. BUSEY and GEO. M. KOBER of Washington, D. C. on morbid and infectious milk, the advance sheets of which are now before us, constitutes a strong argument on behalf of the necessity for the sanitary control of dairies and of the milk supply of cities. According to the U. S. Census of 1890 the average annual production from sixteen and a half million milch cows was 5,209 million gallons of milk, 1,024 million pounds of butter and nearly nineteen million pounds of cheese. These large quantities give an indication of the extent of milk consumption, of the danger from an impure supply and of the temptation, from the monetary point of view, to the practice of fraudulent and more or less harmful adulterations. The official or legal standard composition of milk varies somewhat in different states and cities. It is lowest in New York, New Jersey and the District of Columbia, the requirements being 3 per cent of fat and 9 per cent of solids, not fat; it is highest in Massachusetts, 3.7 per cent fat and 9.3 per cent. solids, not fat. In England the standard is lower than in this country, 3 per cent. fat and 8.5 per cent. solids, not fat; but this class does not prevent adulteration by unscrupulous dealers. A common fraud appears to be the removal of cream and the addition of just enough separated milk to make a mixture that will come within the limit of the standard. Analyses of milk sold in New York city showed an average dilution with 33 per cent. water, the fraud amounting to \$10,000 per day. The State inspector for New York found an average of 12 per cent. of water added and 20 per cent. of cream removed.

According to Dr. SPIEGELHALTER, St. Louis, Mo., loses nearly \$2,000 daily by the removal of cream. The District of Columbia secured the passage of a milk bill last year. Many instances of the abstraction of cream were discovered by the public analyst; but the prosecutions failed because the law provided a penalty only when something had been added to the milk and did not take into consideration milk which had been deprived either in whole or in part of its cream. In the city of Chicago a bureau of milk inspection was created in 1892 and the milk supply of the city has been improved materially thereby; yet in 1894 of 12,093 samples examined 4,320 were below the standard.

The operations of the analyst under a law requiring milk to be of standard quality is a protection to the pocket of the public; but the report of Drs. BUSEY and KOBER shows that the dairies should be under sanitary control to prevent the propagation of disease by infected milk. This sanitary control should include inspection by competent veterinarians that the milk of all animals suffering from disease may be excluded from the supply. The diseases specially mentioned are tuberculosis, erysipelas, anthrax, pleuro-pneumonia, foot and mouth disease, septic and other fevers, specific enteritis and other intestinal disorders, rabies, tetanus, garget and other inflammatory conditions of the teats and udder. The milk of animals under treatment by medicaments and of animals five days before and five days after parturition is also held to be unfit for human consumption. The cow stables should be separate from other stock and poultry yards; they should be spacious, well ventilated and lighted, with cemented floors, proper drainage and clean hay or straw for bedding. The animals should not be allowed to feed on pastures with stagnant water or noxious weeds, particularly euphorbiaceous and ranunculaceous plants, nor upon the swill or products from distilleries, breweries, glucose factories, etc. The cows should be groomed daily and the teats and udders washed before milking with water previously boiled; and the requirements of cleanliness should apply with equal force to the milkmen, both in their persons and clothing. All persons engaged in handling the milk should be free from disease. Milk should not be permitted to leave a farm or dairy during the existence of typhoid fever, diphtheria or scarlet fever among the employes or inmates. The report cites 138 epidemics of typhoid fever, 74 of scarlet fever and 28 of diphtheria traceable to the milk supply. Of the 240 epidemics 187 were reported by English, thirty-one by American and nine by Scandinavian observers; while eight came from German, three from Australian and one each from French and Swiss sources. It is suggested that the infrequency of milk typhoid in France and Germany is due to the fact that milk is rarely used in

its raw state on the continent of Europe. To prevent loss under the restrictions necessary during the prevalence of infectious disease on a farm the utilization of the milk may be authorized for butter production after proper sterilization under the direction of the health board. The bottles for delivery should be cleansed by steam or a boiling solution of caustic soda, with subsequent washing in sterilized water. They should be closed with patent stoppers and properly labeled for specification of contents and identification of dealers. The retailer should be registered and be required to furnish a list of customers; and the names of the latter should be arranged on the index card system at the health office so that the simultaneous occurrence of infectious disease in families supplied by the same dairy or dealer may the more readily be discovered.

The needs of Washington city gave origin to this valuable report, which will be published in the report of the Health Officer of the District of Columbia; but there are few cities in the United States to which it will not give matter for consideration.

THE BROWN-SEQUARD METHOD OF TESTICULAR EXTRACT THERAPY.

The Brown-Séquardian theory of the tonic action of testicular extract has probably passed into the category of exploded fads in the opinion of at least the majority of the medical profession. It is a matter therefore of some interest when we see it brought forward again in a couple of scientific papers that make up nearly the whole of the latest issue of *Pflueger's Archiv*, and supported to a very considerable extent by physiologic experimental proofs. DR. OSKAR ZOTH and DR. FRITZ PREGL, of the physiologic institute of Graz, publish the results of ergographic (*i.e.*, dynamographic) investigations on the action of orchic extract in bodily fatigue and capacity, in which they find that, combined with exercise, the daily injections of this substance produce a very decided tonic effect, increasing the capacity for work considerably above that which would follow the exercise alone. This effect, moreover, was enduring and lasted for a considerable period after the discontinuance of the injections, and that it might, in short, be described as "tonic, eutrophic, and dynamogenic" in its effects on the system. DR. PREGL's experiments, moreover, were directed largely to the exclusion of the influence of suggestion, to which these effects had been referred by FORD, and that of the glycerin which had served as the excipient, both of which influences he concludes from his investigations can be considered as out of the question as causes of the phenomena.

DR. ZOTH suggests as a practical test, the employment of these injections by athletes and the observation of their effects. So far this does not seem to have been seriously carried out, and the experiment is worth a trial by trainers who might in this way add

something to our physiologic knowledge. A contribution of this kind from CORBETT, MAHER or FITZSIMMONS, would not, of course, elevate their occupation to the level of physiologic experiment, but would, perhaps, enable us to extract a little utility from what has at present not a single redeeming feature.

Another important collateral point is that of the value of the ovaries and testicles to the system otherwise than as simply organs of reproduction. If the injection of heterogeneous orchic extract has a direct tonic effect, what shall be the effect of the loss of the natural secretion by removal of the organ. This suggestion has, however, been already amply discussed in times past, but each new testimony to the truth, partial though it may be, of BROWN-SEQUARD's theory revives it, and its practical applications in surgery are numerous enough to give it at all times an interest. The question as to the possible effect of the ovary corresponding to that of the male gland has been discussed by VARIOT and others, and may be considered, as still, to some extent, open to discussion.

At all events, we can not say, with our present knowledge and the additions to it that are offered by investigations such as those here alluded to, as well as those of comparatively recent date by D'ARSONVAL, and others, that the subject is scientifically defunct, or that it has no standing in practical therapeutics with other methods and forms of serotherapy. Nor can we attribute, in the light of these latest investigations, the apparent beneficial effects of this method altogether to the influence of suggestion, as is done by FORD.

UPON GENERAL INFECTION BY THE BACILLUS PYOCYANEUS IN CHILDREN.

The bacillus pyocyaneus, obtained primarily as a contamination of pus in wounds, though definitely pathogenic for certain lower animals, notably rabbits, has but rarely been found as a primary cause of disease in man. Certain cases described by WILLIAMS and CAMERON (*Journal of Pathology and Bacteriology*, V. III, No. 4) being, beyond doubt, of this nature are therefore of more than usual interest. The three cases described seem to be the only ones recorded in which bacillus pyocyaneus has been found alone. There are many instances in which it has occurred in cases of septic infection in association with other microorganisms. The bacillus was found by these investigators in young marasmic children presenting a train of symptoms of emaciation, diarrhea, fever, muscular disorders, albuminuria and hemorrhages—the first and the last being the most prominent—indicating that the bacillus is distinctly pathogenic at an early age. How the disease originated, by what channel it gained entrance into the organism, is a matter of uncertainty. The authors refer to cutaneous lesions as a possible portal of entry, but such

lesions were not noted in any of these cases. The alimentary tract may have been the point of invasion. In two cases the bacillus was discovered in the contents of the small intestine. Signs of gastro-intestinal disturbance were among the first symptoms observed.

A careful bacteriologic examination of all cases of so-called "infantile marasmus" may demonstrate the distribution of this microörganism to be much more wide-spread and much more disastrous in early life than is generally believed.

"A GENERAL PRACTITIONER," OR ALL FOR MERCY'S SAKE.

As long ago as in the issue of this JOURNAL for Oct. 13, 1894, the promising merits of IAN MACLAREN, the now popular story-teller, were recognized. We there spoke of MACLAREN'S "A General Practitioner," as "a classic of its kind," although it was far from being in classic dress at that time; it was then to be found only in a penny paper of London, called the *British Weekly*. Since that time, the features of the Highland country doctor, DR. WEELUM MACLURE, have been made known all the world round in the "Bonnie Brier Bush" stories. And his physiognomy is everywhere recognized as that of one of the sturdiest and noblest medical characters that have ever appeared in fiction. If there is anywhere in fiction a more worthy, admirable and attractive personage than DR. MACLURE of Drumtochty, we will be thankful to have him pointed out to us. As his portrait has not, so far as we know, been seen in any medical gallery, we will here give space to a sketch taken from the earliest publication by MACLAREN:

"A tall, gaunt, loosely made man, without an ounce of superfluous flesh on his body, his face burned to a dark brick color by constant exposure to the weather, red hair and beard turning gray, honest blue eyes that look you ever in the face, huge hands with wrist bones like the shank of a ham, and a voice that hurled his salutations across his two fields, he suggested the moor rather than the drawing-room. But what a clever hand it was in an operation, as delicate as a woman's, and what a kindly voice it was in the humble room where the shepherd's wife was weeping by her man's bedside. He was 'ill pitten thegither' to begin with, but many of his physical defects were the penalty of his work, and endeared him to the glen in which he lived. That ugly scar that cut into his right eyebrow and gave him such a sinister expression, was got one night. His mare Jess slipped on the ice and laid him insensible eight miles from home. His form marked the big snow-storm in the fifties, when his horse missed the road in Glen Urtach, and they both rolled together in the drift. MACLURE escaped with a broken leg and three ribs, but he never walked like other men again. He could not swing himself into the saddle without making two attempts and holding Jess's mane. Neither can you 'warstle' through the peat bogs and snow drifts for forty winters without a touch of rheumatism. But they were honorable scars, and for such risks of life men get the Victoria Cross in other fields. MACLURE got nothing but the secret affection of the glen, which knew that no one had ever done one-tenth as much for it as this ungainly, twisted, battered figure, and I have seen a Drumtochty face soften at the sight of MACLURE limping to his horse."

The thing particularly interesting to medical men about the whole matter, is the claim made by the author, IAN MACLAREN, that his hero has been drawn from life, or rather, from the lives of several. In an address delivered before the Liverpool Medical Institute, he said:

"I am called upon to answer a question that has been often and fairly asked, Was there ever a doctor so self-forgetful and utterly Christian as WILLIAM MACLURE? To which I am proud to reply: On my conscience, not one man but many in Scotland and in the south country; I will dare to prophesy, also across the sea. It has been one man's good fortune to know four country doctors, not one of whom was without his faults—WEELUM was not perfect—but who, each one of them, might have sat for my hero. Three are now resting from their labors, and the fourth, if he should see these lines, would never have identified himself. Then I desire to thank my readers, and chiefly the medical profession, for the reception given to the doctor of Drumtochty. For many years I have desired to pay some tribute to a class whose services to the community at large are known to every countryman; but after the tale had gone forth my heart failed. For it might have been despised for the little grace of letters in the style, and because of the outward roughness of the man. But neither his biographer nor his circumstances have been able to obscure MACLURE, who has himself won all honest hearts and received afresh the recognition of his more distinguished brethren. From all parts of the English-speaking world letters have come in commendation of WILLIAM MACLURE, and many were from doctors who have received new courage. It is more honor than a new writer could ever have deserved, to receive the approbation of a profession whose charity puts us all to shame."

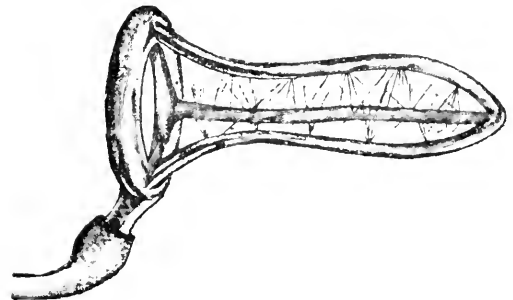
THE ATLANTA TRIP.

There is but one official special train from Chicago to Atlanta, and tickets should be purchased via the "Big Four" route. We have heard that one physician has sent circulars urging members to go with him by another line. The members will please remember that by patronizing the JOURNAL special they will have extra accommodations. The President, Board of Trustees, the Treasurer and other officers will be on board the JOURNAL special.

NEW INSTRUMENTS.

HOT WATER RECTAL SYRINGE.

Dr. Budin, of Paris, uses in his practice the little instrument

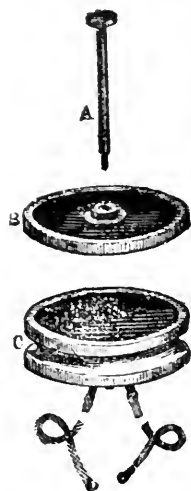


shown in the cut, to apply hot water in the treatment of hemorrhoids. It is all hollow, the base circle $2\frac{1}{2}$ c. in diameter, and the three curved branches meeting 5 c. above it. The

water enters through a tube fastened to some receptacle above, and sprays the hemorrhoids through a series of small openings in the branches. The olive shape given to the instrument is to facilitate its entrance in the anus, where the sphincter holds it in place. If the hot water causes pain to the surrounding parts he has the patient placed in a bath, so that the water mixes at once with some at a lower temperature as it runs out of the anus.—*Revue Internat. de Méd. et de Chir.*, January 25.

THE PHONENDOSCOPE.

This instrument is claimed by its inventors, Bazzi and Bianchi, to render perceptible all the normal and morbid sounds in the body, far more distinctly than the ordinary stethoscope. It renders audible the sounds made by the fetus, by the circulation, the muscles, etc., and also locates displaced organs by the noises made by their contents. It resembles a watch in appearance, and the two ear tubes shown in the cut can be multiplied indefinitely, so that several can be listening at the same time. In ausculting a large surface, the disc *B* is simply placed upon it, and the tubes placed in operator's ears. The tube *A*, is inserted into this disc when it is desired to circumscribe the auscultation. The contour of an organ can be accurately determined by the sound made by its contents through the tube, as the operator lightly manipulates it with his fingers.—*Journal de Méd. de Paris*, January 26.



PUBLIC HEALTH.

The Sanitary Advantages of Employment of Criminals.—The *Medical Examiner* states that the New York Medical Association, through Dr. Austin Flint, chairman of the Committee on Criminology "has sent out a circular to the profession urging its influence and coöperation in the passage of a law for the employment of criminals in prisons, on the ground that idleness leads to discontent, criminal speculations and propensities, and finally, instead of correcting the prisoner, it makes him more confirmed in his hatred of organized society when he leaves prison walls than when he entered. A copy of the 'concurrent resolution' which passed the legislature last year is inclosed. It must be reënacted at this session before it comes to a popular vote, as it changes a provision of the recently adopted constitution. It should have the unanimous support of the medical profession of this State."

Request for Information Regarding Aerial Convection of Variola.—Dr. Reginald Dudfield, the well-known Medical Officer of Health for Paddington, writes to the *Public Health*, London, seeking for information on the above subject, both from home and foreign sources. The question is a highly important one and some of our American sanitarians may be led to comply with the request conveyed in the following letter: "I shall be greatly obliged to you if you will allow me to appeal to all medical officers of health for information on the subject of 'Aerial Infection' of smallpox. I am seeking for cases that have come to their knowledge within recent years, and shall be glad of any references to published facts. I shall especially welcome information from those in charge of smallpox hospitals. I have not been able to discover any literature on the subject giving any account of similar spread of infection in connection with hospitals in foreign countries. Perhaps some of your readers may be able to give me references hereon? I am, sir, yours faithfully, REGINALD DUDFIELD."

Death by Lightning. The *Medical Examiner* has collected the statistics as to deaths by lightning, as follows: "For the four years 1890-93, according to the weather bureau, the number of deaths by lightning were 784, or an average of 196 a year. According to Mr. H. F. Kretzer, of St. Louis, Mo., for the five years 1883-87, there were 1,030 deaths by lightning, or an average of 206 per year. The work of lightning stroke is five times greater in the country than in the city. There is only one record to show what proportion of persons struck are killed outright, and that indicates that, out of 212, 74 were killed. Prof. McAdie thinks, therefore, that efforts to resuscitate should not cease till after the lapse of over an hour. Lightning brings about death by suspending animation through a paralysis of the respiratory centers. Stimulate the respiration, therefore, by the usual methods of artificial respiration, with or without the introduction of ordinary air, or of oxygen, or by means of the double bellows of Dr. Gibson."

Health Reports. The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, February 15 to 22, 11 cases, 8 deaths.

Michigan: Greenbush Township, Ionia, Imlay Township, Riga Township, Saginaw, February 15 to 22, smallpox reported.

SMALLPOX—FOREIGN.

Antwerp, February 1 to 8, 2 cases, 1 death.

Cardiff, February 8 to 15, 3 cases.

Madras, January 17 to 24, 1 death.

Madrid, January 28 to February 11, 12 deaths.

Odessa, February 1 to 8, 3 cases.

Prague, February 1 to 8, 14 cases.

Rheims, February 8 to 15, 1 case.

St. Petersburg, February 1 to 8, 13 cases, 5 deaths.

Swansea, February 1 to 15, 1 case, 1 death.

Tuxpan, January 6 to February 1, 1 death.

Pernambuco, January 1 to 31, 203 cases, 52 deaths.

CHOLERA—FOREIGN.

Bombay, January 21 to 28, 5 deaths.

Calcutta, January 11 to 18, 48 deaths.

St. Petersburg, February 1 to 8, 7 cases, 5 deaths.

YELLOW FEVER—FOREIGN.

Cienfuego, February 16 to 23, 1 death.

Havana, February 13 to 20, 9 cases, 2 deaths.

Sagua la Grande, February 8 to 15, 5 cases.

San Juan, P. R. December 20 to January 17, 105 cases, 24 deaths.

Pernambuco, January 1 to 31, 5 cases, 3 deaths.

NECROLOGY.

J. HARRISON FORBES, M.D., of Brooklyn, died at St. Catherine's Hospital, that city, on February 6, from chronic cystitis culminating in acute nephritis. He was a graduate of the New York University Medical Department in the class of 1857, so that he had been in the profession nearly forty years. He was married, and his age, at the time of decease, was 76 years.

DR. DAVID W. MAULL one of the best known physicians of the State, died at his home in Wilmington, Del., February 22. Dr. Maull had been in failing health for some time. He was 65 years old, a native of Georgetown, Sussex County, and a son of Dr. George W. Maull.

Dr. Maull was educated in the schools of his native town, and was graduated from the Jefferson Medical College in 1853. He then served as surgeon on a steamer plying between Liverpool and Philadelphia. When the war broke out he enlisted in Company G, Delaware Volunteers and became a captain. After serving out his time he re-enlisted in Company E, and then became a surgeon. He was in nearly all the battles of the Army of the Potomac. He was promoted to be surgeon-in-chief of the Second Division of the Second Army Corps. After the war he settled as a practicing physician in Wilmington.

where he remained until his death. For six years he was the city vaccine physician. Dr. Maull contributed frequently to the medical journals. He also wrote an interesting memoir of General Thomas A. Smyth. In 1870 Dr. Maull was married to Miss Mary K. Buck. His wife and two children survive him.

MISCELLANY.

Charitable Bequests.—Under the will of Mrs. Mary Graydon, of New York, several charitable institutions are remembered with gifts amounting to \$8,000.

Population of Rio de Janeiro.—According to the *Brazil-Medico*, the population of Rio de Janeiro is now 600,000. For the first fortnight in December there were 542 births and 680 deaths reported, with the usual overwhelming percentage of deaths from tuberculosis that prevails everywhere nowadays.

The "Medical Faculty" Society at Harvard University.—The above named society is composed of undergraduates, many of whom are aspirants for a livelihood in the legal profession and a few in the ministry, whose constitution and by-laws require of them the perpetuation of practical jokes of a sort sufficiently outrageous to merit expulsion from college. How the society came to select so great a misnomer for its title has not been explained.

Amherst College Hospital for Students.—Mr. G. D. Pratt, of Brooklyn, and of the class of 1893 at Amherst College, has given to that institution a fund sufficient for the erection of a hospital for undergraduates. The work will be begun in the coming spring. The members of the Pratt family, which is one not altogether disassociated from the production of illuminating oils, are nearly all the time engaged in devising liberal things for Amherst College.

Roentgen Photograph.—The surgeons of Vienna and Berlin believe that the Roentgen photograph is destined to render inestimable services to surgery. Case after case is reported where unsuspected formations were revealed by the photograph, indicating slight operations which restored patients to health and cured deformities. Half an hour is the shortest exposure possible, and most require an hour. The electric apparatus required is so expensive, \$100 and upward, that few surgeons can use it yet in their private practice.

Music Graphically Recorded.—A simple little apparatus described in full in the *Revue Scient.* iv, 1, registers the energy, duration and form of each finger-touch upon the keys. A rubber tube runs under the keys, connecting with a Marey drum at each end. In studying music each one can read now for himself where he fails and where he succeeds; but the apparatus is especially recommended for psychologic examinations, where the patient is being examined without his or her knowledge.—*Centralblatt f. Phys.*, Jan. 25, 1896.

Einhorn's Stomach Register.—The inventor calls it a gastrokinesograph, or gastrograph. It consists of a small platinum ball moving freely inside a hollow ball a trifle larger. The patient swallows them, and then every motion, contraction, expansion, etc., makes the inner ball move also, which brings it in contact with wires fastened inside the large ball, thus opening and closing an electric circuit. There is less movement in the fasting than in the full stomach; dilation of the stomach and cicatricial stenosis of the pylorus seem to induce more violent mechanical action, while there is very little in ulcer ventriculi.—*Centralblatt für Phys.*, Jan. 25, 1896.

Anagyrin Localized in the Grain.—The *anagryis fetula* produces an alkaloid called anagyrin, which is derived from its grain-like fruit. Guérin has been making a special study of it recently and announces that combined with iodid or iodized potassium it produces a granulated precipitate, soluble in hyposulphite of soda. Combined with perchlorid of iron, a yellow-orange coloration is produced. With iodid of bismuth

and potassium, a reddish-brown precipitate is formed; with iodid of mercury and potassium, a yellowish-white precipitate, and with picric acid, a yellowish precipitate. He queries whether it may not be identifiable with cytisin, like ulexin, sophorin and baptitoxin.

Imaginary Dyspepsia. The *Gaz. degli Osp. e delle Chir.* of January 25, describes a curious case of a robust peasant woman suddenly attacked with acute dyspepsia, wasting away from actual starvation, until she entered the hospital for treatment, almost a skeleton. Examination failed to reveal any cause for gastric disturbance until the physicians became convinced it was an imaginary trouble, and treating her accordingly: she was soon discharged cured. Her idea that she could not digest did actually prevent her food from assimilating. When she left, her daily rations were twenty eggs and a liter and a half of milk, which she digested perfectly.

City Civil Service Notice.—The City Civil Service Commission will hold an examination in the Council Chambers Saturday, March 14, 1896, at 1:30 P.M., for the position of inspector in the City Health Department. All candidates must be graduates in medicine and present evidence of recognition by the Illinois State Board of Health. Applications in proper form must be filed at the office of the City Civil Service Commission, Chicago, not later than Wednesday, March 11, at 12 o'clock.

WM. CUTHBERTSON,
M. L. GOODKIND,
R. A. EDWARDS,
S. C. PLUMMER,
JOSEPH R. HAWLEY.

Strychnin Dispensed for Phenacetin; Heavy Penalty.—The London correspondent of the *American Practitioner and News* writes of a remarkably heavy penalty administered in an English court, following a death due to an error in dispensing. He says: "A short time ago a Birmingham manufacturer died from taking strychnin supplied to him by a retail chemist for phenacetin. It was shown at the time that the retail chemist supplied only that which had been furnished to him by the wholesale chemist. At the present Birmingham Assizes an action was entered by the widow of the deceased to recover damages, both the wholesale firm and the retailer being sued. The plaintiff's case was concluded on the second day of the trial, when counsel stated that terms had been arranged. The record was withdrawn, the wholesale chemists paying plaintiff about \$14,000 and costs, the retailer paying his own costs. The representative of the wholesale chemists explained that how the mistake arose was a mystery, and the defendants desired to act honorably. The judge expressed his satisfaction with the terms stated."

Provisions for Treatment of Paupers.—Several points of considerable importance to physicians have been decided by the supreme judicial court of Maine, in the case of Goodrich vs. City of Waterville. This decision was rendered May 21, 1895, but has just been reported in the advance sheets of 33 "Atlantic Reporter," 659. The court holds that all persons acting under the employment of town or city officers must take notice at their peril of the extent of the authority of such officers. When a town or city has already provided for the medical treatment of its sick paupers by the election of a town or city physician, and he is ready and willing and competent to attend a sick pauper, so that no necessity exists for employing any other, it is undoubtedly the duty of the overseers of the poor to call him when one of the paupers under their care is sick and in need of medical treatment. In such a case the overseers have no authority to employ any other; and, if others are employed, they are chargeable with notice that they will have no right to call upon the town or city to compensate them for their services. Furthermore, it being provided by statute in Maine (Rev. St. c. 3, sec. 36) that "no member of a city government shall be interested, directly or indirectly, in any contract

entered into by such government while he is a member thereof," the court holds that, one of the plaintiffs being a member of the city council, no action can be maintained to recover for medical services rendered by his firm to a pauper of his city. It is a contract in which a member of the city government is directly interested, and for that reason is void by the statute.

Continuances for Sickness. In a prosecution for a felony, the defendant applied for a continuance on the ground of his sickness and disability. The good faith of the application was challenged by the prosecution, and on its request a committee of physicians was appointed by the court to visit the defendant and report upon his condition, which they did; and they were examined on the subject orally in open court. Afterward another committee of physicians was appointed to treat the defendant until ready for trial, and to see that nothing was given him except under their direction, and they took charge of the defendant accordingly for some days, when, the case being again called, another application for continuance was made, which, upon hearing evidence, the court overruled, finding that the defendant was able to be placed upon trial, and was in a fit and suitable condition physically to be present. On appeal, the supreme court of Kansas holds, *State vs. Rogers*, decided January 11, 1896, that there was no abuse of discretion in overruling the application for a continuance.

Comparative Frequency of Fractures as Shown by U. S. Marine-Hospital Reports (1878 to 1894 inclusive).—Five thousand four hundred and fifty-six fractures were distributed as follows:

Vault of skull.	131	Fibula (alone).	382
Base of skull.	43	Bones of foot (not specified). . .	147
Facial bones.	239	Cervix femoris.	12
Inferior maxilla.	65	Humerus.	205
Hyoid bone.	4	Bones of forearm.	728
Sternum.	11	Radius (alone).	114
Clavicle.	305	Ulna (alone).	55
Scapula.	61	Bones of hand (including) carpal, metacarpal and phalanges. . .	499
Vertebrae.	40	Bones of foot (including) tarsus, metatarsus and phalanges. . .	41
Ribs.	965	Bones of the leg, together and singly.	1,251
Pelvic bones (not specified). . .	43	Bones of forearm, together and singly.	897
Coccyx.	1	Bones of foot, specified and not specified.	188
Sacrum.	1		
Femur.	411		
Neck of femur.	29		
Patella.	113		
Both bones of leg.	539		
Tibia (alone).	330		

Of 570 fractures, occurring after 1886, the bones of forearm were specified as follows: Radius, 244; ulna, 139; both bones of forearm, 187.

Of 112 cases, recorded after 1886: Metatarsus, 47; phalanges, 39, tarsus, 26.

Deaths from fractures and complications:

Vault of skull.	44	Pelvis.	5
Base of skull.	23	Humerus.	5
Facial bones.	3	Forearm.	6
Hyoid bones.	1	Carpus.	1
Clavicle.	3	Femur.	20
Ribs.	7	Tibia.	2
Ribs and spine.	1	Leg, both bones.	19
Spine.	15	Metatarsus.	1
Scapula.	1		
		Total.	154

Acute Fatal Dilatation of the Stomach. Boas distinguishes two forms of acute gastric atony, the first caused by the overcrowding the stomach and the consequent putrefaction and formation of gases; and the second produced by some acute disturbance in the stomach musculature. Bamberger asserts that gastric atony is very apt to follow or accompany diseases like typhus, cholera, puerperal fever, chlorosis and tuberculosis. But this gradual degeneration is more a myasthenic atony than a dilatatio ventriculi. Albu writes to the *Deutsche Med. Wochensh.* of February 13, quoting the above and other authorities, and then describes the case of a young man who came to the hospital with a typical scarlet fever, from which he was recovering nicely when suddenly, on the eleventh day, with no errors in diet, he was taken with vomiting, pain and distention of the stomach, which swelled and puffed up the abdomen with it, accompanied by apathy, coma and then delirium and death. No peristaltic motion was visible, and the vomiting ceased when stomach had attained its largest dimen-

sions. Science has only recently learned to recognize the toxic nature of the paralysis which occurs in the different parts of the nervous system after various acute infective diseases. The influence of some toxic substance or substances on the nerves which communicate with the musculature of the stomach is the writer's conclusion from the case above.

Bravery of a Medical Man. The *Medical Press and Circular* for February 5 has the following account of the brave action of a Welsh physician:

"The late disastrous explosion at Tylorstown, South Wales, was the occasion of much courageous rescue work. Among other noteworthy incidents of the kind, we are pleased to chronicle the bravery of Dr. Thomas Morris, the medical officer of the collieries where the disaster occurred. As soon as the state of the gearing permitted the descent of the rescue party, the doctor went down and spent the whole day underground, where he did much service among the injured survivors. In the afternoon he was summoned to a wounded man who lay a mile and a quarter along one of the workings. To reach him the doctor had to scramble and struggle as best he could through many parts of the wrecked workings. The injured man was unconscious, and was kept alive by artificial respiration, conducted at intervals on the wearisome and dangerous journey back to the pit's mouth. The workmen of the district at a local meeting passed a resolution thanking Dr. Morris for the noble efforts he had made in the work of exploration, and in saving the life of the collier Phillips. This kind of heroism is less conspicuous but not a whit the less sterling than deeds of bravery done upon the battlefield."

Liability of Charitable Corporations for Negligence of Servants.—Under authority of the legislature of the State of Connecticut, the Waterbury Hospital was organized "for the purpose of furnishing medical and surgical care, nurses, medicines and food to patients suffering from disease or from injuries." It has no capital stock, and its members can derive no profit from the corporation. These features, the supreme court of errors of the State says, clearly indicate a "charitable corporation." To this hospital Hugh Hearn applied for treatment of a fractured kneecap. He subsequently sued it for damages for injuries alleged to have been caused by the unskillful and negligent treatment which he received at the hospital. (*Hearn vs. Waterbury Hospital*.) Judgment was rendered for the defendant, which the above court affirms. Its decision, though handed down April 5, 1895, has but just been made accessible in the advance sheets of 33 *"Atlantic Reporter,"* 595, and is of unusual interest, not only because it is the first decision of the question in that State, but because of the exceptional length at which the court discusses it. The result is made to depend on the one question of liability of such a hospital for the negligence of its servants. The court thinks the law does not justify the extension of the doctrine of respondeat superior, making the master answer, to such a case as this. It deems it enough to say that a charitable corporation of this character, whatever may be the principle that controls its liability for corporate neglect in the performance of a corporate duty, is not liable, on grounds of public policy, for injuries caused by personal wrongful neglect in the performance of his duty by a servant whom it has selected with due care; but in such case the servant is alone responsible for his own wrong.

Autodigestion of the Human Pancreas. Chiari (*Archiv für Heilkunde*, B. xvii, 1896) publishes a study of autodigestion of the pancreas and reaches the conclusion that very often there occurs a post-mortal digestion or necrosis in the pancreas; this may also occur during the agony, and even, as described by Chiari in two cases, during the full bloom of life in which the autodigestion showed itself in the form of local necrosis of the pancreas around which a reactive chronic interstitial pancreatitis developed. These areas were free from bacteria. The conditions in the pancreas would consequently be similar to those in the stomach in which we recognize a post-mortal, an intra-agonal, and are intra-vital self-digestion. Several authors have already referred to possibility of the pancreatic

tissue digesting itself. In 1879 Klebs expressed himself as believing that the cause of hemorrhages into the pancreas might be found in the corrosive action of its secretions. Gussenbauer, Salzer and Tilger all refer to the likelihood that this process may play an important part in the production of pancreatic cysts. Chiari believes that self-digestion will explain many obscure cases of pancreatic hemorrhage, and of gangrene of the pancreas, the bacteria from the intestinal tract finding a suitable soil in the necrotic pancreatic tissue.

Why does not the pancreas always digest itself? Obstruction to outflow of pancreatic juice does not cause digestion as shown by the experiments of Senn and Heidenhain in which obstruction of duct of Wirsung was artificially produced without direct destruction of the glandular structure. In all probability the cells of the pancreas must first be changed in some way before digestion can occur.

Pustula Maligna followed by Hemorrhagic Septicemia Produced by a Specific Bacillus.—We know for a fact that the anthrax bacillus often prepares a soil for an invasion by another kind of bacillus whose action is usually beneficial. But occasionally the secondary bacilli prove virulently poisonous. Babes and Pop, of Bucharest, describe minutely such a case in the *Deutsche med. Wochenschrift* of January 23. A pustula maligna on a man of 30 was followed by a fatal hemorrhagic inflammation of the jejunum and multiple hemorrhages in lungs, pleura, kidneys, etc., with a notable absence of the anatomic pathologic indications of splenic fever. Bacteriologic tests showed anthrax bacilli present in the carbuncle and nowhere else. Later they disappeared and were replaced by another bacillus which invaded the whole organism and were encountered everywhere at the autopsy. The writers believe that this second bacillus belongs to a great group of saprogenic bacilli which includes many of the better known abdominal and putrefaction-producing bacteria. The cultures showed that it resembles the bacillus coli and the typhoid bacillus, but is usually more slender, and differs from them also by the way in which it spreads out on agar agar in a thin, homogeneous transparent layer, with long finger-like projections on the borders, by its liquefaction of gelatin, by its swelling and blister-like formations, by its being sluggishly motile and also by its extensive formation of by-products. Different animals inoculated with this virulent bacillus furnished interesting experiences which are described in detail, all of them showing the same peculiar tendency to hemorrhages.

Elsner's Method of Early Bacteriologic Diagnosis of Typhoid Fever.—Elsner announces the discovery of a means to distinguish the typhoid bacillus in the evacuations and differentiate it from the bacillus coli in twenty-four to forty-eight hours. He experimented with bouillon made from fish, from reptiles, beets and all kinds of vegetables, until he found a medium that will only make cultures of the typhoid bacillus and bacillus coli, and these cultures present such characteristics that they can be differentiated with the naked eye. His medium is prepared as follows: He boils gelatin with a decoction of potato and adds a triturated solution of soda in sufficient quantity to produce the same degree of acidity as in Holtz's medium. This he filters and sterilizes. The liquid is then poured into Erlenmeyer tubes and completed by the addition of iodid of potassium, in a ratio of 1 to 100. The culture is then made and poured out on plates. In twenty-four hours there are colonies of bacilli coli, and in forty-eight, the typhoid colonies develop, easily recognized as small transparent points, finely granulated, in the midst of the luxuriant brownish growth of the bacilli coli. This medium is exceedingly susceptible to cultures, experiments showing that the typhoid colonies would develop when the liquid only contained one part culture to eight thousand million parts liquid. Other scientists who have experimented with this new medium find it all that Elsner claims.

They also call attention to the fact that the typhoid bacilli diminish in numbers as convalescence progresses, and if their numbers keep up, a relapse may be expected. — *Revue Internal de Méd. et de Chir.*, January 25.

To Ward off Malaria. Since the disastrous Madagascar expedition, the French have been studying how to fight malaria in the countries where it prevails. The conclusions of a recent treatise on the subject by Dr. Maurel, are: 1. To administer quinin in preventive doses, .75 to 1 gram, at intervals of four or five days, is considered sufficient. 2. As the germs are in the atmosphere and are breathed into the lungs, troops must be commanded to keep their mouths shut when marching, as breathing air filtered through the nose, is much less dangerous. 3. Malarial districts, marshes, etc., must be avoided and habitations located 200 to 300 meters above them where possible. No work should be permitted in the heat of the day. Houses should be surrounded with trees at least their own height, and windows should be glazed to keep out the evening dew. Exposure to this dew must be strictly avoided as far as possible. 4. Europeans must not attempt to cultivate the ground in the intertropical regions. It is death to them, but does not injure negroes or other natives, who should be secured for this purpose. If Europeans respect this law of nature, their malarial attacks are much less frequent and rarely fatal. Even in hotbeds of malaria, Europeans can conduct a campaign or carry on business enterprises if they obey the above regulations. Drainage, etc., will in time partially, if not wholly, reclaim the most malarial countries, but the Caucasian must always bear in mind that he can direct, oversee, practice a profession, fight, paint or do anything he chooses except till the soil. This treatise will soon be followed by another on preventive therapeutics. — *Bulletin of the Acad. de Méd.*, January 21.

Tuberculosis of Parrots. Straus, whose extensive researches upon tuberculosis in various animals as well as in man is well known, says that tuberculosis in the parrot presents several features which differ from those peculiar to the classical form of avian tuberculous disease.

Tuberculosis is not uncommon in parrots. Froehner found that in 154 parrots treated at the veterinary school in Berlin 56 were proven by demonstration of the bacilli to have tuberculosis. Cadiot found eleven out of thirty-five parrots to have tuberculous lesions. Cadiot made inoculations with the tuberculous material from the parrot into guinea pigs and there followed an eruption of general tuberculosis. In the parrot the disease is characterized by the frequent involvement of the skin and of the mucous orifices, whereas in fowls tuberculosis prefers the digestive tract and its adnexa. The tuberculous lesions of the parrot consist of grayish or brownish tumors, often having a horny appearance. The swellings may be multiple. The skin of the head is the seat of predilection. The internal organs are involved only occasionally, the lungs oftener than the liver and the intestines. The parrot, living in a state of captivity, not coming in contact with other birds, but being in close contact with human beings, is most likely infected with the products of human tuberculosis. It would consequently be of interest to determine the exact nature of tuberculosis in parrots, whether it is simply the result of transplantation of human tuberculosis or presents the characters of ordinary avian tuberculous disease. Straus examined two cases of parrot tuberculosis with this object in view and found that the disease presented exactly the same features as tuberculosis in man. This was shown by the result of inoculation into guinea pigs in which it produced the lesions that follow the introduction of human tuberculous products and those peculiar to the avian. Inoculations of the lesions in parrots into the peritoneal cavity of fowls were without effect. It consequently seems clear that it is through its contact with man that the parrot becomes tuberculous. When passed through a bird like the parrot human tuberculosis is not changed into avian but retains its fundamental characteristics.

Langendorff's New Method of Keeping the Hearts of Animals alive for Scientific Investigation. This method does not supersede Martin's method, but supplements it, with especial reference to the study of the cardiac muscles, their innervation, etc. The animal (dog, cat, rabbit) is killed by bleeding. The blood is defibrinated and filtered into the injecting flask, which is kept at the temperature of the body. Then the heart is cut out and a tube inserted in the rising part of the aorta which is fed from the flask of blood. The heart is then put in a warm place and blood forced in by pressure until the semilunar valves close and it is impossible to force open the left chamber. The heart stands upright on a special standard contrived for it, with a hook in the apex to hold it straight. The blood to be injected must flow at a certain pressure, equally, and for a long time, which requires some ingenuity to accomplish. But as soon as it begins to flow through the coronary arteries the heart begins to pulsate as in life. Haller's theory that it is necessary to have blood flowing through the chambers to produce pulsation, is proved erroneous by these experiments, in which they are empty of blood. The heart can be made to pulsate in this way hours after death, or until the heart muscle becomes too stiff. Langendorff noticed: 1. That poisons, like muscarin, atropin and the salts of potash produced their usual effect on the heart. 2. That, like the frog's heart, the pulsations were more rapid the warmer the temperature. 3. That the effect of tetanizing is complete: only in a very few cases did the vagus fail to respond. 4. As the action of the semilunar valves ceases, the heart makes but one sound, which coincides with the systole of the chambers. 5. The same as with the frog's heart the pulsations will cease if salt solution is made to flow through the arteries instead of blood. But a renewal of the supply of blood will start the pulsations afresh even if the heart seems almost motionless. 6. Electric shocks produce a refractory phase the same as with a frog's heart; tetanizing produces "waves" as in living animals. 7. These experiments also contradict the theories of Bezold, Cohnheim, Schulthess and Reclberg that obstruction of the coronary produces "waves" and then stops the heart altogether. Stoppage of the circulation never produces "waves," and a fresh supply of blood introduced always starts up the heart again at once.—*Centralbl. für Phys.*, Jan. 25, 1896.

Sale of Business with Agreement not to Practice Medicine. A practicing physician in Anniston, Ala., sold, for \$125, his horse, buggy, and medical practice, agreeing as a part of the contract, not to practice his profession in that city for two years, and making the further stipulation that in case of failure to comply with the agreement he would pay, as a forfeiture, the sum of \$200. In a decision rendered Dec. 17, 1895, the supreme court of Alabama, *McCurry vs. Gibson*, upholds this contract. It says that it is settled by the authorities that the purchase by one party of the property and good will of the business of another furnishes a sufficient consideration for an agreement by the latter, in enhancement of the value of the good will, not to compete with him in the conduct of the business. The rule is the same when a physician sells his property and practice to a professional brother. It was at an early day supposed that the consideration in such cases must be adequate, that is, equal in value to the restraint imposed; but this idea has been exploded. The contract in this case showed upon its face a sufficient consideration, and the court will not assume the task of ascertaining whether the party selling out made a good or a bad bargain. It contained a valid agreement for the payment of \$200, as fixed damages, for its breach. And that stipulation is no barrier in the way of granting relief by injunction, which is a negative specific performance of the contract: the purchaser having his election to sue for damages or to have the agreement performed according to its terms. Neither is it necessary to show that a physician is actually practicing before he can contract for the property and good will of another, nor to show that he had at

that time complied with the legal requirements for practicing medicine at that place. A license is not necessary to making such a contract, especially where it does not appear that an infraction of the law with regard to practicing medicine is contemplated. Furthermore, in Alabama, it would seem that it is not required that a physician have his certificate of qualification recorded in a county to which he removes after it has been issued and once properly recorded.

Doctors Should Attend the Primaries.—At a recent meeting of the Physicians' Club of Chicago, "The Management of the Health Department of Large Cities," was discussed. Dr. Truman W. Miller said: "I do not care to say very much on this subject. I have attended several meetings and have heard discussions, all tending in the same direction, the laudation of each other to the detriment of somebody else. The preceding speakers have called emphatically for *action*. I have heard that call for many years. I have seen none of it. Your Chairman was kind enough to say that I was a practical man. I believe that has been my reputation, and I do not want to lose it. You discuss this subject very freely, but you accomplish nothing. It is the old and oft-repeated story, the ins and the outs. Those that are in try to stay in; those that are out try to get in. Gentlemen, if you ever wish to do anything in this matter, why don't you go at it like men and do it. Take hold of it and do something, instead of having little gatherings of this kind, with a scattering few from different parts of the city. This is a subject that needs to be discussed in the gravest and most careful manner. Devote a little of your time to putting men in these places who are competent to fill them and who are able to do the work wisely and well, and not simply spend the most of your time in trying to get the places yourselves. I speak frankly about this matter. We who are present are too small in number to speak for the entire profession. The medical profession of this city has a voice, and if used in the proper place, we can carry anything in this city without a doubt. But, gentlemen, it is not at the Physicians' Club that we shall succeed in doing it. It is at the places where most of you never go, the primaries and the polls. You do not go there with your friends and neighbors. If you did and performed your duty as citizens, you could sweep every primary in the city. If you will talk with the majority of your friends and neighbors and tell them what you think is right, regarding the health department of a great city like this, and by whom it should be run, you can accomplish a great deal. But do you ever do it? You wait until other men are elected to these positions, then it is too late. Doctors should come out like men, state their position, and enforce it. Look at the community in which we all live. Look at the people you can control: how many votes you can poll in the primary; how many people you can take along with you to carry anything that is worthy of attention. There are other things besides health matters that require attention, but they must be considered altogether. I shall be only too glad to join all of you if you will come together and make a decided stand as to what you are willing to do and what you desire to be done. If we work jointly we can change the election at any time in spite of any program that may be laid out by anyone in this city. It can be overturned at once and carried our way easily. I deprecate discussions which have for their object the criticism of the business man now at the head of the health department as well as his assistants. The important question for us to discuss is, Who shall be their successors? Go to the primaries and vote and try to put men in these positions who can creditably and thoroughly fill them. It will redound far more to your credit to do this than to waste time in fruitless criticism of the present officers of the health department. Interview the candidates for aldermen yourselves, attend the primaries, state clearly your views in the ward clubs of your respective parties, and then you will accomplish what we all desire to see: A thoroughly reorganized health department for Chicago and a competent medical man at its head.

A Medico-Literary Career.—Dr. Talcott Williams, writing for the *Book News*, February, gives an interesting sketch of the career of Dr. Eugene Coleman Savidge, a newly risen luminary in American literature: Dr. Savidge, though hardly more than thirty years of age, has already attained an enviable position in the two distinct yet compatible fields of medicine and letters. Notwithstanding active railroad work, he traveled extensively in America, studied medicine, edited the *Expressman*, a journal published in New York: wrote "Wallingford," a novel, and contributed many descriptive articles to various newspaper syndicates. Resigning from the railroad, with unusually warm tributes from his chief, he went to Philadelphia and wrote the "Gallery of Eminent Men," and also the Pennsylvania names for Appleton's "Encyclopedia of Biography." "The Life and Times of Brewster" followed, and was a signal success; Chief Justice Paxson pronounced it "the best and most interesting book of the kind he had ever read;" the Philadelphia *Ledger* and *Record* stamped it as "a model piece of work," and the New York *Times* and *Tribune* characterized it as "inspiring." With the proceeds of his literary work he completed his medical studies in Paris. Dr. Savidge has achieved distinct success in "The American in Paris," his last book. Says the New York *World*: "'The American in Paris' barely escapes being a great novel and the American novel." It is certainly the best of the year on either side of the Atlantic, not even excepting Zola's 'Lourdes,' or Crawford's 'Casa Braccio.' As a historical novel of our own time, nothing like it for boldness and audacity has ever been printed. Dr. Savidge is one of the most successful of New York's younger gynecologists. He is an accomplished linguist, having taken his degrees in letters and sciences, as also his first doctorate, from the University of France. He was externe at the Charity Hospital, Paris, and subsequently resident gynecologist to Roosevelt Hospital and the Sloane Maternity Hospital of New York, and is now one of visiting gynecologists to Roosevelt Hospital (out department), and has just been elected attending gynecologist to St. Mark's Hospital, New York." Dr. Savidge's earlier journalistic work comprised studies of American localities and peoples, including the Mormons, the Creoles, the Indians, the negroes, miners and frontiersmen, and the vintage and irrigation interests of Southern California—studies which were combined with the quest of business ends for the railroad. His biographical work reaches nearly one hundred biographies, and was undertaken with the specific design of meeting and studying successful American men.

Practical Notes.

Salolized Vaseline.—Salol dissolved in vaselin does not irritate the skin nor inflame diseased tissues, while yet it retains all its healing and antiseptic properties. Colombini recommends the use of it especially on ulcers. —*Nouv. Remèdes*, February 8.

Asafetida in Gynecology.—Warman recommends this drug in the *D. Frauenarzt*, August, 1895, as invaluable in soothing irritation in the uterus, counteracting a tendency to abortion and relieving the frequent constipation and nervousness of pregnant women. —*Nouveaux Remèdes*, February 8.

Total Thermo-cautery of the Uterus.—A Hungarian medical journal describes an operation where the uterus was entirely removed, without the use of scissors or knife or the loss of any blood. A cancerous infection of the uterus rendered these precautions necessary to prevent secondary infection. The ligatures were seized with the hot instruments but were not detached for forty-eight hours. —*Centralbl. für Chir.* January 25.

Pancreatic Cyst and Twisted Kidney.—A pancreatic cyst recently operated upon in Dresden discharged 3500 c.c. of a greenish brown fluid strongly impregnated with cholesterin. In growing it had compressed the kidney $\frac{1}{3}$ to $\frac{1}{4}$ its normal size, and twisted it half around. Complete recovery followed. The opening was made from the right twelfth rib, curving around to near the spina ant. sup. The cyst lay in the intraperitoneal region and was not tapped for several days after opening had been made, to promote adhesions. —*Centralbl. für Chir.*, January 25.

Malarial Eruption.—A woman of 40 was suddenly attacked with a peculiar eruption on the nose, which discharged a serous fluid every morning with a burning sensation, and grew better

toward afternoon. She had been living in a malarious region and had suffered from intermittent pneumonia which only yielded to large doses of quinin. Guided by this, quinin was ordered for the eruption, which had been treated in vain with almost every other known remedy. In forty-eight hours the congestions had ceased and in four days the entire eruption had vanished. —*Ther. Wochenschrift* of January 26.

Pressure Necessary to Absorption.—Hamburger of Utrecht has been making an exhaustive study of the processes of absorption in the tissues with specially prepared apparatus, experimenting on dogs and also with artificially prepared membranes. He announces that there is no absorption if there is no pressure, and that absorption in the intestines is directly dependent upon the pressure. This pressure is produced by respiration, the peristaltic action of the intestines and by the weight of the bowels as they press against each other. —*Centralbl. für Phys.*, January 25.

Guaiaic in Oil as a Local Anesthetic in Optical Operations.—One gram of the guaiaic crystals in 10 grams of sterilized oil, is the proportion recommended by Belencontre, quoted in the *Gazette Médicale de Liège*, February 6. He uses a gram syringe supplied with a platinum needle. This he inserts into the tissue, especially if the lid is to be operated on, carrying it as deep and parallel to the path of the knife. While withdrawing the needle he pushes the piston so as to distribute the oil smoothly and regularly while using the smallest possible amount. Three drops of the oil will suffice in most cases, and Belencontre has never used over fifteen. In severe inflammation, however, the pain of the injection is almost equal to that of the operation. Guaiaic is useful, however, in certain cases, as it produces no general nor local accidents, and can be used on children or where there is cardiac trouble when cocain is counter-indicated.

Malaria Treated with Chlorhydrate of Phenocol.—The *Méd. Obzo-riénie*, 1895, No. 9, reports three cases of malaria, upon which quinin produced no effect, successfully treated with the chlorhydrate of phenocol. In first case fever disappeared after third powder (0.6 gram each) and complete recovery followed the twenty-sixth. Second case, intense neuralgia of the left trigeminal from 8 A.M. till 6 P.M. relieved by two powders and completely cured with twenty-four powders, same dose as above, three powders a day. Third case, a daily hectic fever with such exhaustion that incipient tuberculosis was suspected. No benefit from quinin, arsenic or methylen blue. Fever ended with fourth powder, same dose as above, and complete recovery coincided with twenty-fifth powder, equal in all to fifteen grams chlorhydrate of phenocol.

Creosote in Tuberculosis.—At a recent meeting of the Soc. Méd. des Hopitaux the use of creosote in tuberculosis was discussed, and some members claimed great advantages from its use, while others asserted that the improvement came from the better care and food received by the patient in the hospital, and not from the treatment. All agreed that it did benefit the scrofulous form, and that its use was counterindicated wherever there was fever, dyspepsia, or a tendency to congestions, hemoptysis, or tachycardia. Burlureaux warmly endorsed the use of creosoted oil in all other cases, and in large doses, although he reported at the same time a pseudo-meningitic accident following injections amounting to 9.30 grams in one patient. —*Gaz. Méd. de Liège*, February 6.

Trephining a Suborbital Abscess.—A delicate and interesting operation is Michel's new method of operating upon a suborbital abscess where the frontal sinus is suppurating. Jurass treats it with a naso-frontal catheter, Schoeffer perforates the bone above, and Panas trephines the orbit. But Michel trephines the frontal wall of the sinus. He applies a trephining crown 5 mm. in size, at a tangent to the two sides of the angle formed by the vertical median line and the line of the two cavities. This opens a larger space and has the least disfigure-

ing results. The pus cavity is drained through the naso-frontal passage, according to Guillemin, or by Rollet's method of using the suborbital fistula. — *Province Médicale*, January 11.

Nephrotomy for Complications of Cancer of the Uterus. A writer in the *Centralblatt für Chirurgie*, January 26, questions the advisability of prolonging the life and sufferings of persons afflicted with inoperable cancer of the uterus, when the compression causes occlusion of the ureter, by operating for the latter complication. Jayle and Labbé describe three cases of this kind treated by simple nephrotomy and keeping the kidney fistula open. Patients lived afterward 19, 73 and 106 days. Their ages were from 32 to 43 years. The first died from suppuration of the kidneys; the second succumbed to cachexia. Le Dentu records a similar operation, but patient died in thirteen days. Picqué treated a patient in this way, who survived fifteen weeks. — *Ann. de Gyn.*, September, 1895.

Lupus and Syphilis Differentiated. Lupus usually develops on the face and hands but occasionally it is found on the body. One case described in the *Gazette Médicale de Liège*, Feb. 6, 1896, had two large patches each side of the spinal column, which were treated by scraping with Volkmann's curette and with Vidal's for the smaller humps, after a general and local anesthetic had been administered, and then carefully thermocauterized and dressed with iodoform and sublimated gauze. The surface healed with healthy granulations and recovery ensued. The chronic character of lupus is a guide in differentiating it from syphilis. It is not always easy to differentiate ulcer of the tongue. It can be traumatic, cancerous, tuberculous or syphilitic. The history of the case is a guide; the cancerous does not appear before 40; the tuberculous is torpid and only appears in latest stages of disease. Although there may be no other evidences of syphilis, yet it is safe to treat it as such if the above points exclude the other causes. Daily touching with a 10 per cent. solution of chromic acid (Dühring) is an efficient supplement to other treatment.

New Method of Puncturing and Opening the Pericardium.—In cutting into the pericardium care must be taken not to injure the internal breast and the heart itself. Delorme and Mignon, who have been making a study of this subject, offer the following suggestions: Tests made with sixty cadavers to determine the connection between the left edge of the pleura and the left edge of the sternum, convinced the operators that the former passes under the latter as far down as the fifth intercostal space. Below this it spreads away from it. Consequently they recommend that the opening should be made in the fifth or sixth intercostal space, and even then it is only by the greatest care that the operator does not open into the pleura, which would inoculate it with pus from the pericardium, and lead to serious trouble. The recommended method is:

1. Puncture. Insert the trocar lengthwise of the sternum opposite the fourth or fifth intercostal space. Then carry the needle flat against the posterior surface of the sternum about the depth of a centimeter. Then raise it upright and push it down and back. This punctures the pericardium alone.

2. To open the pericardium. They cut the cartilages of the fifth and sixth ribs along the sternum, then detach the pleura with the fingers, when the pericardium will be exposed to view, which can be seized with pincers and pulled out enough to puncture and open with a grooved director. These new methods obviate all the inconveniences of the old-fashioned methods.

Deodorization of Iodoform. The *Journal de Médecine* of January 19, republishes the following from the *Presse Médicale* prefacing it with the query: Why not use di iodoform? This has all the properties of simple iodoform without any odor, as Hallopeau demonstrated before the Société de Thérapie, in 1891. Jaksch observed that all the antiseptics with a specific odor possessed the property of disguising the odor of iodoform, while their own became scarcely perceptible. Thymol, naph-

thalin, tar and creolin can be used in this way, preferably the latter, in the proportion of 1 to 2 per cent. This produces a brownish powder with a mild aromatic odor. Oppler suggests pulverized coffee in a proportion of $\frac{1}{3}$ to $\frac{1}{4}$. Ten per cent. conmarin or vanillin disguises the odor of iodoform, and also acid of cinnamon in equal quantity to the iodoform. Laura Goodman observed that after a menthol pencil had been left an hour or two in a bottle of iodoform the odor had disappeared. There is a bituminous iodoform made by a secret process; and brownish mica-like scales with a metallic luster, are produced by blending tar with the iodoform to the point of deodorization. Kay made a 10 per cent. paste of tar that had no odor except that of the tar; 5 per cent. produces a powder in which the iodoform is not recognized. Negel's pills are made thus: 3 grams iodoform, 15 grams tar and 0.60 grams extract of opium for 120 pills, administered eight a day. Cantrelli mixes equal parts of iodoform, essence of menthol and essence of lavender.

Tuberculous Infection in Hospitals.—The meeting of the Académie de Médecine of January 27 was devoted to a discussion of the contagiousness of tuberculosis and the many deaths resulting from infection in hospitals. Several members consider it as contagious as diphtheria, measles or smallpox, and say it should be isolated and disinfected with the greatest care. Terrier asserted that the mortality among the internes, nurses and servants of the hospital he is connected with traceable to infection from phthisic patients, is something frightful, as he has watched its development year after year. All agreed that the present methods of treating persons affected with tuberculosis are criminally lax in regard to the general health of the community, and radical reformation is imperatively necessary.

Congenital Luxation of the Thigh and its Treatment.—It is a comparatively easy matter to diagnose this trouble, but more difficult to discover its etiology. We usually find that it is due to a lack of proportion between the head of the femur and the socket. The former is usually properly proportioned, but the socket is often too small, and also the neck. The muscles are also sometimes involved, which can be determined by noting the effect of electricity upon them. In trying to manipulate the parts into place, the resistance we encounter in working down the upper end of the femur, is due less to the pelvotrochanterian muscles than to the iliac and psoas, and also to a thick fibrous band parallel to the Bertin ligament, starting from the lower part of the capsule. Treatment should be very slow and gradual, commencing as promptly as possible after diagnosis is established. If the head can be successfully placed in the socket, a plaster cast should be applied for four months, changing it occasionally. If this fails, extension is the next treatment to be applied, continued for several weeks, when manipulation should be recommenced. If the femoral head is in place, but does not fit, surgical intervention becomes necessary to enlarge the socket. If the neck is crooked it must be reduced and kept in position until osteotomy can be performed. If the head of the femur is still held in such a way that it can not slide down into the socket, the obstacle must be cut, and the head and socket altered to fit each other. In malformations or deformities where the head of the neck are wanting, surgical intervention is strictly counterindicated. In these cases all that is possible is to teach the patient to walk, and by means of a correcting corset modify the lumbar deformity and prevent the femur from riding up, as far as this is a possibility. *Journal de Médecine*, Paris.

Leucocytes and Albumin in the Urine as Aids to Diagnosis.—Reincke and Goldberg have been experimenting to determine the number of lymph corpuscles in the urine. The former used the Thoma Zeiss apparatus after thoroughly mixing the urine with a 1 per cent. salt solution. The variations between extremes noted were from 3.73 to 26.74 per cent. The improve-

ment of a cystitis can be distinguished in this way. If there is more than 1 per cent. albumin to 100,000 leucocytes in a cubic millimeter, there is reason to suspect an accompanying nephritis. Goldberg asserts that more than 1 per cent. albumin to 50,000 pus cells indicate true renal albuminuria. He has also numbered the red blood corpuscles in hematuria and calculated the amount of blood lost. He concludes that if there are less than 1000 3000 red blood corpuscles in a cubic centimeter of urine, then the presence of albumin is proof of renal albuminuria. He also adds that if there is more than 1 per cent. albumin to 30,000 blood corpuscles in a cubic centimeter of filtered urine, then a renal albuminuria coexists with the albumin derived from the blood.—*Berl. klin. Wochens.*

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer for the week ended February 22 is as follows: Number of deaths (stillbirths not included), 118; death rate per 1,000 per annum, 22.27; death rate per 1,000 per annum, corresponding week last year, 25.76.

MEDICAL SOCIETY.—At the meeting of the society held on the 26th ultimo, Dr. Wm. Forwood, U. S. A., reported two cases of diseased liver operated upon by himself. In the first the gall bladder contained 419, and in the second 705, stones. Dr. Robbins read a paper on "Syphilis of the Vital Organs." Dr. Metzgeroll read a paper entitled "Two Hundred and Fifty Cases of Syphilis Faultily Treated by Specialists." Dr. MacKall reported a case of foreign body lodged above the soft palate.

DEATH OF DR. SMITH TOWNSHEND.—Dr. Smith Townshend, for fourteen years Health Officer of the District of Columbia, died suddenly February 25, and was buried on the 27th with Masonic honors. He was one of the most honored and respected members of the profession.

RETIREMENT OF MEDICAL DIRECTOR WALES.—Dr. Philip Skinner Wales, ex-Surgeon-General of the United States Navy, and now a medical director serving on the naval retiring board, was retired from active service on the 27th ultimo.

WASHINGTON BOARD OF TRADE.—At the special meeting of the Board of Trade held on the 25th ultimo, under the direction of its Committee on Public Health, Dr. Samuel C. Busey, its chairman, reported the following preamble and resolution, which was unanimously adopted by the Board:

WHEREAS, the city of Washington, being the capital of the United States, should be placed and kept in the best sanitary condition; and

WHEREAS, such condition can only be secured by having every habitation or habitable house connected with an ample supply of pure drinking water, and with a system of foul water and sewage disposal which will promptly remove such fluids beyond the city limits in such a manner as to absolutely prevent soil pollution; therefore, be it

Resolved, 1. That the general system of water supply from the Potomac River should be extended so as to be available for the supply of every habitable building now in the city or which may be erected within the city limits, and that this provision should be extended as far as possible to the immediately adjacent suburban districts.

2. That the general water supply should be purified by sedimentation and filtration (the first being necessary at certain times and the second at all times) before it is admitted to the mains.

3. That the system of sewerage which has been adopted should be extended *pari passu* with the system of general water supply until every habitable house can be readily connected with it.

4. With the completion and purification of the conduit system of water supply all springs, pumps and wells should be closed by such means and methods as will prove so effective that no human being can obtain drinking water from either of these sources.

5. As rapidly as possible, *pari passu* with the extension of the conduit system of water supply and system of sewerage, the owners of every habitable and inhabited house should be compelled to make satisfactory connections with such systems of water supply and sewerage, and all privy boxes,

cesspools and other methods of disposal of human excreta be effectively abolished.

6. Without adequate supply of pure water for all domestic purposes and sewer connections of habitable and inhabited houses, pollution of soil, foods and drinks and the diseases due to such pollution can not be prevented; and

WHEREAS, the enormous and constantly increasing area of marsh along the eastern border of the city is a constant menace to the health of the residents of the eastern section of the city, and especially so to the inmates of the almshouse and hospital, St. Elizabeth's Asylum and army and navy forces, officials and employees at the Marine Barracks and Navy Yard; therefore, be it

Resolved, That the reclamation of these marshes is imperatively demanded and should be accomplished without unnecessary delay.

The medical men on the committee are Drs. S. C. Busey, Geo. L. Magruder, W. W. Johnston, W. P. C. Hazen and W. S. Thompson.

Louisville Notes.

ACADEMY OF MEDICINE. At a recent meeting of this society, a symposium of papers, was presented on rheumatism. The following were the titles: "Etiology and Pathology," Dr. Carl Weidner; "Complications," Drs. Frank C. Wilson and Crittenden Joyes; "Treatment, non-medicinal," Dr. Curran Pope; "General Treatment," Dr. T. H. Baker. At the last meeting Dr. Albert Muench read an interesting report of cases. At the next meeting Mr. E. H. Mark, Superintendent of the Louisville Public Schools, and formerly Professor of Physics and Chemistry in the Louisville High School, will give a practical lecture and demonstration of the Roentgen rays, exhibiting some photographs taken in this way. The discussion will be opened by Dr. H. M. Goodman, who has done some work in this line.

DR. W. H. WHITE, Health officer, has been the recipient of many commendatory letters and resolutions from the various medical societies, and petitions, signed by medical men and laymen, are to be presented to the Mayor, requesting that Dr. White be retained in his present position.

THE REPORT OF THE HEALTH OFFICER for the past month is as follows: There was a total of 259 deaths; pneumonia caused 32, consumption 30; organic heart disease 17; cerebral meningitis 13; and there were 18 stillbirths. There were 226 deaths in the corresponding month last year; annual death rate per 1,000, 16; vaccinated, 400; diphtheria, placarded 27, of which there were 5 deaths; scarlet fever, placarded 40, with no deaths. Diseased cattle killed 128, and 277 diseased cattle condemned and sent out of the city. For the week past there were 90 deaths, pneumonia causing 13.

DR. NELL.—Dr. E. M. Nell, State Senator from Adair County, has been decided upon, by the Sinking Fund Commissioners as the warden for the Frankfort penitentiary.

STATE BOARD OF HEALTH.—This body, with a full meeting, held its session recently in this city. Several important points came up for discussion, the chief topic being the suppression of the cerebro-spinal fever in the southern portion of the State. The State Board Bacteriologist was sent to the infected county, with full power to act for the board in stamping out the epidemic.

NORTON INFIRMARY. The following report has been published, showing the charitable work done by the John N. Norton Memorial Infirmary of this city. During the year 1893 there were forty-two patients who occupied endowed beds 140 weeks and six days; seven patients occupied endowed cots, sixty-nine weeks, two days. In 1894, thirty-six patients occupied endowed beds, seventy-six weeks; six patients occupied cots fifteen weeks, three days. In 1895 twenty-seven patients occupied endowed beds one hundred and six weeks and four days; three patients occupied cots nine weeks and six days. This report was made to correct a rumor, accidental or malicious, which stated that no charity patients were received at the Norton Infirmary and that pay patients occupied endowed beds continuously.

Cincinnati Notes.

THE MORTALITY REPORT for the week ended Friday, February 21, gives: Membranous croup 1, diphtheria 1, influenza 2, measles 3, scarlet fever 1, typhoid fever 2, other zymotic diseases 3; cancer 5, phthisis pulmonalis 14, other constitutional diseases 6; apoplexy 5, bronchitis 10, convulsions 4, gastritis and gastro-enteritis 3, heart disease 5, meningitis 5, peritonitis 2, pneumonia 12, other local diseases 21; deaths from developmental diseases 14, deaths from violence 1, deaths under 1 year 26, deaths from 1 to 5 years 18; deaths from all causes 120. Annual rate per 1,000, 17.82; deaths during preceding week 148; deaths during corresponding week, 1895, 165; deaths during corresponding week, 1894, 102; deaths during corresponding week, 1893, 129.

DR. F. W. HARMON has been to Columbus before the Legislature to urge that additional appropriation be made for Longview Asylum in order to avoid the necessity of Hamilton County meeting the deficiency. His report for last year shows: Total expenses, \$145,000; number of patients, 1,023; food, light and clothing per capita, \$114. The per capita expense was \$3 lower than the average of the other Ohio institutions.

THE LAST LOT OF DRUGGISTS who were arrested by the State Food and Dairy Commissioner decided to fight their cases before juries instead of pleading guilty as heretofore, and as a result five out of nine were found not guilty.

DR. G. D. LIND, of the National University, delivered a lecture on "The Oyster and Its Relations" before the Cincinnati Society of Natural History last Tuesday evening.

DRS. SCHMIDT, RANKIN, KEARNS, WINTERMEYER AND WALLINGFORD, the district physicians of Covington, have requested the City Council to raise their salaries from \$12.50 to \$30 per month, and as an inducement offer to furnish all necessary medicines in tablet form, which they claim would result in a saving to the city of about \$150 per year.

THE NEW CATHODE RAYS were tried at the Presbyterian Hospital last week by several of the staff to locate if possible a bullet which was supposed to have lodged in the interosseous tissue of the arm of a young boy who was accidentally shot and in which the probe failed to reveal the location of the bullet. The results were unsatisfactory, the failure being partly attributed to the batteries.

AN UNUSUAL CASE of aneurysm located in the cervical vertebra was admitted to the Cincinnati Hospital this week. The patient, a young man, was admitted for treatment of a bad cough which, upon examination, proved to be the first stage of phthisis. After being treated for several days he felt much better and was walking around in the ward; one of the nurses noticed him lie down, and passing by the bed a few moments later saw he was dead. An autopsy was ordered and an aneurysm was found pressing on the spinal cord. With the exception of a slight tubercular invasion of the lungs he was in good physical condition. This is the first case of the kind ever admitted to the hospital.

THE BOARD OF MANAGERS of the Presbyterian Hospital have in contemplation the addition of an emergency surgical ward to the institution to meet the increasing demand for beds.

THE CINCINNATI TRAINING SCHOOL FOR NURSES, which formerly had the contract with the Cincinnati Hospital to supply its nurses has decided to close the portion of the institution devoted to the training of nurses for want of financial support. It will still be open, however, to a limited number of private patients.

A NUMBER of Cincinnati men are aiding in having the bill now before the Legislature passed, fixing the penalty for abortion at twenty years imprisonment instead of seven as at present. The recent Pearl Bryan case has had much to do in arousing this sentiment.

THE BOARD OF MEDICAL EXAMINERS made the report of their annual examination to the Mayor this week and it shows 204

men in perfect physical condition, 141 in need of active exercise for at least one hour each day, 50 who are only in fair condition and 16 who are totally unfit for service.

THE MEDICAL COLLEGE OF OHIO has at last formally combined with the University of Cincinnati.

AT A MEETING of the Alumni of the Cincinnati College of Pharmacy held February 24 for the purpose of having the present pure food and dairy laws amended, the following committee was appointed to draft an amendment to the laws and present it to the Legislature during its present session: Otto Rauff, Frank Freericks, Alfred De Lang, Theo. Wetterstroem and Andrew Diebold.

THE ANNUAL ELECTION of officers of the Academy of Medicine resulted as follows: President, Jos. Eichberg; First Vice-President, Robt. W. Stewart; Second Vice-President, Amelia J. Pryor; Recording Secretary, W. E. Schenck; Corresponding Secretary, A. G. Drury; Treasurer, Geo. E. Jones; Financial Secretary, S. E. Allen; Librarian, Arch. I. Carson; Trustees, John A. Murphy, N. P. Danbridge and J. T. Whittaker.

THE PUBLIC SERVICES.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the nineteen days ended February 19, 1896.

Surgeon R. D. Murray, when relieved at Tortugas Quarantine, to proceed to Mobile, Ala., and assume command of Service, Feb. 19, 1896.

P. A. Surgeon C. T. Peckham, to proceed from San Francisco Quarantine to Port Townsend, Washington, and assume command of Service, Feb. 6, 1896.

P. A. Surgeon P. C. Kallach, when relieved at Cincinnati, Ohio, to proceed to Charleston, S. C., and assume command of Service, Feb. 6, 1896.

P. A. Surgeon L. L. Williams, when relieved at Charleston, S. C., to report at Bureau, and then to proceed to Tortugas Quarantine and assume command of station, Feb. 6, 1896.

P. A. Surgeon G. T. Vaughan, granted leave of absence for seven days, Feb. 17, 1896.

P. A. Surgeon J. O. Cobb, when relieved at Port Townsend, Washington, to proceed to Cincinnati, Ohio, and assume command of Service, Feb. 6, 1896.

P. A. Surgeon H. D. Geddings, when relieved at South Atlantic Quarantine, to report at Bureau for duty, Feb. 6, 1896.

P. A. Surgeon M. J. Rosenau, to assume command of the San Francisco Quarantine Station, Feb. 6, 1896.

Asst. Surgeon J. A. Nydegger, to proceed from Washington, D. C., to Reedy Island Quarantine for special temporary duty, Feb. 17, 1896. To report at Bureau preparatory to assuming command of South Atlantic Quarantine, Feb. 19, 1896.

RESIGNATION.

Asst. Surgeon Edgar Strayer, resignation accepted, to take effect Feb. 14, 1896.

Change of Address.

Barbat, J. Henry, from 1612 Folsom Street to 1412 Folsom Street, San Francisco, Cal.; Baird, T. M., from Hot Springs, to Forest City, Ark. Manley, T. H., from 302 W. 53rd Street to 115 W. 49th Street, New York. Nye, Geo. L., from Wythville, Va., to Hurricane, W. Va. Van Cleve, A. H., from Eddy, N. M., to Sheldon Blk., El Paso, Texas.

LETTERS RECEIVED.

Alma Sanitarium Co., Alma, Mich.; Atkinson, W. H., Washington, D. C.; Ashby, T. A., Baltimore, Md. Bodine, J. M., Louisville, Ky.; Brown, F. F., Adv. Agency, New York, N. Y.; Berger, S. C., Philadelphia, Pa. Clary, W. P., Columbus, Ohio; Coale, R. Dorsey, Baltimore, Md.; Cook, G. Wythe, Washington, D. C.; Chaille, S. E., New Orleans, La.; Cannaday, C. G., Roanoke, Va.; Comegys, E. T., P. O. Rosebank, N. Y.; Campbell, B. A., Chicago, Ill.; California Fig Syrup Co., San Francisco, Cal. Damour, F., (2) Bodekow, Mo.; Davis, Geo. S., Detroit, Mich. French, Pickney, St. Louis, Mo.; Fairgrieve, G. W., Enid, O. T.; Fehr, Julius, Hoboken, N. J. Grinnell, A. P., Burlington, Vt.; Globe Mfg. Co., Battle Creek, Mich. Hull, A. H., Webster City, Iowa; Hardy, H. T., Kaneville, Ill.; Huizenga, T. G., Zeeland, Mich.; Harris, T. C., Raleigh, N. C.; Hummel, A. L., Adv. Agency, New York, N. Y. Jekes, J. T., Hot Springs, Ark.; Kane, Evan O'Neill, Kane, Pa. Lillard, Benjamin, New York, N. Y. Marshall, John, Philadelphia, Pa.; Mudd, H. H., St. Louis, Mo.; Mills Chas. K., Philadelphia, Pa.; Maltine Mfg. Co. The, New York, N. Y. Mereness, Dwight, Milwaukee, Wis. Parke, Davis & Co., (2) Detroit, Mich. Raymond, J. H., Brooklyn, N. Y.; Richardson, W. L., Boston, Mass. Reitzman, C., Austin, Ill.; Rowell, H., Hearney, Mo.; Rook, J. W., Louisville, Ky. Spiegelhalter, J., St. Louis, Mo.; Sheldon, S. E., Topeka, Kans.; Small E. H., Pittsburg, Pa. Tucker, C. F., Syracuse, N. Y. Van Doozer, B. R., Chicago, Ill. Wales, A. H., Chicago, Ill.; Winn, J. J., Norwood, Ohio; Warner, W. R. & Co., Philadelphia, Pa.; Woody, Samuel E., Louisville, Ky.; Welch Wm. H., Baltimore, Md.

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ADDRESS.

AN ADDRESS.

Delivered before the Gynecological Society of Boston, Jan. 9, 1896.

BY JESSE F. FRISBIE, M.D.

NEWTON, MASS.

Ladies and Gentlemen:—As president, it becomes my privilege and pleasure to welcome the members of the Gynecological Society of Boston, and the assembled guests, to the celebration of the twenty-seventh anniversary of its foundation. Most heartily do I congratulate the members of the society on this auspicious occasion, and in their name do I give glad welcome to our guests.

On the evening of Jan. 22, 1869, eight medical gentlemen met at Hotel Pelham, in this city, and organized the first distinctive society for the scientific study and investigation of the diseases peculiar to females, and christened it the Gynecological Society of Boston. I say the first society of its kind for, as far as I know, it was the first gynecologic society formed in this country or Europe. At the time it was organized there was not in the medical schools a recognized department of gynecology. Whatever work was done, whatever instruction was given in this direction, was largely by obstetricians. Obstetrics and diseases of women were classed together and taught by the same professors. The following is the simple preamble: "The undersigned, desirous of advancing the study and treatment of diseases of women, hereby associate themselves together with that intent, and adopt for their government the appended constitution and by-laws." This was signed by George H. Bixby, Samuel L. Dutton, H. M. Field, Winslow Lewis, John C. Sharp, Horatio R. Storer, Levi F. Warner, William G. Wheeler.

The constitution and by-laws adopted were the simplest and conformed to the Code of Ethics: "This society recognizes the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION as binding upon its members," thus beginning its career with the expressed acceptance of the highest medical professional laws of this country.

The following gentlemen were elected officers: President, Dr. Winslow Lewis; Secretary, Dr. H. R. Storer; Treasurer, Dr. George H. Bixby; Committee on Membership, Dr. W. G. Wheeler, Dr. L. F. Warner, Dr. S. L. Dutton; Committee on Foreign Literature, Dr. J. C. Sharp, Dr. H. M. Field. And thus the Gynecological Society of Boston was organized and at once proceeded to the work for which these medical men had come together.

And now I deem it judicious and proper—a well-deserved tribute—that a few biographical words should be said here with reference to these gentlemen who have done so much for the advancement of gynecologic science.

Dr. Winslow Lewis, a graduate of Harvard and a student in Paris and London, was a trained surgeon and anatomist, a pupil of the late Dr. John C. Warren, connected by position on the consulting staffs with the Massachusetts General, the City and Carney Hospitals. He was the founder and for many years president of the Boylston Medical School, city physician of Boston, and in other respects a prominent professional man. He died in 1875.

Dr. George H. Bixby, South American by birth, educated in New England, followed by six years' professional study and practice in Europe, the latter part especially devoted to diseases of women. He was a man of fine literary and professional attainments.

Dr. Horatio R. Storer was one of the earliest and oldest students and instructors in gynecology. He was, in fact, the originator and real founder of the society. From his graduation he endeavored to bring into prominence the idea of special study and special work for the treatment of the diseases of women. He spent years of study in Europe and for a time was a special student with Sir James Simpson, of Edinburgh, and in conjunction with Sir Walter O. Priestly, edited his works. He was lecturer upon medical jurisprudence and obstetrics in the Birkshire Medical College, assistant instructor in Harvard Medical School, the first physician in America to give a complete collegiate course upon diseases of women. His connection with medical societies in this country and Europe, hospitals and State commissions are far too numerous to mention. Special honors have been conferred upon him from nearly all parts of the civilized world.

Dr. Levi F. Warner was a true-hearted, Christian physician; able, competent, skillful and always a genial companion, an honor to the profession and high manhood, respected and beloved. His honors were many and when, six years ago, he passed from the field of labor and entered into his eternal rest the world lost a great man full of honors and years, and we mourn one of our brightest and most steadfast friends. The world is better because he lived.

Dr. William G. Wheeler, a fellow student with Dr. Warner, whose kindly, genial spirit, coupled with his high professional abilities, have won for him the respect, esteem and almost veneration of all who know him. Honors have been his and it is cause for congratulation that he still abides with us.

Dr. Henry M. Field, professor in Dartmouth Medical College, one of the ablest therapeutists and most scholarly men in the medical profession—broken down through over-work—is now spending his declining years in the genial, sun-blessed climate of Southern California.

Of Dr. Samuel L. Dutton and Dr. John C. Sharp, the other two medical men among the original founders, I can only make brief mention. Their connection with this society was not long continued, and appa-

rently other professional duties prevented them from taking very active part in its work. Dr. Sharp died Sept. 22, 1890.

These were the founders of the Gynecological Society of Boston: strong, full-brained, skillful, scientific pioneers in this department of medicine and surgery, whose successes have added lasting glory and honor to the medical profession. As soon as the success of this society was an assured fact, as soon as there was demonstrated the great advantage, the need, yes, and the demand for separate and scientific instruction in this department, other gynecologic societies were organized, both local and national, in this country and Europe, and the medical colleges all over the civilized world hastened to establish professorships of gynecology. But the honor, the palm for the organization of the first society belongs to Boston and the few earnest, zealous, far-seeing and able men who founded this one. During these years—from 1869 to 1896—we have added many hundreds to our number of active, corresponding and honorary members. In this long list of names will be found nearly all the first gynecologists of two continents, men who considered it an honor to hold such membership and the society was honored by the acceptance.

The great interest which these gentlemen—representative medical men in Europe and America—continue to have in this society is manifest in their appreciative and congratulatory replies to the invitations sent for this evening. In order that this society might exert a wider influence on the general practitioner, be of greater aid and advantage, especially to those medical men who have not had opportunities for special studies in gynecologic investigation and practice, it was decided to publish its proceedings under its own authority, and Dr. Lewis, Dr. Storer, Dr. Bixby were elected editors of a monthly periodical called *The Journal of the Gynecological Society of Boston*. As a medium for the general dissemination of information pertaining to diseases of women it was a success from the beginning.

Since the organization of this society other medical men have become active members whose names bear a world-wide reputation, whose skill and remarkable successes are known and acknowledged on two continents, whose published works are standards with the foremost professional men everywhere. The founders can congratulate themselves on the fact, following its organization, influenced by its scope and work other societies were organized and gynecology bounded to the front and became a distinct and important specialty in college instruction, hospital and private practice. Well may this society take pride in its past achievements, in the grand work it has done and in the brilliant record made by its members.

With the honors and successes that have come to us during the years that are gone, we may look forward with bright anticipations to still greater triumphs in the future, to greater advances in gynecologic science, to greater aid in the comfort and cure of those suffering from disease, and posterity will gladly and freely give tribute to the fathers of this society in words of old: "Well done thou good and faithful servants."

Some of us show by the silvering hair the rapid passing years and the nearing of the time when we shall have accomplished our work.

While we labor on we may console ourselves with the thought so beautifully expressed by our dearly

beloved poet, Oliver Wendell Holmes: "Where the snowflakes fall the thickest, there nothing can freeze."

The following gentlemen have been presidents of the society: Dr. Winslow Lewis, Dr. William G. Wheeler, Dr. Henry M. Field, Dr. W. S. Brown, Dr. J. C. Irish, Dr. J. F. Frisbie, Dr. Horatio R. Storer, Dr. Henry O. Marey, Dr. H. C. White, Dr. A. P. Clarke.

ORIGINAL ARTICLES.

SOME REMARKS ON THE HISTORY OF THE GREATER EPIDEMICS OF THE PAST. AND THE MANNER OF TRANSMISSION.

Read before the Milwaukee Medical Society.

BY U. O. B. WINGATE, M.D.

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM, AND HYGIENE, IN THE WISCONSIN COLLEGE OF PHYSICIANS AND SURGEONS, MILWAUKEE, WIS.; SECRETARY OF THE WISCONSIN STATE BOARD OF HEALTH.

It is only possible, during the few moments allotted to me at this time to refer, in the briefest possible manner, to some features of certain epidemics in the past. I shall only consider the four diseases which stand at the head of epidemics, namely, the plague, asiatic cholera, yellow fever and smallpox.

I.—THE BUBONIC PLAGUE.

This is a disease of great antiquity. The first extensive epidemic of which history has given us any definite account occurred in the sixth century, is described as "the plague of Justinian," and is said to have persisted during nearly the whole of that emperor's long reign. It probably originated in Lower Egypt in the year 542 A.D. It swept with increasing fury over Asia Minor; it also visited Constantinople with the result that for some days people died, so it is related, at the rate of 10,000 daily. For seventy years this disease raged in all parts of the then known world, and its victims were numbered by millions. In the fourteenth century it appeared under the name of the "black death" and is said to have destroyed 13,000,000 people in China, 24,000,000 in other Oriental countries, and not less than 25,000,000 people in Europe. The same disease is classed under the head of "the great plague of London" which occurred in 1665, when the total number of deaths is placed at 100,000. The same plague occurred at Marseilles and Toulon in 1720. Its last appearance in Europe was reported to be at Dalmatia and Turkey in 1840-41. The bubonic pest, however, has never ceased to exist in China, showing itself more or less frequently, and spreading from there, from time to time, to Persia, Arabia and Asiatic Russia. It is probable that for the past fifteen years it has continually existed in the southern part of China, and the recent outbreak there shows that its virulence is no less than existed formerly. According to the official reports for the six months from February to July, 1894, inclusive, in Canton, which has a population of about 1,000,000 there were 180,000 deaths. The official reports from the city of Hong-Kong up to August, 1894, showed that 2,504 deaths occurred from this disease out of a population of 200,000. It is, however, believed that as every Chinese man or woman, when seized with it, got over to the main land, if he or she possibly could, the actual number of deaths out of that population was probably much higher.

The death rate is simply enormous. Yersin places

it as high as 95 per cent. even in hospitals. In this recent outbreak the disease occurred among the Chinese principally, more especially among women and children, and among those who were the least able to resist the invasion of any disease. It was also observed that it raged worse among families living on the first floor of houses next to the ground, and that those living on the water, in many instances escaped, which leads us to believe that the condition of the soil has something to do with the spread of the disease.

From the investigations made by Kitasato and Yersin, there is no longer any doubt that the bacillus has been isolated by them and, thus far, they have been unable to observe that the bacillus has any spores. It is claimed that the bacillus enters the human body by three channels—through the respiratory and digestive tracts, and through an external wound. It seems to be a disease of poverty, and flourishes best in overcrowded localities where there is a lack of proper ventilation, personal cleanliness, and proper and sufficient diet. It is a typical infectious disease; a filth disease caused by a bacillus. There is no doubt that it has been and can be transmitted through merchandise, such as rags, and other material, that may be shipped from one place to another. Just how long the bacillus may live under certain conditions does not seem yet to have been demonstrated, but it is believed that it will live for a long period under favorable conditions. We do know, however, that it can be easily destroyed by the degree of temperature employed in disinfecting by live steam. It is probably transmitted by food, drink and air. Like cholera, it has followed the channels of commerce. In the recent outbreak it found its way from Yunnan along the southern border of Kwang-se to Pakhoi, from whence it traveled northward through the Kwang-tung province to Canton. From the latter city it was readily conveyed to Hong-Kong by persons removing while actually suffering from the disease, or during the period of incubation. It only requires about eight hours of time, by steamer, to pass between these two cities, and in the late epidemic it was quite common to have several deaths occur on the passage between these two points. According to Mr. Rocher, pigs, goats, rats and other animals, die in great numbers before man is affected, and it has been noted that a high mortality exists among these animals two or three weeks before cases of plague are noted in the human family. Just what the relationship may be in regard to this matter is a question not yet fully worked out or understood. Yersin has called attention to the results of his autopsies of animals, which showed that many dead flies were found. On examination of their bodies, he found them to contain the plague bacillus, and an inoculation of guinea pigs from such flies caused death within forty-eight hours with specific lesions of the disease. There is not much question that this disease may be carried to any part of the civilized world, and an outbreak in any locality should be watched very carefully by sanitary authorities.

II.—ASIATIC CHOLERA.

The history of epidemics of this disease, prior to the seventeenth and eighteenth centuries, is so imperfect that we can not depend very much upon it. Mention is made of it in the Sanscrit and Chinese writings; it is also spoken of by Hippocrates, Celsus, Galen and others, but we do not find a clear description of it, as existing epidemically, prior to the seventeenth century. Since then it has occurred as an

epidemic in so many localities that it would be impossible to name them all. As long ago as 1768-71, Sonnerat described an epidemic in the neighborhood of Pondicherry which destroyed 60,000 lives. In what was then known as French India in 1780-81 it also prevailed, and we also have reports of epidemics occurring in Madras from the years 1774-82. The first really famous epidemic dates from Jessora in 1817, although it has been proved that other cholera epidemics existed in India prior to this. In 1817 in Jessora, a city some forty hours ride northeast from Calcutta, there existed a patient who had been seized in the night with violent vomiting and diarrhea. A local Indian physician called on an English physician, Dr. Robert Tytler, to see this patient. He found him moribund, and thought at first that it was a case of poisoning, but when he learned that some seventeen other cases had been attacked at the same time and had quickly died, he came to different conclusions. This was a case of genuine Asiatic cholera, and so rapidly did the epidemic spread that within two months, in the city of Jessora, more than 10,000 of the inhabitants had died. During this same year the disease prevailed throughout the whole of English India, reached Calcutta in September, and caused a heavy mortality. An army encamped on the banks of the Sind lost within a short time 764 officers and European soldiers and about 8,000 Sepoys. In the first year the number of cholera victims is given as 600,000. It is possible that this number is somewhat exaggerated, as statistics under such circumstances are unreliable, and were especially so at that early age. Cholera spread over all of Bengal in 1818, and it is reported that in Benares 15,000 persons died in two months. Epidemics spread northwardly, then westwardly, then southwardly along the coast of Coromandel, and out of 18,000 men composing General Hastings' army, stationed between Bombay and Calcutta, 9,000, or 50 per cent., died in a short time. In 1820, Bengal was again severely attacked and the epidemic penetrated to Cochin China, also to Canton. In 1821 the disease passed across the mouth of the Indus and spread itself along the coast of the Persian Gulf, whence it extended into the interior of the land. It soon appeared in Bagdad and other places. It spread also towards the East, sowing everywhere the greatest destruction, especially in Borneo and Java; the latter place is said to have lost 100,000 inhabitants. In 1823, Burmah and the Empire of China, the latter especially, were severely attacked with cholera, and about this time it showed itself for the first time on Russian soil. It spread in a westerly direction and invaded the Empire of Russia. In 1823 it penetrated the very borders of Europe. In the three following years cholera made but little progress in the two threatened divisions of the earth, Europe and Africa, and toward the close of the year 1826 the hope was cherished, says Lebert, that the epidemic was near its end, but as early as the beginning of 1827 it appeared with renewed intensity in Calcutta, and here is mentioned, for the first time, that many animals also showed the influence of the disease. In 1830 its advance toward the northeast was more positive than ever before. It soon again extended on the coast of the Caspian Sea; Orenburg, which had been already reached in the last months of 1829, was again attacked, and it is related one-tenth of the whole population was seized with cholera.

There is something peculiar in the mode of trans-

mission of this disease, inasmuch as in times past it seems to have encircled the world, when it has once started, before the pandemic has ceased. While it has been said to be a water-borne disease, there are some facts which hardly coincide with this theory, for we find it has traveled over mountains and through every part of the known world, apparently independent of water courses. Early in 1831 it appeared in Mecca and raged with great violence; later it appeared in Alexandria and Cairo; the latter place is said to have lost 30,000 people by it in the first months. In Egypt the disease penetrated up the Nile to the higher regions of this country. Constantinople was also attacked within this year, and Smyrna was seized and suffered very severely from it. It occurred in the same year in various parts of Russia, and on August 30 entered Berlin, where it caused 2,500 deaths among 200,000 inhabitants. In the northern part of Germany, at this time, it was observed to affect chickens, pigeons, and in many rivers fish perished in great numbers. In October it reached England and soon spread over the islands of Great Britain. The following March it reached Paris where it raged with extraordinary intensity, destroying one forty-third of the whole population. About the middle of 1832 it crossed the Atlantic Ocean and appeared in North America at Quebec and Montreal, traveling quickly from there to New York, Philadelphia and Baltimore, and as far south as New Orleans. In 1833 it invaded the Mexican States and was very severe in Vera Cruz and Mexico. Since that time the history is familiar to nearly every one. Its home is well known to be in India, where it is constantly present and from which place, when once started, it spreads to all parts of the world before it stops. It reached this country again in 1848, appearing first at New Orleans, and again in 1853-54, extending over a considerable portion of the United States. The next great epidemic in Europe persisted from 1865 to 1874, about ten years. Europe then enjoyed a complete immunity for a period of ten years, or up to 1884. In 1883 the scourge made its appearance in Egypt, where in three or four months it occasioned a mortality of from 30,000 to 50,000 of the inhabitants. In the autumn of 1887 it made its appearance in the port of New York, but was controlled by prompt and efficient measures of isolation at the quarantine station. It again appeared at the same port in 1892, where it received like treatment. The epidemic of cholera in Europe in 1884-5, is said to have cost France 15,000 inhabitants, Spain 180,000, Austro-Hungary 4,000, Italy 50,000, Malta 500, making a total, approximately, of 250,000 inhabitants of Europe.

We know that the specific germ of cholera, as well as that of the plague, has been isolated, and the value of the discovery of the germs of these two diseases can not be over-estimated, for it enables us to take definite precautions to prevent an introduction of these diseases and to control them if introduced. But there is much to be learned concerning the habits and conditions favorable to the propagation of the germ of cholera. We believe we can control it if we can persuade the people to be liberal in their appropriations of money, which is necessary in order to take the requisite precautions. Then again, it is of the greatest importance to be enabled to control the people should an outbreak occur.

In concluding this portion of my subject, I wish to refer to the very large increase of diarrheal diseases

that has prevailed during the past year, and especially in our own State. The idea has been suggested that the great prevalence of diarrheal diseases is indicative of approaching cholera. Is it possible that such conditions, with others, may favor or invite this disease, and may such conditions not be a part of the general causation, while the germ completes the cause?

III.—YELLOW FEVER.

Haenisch says "the Antilles were probably the cradle of yellow fever." According to Hirsch, the range of the distribution of this disease over the earth's surface takes one of the lowest places among acute infectious diseases. He says further: "If we disregard its isolated appearances at different points on the western shores of Europe and its quite recent establishment as a prevalent form of sickness on the Atlantic and Pacific coasts of South America, there remain only two among the great regions of the globe to form the seat of yellow fever; on the one hand, the shores of the Gulf of Mexico, including the West Indies and part of the Atlantic coast of the United States, and on the other hand, a part of the west coast of Africa."

The earliest history of yellow fever is enveloped in obscurity. It seems to have originated either on certain islands of the West Indies, or on vessels sailing from those points to certain points on the Atlantic and Pacific coasts. The area over which it has spread, in times past, is certainly circumscribed. That the germ, if one exists, has not been demonstrated has been clearly shown by Sternberg. There is no doubt but what it is the natural offspring of regions and places characterized by the presence of putrefying organic matter under a high temperature. The persistence of yellow fever aboard ship necessarily involves the question as to its direct cause, but whatever difference of opinion may exist as to the nature of the virus of yellow fever, there can be no question as to the conditions of its existence. Decomposition of organic matter under certain climatic conditions is an essential requisite. It was formerly believed that yellow fever could only occur during certain months of the year, from April to November. It is now, however, known that it may occur during any month of the year within the area called the "yellow fever zone."

The first trustworthy account of an epidemic of yellow fever dates from the year 1635, when it prevailed on the Island of Gaudeloupe. The adjoining islands, Dominica, Martinique and Barbadoes, were invaded a number of times in the fifty years following. Since then it has occurred on the Mexican coast and the West India islands, and on the west coast of Africa. During and since the eighteenth century, yellow fever has also frequently extended up the eastern coast of North America, the highest points reached being Halifax and Quebec. It appeared in the United States in Boston in 1693; in Philadelphia in 1699; in New York in 1702; in New Haven, Conn., in 1742; in Norfolk in 1747; and first made its appearance in New Orleans, where the greater epidemics have existed, in 1796. It has never gained a permanent foothold in the United States, having always been brought from its source in the West India islands or in that locality. It is impossible to give a detailed account of all the greater epidemics from this disease. The places in the United States in which they have occurred are numerous, including Boston, New York,

New Orleans, Philadelphia, Charleston, Mobile, Pensacola, Norfolk and Baltimore. The more important epidemics occurred as follows: In 1793 in Philadelphia with 4,040 deaths, said to have equaled 10 per cent. of the population; in 1797 in Philadelphia with 1,300 deaths; in 1798 in Philadelphia, and other places (including New York), with 5,700 deaths. In 1853 the States of Florida, Alabama, Louisiana, Mississippi, Arkansas and Texas were invaded. The deaths in New Orleans, during this epidemic, are reported to have been 7,970. In 1867 it invaded Texas and Louisiana; deaths in New Orleans 3,093; in Galveston, Texas, 1,150. In 1873 the States of Florida, Alabama, Mississippi, Louisiana and Texas suffered severely, and in 1878 the most extended epidemic in the United States occurred, according to Sternberg, invading 133 towns, chiefly in Louisiana, Tennessee, Alabama and Mississippi, where there were 74,000 persons attacked, with 15,934 deaths.

It has been frequently transported to European points from its source, but has not spread extensively at those points. The fatality has varied very much in different epidemics. It is more fatal to persons who are unacclimatized than to others. Among unacclimatized adults the fatality ranges from 20 to 60 or even 80 per cent. No race is entirely exempt, but there is no doubt that negroes are decidedly less susceptible than the white race. They are less liable both to attack and to death in the event of attack. Both the attacks and deaths are more numerous among males than females. This is, no doubt, largely owing to the greater exposure of males, and to their habits, especially indulgence in alcohol.

In regard to the manner of transmission or mode of dissemination there is strong ground for the belief that it is a microbic disease, although not yet demonstrated. It can not survive cold weather, and the first one or two frosts destroys its vitality. Under certain conditions, however, it can be carried in merchandise, vessels, and especially where there is a lack of cleanliness. It is believed to be easily conveyed in old vessels that are undergoing decay. Just how this disease enters the human body is not yet known. It is certainly infectious, and the poison is claimed to be as specific as atropia or hydrocyanic acid. It can be transported from place to place in the ordinary vehicles of travel and traffic, and in the bodies or baggage of men and women. It seems to take root, however, in the locality, in the soil as it were, and to be contracted from the environment of the patient rather than from the patient himself; the locality seems to remain infected after the patient has been removed, for weeks and even months. There is a very important circumstance connected with the transmission of this disease which, I believe, should receive very careful attention from all members of the medical profession. It is a condition which exists as a warning in other diseases, as has been referred to under the head of cholera. It was first mentioned, so far as I know, in the Surgeon-General's report of the Navy Department for 1873-74, by Dr. Joseph Wilson, Medical Director of the United States Navy, under the head of "An Interesting Epidemic." He says: "There is a variety of yellow fever poisoning which seems not to be generally understood; at any rate, not generally insisted on. I allude to the numerous cases of light febrile disease which precede the development of the fully formed fatal cases of yellow fever, usually noticed in the first cases of an epidemic. Every writer on epidemic

cholera tells us of the numerous cases of diarrhea preceding the epidemic, but no one describes these numerous cases of slight febrile disease, which are the harbingers of the yellow fever epidemic." He then goes on to show that for some time before an outbreak of yellow fever they had a large number of these febrile conditions—some diagnosed as mild typhoid, some as simple fever, etc., followed by an epidemic of yellow fever. An interesting feature connected with epidemics of this disease, as well as others, is the commercial relation, and the difficulty that sanitarians have in impressing upon the people the importance, not only from the standpoint of life saving, but from a commercial standpoint, of controlling these outbreaks. This has been well illustrated by Dr. Samuel Chopin, of Louisiana, in describing the epidemic of yellow fever that occurred in this country in 1878. It appears that an estimate of the total loss to our country from this epidemic was made by Mr. A. B. Farquhar in a letter to Surgeon-General Woodworth, in which he places the cost at \$175,000,000. In New Orleans alone there were estimated 25,000 cases with 4,500 deaths, and the cost to that city, based upon a moderate estimate, was \$12,072,500. It is also shown that the city of New Orleans, by its commercial interests with the tropical ports, from which this disease was brought, amount to about \$1,500,000 per year, while the loss in one year by the presence of yellow fever is estimated at over \$12,000,000. Dr. Chopin, referring to the quarantine system, which is impossible to make perfect on account of the commercial interests, very wisely says: "No conditional quarantine can ever be made effective, because first, of the laxity with which laws are unfortunately executed in this country, and secondly, because of the cupidity of the commercial men having large interests at stake, who will always move heaven and earth to evade successfully all quarantine laws and regulations." Until people can be educated up to the point of recognizing the importance of these sanitary measures, we can never expect to be able to control epidemics and they will occur from time to time, for it seems to be a law of nature that people must learn by experience alone.

IV.—SMALLPOX.

It hardly seems necessary for me to refer to this subject, because I take it for granted that all present have learned the lesson of experience that I have just quoted. This is another disease, the essence of which is unknown to us, as you all know. We do have, fortunately, a means of prevention, which is not provided for positively in the diseases that I have just mentioned, that of vaccination. It would be impossible, in a few words, to even scan the history of smallpox. The earliest records of its existence are to be found in Hindoostan and China very many years before the Christian era. It has invaded all parts of the world from the earliest history, and at times the havoc caused by its ravages has been something appalling. One of the earliest writers was the Arabian, Ahron, who practiced in Alexandria in the time of Emperor Heraclius, 610 A. D., but for what is known of these writings, and others, we are probably indebted to Rhazes, physician to the hospital at Bagdad, who died about 923 or 930 A. D. He was the first to distinguish smallpox from measles. Epidemics from this disease are too numerous to mention. The more severe, perhaps, occurred in Iceland, the records of which are to be found in those of the Danish gov-

ernment: the worst epidemic of all occurred in 1707; among a population of somewhat over 50,000 it carried off 18,000. In Ireland where the lamp of learning burned all through the Dark Ages, we find that this disease raged to a great extent, and a very interesting chapter might be written concerning this if time allowed. Emerging from the Dark Ages, Vidus Vidius, 1550, incidentally refers to it as attacking all persons in the course of their lives, and Mercurialis, born in 1530, holds that almost every person must have it once. Many others at this time used similar language, and it seemed to be the general impression that every person born into the world was liable to, and most probably would at some time, have smallpox. Sir Gilbert Blane is credited with the statement that "it had destroyed a hundred for every one that had perished by the plague." George Bell, of Edinburgh, in 1802, wrote that smallpox was one of the most severe and dangerous diseases to which mankind is subject.

The full power of the disease, however, can only be seen as we learn its ravages in the New World, among unprotected populations. This began in 1507 in the West Indies, where it was so disastrous that whole tribes were exterminated; in Mexico, it is related, it even surpassed the cruelties of conquests, suddenly smiting down 3,500,000 of the population and leaving none to bury them. In Brazil, in 1563, it extirpated whole races of men. At about the same period, in a single province in Quito, it is related, it destroyed upward of 100,000 Indians. In Russia, according to the calculation of Dr. Alexander Creighton, physician to the Emperor in 1812, every seventh child died annually of the smallpox; and Colon set down the deaths in France as from 60,000 to 72,000 annually. This was before vaccination. The periodicity which existed in the pre-Jennerian times is interesting as showing that an epidemic of the disease caused an immunity among those attacked who were fortunate enough to live, for a certain period of time, and there is a relationship between this thought and vaccination as practiced at the present day. This periodicity differed in different localities. The immunity seemed to be exhausted sooner in some places than in others, and may this not be true in regard to vaccination? Smallpox first made its appearance in the United States in Boston in 1649, and from then to 1792, about one year in twelve, it was epidemic, while in Vienna from 1742 to 1759 it was epidemic about every fourth year. The enormous mortality from the different epidemics in this country are too familiar to you all for me to quote, and the mode of transmission is also well known. The great prophylactic power of vaccination in smallpox has been so thoroughly demonstrated in our present outbreak, that it does not seem possible that the opponents of vaccination have a single thread to hang on. For a time being, after the disease exists, with the large amount of vaccination that has been done, smallpox will decline until the immunity is lost by time and the future generation comes up unprotected, then we will have a repetition of the disease. To prevent a prevalence of smallpox is a work difficult to perform, for as I stated before, the great masses of the people will only learn by experience. We are, however, very much better off than our forefathers in respect to knowledge pertaining to the greater epidemics. We now know some of the potent factors which cause certain diseases, that are, or may be classed as epidemic. While

the people are slow to realize the invaluable scientific discoveries that have been made concerning epidemic diseases within the past two or three decades, the more intelligent portion is beginning to understand more and more their value, and the medical profession may well feel encouraged with the progress made.

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THOUGHTS ON TYPHOID FEVER; ITS ETIOLOGY, PATHOLOGY, ABORTION AND TREATMENT.

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Prior to the dark ages we find little to indicate that typhoid fever was diagnosed as a distinct form of disease. When the mind of man awoke from the sleep of centuries a new impulse was given to all departments of science, and through the investigations of Spigelius, Sydenham, Huxham, Trousseau, Stoll, Petit, Peyer, Andral, Louis, Chomel, Bretonni and a host of others, we have our knowledge of typhoid or enteric fever, as a specific zymotic disease. Until within a very recent period the consensus of opinion has been that it could not be aborted, but must run a course, and whether only communicated from pre-existing cases or occurring spontaneously, are still mooted questions. Virchow says, wherever we find a cell there must have been a cell—it is a concise statement of an almost universal belief, applicable to all forms of life since the monad, the microscopic atom of protoplasm that Infinite Wisdom unnumbered ages ago placed on earth, endowed with evolutionary force, developed on and on and up through creeping things and bird and beast, to man. Without the intervention of the ages the varied cells of our bodies have been proliferated and differentiated from a microscopic mass of protoplasm, an embryonic cell, into the cells that constitute our bodies, each cell having a life of its own, and subject to the universal law, "each after its kind."

Whether the author of the earliest record of creation, made by man, sought to convey the impression that the Creator "formed man of the dust of the ground," with all his organs and their myriad cells in place, and "breathed into his nostrils the breath of life," or that when there had been evolved from the progressive monad a sufficient number of cells in the gray matter of the brain through which to correlate impressions borne to them through the senses, he

breathed into him a spiritual life and he became a living soul; in him we find differentiation completed. No new form of life, within or about us, has since appeared on earth: all the seemingly new forms, whether occurring as monstrosities or diseased cells, are only pathologic diversions. Stich in discussing the etiology of typhoid fever advanced the belief that every one carried in the intestines material susceptible of putrid intoxication, requiring only favoring conditions for the production of sepsis and typhoid fever. Peter came to a similar conclusion, believing this material was not simply foreign matter within the alimentary canal, but waste products of the organism, capable under lowered vital action of auto-intoxication. Both believed in the spontaneity of the disease, but that it originated in septic matter in the intestine. Later authorities have demonstrated the bacillus typhosus or the typho-abdominalis bacillus, the Eberth-Graffy bacillus, and Koch, Eberth, Graffy, Chautamese, and a host of investigators following in their pathway, believe typhoid fever, and perhaps all disease, the result of microscopic entities foreign to the organism, and hence its occurrence *de novo* impossible.

However life's varied forms may have been differentiated, we know that from the granule of protoplasm within the embryonic cell have been differentiated cells that differ as widely in function and form and chemic constitution as the micrococci, or even the higher forms of life, and that the toxins of their ptomaines are as varied and as virulent as a foregone conclusion. When retained within the organism may we not rationally conclude they are as capable of producing varied forms of disease as the ptomaines and toxins of the so-called pathogenic germs? Those who defend the germ theory of disease beg the whole question when they assume a lowered vitality, with the retained ptomaines of tissue cells, as a necessary precedent to germicidal activity. When natural zymosis is normal pathogenic germs are not present, or if present harmless. It is only when the devitalized cell ptomaines are permitted to accumulate within the tissues that they appear in vast numbers, and their character is determined by the chemic elements of the cell ptomaines on which they feed. While the bacteriologist tells us the ptomaines of bacilli, bacteria and micrococci contain the toxins that produce disease, what of the leucomaine and the toxin of the dead tissue cells that have failed of return to harmless elements, through defective vital action? We may breathe the purest air, drink the purest water, eat the most wholesome food, with every environment perfect, but the changes incident to all vital action involve the death of cells, and in every dead cell lies a hidden poison. If not returned to harmless elements and eliminated from the body they are ptomaines, leucomaines and may become toxins, the poisons varying in character with the chemic constituents of the cells from which they spring. If, however, as in health, metabolic and katabolic changes are normal, through natural zymosis they are returned to oxidizable, harmless forms and borne from the body through its excretories, without the generation of disease. As disturbed vital action is capable of producing all the toxins attributed to pathogenic germs, never present in force without such disturbed action, and as germicides can never be given of sufficient strength to destroy these germs without first destroying the body in which they reside, while antiseptics and disinfectants may prevent or arrest the processes that make cell ptomaines toxins,

why go "around Robin Hood's barn" for causation? If caused by toxins from the etoma of dead tissue cells retained in the body, which we may rationally expect will produce like disease wherever implanted, we have a rational theory of disease and can readily understand how it may be both spontaneous and contagious, why antiseptics and disinfectants of less than germicidal force may prevent or arrest its action, and why it does not harm those in robust health, and if there is any virtue in serotherapy and antitoxins herein lies the key. The toxins of the ptomaines, not of vegetable germs, but of dead cells of special types, undergoing a specific form of sepsis, can probably be modified by treatment so that they will produce a modified form of the specific disease they represent, and protect against future attacks as vaccine protects against variola. However the poison of typhoid fever is generated, its wide diffusion, its preference for the older and more advanced civilizations, and for early manhood, when the dangers of infancy have passed and active life with its duties and pleasures is at hand, its grave character and often fatal issue makes its consideration and the possibility of its abortion, or arrest, of great importance to the profession and to humanity. It is universally recognized as a filth disease, usually water-borne, caused by a specific poison communicated through the alimentary canal by contaminating excrementitious matter from that canal. Authorities differ as to the precise nature of the poison, but all agree that it may be rendered inert outside the body, and if without why not within? If a pathogenic germ whose vitality can not be destroyed within, without destroying the vitality of the body in which it is found, we can readily understand why not. The fact that it can be destroyed would indicate that the germ is not its cause.

Water is the medium through which the poison is usually conveyed to the alimentary canal. If caused by germs they must have been borne to the privy pit, or other source of contamination, from preëxisting cases. While the disease may often be traced to other cases every physician of large experience has had cases that, search where he would, defied all effort to trace their pedigree. They had no line of descent. By way of illustration take an extract from the memorandum of an endemic, confined to a single home, to which I shall refer again. Oct. 3, 1857, was called to see N. M., aged 10 years. She is one of a large, intelligent, cleanly and well-to-do family, living near the top of the northern slope of the divide of the two Miami Rivers, three miles south of Franklin, Ohio. She had not been from home, and no strangers had visited the house. No case of typhoid fever existed within a circuit of many miles, and no case had ever before occurred on the farm. A few days later two other members of the family were stricken with the disease. All the cases were typical typhoid fever and ran long and doubtful courses. An investigation showed that the water used by the family bubbled up clear and sparkling, in an open, well-walled cellar, and after perambulating a milk-house danced away, in a bright stream, down the hillside. The privy vault was found an hundred yards from the house, but higher up the hill. It had been there for a generation, the farm having been opened in the early settlement of the country, and the whole family were born in the house. As no other possible source of the disease could be discovered the presumption was that some of the accumulating contents of the vault had under-

gone a specific change, and found their way to the underground stream that fed the spring. In a well-developed case of typhoid fever diagnosis is not difficult. The tenderness in the right iliac fossa, consequent upon inflammation and ulceration of the solitary and agminated glands of the ileum, with a gurgling sound upon pressure, the rose-colored eruption, the fever without any distinct remission, the morning and evening temperature varying only a degree or two, the listless expression and tendency to stupor, the hemorrhages, especially epistaxis, and as the disease progresses the dusky complexion, the dry tongue with its brown coat, the accumulating sordes, the tympanitic bowels, with the constant tendency to complications, are sufficiently characteristic. It is in the earlier stages that diagnosis is difficult in a disease whose onset is so varied, and yet an early diagnosis is of the greatest importance. Though the invasion is usually so gradual that the patient does not know for a time whether he is sick or well, and in "walking" cases keeps about until suddenly taken down with perforation, it is not always thus. Sometimes the attack comes on suddenly with a chill, at others, as an acute catarrh. In other cases during the inchoative stage there is a diarrheal action, much like that produced by physic. A special susceptibility to the action of cathartics is always present. There is generally languor, listlessness, headache, and a tendency to epistaxis, likewise a general hebetude and an inclination to sleep is apparent; not infrequently there is insomnia and restlessness. An early and accurate diagnosis is important, for if we do not see or recognize the disease until there is ulceration of Peyer's patches we can not abort an ulcer, though we may yet modify or shorten the course of the disease. Whenever typhoid fever is endemic, especially when it is going through a family, as it often does, any suspicious cases should be subjected to preventive treatment. It may be laid down as a rule in any markedly contagious disease, as variola, if we err, it should be in the interest of society. So in the early stage of typhoid fever, if err we must, it should be in the interest of the patient. Wherever a case of typhoid fever is found every precaution should be used to prevent a second case. Whatever the specific poison it is generally communicated from and through the alimentary canal, water being the usual medium of communication. In all centers of population the privy pits that honey-comb the soil contaminate the city wells, whose water is the prolific source of the disease. If such water must be used for potable purposes it should always be boiled. All discharges from typhoid fever patients should be received in a vessel containing a saturated solution of crude sulphate of iron, the privy contents being saturated with the same. In every suspicious case occurring in the family where a case exists, or in the immediate neighborhood, the decks should be cleared for action and the patient put under treatment. Professor Chambers, of St. Mary's Hospital, London, a most reliable observer and attractive writer, in his lectures delivered 1861-2 says: "At an early stage, even after the virus has begun to act upon the system, the fever may be stayed by emptying the stomach. . . . Those who have watched my practice will have seen the fever cut short and convalescence entered upon immediately." Referring again to my notes of the cases in the family of M., October, 1857, I find, in addition to the three well-developed cases, three other members of the family had the pro-

dromic symptoms of the disease. To each was given a mild catharto-emetic, until free emesis. This was followed by tinct. ferri chlor. in drachm doses every six hours, rest and a mild diet. In a few days all symptoms of the disease had disappeared. We can not prove a negative, or that what does not happen would have happened. But when in a swamp region we have the premonitory symptoms of periodic fever who doubts that the disease may be aborted with full doses of sulph. quinin, or other antiperiodic, or the premonitory symptoms prevented by donning dry flannel underclothing when the chill of night comes on, and sleeping between woolen blankets? Since the above date the same experience has been so often repeated that its abortive action can not be questioned.

Dr. Woodbridge, of Youngstown, Ohio, says in the JOURNAL, April 14, 1894, that with a "eucalyptol-guaiacol mixture" he can "abort every case and save every life." While we know that many cases of typhoid fever may be aborted, we do not claim that every case can be aborted and every life saved. If not called until there is lesion in the glands of the ileum, and where there is not only tissue death in these glands, but the whole system is saturated with a poison that lowers vitality and vital resistance, we have the fully developed disease, and there can be no abortion. It must have its course. Into the parched mouth there comes no secretion from the salivary glands to digest amylaceous foods, which if digested could not enter the capillaries through the dry and thickened mucus overlying them, and the tongue and fauces typify the stomach, where no pepsin will be found to digest nitrogenous foods, while along the whole alimentary tract there is an atonic irritability that resents all ordinary attempts to provide material for repair. The glands of the outer coating of the body are as dead or dormant as those along the alimentary canal, the sebaceous cease to yield the unguents that keep the skin soft and pliable, and the sudorific, whose excretion helps to regulate both the temperature and the circulation, ceasing to act, the surface is excessively dry and hot. The hemoglobin, escaping from the poisoned cells, is found in the urine and feces, while decompositions have rendered the blood suddenly alkaline, and in all the structures of the body katabolism is in excess of metabolism; the whole organism is being destroyed by an unintermitting fire, not the heat produced by physiologic activity, but pathologic heat, caused by dead tissues returning through chemie decomposition to original elements, heat like that occasionally observed after death. All the great emunctories are sleeping at their posts, because the poisoned brain can not generate the force necessary to their functional activity, though their action is sadly needed for the removal of waste products. Let us supplement the arrested action of the sebaceous glands with frequent inunctions of cocoa butter, medicated, if you wish, with antiseptics; moisten the dry, harsh skin by frequent sponging with water or water and acetic acid, of such temperature as is most agreeable to the patient, and thus stimulate activity in the sebaceous and sudorific glands, and invite the circulation to the capillaries of the periphery. Do not seek to overcome the excessive heat by depressing the nerve centers with such sedatives as the coal-tar products. Vitality is already nearly *nil*. The heat is not disease, but only a danger signal, though beyond a certain undetermined degree it may destroy life. Here it is a necessary sign of excessive destruction

and decomposition. While you administer comfort and avoid danger by keeping it within due bounds, do not attempt to control it with depressants. Having given due attention to the surface of the body look a little farther. The functions of the digestive tract are arrested. There is loss of appetite, and if food is taken, it produces nausea or vomiting, flatulence and diarrhea, and yet the excessive disintegration of the tissues demands food for repair. Not only are the tissues in which are the stored force of the organism being rapidly destroyed, but as well the nitrogenous tissues, and material for their replacement must be supplied. Solid foods can not be digested, and if not ejected cause a putrefactive diarrhea and aggravate the glandular lesions. The beef extracts on the druggists' shelves are usually frauds. Eggs, however prepared, are liable to decompose and generate sulphuretted hydrogen and other injurious gases. There is no salivary secretion to digest amylaceous foods. Milk, almost always accessible and supplied by nature to the feeblest digestive organs of all mammals, contains not only all the elements of nutrition, but given hot, to stimulate the alimentary tract, and by sips, to prevent the formation of solid curds, is not only generally acceptable to the patient but the little waste it produces leaves the small intestines practically at rest, exercising upon them a soothing influence. So marked are its benefits that good authorities have advocated a "milk treatment." As a diet in typhoid fever milk, properly administered, is the *sine qua non*. I remember very well one typhoid patient, a previously plump and healthy girl of 16 summers, who lived for four weeks on milk, and to all questions of diet gave the unvarying reply, "Milk is good enough for me," and convalesced with scarcely the loss of a pound in weight. Milk should be given as above, in such quantities as can be digested and appropriated, every two hours, giving, if possible, at least three quarts in twenty-four hours. To supplement the oft-times absent lactic acid of the stomach, it should be preceded by a few drops of the ever reliable antiseptic, dilute hydrocyanic acid, which may be diluted, sweetened and flavored to suit the taste. If you would shorten typhoid fever and secure perfect convalescence, the first great necessity is a diet that will secure repair, and the second is like unto it, the prevention of all effort, mental or physical, that tends to exhaustion. After these essential directions we look a little farther and we find the typhoid poison is being carried to all the tissues of the body. There is a lowered vitality, lessened power of resistance and greatly increased interstitial destruction. The red corpuscles are diminished in number, many of them being "melanosed," shriveled, serrated and marked with black spots, while their hemoglobin is being discharged into the serum, coloring it and giving to the skin its dusky hue. The various cells of the body nourished by this poisoned blood suffer, the effect being especially marked in the nervous system, at first by a general aching, sometimes by neuralgic explosions, by chilliness and an increasing and deepening torpor, a general interruption of the generation and dissemination of vital force, especially marked in the cells of the cortex by failure to note and correlate impressions, and by a low muttering delirium.

As far as the absorbents and exosmosis are capable of action they carry the excessive waste to the already gravely poisoned circulation. The dead cells not fully returned to original elements are cellular ptomaines and through decomposition cause a super-

alkalinity of the vital current. The torpid condition of the great eliminators, kidneys, liver and skin, permit this alkalinity to continue and increase. Yet this grave condition is not beyond our reach, and we must not stand idly by until nature removes it or life succumbs. By the free use of hydrochloric acid and hydrochlorate of iron we can supply the deficiency of salts, neutralize the alkaline blood, arrest nutritive decomposition and render the excretions aseptic. It may be given as a grateful lemonade or mineral water, and given *ad libitum*. When it can not be absorbed we have ever at hand the modern invention, the hypodermic syringe, with which we may both nourish and medicate. The use of mineral acids in "putrid" fevers is older than the days of Boerhave, Van Sweiten and Sydenham, and they can not be driven from the field by the high-sounding products of modern pharmacists. Have alcohols any power to shorten the fever, or to help us to a safe haven? Good men answer the question differently. We think they have, but not as ordinarily given, for stimulation or nutrition, or because we are at our "wits' end," and do not know what else to prescribe. In all cases of typhoid fever destructive is in excess of constructive metamorphosis; alcohol may hold destructive metamorphosis while we build up with nutrients. When there is great nervous depression, and exhaustion is increased by its felt sense, when the tongue is tremulous and the hands shake with the slightest movement, when the pulse is sharp, weak and unequal, when there is low, muttering delirium, you may with an alcoholic anesthetic give relief. The best form is sour catawba, if the stomach is irritable, sparkling catawba. The salts in the wine stimulate the kidneys while it gently soothes the nervous system. The stronger alcohols increase the injury, already sufficiently grave, of the typhoid poison. The catawba, if pure, may be taken *ad libitum*. Galen's free commendation of alcohols in every form and in every case, has done much harm. Be sure you understand the therapeutic action of alcohols and prescribe them with intelligent purpose. Everyone who has tried it will agree with Dr. Geo. B. Wood, who says in his "Practice of Medicine," vol. I, p. 329, "I will repeat that the oil of turpentine may be used, with good hope of benefit, in any case of enteric fever in the advanced stage with a dry tongue." It should be made into a pleasant emulsion. Where there is local stasis, hastening, as it is prone to do, to a low grade of inflammation, molecular action should be aroused by hot fomentations and cups, wet or dry, as the case indicates. In all stages of the disease the patient should drink freely of muriatic acid lemonade, or a mineral water made of muriated tincture of iron, and the whole family where the disease exists should make free use of the same drink. Quite recently I have had, by accident, two instructive cases, the patients not understanding or heeding directions. October 1, called to see Dominic Roletta. Found he had had continuous fever for a week. Tongue dry, dark and heavily coated, tenderness and gurgling in the ileo-cecal region, diarrhea, pulse 95 and temperature 101 F. Among other things prescribed tinct. ferri chloridi 3iij, thirty drops every six hours. October 2 the patient had taken during the night all the tincture of iron. The tongue was moist and clean and the patient free from fever, which did not return. November 9, saw Mrs. Zangalina, aged 20, a primipara of two weeks. Found her in a filthy bed in a small, mud-covered Italian hovel,

with every surrounding unsanitary, temperature 105 degrees, pulse 150, skin mottled, abdomen tender, etc. Among other prescriptions was two ounces of dilute muriatic acid and chlorinated tincture of iron, equal parts, with directions to add enough to a glass of water to make a pleasant drink. It was all taken before my visit next morning, and *post hoc* or *propter hoc*, there was an arrest of all grave symptoms and a speedy return to health. If administered in sufficiently full doses we have in hydrochloric acid and the chlorinated tincture of iron abortifacients and curatives as positive in their action upon several of the zymotic diseases than the sulphate of quinia in remittents.

TYPHOID FEVER TREATED BY THE WOODBRIDGE METHOD.

Report of Eighteen Cases of Typhoid Fever treated by the Woodbridge Method at the Worcester, Mass., City Hospital without a death.

BY WESLEY DAVIS, M.D.

WORCESTER, MASS.

During my service from Oct. 1, 1895 to Jan. 1, 1896, there were admitted eighteen cases of typhoid fever all of which were treated by the Woodbridge method, only that the tablets were given in double doses, two every half hour in place of one every fifteen minutes. Of these cases four had intestinal hemorrhage, none commencing later than the fourth day of treatment; we had very little tympanites; no sordes, tongue rarely found dry and then only for a short time, practically no delirium. Three cases had relapse, one a slight recrudescence of four or five days, the other two had an elevation of 2 or 3 degrees and it was ten to fourteen days before the temperature reached normal again; no cause could be discovered. Two or three were nauseated by the treatment and it was suspended for a few hours and subnitrate of bismuth given, when the treatment was resumed and persisted in, not even hemorrhage being considered a contra-indication.

Several had stomatitis to such an extent that the tablets were suspended and guaiacol carb. given in from 3 to 5 gr. doses alternately with the capsules, and the bowels were kept open with 1-20 gr. of podophyllin given with each dose of medicine *i.e.*, every hour and a half or small doses of magnesia sulph. or both as seemed necessary.

One case came in with a septic hand which ultimately required amputation, but fortunately for the diagnosis he had an intestinal hemorrhage of half a pint the second day after admission. Another after several hemorrhages had a chill and temperature of 106 degrees on two consecutive days, after which no local complication being discoverable it yielded to quinin; another had a sharp attack of local peritonitis, probably nature's method of preventing perforation. There was one case of parotitis, also one of double pleurisy with slight effusion developing after ten days when the temperature was nearly normal. We had the reputation of having *mild* typhoid fever at the City Hospital during the fall. When we consider that it is mainly a charitable institution and that the city as a whole presented the usual death rate from the fever, I am compelled to think that the treatment was in a measure, at least, responsible for the mild form assumed and *no deaths*. With the same number of cases during the corresponding period of 1894 we had four deaths under the regular treatment. No typhoid case was refused admission if we could make room for it, as we were anxious to give the treatment a

thorough trial. In strict justice I wish to say that one case in a state of delirium such that it could not be longer cared for at home, was sent to the hospital after my visit one day and died before my arrival the next day, being in the hospital fifteen hours. I have not included this case but refer to it that there may not seem to be a discrepancy when the hospital report shows one death from typhoid fever during the period. The house officer says this was the only case this season where he has seen the characteristic sordes upon the teeth. The regular treatment by sponge baths, usually cold, when the temperature rose to 102.5 or 103 degrees was faithfully pursued and turpentine stupes, opiates, quinin, strychnia and stimulants when indicated were not omitted. The diet in all cases was liquid at first. Milk, lime water and milk, beef tea, beef juice and broths of various kinds in regular quantities and at stated intervals. Stale bread or toast made from it was given, whenever desired by the patient regardless of temperature, if the tongue was moist and tolerably clean; if this was eaten with a relish and did no harm it was allowed more freely and soon followed by custards, dropped egg, egg on toast, etc. *if desired*, and in a few days tender boiled chicken, baked potatoes and the like. During the treatment the stools smell quite strongly of the medicine, which would appear to show that they can get to the site of disease in the small intestines. This antiseptic treatment seems to prevent decomposition and the formation of gas whatever diet may be given and the convalescence is more rapid in consequence of the extra amount of nourishment tolerated and assimilated.

I learn from the board of health, where all cases of fever are required to be reported, that during the three months there were 69 cases reported, from which, if we deduct the 18 at the hospital, we have 51 cases cared for by the various methods and means that a city of a hundred thousand inhabitants affords, with a mortality of 12, a death rate of 23½ per cent. outside the hospital.

I wish to add that I have treated by this method seven cases in private practice without a death, and some have seemed to show that it can be aborted.

FIBROID TUMORS OF THE UTERUS. MEDICAL TREATMENT—GENERAL CONSIDERATIONS.

BY FRANKLIN H. MARTIN, M.D.

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In the consideration of the histology, growth, anatomy, varieties and symptomatology of fibroids of the uterus one is irresistibly drawn to the conclusion that each one of these growths is a law unto itself. Such is certainly the case when we come to the consideration of treatment.

A fibroid tumor is a benign growth. The principal symptoms arising from it are due to the effect of its presence upon organs associated with it or in close proximity to it rather than from any inherent qualities. From its slowness, in the majority of instances, to produce serious symptoms, and the rarity of a fatal termination as a direct result of it, patients are with difficulty aroused, early in the history of the disease, to adopt radical measures for relief. Hence innumerable symptomatic remedies have arisen, each for a brief time having enjoyed the reputation of specifics, only to sink into their true positions as soon as the light of

experience had shown upon them. The simple enumeration of a list of these remedies would fill a long chapter.

The remedies for fibroid of the uterus which merit attention must be considered under three principal heads:

1. Medical treatment.
2. Electrical treatment.
3. Surgical treatment.

To indicate when each of the above methods of treatment could be employed with the greatest advantage to the exclusion of the other, how or when two or more could be combined to greatest advantage would be a task which would necessitate the careful analysis of a large number of fibroid cases, together with all the peculiarities of the growths with their surroundings, the temperament and the physical condition of each particular patient possessing the tumor. The most that can be attempted is to describe the various remedies; the exact physiologic or mechanical effects of each; the manner of administering drugs; the chemic, mechanical and physical effects of electricity, with a comprehensive description of the details of application; the many operative procedures including the rationale of each with a minute technical description of those which merit attention; and finally to show wherever each remedy is especially adapted to counteract some specific condition or symptom of a fibroid uterus.

I will therefore consider each grand division of treatment in detail trusting to the diagnostician to apply the remedies as the indications in each particular case may dictate.

MEDICAL TREATMENT.

The medical treatment of fibroids of the uterus has played an important part in the symptomatic relief and the prolongation of life of those afflicted with this dread condition. For convenience its therapeutics may be divided into general tonics, alteratives, sedatives, astringents and special uterine tonics.

General Tonics.—Rapid growth of a fibroid tumor and a condition of general good health in a patient seldom exist together. So true is this, that I have learned to assure patients laboring under this disease that their tumors will not increase in size rapidly if they can by some means keep themselves in a condition of natural tonicity. While undoubtedly the cause, frequently, of the general lack of tone is the rapidly growing tumor, I believe its growth may be retarded by adopting means to counteract its effect upon the patient. While the tumor with its accompanying pain and loss of blood, and rapid growth must impair general health, that impaired tone of necessity leaves the patient with still less resistance to withstand the onward march of the disease. In other words the results of the rapid growth of the tumor does in turn become one of its aids to still more rapid destruction. Therefore fibroid-tumor patients should be abundantly nourished. The loss of blood should be met by an abundant supply of wholesome substantial food. Bitter tonics such as quassia, calumbo, nuxvomica and cinchona should be administered to increase the appetite. Iron should be administered in a form to be readily assimilated in order to improve the blood. The patient should be urged to drink milk and cream between the regular meals. Prepared foods both of the nitrogenous and farinaceous order should be employed to reinforce the ordinary diet.

Predigested foods may be found of service if the digestive organs fail to stand the strain of over feeding.

As nerve tonics the compound syrup of the hypophosphites with small doses of quinin, strichnia and iron are often of great service. Strychnia in gradually increased doses until the patient takes 1-10 of a grain four times a day, I consider of great value as a tonic in these cases. The dose should begin at 1-40 or 1-60 and be increased gradually, being careful to avoid unpleasant constitutional symptoms. This tones the bowels, acts as a vaso-constrictor tonic everywhere, and I believe acts as a direct tonic to the muscular structure of the uterus itself, while it undoubtedly acts as a vaso-constrictor to the uterus and tumor. As a direct bowel stimulant and laxative aloin with strychnia and hyoscyamus has few equals. Cascara sagrada may take the place of the above as an alternative laxative. General stimulating baths often prove beneficial tonics to fibroid patients. Sea salt baths, warm or cold with judicious rubbing to establish reaction, are often recommended. Chlorid of sodium baths may be employed in lieu of the sea salt baths.

Hot water as a local tonic, employed as a vaginal douche, frequently relieves excessive congestion of the uterus. To accomplish this object the water must exceed a temperature of 115 F., the patient should use at least two gallons at a time and should employ it while in the recumbent position on the back. Chlorid of sodium as an antiseptic and tonic may be dissolved in the water—3 to the pint. Or to get the advantage of an astringent the same amount of powdered alum will prove of advantage. The water must be hot. Tepid water will favor hemorrhage.

Change of air from the sea shore to the mountains (not too high an altitude) or from the mountains to the sea shore often improves health and retards the growth of these mysterious tumors. An ocean or a European trip will often bring a remarkable change for the better in these unfortunate cases. Even a slight move which only involves a change of routine, or surrounding the patient with a pleasant change of companions will draw them away from themselves and occasionally give them just the impulse which they require to regain the lost tone.

Alteratives.—Arsenic, muriate of ammonia, mercury and iodine have an important role in the therapeutics of uterine fibroids.

Arsenic in the form of the acid or in Fowler's solution given in 1-20 dose of the former and in 5 drop doses of the latter immediately following each meal will often act as a powerful alterative tonic in these cases. While no specific action on the growth of the tumor has been demonstrated, its general effects are frequently so satisfactory in maintaining a general condition of tone that it is strange it has not run the gauntlet of a specific.

Muriate of ammonia, which has none of the tonic properties of arsenic and while inferior in alterative properties, has enjoyed a brief trial as a specific for fibroids. Its principle action, it seems to me, lies in the direction of a hepatic stimulant. By favoring a free portal circulation its action in relieving uterine and pelvic congestion must be obvious. I frequently employ it in 5 to 10 grain doses to be taken in one-half glass of water on rising in the morning. It acts in this way as a very gentle stimulant to the bowels and may be used as a substitute for saline mineral water. As a specific for fibroids, however, one must not place upon it much reliance.

Mercury in the form of blue mass or calomel, is the most valuable alterative, laxative and tonic we have in all pelvic difficulties. Its efficiency and superiority as a laxative lies in the fact that it is our best hepatic stimulant. It unloads the portal circulation, relieves pelvic congestions and favors the rapid removal of waste products from the pelvic organs. It too, possibly from the same reason, increases the patient's desire for food, aids healthy digestion, favors normal assimilation and gives an impetus to the general circulation. My valuable friend and teacher, the late Prof. W. H. Byford, taught me the value of this remedy as a tonic, when properly administered, in gynecologic practice. As a laxative the blue mass should be given in 1 to 2 grain doses every evening for several days, then to be omitted for a like number of days. Following the night dose the next morning should be administered a mild saline laxative, either a seidlitz powder, or from a drachm to two drachms of granulated citrate of magnesia in one-half glass of water. As an alterative tonic it may be given in half the above doses extending over a period of twelve days. Calomel is a convenient form for administering mercury as a tonic and alterative. Triturated with sugar of milk, doses of 1-30 of a grain twice or three times a day may be given for a period of twelve days. An interval of twelve days should then elapse before re-continuing the drug. The bowels should be kept free with saline laxative while the mercurials are in use, and care should be exercised to avoid the unpleasant consequences of administering hydrochloric acid coincident with the drug.

Iodin in the form of tincture applied to the cervix of a fibroid uterus or employed as an application to the mucous membrane has been much employed as a routine treatment for fibroids. As an alterative its effects on a fibroid tumor must be slight, but as a stimulant and antiseptic application to the endometrium of an endometritic uterus it certainly will do good. The injection of iodine into the uterine tumors will scarcely be tolerated as a rational or at least as a desirable treatment at the present day.

Sedatives.—The bromids, the coal tar antipyretics, chloral, cannabis indica, hyoscyamus and opium are sedatives which succeed in relieving the suffering of many fibroid patients and which, when judiciously employed succeed occasionally in tiding them over desperate attacks which would prove fatal without their assistance. In chronic conditions like this one we are considering, no physician should mistake the temporary effects of these sedatives for effects of a curative agent. Symptomatic relief only can we hope from them while we are selecting and marshaling our final conquering remedies.

The bromids are probably as safe and as enduring as any mild sedative, where irritability and general nervousness characterize the patient's suffering instead of actual localized pain. Bromid of potassium, ammonia and sodium mixed in solution given in doses containing 10 grains of each, the doses given at intervals of four to six hours, until nervousness is allayed and sleep obtained, is a favorite method of mine of administering this drug. Frequently the above combination given us a dose at bedtime will accomplish good.

Antifebrin, phenacetin and antipyrin I have found of value in relieving severe menstrual pain accompanying fibroids. By giving them in their appropriate doses at intervals of two to four hours during the pain-

ful period of the menstruation frequently complete relief is obtained.

Chloral is a favorite hospital remedy of mine. I employ it for the uterine pain which accompanies menstruation exclusively—not as a steady remedy. The favorite method of administering it is to instruct the nurse to give 20 to 30 grains in three ounces of water as a small rectal enema not oftener than once in four hours for severe pain or sleeplessness. It does not affect the stomach when given in this manner, and the method of administering the remedy serves to make it unpopular to the patient. In fact, an effort is made to keep the patient in ignorance of the contents of the enema.

Cannabis indica as a remedy for pain in menstrual difficulties is one which I have never learned to appreciate. The remedy is so uncertain and variable in its actions that I usually resort to something upon which I have greater reliance. If a pure article can be obtained a pleasant combination of cannabis indica in extract combined with ergot and valerinate of quinine for the pain of fibroid menorrhagia may be employed with advantage. The extract of cannabis indica in from $\frac{1}{4}$ to $\frac{3}{4}$ of a grain, the ergotin in from $\frac{1}{2}$ to 1 grain, and the valerinate of quinine in 2 grain doses, makes a powerful uterine tonic, the cannabis indica and the valerinate modifying the pain which otherwise would be aggravated by the necessary effects of ergot and quinine.

Hyoscyamus, belladonna and stramonium are valuable sedative remedies to employ as alternatives in the long medical treatment which one is often obliged to conduct before these patients decide to have radical means adopted. While one sedative, hypnotic or anti-irritant remedy after another is being employed these remedies will often give surprising aid as a temporary substitute for remedies which for prudential reasons we feel should be discontinued. The active principle hyoscyamin or atropin may be given in solution in appropriate doses. Or may be given in the small granules which are so accurately compounded by the large manufacturers of pills. I frequently combine these drugs with the valerinate, the two making very effectual sedatives or anti-nervous remedies.

Gelsemium, valerian, and asafetida are very valuable drugs, which can be employed with success in the treatment of fibroids. Extract of gelsemium, combined with valerinate of quinine, zinc and iron, acts as a very reliable aid as a mild anti-neuralgic, while in asafetida we have a remedy which the physician could ill afford to lose. Good full doses of asafetida, 4 to 8 grains, four times a day has carried many a nervous, sleepless, hysterical woman successfully through what otherwise would have been a painful menstrual period.

Opium is a dangerous remedy to employ for the pain of fibroids. The remedy is so prompt and efficient with the majority of patients that it is an easy matter for a dangerous habit to be contracted, inasmuch as the difficulty is a chronic and constantly reverting one. If in desperate cases it is considered wise to employ the drug temporarily, it should be presented by the physician and given, if possible, without the patient becoming aware of the contents of the dose. A condition serious enough, however, to demand the use of opium should also demand some permanent radical means of cure.

Astringents.—Local astringents include such drugs as may be employed with curative benefit by applica-

tion to the mucous membrane of the uterus or by application to the neck of the womb through the vagina. Local astringents may be employed, too, for the temporary effect they may have on the secretions of the uterus or for the direct curative effect they may exert when applied to the mucous membrane of the fibroid womb. When the astringents are applied to modify temporarily the secretions of the uterus, for instance the excessive blood flow, it is best applied on tampons. Alum is cheap and one of the safest and most efficient astringents to use in this way. Wicking, or strips of gauze, or cotton tampons may be prepared and kept for emergencies, by dipping them into a 20 per cent. solution of alum in hot water and then evaporating the water of solution by exposure to the air. This leaves the alum thickly deposited in the interstices of the material. It is only necessary then to apply the tampon directly to the bleeding cavity, allowing the fluids of the cavity to dissolve the alum, or it can be placed in warm water immediately before applying. Excessive bleeding from the uterus which fails to yield to other remedies will seldom fail to be controlled by well placed uterine tampons well saturated with alum. Wicking or strips of gauze without knots is the best material to employ. The patient should be placed in Sims' position, the neck of the uterus grasped with a strong tenaculum, so as to expose the canal, then by means of a bulbous-pointed uterine sound, the material should be systematically packed to the bottom of the uterus. Only where the hemorrhage is alarming is this procedure necessary. In ordinary bleeding a well-placed vaginal tampon alone is necessary. For vaginal tampons, Byford recommends compressed sponges saturated with alum. They are made by taking a fine sponge, large enough to fill the vagina, passing a strong string through the center to aid in its removal, and then after dipping it in the solution of alum, well winding it with twine from one end to the other, compressing it into as small a space as possible. The twine should so compress the sponge as to make it assume an elongated form. It should then be laid aside and permitted to dry. Several of these should be kept on hand by the patient, she having been previously instructed how to employ them. After compression and drying it will be of small size, and such shape that it can be easily introduced into the vagina, while the moisture of the parts will soon cause it to expand into an efficient tampon.

Astringents when applied to the mucous membrane of the uterus, are applied ordinarily for the curative effect they may exert on the inflamed endometrium. For this purpose the tincture of the chlorid of iron is a popular astringent. I have employed with benefit a 10 per cent. solution of chlorid of zinc in glycerin and water. Varying strength solutions of nitrate of silver have been employed. This is objectionable, however, because of the indelible stain produced by it. There is such a large variety of well-known astringents which may be employed for this purpose that it seems like needless waste of time to enumerate them.

The application to the mucous membrane should be made, after the cervix has been exposed, by means of a flexible applicator wrapped with cotton. The canal should first be wiped free as possible of all secretion by means of the applicator and cotton and when that is accomplished the mucous membrane should be thoroughly painted with the astringent by passing the applicator, well wound with absorbent

cotton, and saturated with the drug, to the bottom of the uterus.

General Astringents.—Of the astringents which reach the uterus and modify uterine hemorrhage when given internally I know of none which compares with *hydrastis canadensis*. It contracts the blood vessels and modifies the hemorrhage. It is so efficient that one is led to believe that it has a direct contractile effect upon the muscular walls of the uterus and tumor. While it acts as an astringent with special predilection for the uterus it also is efficient as a bitter tonic. The fluid extract may be given in doses of a third to one-half a drachm three or four times a day. I frequently combine the solid extract with ergot in grain doses of each in form of capsules, one three or four times a day. This drug actually seems to possess a curative effect not only in diminishing the amount of the blood discharge but also in decreasing the size of the tumor. When employed to modify hemorrhage it should be given in good maximum doses of one-half to three-fourths drachm of the fluid extract three or four times a day during menstruation. If it is to be employed as a direct curative agent it can be more conveniently and elegantly administered in capsule form as already indicated either alone or combined with other uterine tonics.

Tincture of *cannabis indica* in from four to ten drop doses given during the approach and continuance of menstruation not only modifies irritation but also acts as an astringent and hemastatic.

Special uterine tonics.—Ergot has occupied such a conspicuous and important role in the treatment of fibroids of the uterus that I deem it advisable to devote a special article to its consideration.

The foregoing article can be briefly summarized as follows:

1. The medical therapeutics of fibroids of the uterus are divided into general tonics, alteratives, sedatives, astringents and special uterine tonics.

2. General tonics: Judicious and systematic feeding; bitter tonics including quassia, calumba, nuxvomica and cinchona; iron; prepared foods of all kinds. Nerve tonics: The hypophosphites; strichnia and manganese. Bowel tonics: Aloin and cascara sagrada. General stimulants: Hot salt baths; sea salt baths, warm or cool; massage. Local tonics: Hot vaginal douches. Climate: Change of residence, travel and ocean voyage.

3. Alteratives: Arsenic; muriate of ammonia; mercury; iodine.

4. Sedatives: The bromids; the coal tar antipyretics; chloral; asafetida; valerian; gelsemium; hyoscyamus; opium.

5. Astringents: Local, alum; chlorid of zinc; preparation of iron. General astringents: Hydrastis; *cannabis indica*.

6. Special uterine tonic: Ergot.

Treatment of Syphilis.—The Société de Dermatologie has been considering the question of mercurial injections in syphilis, devoting two meetings to it. The conclusions seem to be that its use should not be limited to severe cases, but that it is beneficial in all, and the best means of administering mercury, on account of its reliability, rapidity, and the intensity of its action. Le Pileur has treated 600 cases with injections of gray oil, which he especially recommends. Hallopeau and others prefer to this injections of calomel.—*Progrès Médical*, February 8.

THE PROPER INDICATIONS FOR REPAIR OF PATHOLOGIC LACERATIONS OF THE CERVIX UTERI, AND THE PROPER OPERATIONS TO MEET THEM.

Read at the meeting of the Mississippi Valley Medical Association, at Detroit, Sept. 5, 1895.

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The recognition of a distinct pathologic bearing of many parturient lacerations of the cervix uteri, and the devising of one of the operative procedures for repairing the injury, by Dr. T. A. Emmet, is probably one of the foremost improvements in minor gynecology in the last twenty-five years. And although the Emmet operation is essentially incompetent to meet all the indications in all properly selected and prepared operative cases of this nature; still its name might be fairer had its importance not been overestimated in the beginning; had it not in a large proportion of instances been ignorantly or carelessly pressed into service, where or when no operation whatever on the portio vaginalis was indicated; or if it had always been properly executed. But the Emmet operation is not the only one that has suffered such abuse. Most other procedures upon the cervix or its canal can make equal claims for redress and limitation to proper indications.

In this connection it is pertinent to note that to one who comes frequently in contact with general practitioners as in consultations or in post-graduate classes in gynecology, it becomes very evident that their views of pathology in the female pelvis are based altogether too much upon things they find in the gynecologic vestibule—the vagina—as seen through the speculum or felt with a finger or two, with one hand only. While these intelligent gentlemen, successful general practitioners, ambitious to be up with the times, are well aware of the fact that the most important portion of the generative organs is located higher up, they seem possessed of the idea that whatever exists up there, aside from marked tumefactions and displacements, must have had its origin below somewhere in the vaginal portion of the uterus or its canal; that something must first be repaired or straightened out there before any disorders above can get better; that when the former has been done, the latter will follow of their own accord “in time” and with “proper care;” that repairing the sheepfold at the place where the wolf entered will make good all the ravages that he committed within, is the delusion to which they are still led on by the original positive statements of the promoters of trachelorrhaphy in their text-books, who said that subinvolution, metritis, retroversion of uterus and tender ovaries would practically be done away with by removal of the “cicatricial plug” and overcoming the ectropion. Gynecologists generally know now from experience usually well paid for, that this is not so. They know that organic disorders of pelvic organs located above the vagino-abdominal diaphragm that have arisen as ulterior effects of cervix laceration, become separate entities and require treatment suited to themselves nearly the same as if no lacerated cervix figured in the case; and they know, moreover, that when such a policy of treatment is carried out the patient very frequently recovers enduring health with-

out any cervix operation. While such knowledge is in possession of able specialists who are familiar with the opinions and experiences of most of the world's authorities and greater operators, it has not penetrated through the general rank and file of honorable and efficient general practitioners, who naturally have not the time to thresh the great international stack of medical journals, society reports, etc., but are limited to the opinions of a few authorities briefly expressed in the text-books. The text-books are the principal guide to general practitioners in matters apart from general medicine, and oftentimes in the whole domain of medicine and surgery. I am constrained to attribute much of the defects and inconsistencies in gynecology as it is practiced by general practitioners and some self-styled specialists to the text-books; and chiefly to those of our own glorious country.

Thus while Emmet in the 3d edition (last) of his “Principles and Practice of Gynecology,” admits that he would not do trachelorrhaphy in a number of conditions where he had previously operated, he inconsistently retains a most unfortunate and unguarded statement from the previous editions. He opens the chapter on this subject by saying: “The importance of this injury can not be exaggerated;” (!) since at least one-half of all the ailments among those who have borne “children are to be attributed to laceration of the cervix.”

To say that one-half of all the gynecologic ailments, even of parous women are due to this cause, would be an exaggerated statement which the experience of the last twenty-five years has abundantly disproven. And to say that half of all the ailments—general, medical and surgical included—are due to this is so much greater an error. For the feminine body, minus its generative organs, does have ailments also, quite as well as that of the male minus its sexual organs. And if we, for the sake of generosity in argument will assume that half of all the ailments of parous women come from their reproductive organs, and the other half from all the rest of their bodies combined; then the logical conclusion would be that laceration of the cervix uteri causes all the gynecologic ailments in parous women, if Dr. Emmet's dictum were correct.

Thus, we have a praiseworthy subject crippled at its introduction by an unfortunate exaggeration of its importance by its own author; and is it surprising then if thousands of practitioners and scores of improvised specialists, who justly bow to the fruitful views, valuable suggestions in treatment and authority of Dr. T. A. Emmet on nearly every other gynecologic subject, have looked to the cervix uteri and no further, for the source of nearly all gynecologic disorders, and have operated for imaginary sources of irritation more frequently than for real ones? They can not all know that six years later (1890) in an excellent paper at Toronto, Canada¹, he trimmed the indications for his operation down to “relief of certain reflex symptoms accompanied by more or less impaired nutrition, and to guard against the occurrence or epithelioma,” after ample previous treatment; and that, to escape the need of trachelorrhaphy, he advised a potent course of treatment of the parts during the puerperal state consisting of hot water vaginal douches, weak sublimate intra-uterine irrigations, Churchill's tincture to the cervix and vaginal vault, three to four weeks recumbency, ending in efficient tamponade of vagina when

¹ Canadian Practitioner, vol. xv., p. 313.

indurations above or descent of the uterus exist.

And while the other more recent text-books have taken a fairly reasonable view of trachelorrhaphy, they state merely the "Emmet pathology and treatment of this subject" and fail,—

1. To proclaim and to reiterate, with emphasis, the important principle or rule of action, that a complete diagnosis of the woman and of her pelvis must be made before any operation whatever on the gynecologic uterus is permissible; that by skillful and well disciplined bimanual palpation, almost wholly, in anesthesia when required, the position, mobility, size, shape, consistence and tenderness of the entire uterus, the location, mobility, size and tenderness at least of usually both ovaries, and any material departure from health in the tubes, ligaments and pelvic peritonium must first be secured before the question of indication for cervix operation of any kind can be decided.

2. The text-books fail to impress upon their readers as irrevocable common law, that aside from some reflex neuroses, all organic pathologic conditions above the vagina that follow by infection and otherwise, in the retinue of cervix laceration, become separate objects for treatment, independent of the cervix, and should receive such treatment previous to the repair on the cervix, or in the same narcosis with that operation.

The substance of such rules and principles prefaced to each of the principle minor operations in the text-books, would soon eliminate the frequent instances where pathologic conditions of a minor grade, receive an impetus in the wrong direction which lands them where major operations only can avail; when a correct understanding of the whole case and supporting of nature's processes would have secured more nearly a normal woman by minor means.

As to the Emmet operation, time forbids that I should quote the numerous derogatory statements in the literature by thorough gynecologists as to its poor, bad and positively harmful results. Such are known to all men in extensive general and special practice. And, alas! among the laity they have too often been stumbling blocks that have induced women who needed other very important operations, to while away their day of grace.

There are many who eulogize trachelorrhaphy. But their number is constantly decreasing and they are usually young aspirants who, with broader knowledge and more experience, will become more reserved in their statements. The critics of this operation usually ascribe its negative results to its being done defectively or out of place. But I hope to show by touching upon the several views of the pathology, and a brief review of the morbid processes in childbirth that the operation is itself unable to cover the whole ground.

A view that is entertained by many, chiefly Europeans, and expressed by Wm. R. Pryor,² is, no doubt, correct in many cases; viz., the cervix that tears is usually one that was hypertrophied or hardened previous to pregnancy; that it was then in a state of fibrosis or connective tissue hyperplasia, viz., a diseased cervix, and therefore tore; that the erosion is caused by the outflow of purulent discharge from the associated endometritis, so that if any operation at all is indicated it is curettement and amputation of the cervix; that sewing such lips together is worse than nothing.

2. The view of Schroeder is, no doubt, also often nearest the truth: that lacerations of the cervix being so frequent that they may almost be looked upon as physiologic, in themselves tend to heal spontaneously unless something gets into them and prevents coaptation of the torn surfaces. And this obstacle is presented by the previously diseased catarrhal mucous membrane lining the canal. And as the canal is flat and has acute angles laterally it prevents the healing of those tears mostly that occur on the sides. And therefore extirpation of this diseased lining of the canal with its degenerated mucous glands is indicated, with reunion of the severed lips when necessary.

3. The view of Emmet assumes the deeper muscular and fibrous tissues of torn cervixes to have been healthy previous to pregnancy and labor, and regards the laceration as the original evil, causing disease of columnar mucous membrane by its exposure. He assumes that involution in the cervix is arrested, because its lymph and vascular channels are laterally obstructed by cicatricial formations in the angles of the tears. This does not seem rational when, as he assumes, these channels are in action in the interior—the greater portion of the cervical lips.

When lacerations occur in cervixes whose mucous lining and other tissues were perfectly healthy before pregnancy, the Emmet order of events is correct. But while each of these three views presents a part of the whole truth, we need to ascribe more importance to the element of infection, inflammatory action and its residua.

According to the investigations of Doederlein,³ Burguburu,⁴ Williams⁵ and Burkhardt,⁶ the vagina of every pregnant woman contains saprophytic germs and in nearly half of all cases, pathogenic germs are present in it. In recumbency the vagina of the puerperal female is almost never empty but is simply overflowing most of the time. This basin presents admirable conditions for bacterial culture and the fluid contained in it is never strictly aseptic, although it contains pathogenic germs in only about 40 per cent. and the dangerous streptococci in 4 per cent. of cases unmodified by douches, examinations, etc. It will arouse a variable degree of inflammation in the lacerated cervix that is either immersed or periodically dipped in this fluid, even when it can or does not induce puerperal fever. Such inflammation will not be limited superficially to the torn surfaces but it will engage the columnar mucous membrane and muscular and connective tissue substance of the bodies of the severed lips.

Involution is arrested by the inflammation which converts it from the state of subinvolution into that of fibrosis or connective tissue hyperplasia. Thus, if the cervix was not hard and diseased previous to pregnancy, it becomes so now. The hard tissue encountered by the needle in the Emmet operation is formed. It is studded with diseased submucous glands and is more of an irritating focus than are the much smaller cicatricial plugs removed by the Emmet procedure. And the enlarged Nabothian follicles that are distributed beneath the mucous membrane deeply in the diseased bodies of the cervical lips must be regarded, not merely as hypertrophied glands, but as a graver feature tending toward malignancy, in view of facts learned by extended histologic

³ Archiv f. Gynecologie, Bd. 40, pp. 99 and 306.

⁴ Archiv f. Experimentelle Pathologie u. Pharmacol.

⁵ Amer. Jour. Med. Sciences, July, 1893, Bd. xxx, p. 463.

⁶ Archiv f. Gynecologie, Bd. 45, Hft. 1.

studies of the earliest malignant infiltrations here. Therefore, extirpation of all tissues containing such cystic follicles is needed, and not merely puncturing them and then hiding them, as is done in the Emmet régime.

Now in order to do away with the customary guess-work with which physicians have usually plied the question, whether a given case required operation or not; and on the principle that the laceration itself, *per se*, is innocent, that its evil results alone are pathologic and may need removal in cases where they have supervened.—I analyze these results under the following four points, which must be objectively demonstrated by touch, and can be guessed at only by sight. They are:

1. *Cervical Diastasis at the Vaginal Attachment*, produced only by very deep lacerations that extend above the vaginal insertion. Then traction of the anterior and posterior vaginal walls may draw the torn flaps of the cervix apart and will usually tilt the fundus backward. All tears that do not extend beyond the portio vaginalis uteri, and whose torn surfaces are covered by normal vaginal mucous membrane and that are bounded by normal elastic and flexible cervical tissues throughout the entire cervix, are not pathologic, no matter what be their depth.

2. *The Cicatricial Plug or Wedge* at the bottom or angle of each tear.

3. *The Columnar Mucous Membrane* lining the outer portion of the cervical canal and covering the inner side and tips of the everted cervical lips, which is diseased by hypertrophy and adenoid degeneration, and is commonly called "an erosion."

4. *The Indurated Body of each Lip*, meaning the entire stratum of hardened cervical tissues in each lip, which underlies the membrane last mentioned, and embraces most of the Nabothian follicles.

Two or more of these four features must be present in any given case before we can say that the cervix may possibly be a source of irritation, or is pathologic. But to say that it is such, that it is what makes the woman sick, is another question altogether; and before we can answer it we must make a general diagnosis of the entire woman and a detailed one of her pelvis, not merely of the vaginal vestibule. We need to be aware of every anatomic and functional derangement that may be present in any of the other principal organs or systems of the body, before we can possibly judge fairly how much of the patient's sickness is due to these, and how much to her pelvic conditions. And then, coming to the pelvis, we must not let our eyes and a speculum deceive us and be overawed by cosmetic infringements in the vagina. But when the intestines have been properly emptied of feces and gas and the bladder is empty, we must by simple digital palpation, and by vagino-abdominal (bimanual) or by recto-vagino-abdominal (trimanual) palpation search for the four pathologic features about the torn cervix; determine the position, mobility, size, shape, consistence and tenderness of the entire uterus; ascertain the location, mobility, size, tenderness and contour (as to cystic follicles) of usually both ovaries; and find out any material departure from health in the tubes, ligaments and pelvic peritoneum. Nor dare we overlook anything about the rectum, perineum or bladder. Not until we have thus surveyed the entire pelvis and have carefully weighed the pathologic bearing of every abnormal feature in it, can we possibly judge as to the harmfulness or inno-

cence of lesions about the cervix, be they ever so marked.

Distinct extra-uterine swellings, aside from mere thickenings and retraction of ligaments, when they continue longer than six or eight weeks after a labor, miscarriage, or other occasion for inflection, are not cellulitis, as expressed by Emmet, but disease of appendages, and adjoining peritoneum, or the results of such disease; or they are neoplasms; and they will contra-indicate all cervix repair as long as they give pain locally, or are markedly tender on pressure, or are aggravated by the passage of a galvanic current of moderate amperage through them; unless in the judgment of a competent gynecologist they are amenable to minor means, and it is thought that their chances would be improved by eliminating a suspicious endometritis by a thorough curettement, packing, etc. Then the cervix operation may be done also incidently.

When, as is so frequently the case, a lacerated cervix is accompanied by a retroversion or flexion of the uterus, and is adherent or not normally movable, especially when one or both ovaries are also descended, operating on the cervix is contra-indicated until all adhesions and other hindrances to normal anteversion have been overcome by the usual means, supplemented by skillful pelvic massage. If this proves to be unavailing in competent hands, then curettement and intra-abdominal work will be needed, not to remove anything unless it is hopelessly diseased, but to liberate the organs and to secure them in their proper positions; and not merely a little whittling enterprise on the cervix: that would but aggravate the principal disorders. But in 95 per cent. of all such cases pelvic massage will achieve this liberation of the organs and will restore them to their proper realms, with nothing but their own weight to hinder them from remaining there.

When this preliminary victory has been gained, and not until then, the following series of operations is in order, which I do usually in one narcosis:

1. Curettement and packing, to take care of the co-existing endometritis and to make a surgically clean field.

2. Operation for lacerated cervix.

3. To hold the uterus in anterversion, shortening of the round ligaments is most serviceable and satisfactory in the great majority of well prepared cases. But ventro-fixation will have to be chosen for some, and vagino-fixation for others.

4. Posterior kolporrhaphy and perineorrhaphy are often required to meet all indications.

Endometritis is the regular accompaniment of all pathologic lacerations of the cervix; and any secondary operation for cervix repair, without a preceding careful, and intelligent curettement or without a narcosis, is botchwork.

PROPHYLACTIC TREATMENT.

Large tears that occur in hospitals and elsewhere, when a competent nurse and appointments for aseptic detail are at hand, should be sewed up primarily within a few hours after labor; as has been done and advised by Pallen, A. P. Dudley,⁷ Garrigues,⁸ C. Kollock,⁹ C. C. Barrows,¹⁰ H. T. Byford,¹¹ and many others. But whether they be sewed up or not, sur-

⁷ Amer. Jour. Obstetrics, February, 1895.

⁸ Amer. Jour. Obstetrics, 1891, vol. xxiv, p. 1329.

⁹ Tr. Amer. Gynecol. Soc., 1891, vol. xvi, p. 295.

¹⁰ New York Med. Jour., 1891, vol. lxi, p. 530.

¹¹ H. T. Byford, Tr. Ill. State Med. Society, 1894, p. 495.

gical cleanliness of the parts should be maintained by suitable douches. The evil results of a tear are alone pathologic; and these may be largely prevented by eliminating the element of infection and inflammation, by interfering with the developments of both pathogenic and saprophytic or fermentation germs. This declaration is testified to by: 1. Dr. T. A. Emmet, who says that in cases where the stitches are taken out on account of infection a few days after trachelorrhaphy has been done, and the cervix is not re-united, but the freshened surfaces are allowed to glaze over with a vaginal mucous membrane under efficient hot water douches and other guards against infection, the benefit to the patient's health is about the same as if it had all primarily united.

2. This declaration is testified to by the fact, which can frequently be observed, that lacerations in the cervix that have been protected from constant or frequent contact with fermenting or positively septic lochia by antiseptic, or aseptic vaginal, or vaginal and intra-uterine douches, skillfully administered, will afterward be found healed over with shining vaginal mucous membrane and not associated with the pathologic features which I have detailed. Therefore the vagina should be redeemed from being an undisturbed culture bed for germs.

CHOICE OF OPERATION.

In the rare instances where only gaping of the cervix at or above the vaginal attachment exists, or the cicatricial plug alone, or both of these together, *i. e.*, Nos. 1 and 2 of my pathologic features, with no diseased columnar mucous membrane and no indurations or cystic follicles in the body of the lips, the Emmet operation will fill the indications. This will be more likely in cases of early trachelorrhaphy, as it is named by J. J. Mulheron,¹² who advised sewing up tears in childbed about two weeks after labor.

But in some of these early cases even, and in nearly all cases that really need operation later on, the principal indication for removal is presented by points 3 and 4 of my description; viz., the diseased columnar mucous membrane covering the longer median portion of each lip, and the entire mass of indurated cervical tissues composing the body of each lip and containing most of the dangerous submucous cystic follicles.

These principal sources of irritation and of malignant developments the Emmet operation can not cope with, without doing more harm than good by impairing uterine drainage. In at least four-fifths of all secondary cases the entire indications are best fulfilled by a suitable adaptation of the operation devised by the lamented Schroeder of Berlin, for excision of catarrhal mucous membrane from the cervical canal. It was published by him in this country in 1882. It is as follows:

1. Exsection of the cicatricial wedge at the bottom of each tear by two suitable incisions which meet near the internal os, forming acute angle with each other. When there is only a unilateral tear and diseased cervical tissue and membrane are to be removed, then one simple temporary incision of equal depth is made in the cervix at a point opposite the tear. By holding the two cervical flaps thus made apart by bullet forceps, the entire cervical canal becomes accessible.

2. A cross-cut is then made on one lip extending in length to about one-eighth or one-fourth of an inch

from the lateral boundaries of the cervix, and of sufficient depth to pass through the mucous membrane and all indurated cervical tissue beneath it. This cut is made as high up in the cervical canal as is needed to remove all diseased parts and still admit of the subsequent suturing. From this incision downward to the end of the lip, the entire mucous membrane and with it all the adjacent hard cervical tissue, with all the diseased follicles in it, is removed in one piece, so that a hollowed-out flap of the soft and flexible outer vaginal portion of the portio vaginalis is left. This is then flexed inward upon itself, and its end sutured by four to six catgut sutures to the projecting shoulder above (and created by) the transverse incision.

3. The other lip is next treated in the same manner.

4. Finally, three or four silkworm-gut sutures are introduced on each side similarly to the Emmet sutures.

Thus a short and broad cervix or portio vaginalis is made, whose external portion is lined by squamous epithelium that will never degenerate as the less resistant columnar mucous membrane does, from numerous local causes, and stenosis of the cervical canal is never invited, as it often is by the Emmet operation.

A CONSIDERATION OF THE VALUE OF THE ALEXANDER OPERATION COMPARED WITH THAT BY ANTERIOR FIXATION OF THE UTERUS.

Read before the Gynecological Society of Boston, Feb. 13, 1896.

BY AUGUSTUS P. CLARKE, A.M., M.D.

CAMBRIDGE, MASS.

Alexander's operation seems from the most recent experiences to be indicated only in those cases of backward displacement that are not complicated with adhesions and pelvic contraction. When the displacement is due to morbid processes connected with the Fallopian tubes and ovaries the Alexander operation would be for the most part contraindicated. The operation can only be resorted to with advantage in cases of mere relaxation of tissue. In cases of adhesions it is plain that the contracted parts would draw upon the bladder. In uncomplicated cases the operation would insure the uterine fundus, being held over the bladder more in accordance with its normal relation than can be secured by a resort to the other surgical procedures. Speaking from my own experiences and observations I should say that the indications for Alexander's operation are extremely limited. The operation, though a delicate one, is often quite formidable and, unless its application is narrowed down to the cases in which it must be employed, the measure for relief will prove a failure. Most of the apparent cures following the Alexander operation result not so much from its adoption as from the measures employed to relieve many concomitant lesions. Metritis, endometritis, salpingitis and ovaritis are conditions that often accompany retro-position. Curettage and other surgical expedients employed for the relief of these affections are often most helpful in overcoming displacement. Some operators employ for some weeks after the operation as a precautionary treatment different forms of pessaries. Careful and judicious application of iodoform gauze tampons is sometimes preferable to the use of the regular pessaries. The employment of such means and the keeping of the patient in bed or at rest contribute no doubt to the relief experienced. The special features of treatment such as rest and the

¹² Canadian Practitioner, vol. xv, p. 346.

securing of greater nutrition may often assist materially in lessening the retro-position. Some have reported cases in which the Alexander operation has been employed for overcoming prolapse. The results of such cases must be regarded as negative, for the reason that the proper function of the round ligaments is rather to prevent a backward than a downward displacement.

Mr. Bland Sutton tells us that except in the human female the round ligaments are found only in the chimpanzee and the higher apes. The function of these ligaments in those animals is also to prevent retro-displacement. In downward displacement or prolapse other surgical procedures, such as anterior colporrhaphy, and, in intractable cases, vaginal hysterectomy are the means resorted to for a cure. In cases when inflammation and laceration are the causes, curettage of the uterine cavity, trachelorrhaphy and perineorrhaphy may have to be employed. In cases of backward displacement in which there are adhesions abdominal section or celiotomy (hysterorrhaphy) may advantageously be employed. This is especially indicated when the retro-position continues after other lesions have been attended to. Certainly hysterorrhaphy is more dangerous than the Alexander operation. In hysterorrhaphy or anterior fixation it is surprising to observe what a small band of union will keep the uterus properly anteposed after it has been restored. It is the intra-abdominal pressure that is exerted from behind as well as from before or from above that sustains the uterus in its normal position over the bladder. When, however, the uterus has undergone a backward displacement the intra-abdominal pressure is merely downward upon the organ. Pressure high up, or drawing from below tends to overcome the supports rendered by the round as well as by the utero-sacral ligaments, and so gives rise to the retro-position. The shrinking or the contraction that generally takes place in the round ligaments may serve to restore the displaced uterus. In some cases the round ligaments are very frail and may be found to have undergone fatty degeneration and atrophy. Anterior fixation through an abdominal section may, after the appendages have been removed, be effected by suturing the pedicles to the peritoneum and sub-peritoneal fascia on each side of the incision; in such cases a single suture passed through the uterine wall may suffice. There will, therefore, be less traction or sense of discomfort complained of by the patient before she has become accustomed to the presence of the uterus in its restored position. The fixation in this manner for the most part in any case gives rise to unnatural sensations. The Alexander operation, when successfully performed, is a more scientific procedure, though there is danger of establishing a too firm fixation in this direction. Ventro-fixation may interfere very seriously with the progress of pregnancy, and should rarely be resorted to in virgins or in women who have not reached the menopause, unless the adnexa have been removed by reason of disease or morbid changes. Vaginal fixation is sometimes employed as a means of relief for retro-position. The extended incision rendered necessary to effect a separation of the bladder from the vagina may lead to troublesome vesical symptoms. Some operators advise that the inner surface of the ligaments on either side be scraped and their raw surfaces be folded together and sutured. The sacro-uterine ligaments may be folded through an abdominal or a vaginal

incision. The history of the results of such surgical expedients has not been as satisfactory as that of the relief obtained from the Alexander operation and hysterorrhaphy. It should be again observed that the Alexander operation as well as hysterorrhaphy when resorted to in women who have not reached the menopause may so firmly fix the uterus as to interfere seriously with the development of a normal pregnancy.

The patient should be made aware of the full consequences of either operation and be made to recognize the possibility of not being able afterward to carry a child to the completion of pregnancy. In certain cases of retro-position when the patient is to remain unmarried, or has passed the menopause, these measures of relief may be excellent expedients.

LOCOMOTOR ATAXY ASSOCIATED WITH SYPHILITIC CEREBRO-SPINAL MENINGITIS.

Read at the meeting of the Chicago Academy of Medicine, held
February 14, 1896.

BY SYDNEY KUH, M.D.

CHICAGO.

Late Assistant to Professor Erb, of Heidelberg; Professor of Nervous Diseases, Post-Graduate Medical School; Attending Neurologist, St. Elizabeth and Michael Reese Hospitals, Michael Reese Hospital Dispensary and U. H. C. West Side Dispensary; Consulting Neurologist, Home for Aged Jews and Home for Jewish Orphans.

For some years we have known that syphilitic disease of the spinal cord may simulate the symptoms of locomotor ataxy. More recently we have learned that tabes dorsalis may occur simultaneously with true syphilitic lesions of the spinal cord or its membranes. In 1890 when examining the central nervous system of a patient who died while suffering from locomotor ataxy for changes in the cortex of the brain, such as had been described by Jédrassik but a short time previously, I was surprised to find changes in the membranes of the brain and spinal cord, such as had not before been seen. The history of that remarkable case and the result of the microscopic examination were as follows:

The patient, a well-known actor, 36 years of age, had had an ulcer glandis penis when 20 years of age. He had a course of inunctions and never suffered from secondary symptoms. His occupation exposed him to frequent sudden changes in temperature and necessitated a good deal of intense mental exertion. There was no neuropathic disposition in his family; he had never used tobacco or alcohol to excess, and had never suffered any trauma. In 1887 he had a sudden attack of vertigo. Very shortly afterward he was examined by Professor Erb, of Heidelberg, who found the following symptoms: Impotence, wide and unequal pupils which did not react to light, slight swaying when eyes were closed, absence of knee jerk, slight diminution of sensibility, particularly to pain in the toes of both feet. After forty inunctions and continued electric treatment there was some improvement. During the following year the patient suddenly became worse. There was ataxy, more marked swaying oculis clausis, greater impairment of sensibility and paresthesia in lower extremities and in the ulnar nerve, lancinating pains. In September of that year Charcot's joint developed in the right knee and the beginning of a similar condition in the left knee became noticeable. In March of the following year he died quite suddenly. Up to the last day his mind had remained perfectly intact.

At the post-mortem examination the bones of the skull were found to be very much thickened. The heart was enlarged. There was degeneration in the posterior columns of the spinal cord, but the record contains nothing about changes in the membranes. The spinal cord and brain, the pneumogastric nerve, cerebral and spinal arteries and part of the cauda equina were hardened in Mueller's fluid and stained with Weigert's hematoxylin, borax carmin, alum carmin and Delafield's hematoxylin. In order to render the results as reliable as possible normal material was hardened and stained by exactly the same methods.

The changes found were briefly as follows: Typical tabetic changes in the spinal cord, most pronounced in the lumbar region. On a level with the upper portion of the decussation of the pyramids some of the axis cylinders in the columns of Goll and Burdach were swollen, others atrophied; the medullary sheaths were broken up into globular fragments, while the neuroglia was totally unaltered, or in other words, purely parenchymatous degeneration had taken place. Besides this we found peri-, end-, and mes-arteritis in the vessels of the membranes of both the spinal cord and the brain, and a leptomeningitis which extended from the cauda equina to the cerebrum, involving the convexity of the brain to a greater extent than its base. The cause of the sudden death was probably a series of minute fresh hemorrhages in the immediate neighborhood of the nucleus of the pneumogastric nerve. In the dentate nucleus of the cerebellum the nerve cells were undergoing a process of degeneration, a condition which according to recent investigations by Jellinek (Ueber d. Verhalten d. Kleinhirns bei Tabes dorsalis. *Deutsche Zeitschrift f. Nervenheilkunde*, 1895, VI, Bd. 3 and 4, p. 231) appears to be a common occurrence in tabes. That the meningitis was of a syphilitic nature was proven by the existence of a typical gumma in the pia mater of the anterior portion of the cervical region. In the pneumogastric nerves the blood vessels were increased in number, their walls contained an abnormal number of nuclei, were thickened, infiltrated with round cells here and there. Similar accumulations were seen between the nerve fibers and some of the latter were distinctly diseased, the changes being similar to those described in the region of the decussation of the pyramids.

Since the publication of this case a number of similar observations have been placed on record by others.

Thus Dr. Jegorow,¹ at a meeting of the Society of Neuropathologists and Alienists of Moskau held on Jan. 18, 1891, reported a case in which the symptoms of tabes (absence of deep reflexes, Argyll-Robertson pupils, sensory disturbances) were associated with inferior paraplegia and atrophies and the post-mortem revealed the changes characteristic of locomotor ataxy, meningitis in sacral region, syphilitic disease of the blood vessels and a number of fissures in the spinal cord. In the same year Dr. G. Marinesco² reports four cases of locomotor ataxy in at least two of which tabes was combined with tertiary syphilitic lesions in the central nervous system.

In 1892 Dr. M. Dinkler,³ of Heidelberg, read a paper entitled: "A Case of Syphilitic Tabes," in which he gives the history of a patient, 42 years of age, in whom the first symptoms of tabes developed nine years after the primary lesion. Clinically the case was typical: Impotence, lancinating pains, girdle sensation, Argyll-Robertson pupils, miosis, analgesia, right knee-jerk less marked than the left. The patient succumbed to a cerebral hemorrhage. Besides the tabetic degeneration there were found milary aneurysm of the cerebral arteries, syphilitic leptomeningitis with small gummata and multiple hemorrhages.

In Minor's⁴ case a woman, 26 years of age, developed the symptoms of a myelo-meningitis of the dorsal region five years after the probable infection. To these symptoms were added those of locomotor ataxy, such as absence of deep reflexes, Argyll-Robertson pupils, myosis, lancinating pains. After treatment with mercury the paraplegia disappeared, while the symptoms of tabes remained unchanged. Here, too, cerebral lesions were the cause of death, and the post-mortem showed not only that the diagnosis of locomotor ataxy had been correct but that in addition to this a diffuse syphilitic leptomeningitis with gummatus periarteritis in the spinal cord had existed.

¹ Neurolog. Centralblatt, 1891, x, p. 406.

² Über einige d. Syphilis hervorgerufene Veraenderungen, etc., Wiener med. Wochenschrift, 1891, xli, 51, 52, 1891.

³ Ein Fall von Syphil. Tabes. Vortrag gehalten auf d. XVII. Wanderversammlung Suedwestdeutscher Neurologen und Irrenärzte zu Baden-Baden am 28 und 29. Mai, 1892. Vide also Deutsche Zeitschrift f. Nervenheilkunde, 1893, lri, p. 319.

⁴ Heml- und Paraplegie bei Tabes. Zeitschrift f. klin. Medicin, xix, 5 and 6.

A seventh case, that published by Dr. M. Nonne,⁵ was somewhat more complicated. His patient, a man 44 years old, had a chance in 1870. Seventeen years later ataxy, Romberg's symptom, myosis, Argyll-Robertson pupil, absence of deep reflexes and atrophy of optic nerves were found. In 1890 subacute paraplegia developed in the upper extremities. Death one month later from apoplexy. Again the changes characteristic of tabes were found in the spinal cord and added to these gliomatosis beginning in the upper cervical region and extending down to the level of the tenth dorsal nerve, a fresh focus of necrotic softening in the cervical region, chronic cerebral leptomeningitis, end- and mes-arteritis of the basilar artery.

Finally, an additional observation of this kind has been published by Dr. B. Sachs⁶ about two years ago. Here we again find the symptoms so often enumerated: Ataxy, lancinating pains, absence of deep reflexes, Argyll-Robertson pupils, miosis, Romberg's symptom, and in addition to these gastric crises and slowness of sensory conduction. Anatomically the typical sclerosis of the posterior columns, syphilitic leptomeningitis and typical specific arteritis existed.

A ninth case published by Dr. C. A. Ewald⁷ is mentioned in some of the papers on this subject, but the microscopic examination showed that it was a pseudo-tabes syphilitica and not a true case of locomotor ataxy. These lesions are very probably not at all uncommon in cases of locomotor ataxy and have presumably not been described more frequently on account of the technical difficulties associated with making satisfactory microscopic sections of the central nervous system when the membranes have not been previously removed. The discovery of true syphilitic changes in the central nervous system proper or its membranes may well be mentioned as an additional factor in the support of Fournier's theory, that locomotor ataxy is very often, if not always, the consequence of a specific infection.

Since this paper was written I have looked over some older specimens prepared in the laboratory of the late Professor Meynert, of Vienna, and have found among them two cases with changes in the spinal membranes identical with those described in this paper, excepting that I could not discover any gumma.

DISCUSSION.

DR. HUGH T. PATRICK—The combination of ordinary syphilis of the nervous system with tabes we must consider an established fact, and there is no reason why it should not be so. A large proportion of all cases of tabes undoubtedly occur in syphilitics, and there is nothing to prevent the ordinary syphilitic lesions from being superimposed upon or combined with locomotor ataxia. In direct relation to what Dr. Kuh has said in his most instructive paper, there are two points I would mention briefly, and the first is the relation of suspension to sudden death of the patient. It has been known for a long time that tabetics occasionally die suddenly with symptoms of cerebral apoplexy, yet nothing can be found post-mortem to account for death. I believe I was the first in this city to suspend an ataxic for locomotor ataxia, and this patient died after suspension. He had, as Dr. Kuh's case did, all the symptoms of cerebral apoplexy, coming on about four hours after suspension. Macroscopically nothing was found in the brain or medulla oblongata, but whether there had been a punctate hemorrhage in the pneumogastric nucleus, I will not attempt to say. Nothing was found with the naked eye whatever. Whether suspension had any influence in producing sudden death, I do not know. The same thing has occurred in cases of locomotor ataxia before the days of suspension, and the connection may be considered problematic.

In speaking of the combination of syphilitic meningitis with locomotor ataxia, we should remember the very interesting work of Redlich, who concludes that locomotor ataxia is nearly always, if not always, the result of a chronic lepto-meningitis due to syphilis. Redlich's work is most interesting and careful. He is rather conservative in drawing his conclusions, and states the arguments both for and against his theory. What he finds is briefly this: That in the normal cord the posterior nerve roots are constricted by the pia mater at their entrance into the cord. There is a distinct constriction of the nerve root where it passes through the pia mater normally. At this point the medullary sheath is normal in many fibers, thinned in others, and in some fibers disappears. Furthermore, in the normal subject the small calibred fibers are arranged at this

⁵ Ein Fall typischer Tabes und centraler Gliese bei einem Syphilitischen. Arch. f. Psychiatrie, etc., xxiv, 2, p. 526.

⁶ Syphilis und Tabes dorsalis. New York Med. Journal, January 6, p. 1.

⁷ Ein unter d. klinischen Bilde, d. Tabes verlaufender Fall von syphilit. Rückenmarkser kraenkung. Berlin klin. Wochenschrift 1893, xxx, No. 12, p. 284.

point of passage through the pia mater at the periphery of the trunk of the posterior roots. It is these fine fibers that go to make up the marginal zone of Lissauer, which is ordinarily the first attacked in incipient tabes. Furthermore, he finds that there are two or three regions of the cord where this constriction of the posterior roots occurs in the most marked degree, viz., the cervical enlargement, and the lower dorsal and upper lumbar regions. These are the regions first affected in locomotor ataxia. At the point where the pia mater normally constricts the posterior nerve root there is ordinarily a vessel more or less circulatory embracing to a greater or less degree the nerve root. Now, if there is any chronic change produced by syphilis which is more constant than another it is arteriosclerosis, a thickening of the vessels generally throughout the system, or localized more here or more there. Redlich concludes that at this point of normal constriction a very slight meningitis will induce a very marked change in the nerve root and in the next place, an affection of this vessel at this place will also produce relatively marked changes in the nerve fibers without very extreme changes taking place in the vessel. There is localization which coincides with the ordinary beginning place of the lesions of locomotor ataxia. Again, it has been shown very conclusively that the lesions in the cord in locomotor ataxia are practically and substantially those of ascending degeneration, which may be produced experimentally or by pathologic processes destroying the posterior roots. I would simply state this, that in considering the so-called complication of syphilitic meningitis with locomotor ataxia, we ought to consider at the same time whether the locomotor ataxia is not really the sequence of the syphilitic meningitis instead of the latter being a fortuitous complication of the former. While that is not conclusive, I think it is to be considered, for the peripheral origin of locomotor ataxia has very strong arguments to support it.

Dr. J. G. KIERNAN said there was one phase of the subject which deserved a little more attention than has been paid to it, namely, whether the luetic lesions were not often the result of lues developing secondarily to the tabes rather than a primary condition. Miner, of Moscow, asserted that the cognate disease, parietic dementia, never occurred except in the victim of inherited or acquired syphilis and asked for cases in which syphilis had occurred in parietic dementals after the development of the parietic dementia. Rippler and a number of others had previously cited cases. Dr. Kiernan had seen eleven such cases, in which the parietic dement in consequence of the disease had contracted lues which ran its course *pari passu* with the parietic dementia. What is true of parietic dementia is very apt to be true of the cognate condition, locomotor ataxia. Fournier places these two conditions, parietic dementia and locomotor ataxia, among the parasymphiloses.

With regard to the cases cited, Dr. Kiernan recalled cases of parietic dementia in which there were tabetic symptoms, and in which cerebral gummata were found. There were also luetic changes in the spinal cord as well as meningeal gumma. Probably they were cases in which, if the lues coëxisted with the locomotor ataxia, it produced the ordinary pathologic changes of the latter disease, and later the gummata.

With reference to one of the points raised by Dr. Patrick, Dr. Kiernan remembers making autopsies in cases of ataxic mental trouble which had led to ataxics dying in an insane hospital, in which a complete examination of the spinal cord, meninges and brain was made and the findings were absolutely nil. There was nothing truly pathologic found either microscopically or macroscopically. Colloid spheres had been found and artefact of that character produced by alcohol. But these artefacts excluded, no other lesions were present. The question here certainly could not be raised whether the meningeal condition was not the primary one and the other changes secondary.

Dr. HAROLD N. MOYER. I am impressed with the progress of this discussion, from the fact that my neurologic friends do not understand all there is to be known about the pathologic anatomy of the nervous system. Indeed, I think it is still in a most chaotic state. We have to unlearn the subject almost as rapidly as it is acquired, and we are getting down, as Dr. Kuh has admirably done in his article, to a thorough, careful study of a few cases, though taking in the whole range of the nervous system; in this way we shall have an accumulation of observations which will perhaps place the pathologic anatomy of nervous diseases on a more substantial basis. When one stops to think of the extent and variety of function and the possibility of change in this extended nervous system, it is no wonder that the pathology of other organs of the body should be far better elucidated. I rise to commend Dr. Kuh's paper, not to discuss it or to differ with him. On a former occasion he drew

extended clinical deductions from pathologic observations with which I did not wholly agree, but I concur heartily in what he has said to-night, and I wish simply to commend this masterly observation in neuro-pathologic anatomy.

Dr. KUH (closing the discussion).—The discussion has opened up an immense field, but I shall not detain you by dealing with all of the points which have been touched upon. I wish to reply briefly to one or two questions which have been raised. First, as to the Redlich theory of the constriction of the posterior nerve roots. It is a very seductive theory. There is only one fault to find about it. There are any number of cases of locomotor ataxia on record examined during the first stage of the disease in which there is not the slightest trace of any changes in the meninges, and I can show Dr. Patrick some specimens which will corroborate this statement. This being true, it does away with Redlich's theory entirely. Beside, I need but call Dr. Patrick's attention to the fact that a very large number of cases of locomotor ataxia begin with cerebral symptoms; how they can be due to constriction of the posterior roots in the lumbar region is something I fail to see.

Dr. Kiernan's theory, that the syphilis in my case might possibly be the consequence of tabes, is very improbable. We can all understand how a patient suffering from parietic dementia is liable to expose himself to the danger of contracting syphilis on account of loss of control over himself, his tendency to indulge in excesses, from lack of judgment in selecting proper victims, etc., but the same thing does not hold good in locomotor ataxia. I mentioned in my paper that one of the first symptoms was impotence, which is more frequent than satyriasis. Besides, we know positively that in this case syphilis did exist; that the patient had contracted a chancre when 20 years old. I have not claimed that the meningitis in this case was the cause of the locomotor ataxia; in fact, my impression is that the meningitis was of much more recent date than the changes in the posterior columns, and it was not by any means more marked around the posterior half of the spinal cord than the anterior. The only gumma found was in the anterior portion of the cord.

Another point which may be of interest is this: We know that a number of cases of locomotor ataxia are improved very materially by anti-syphilitic treatment. Dinkler's statistics show that improvement took place in 75 per cent. of his cases. If specific meningitis is as common a complication of locomotor ataxia as I am inclined to believe, then we have in its existence the explanation for the effects of anti-syphilitic treatment. We all agree that neither mercury nor iodid of potassium can restore the destroyed fibers in the posterior part of the spinal cord; but we can understand how other symptoms might be added and existing symptoms aggravated by meningitis, and that when the latter is improved there results an improvement in the condition of the patient.

SPECIFIC TREATMENT OF NECROSIS OF THE ALVEOLI AND MAXILLÆ WITH AROMATIC SULPHURIC ACID.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY W. A. MILLS, D.D.S.

BALTIMORE, MD.

I desire to bring before your attention the non-operative treatment of necrosis of the alveoli and maxillæ with aromatic sulphuric acid. I shall cite only two cases in office practice, entering as little as possible into any minute detail of their history or etiology.

Case 1.—A lady of nervo-bilious temperament, aged 30, called to consult me about a fistulous opening situated at the right side of the superior central incisor which was discharging freely a dark-colored pus. On examination, I found the superior right central and lateral incisors and cuspid teeth dead. Patient informed me they had been so for seven years or more, and had never been treated. I diagnosed the case as necrosis superinduced by chronic abscesses. I prescribed the following:

R Acid sulphuric aromatic ʒ ij. 60
Aqua fʒ x. 300
Misce.

To be injected by the patient into the fistulous opening five or six times daily.¹ The patient was also instructed to visit the office every other day for examination.

¹ Bicarbonate of soda and water, used as alkali mouth wash after every injection.

At the expiration of two weeks all discharge had ceased, the soft tissues had fallen into the cavity, made by the chemic action of the aromatic sulphuric acid upon the necrosed tissue. An incision was made extending from the fistulous opening to the right first bicuspid. The cavity was then packed with absorbent cotton saturated with the following:

R Acid carbolic
Tinct. iodin. āā 5 ss. 2|
Aqua. f3 xij. 360|
Misce.

Patient was then dismissed to return the next day, when cotton pledget was removed. The soft tissues having been pushed aside, I was able to see to what extent the bony structures had been diseased. I found the line of necrosis had involved the right facial surface of the superior maxilla from the left central to the right bicuspid teeth and upward from the alveolar ridge to the anterior nasal spine, a part of which with bony structure around the apices of the dead teeth had been destroyed; only sufficient alveolar septum remained to hold them in position.² I opened the nerve canals of the dead teeth and cleaned, disinfected and filled them at once. The filling material was forced through the apical foramina, from the posterior surface, and dressed in the usual manner. The patient was then dismissed with instructions to syringe out the cavity twice a day with the carbolic acid and iodine wash, as long as syringe could be used; afterward the medicament was to be used as a mouth wash. In five weeks new bone-tissue had filled the void, when no suspicion of the parts having been diseased remained, the outline being quite perfect, and all the tissues in a normal condition.

Case 2.—Mr. T., a lawyer, aged 40, of sanguino-bilious temperament, presented the following conditions: A fistulous opening situated to the right of the left inferior cuspid tooth, another to the left of the right inferior cuspid: both openings discharging pus copiously. This condition had continued for over a year, and Mr. T. failing to get any relief from many medications, he consulted a surgeon, who diagnosed his case as necrosis, caused, the surgeon said, by the toxic effect of mercury or syphilis. To either being the cause Mr. T. protested most vehemently. Mr. T. was informed that he would have to be operated upon. The first thing the surgeon suggested was to have all the incisor teeth extracted in the hope that nature would have a better chance to throw off the sequestrum. Mr. T. did not object to having the operation performed, but he did object most strenuously against having his teeth extracted, as he possessed a beautiful set, being perfect in form and arrangement. He consulted me to find out if I could in some way manage to save his teeth. I suggested the sulphuric acid treatment, which I thought would not only save his teeth, but save him from having to undergo any operation. After consulting with the surgeon it was agreed that I should take charge of the case, with the understanding that I was to consult with the surgeon as the case progressed, and not, under any circumstances, change treatment without his knowledge. The treatment in this case was the same as in case of number one. After the first day's treatment Mr. T. came to the office early in the morning with a very distressed countenance, and said he believed I had aggravated the case, because the flow of pus had been so great during the night that he could scarcely sleep. I assured him it was a good sign and that the remedy was doing its work well. The first week the teeth became movable and tender to the touch. A vulcanite splint plate was made to hold the teeth in place and to protect them from shock during the process of mastication. At the expiration of two weeks all discharge had ceased. Then an incision was made from the left fistulous opening to the right, the cavity packed with absorbent cotton saturated with the carbolic acid and iodine mixture (as in first case) and left to remain until next day. When pledget of cotton was removed the following con-

ditions were presented: Line of necrosis found to have involved the facial surface of the inferior maxilla, from cuspid to cuspid, slightly exposing the nerves at the apices of two central incisors. The septa were nearly destroyed, the teeth were only held in position by their attachment to the external or posterior plate of the alveolar process and gum tissue. Same instructions for injection and mouth wash were given as in former case. In six weeks Mr. T. was pronounced cured—teeth all living and firm, and the continuity of maxilla outline fully restored.

I not only received the congratulation of the surgeon upon the successful treatment of the case, but the most grateful thanks of Mr. T. I take no credit for the successful treatment of these cases, but will give all honor and praise to Dr. Gross, of Philadelphia, who, I believe, was the first to suggest the sulphuric acid treatment for necrosis. Some one may ask the question: How does the sulphuric acid act? In reply I will say, that the bony structures of the human organism contains 33 per cent. organic matter, 4 per cent. water and 63 per cent. mineral matter, 60 per cent. of which is carbonate of lime. The action of the sulphuric acid is to seize chemically upon the carbonate of lime, break it down or dissolve it, throwing off carbon dioxide gas; and subsequently the animal tissues, etc., break up through a process of fatty degeneration and flow out in form of pus, etc. The acid in the strength prescribed has no effect upon healthy tissues, except to stimulate them. The advantage of this treatment in the oral cavity over that of operative is: The periosteum is in no way injured, thereby not causing a loss of the continuity of outline of any structures, nor the loss of teeth through the necessary extraction in removal of the sequestra.

Miss G., the first case described, told me not many weeks ago she had not fully appreciated what I had done for her until after she had made a visit to Germany, some three years ago. She informed me of a cousin living in Germany who had a similar case with her own, age the same, conditions about the same, but the treatment and final result quite different. In her cousin's case the teeth involved had been extracted by a surgeon prior to the removal, by operation, of the sequestrum. During the operation the periosteum had been injured, causing a loss of a great part of the maxilla; in consequence her face was disfigured for life. Moreover, she had never been able to have the continuity of outline restored by any artificial means. Now, suppose the two cases I have cited had been treated by operation, in like manner, what would have been the consequences?

In conclusion, I would call the attention of the surgeon, no matter how prone he may be to operate in the oral cavity, not to do so before he has failed in the sulphuric acid treatment, or use more conservative surgery than is usually practiced in similar cases.

THE PROGRESS OF MODERN METHODS IN DENTAL PRACTICE.

Read in the Section on Dental and Oral Surgery at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY ALTON HOWARD THOMPSON, D.D.S.

TOPEKA, KANSAS.

The marvelous success of modern dental practice is founded upon two main elements, viz., *mechanical skill* and *medicinal precision*. In regard to the first named element, mechanical skill, the profession has been noted for that for many years. The best practitioners of fifty years ago were famed for artistic taste

² A similar case is noted by Dr. Black in *American System of Dentistry*, vol. 1, p. 950.

and metallurgic technique, for they produced beautiful work, and which in its way has never been surpassed. So far as mere jewelry work is concerned, there has been but little real advance, but there has been tremendous progress made in the extension of the applications of gold plate work to the purposes of prosthetic restoration. We need only refer to the exquisite gold crown and bridge work, so much in use now, to be reminded of the greatly increased usefulness of this wonderful metal. The rapid development of this work has been the most conspicuous feature of advance of the last decade. It has served to render useful teeth that were in former years condemned to the forceps, and has almost banished partial plates with all their discomforts and injuries, so that this invention has indeed been a great blessing to humanity. Being essentially a new idea; the discovery and perfection of crown and bridge work, has been a great advance, for it was the birth of a great principle in practice; and the promulgations of great principles are the milestones which mark the path of human progress. But crown and bridge work has really been the only thing in which there has been great and positive advance in the last ten years in mechanical work and prosthesis. In plate work there has been little or no great improvement, except in a few minor matters as regards materials or methods; it remains much the same as it was ten or even twenty years ago. The same may be said of operating; there has been little advance, for materials and methods have remained the same and there have been no great discoveries. Some materials, as the cements, have been improved and new appliances have been added to our armamentarium, but no revolutionizing inventions have been forthcoming. We might except porcelain fillings and inlays, but this method is yet very crude and needs to be improved greatly before it can rank as a great addition to our resources.

There has been some improvement in porcelain crown work, but nothing worthy of being called a great advance. While undoubtedly capable of great possibilities, there is urgent need of improvement both of materials and methods. Porcelain is a great material for our uses, but it requires simplification of methods of working before it can have the extended application that it deserves. The prosthesis of the future must be dependent on porcelain or some similar material that will admit of better imitation of the color and texture of the natural teeth, than the metals, that we may keep pace with the artistic demands of the age.

As regards the second element of the successful practice of dentistry in our day, we can safely assert that the greatest general advance in the last decade has been made in the field of medicine, as applied to the treatment of diseases of the teeth and their environments. The greatest positive advance has been in the one feature of the extended application of the principle of antiseptics. The increase of the knowledge of germ life, the growth of the science of bacteriology, and their effect upon the theory and treatment of disease is nothing short of marvelous. We live in the age of antiseptics. Antiseptic medicine and surgery has saved thousands of lives that would have been lost under the old methods. Dentistry has shared in the benefits of the new therapeutics to a wonderful degree. The enlarged usefulness of the profession to humanity in the increased saving of teeth, can not be over-estimated. This is especially true of

the treatment of septic pulp canals and alveolar abscess. Thousands of teeth are now saved that would have been given up at once in the previous decade. Every practitioner now treats and saves scores of teeth that he would formerly have extracted as hopeless. This is a wonderful gain and is a positive advance on the practice of the past. Pulp canal treatment is now performed with scientific precision, thanks to the antiseptic principle. The many antiseptic remedies that have been brought to our notice and that have been useful in various degrees, attest the interest and importance attached to this branch of therapeutics. The treatment of pyorrhea alveolaris has been greatly improved by the use of these remedies and all the advance that has been made has been due to antiseptic medication. Little improvement has taken place in late years in the surgical treatment of this disease, for the thorough removal of deposits was recommended in former years as now, and we have got little further; but we have made vast improvements in the therapeutical treatment and the application of proper remedies. We may safely say that we are now on the road to the successful treatment of this *bête noir* of dental practice, although we have not yet attained the goal. When we shall have reached the precision with which we now treat septic pulp canals and abscesses, in the treatment of pyorrhea, we will have attained another great step in the forward march of progress in dental practice. But it yet defies us and we can not claim that we have made great gains in the direction of overcoming it in the last decade.

In surgical procedure we have advanced to the conquest of new fields, but all we have gained is due largely to the advantages of antiseptic methods and not to any great improvement in operating. The oral surgeon can now attempt more and accomplish greater things than he could ten years ago, but his methods have improved but little. His great success is due to the extension of the antiseptic principle which has done so much for the treatment of all classes of disease in which septic poisoning is present as an important and dangerous factor. Perhaps implantation should be mentioned as one of our special surgical operations, but little has been added to it, either as to its merits or methods during the last decade. Orthodontia is a special branch of practice that might be classed under surgery, or its kindred branch pediatrics, in which great advance has been made of recent years, thanks to the noted specialists who have devoted skilled attention to it. While there have been no great discoveries in the principles there has been vast improvement in the methods of its treatment in the last decade. Deformities are now corrected and reduced that were formerly considered hopeless, and this by the help of scientific knowledge of procedure and by the philosophic application of intelligently designed and skillfully applied appliances.

It is interesting to note the relationship of science to practice in some of the most marked recent advances. True progress involves the application of exact knowledge to the uses of life. Accidental discoveries which have benefited mankind have been made since the emergence from man's previous animal existence and he became capable of the exercise of his distinguishing human faculty, reason. Such discoveries and inventions, be they ever so useful, have been of no extended benefit until illuminated by scientific knowledge of the principles which lie back of them.

and make them possible. With the attainment of this knowledge, discoveries and inventions become clothed with illimitable possibilities. This knowledge has made the great discoveries of the ages the blessings of mankind, printing, steam, electricity, antiseptics; these and more have been made the servants and the saviors of men. Empirical practice is always limited in its application and the good that great discoveries and inventions may accomplish is limited because we are hampered by lack of knowledge of their underlying principles. In the progress of the development of dental practice this is quite apparent. A useful invention or discovery made in an empirical way, is practiced in a limited field for many years with the result of circumscribing its benefits, until some bold investigator, dissatisfied with the mere results without knowing how they are produced, proceeds to experiment and discovers the underlying laws which govern its action. Then it is found that the invention, so useful in one field, could be made of far more general application, and further experimentation leads to the verification of those expectations and its extended usefulness.

It is too true that our art, on which so much of our reputation and usefulness depends, has outstripped our science and this art is largely the result of empirical practice. Take the one item of crown and bridge work, which, while protested against by many as unscientific and pernicious, and it is so in regard to its worst features, yet holds its own and grows because it is practicable and useful. It is unscientific in theory but useful in practice and has sprung from pure empiricism. On the other hand, the other great item of our recent progress, antiseptic medication, has proceeded from pure science, the reasoning from cause to effect, the producing of results from the prediction of discoveries. That is pure science, the producing of practical results from a basis of scientific fact. The mechanical treatment of caries long preceded our knowledge of the real nature of the disease, and the cure attained was the result of pure empiricism and experimentation. The treatment was scientific but it remained for later discoveries to reveal the scientific basis. So with many of our most noted achievements in the conservation of the teeth or their prosthetic restoration; we attained a certain success that was practical and useful but the scientific basis long remained unknown. It was the main characteristic of the old practice that results were reached by the slow process of experimentation, trying first one thing and then another, until something was stumbled upon that answered a practical purpose in a greater or less degree.

The new practice is more scientific. In all its main features it proceeds from a scientific basis. It does not experiment in a blind way but reasons from cause to effect and applies the remedies or appliances that a discriminating judgment suggests as the proper agent for securing a desired result. That is science. The empiric would try what was at hand without regard to its qualities or what he desired to accomplish, and failing in one try another. The success of modern practice depends more on scientific judgment than that of the past, for all of the ordinary possibilities are exhausted. We have gained all the victories within easy reach and to attain more conquests and extend our field of usefulness, we must search deeper and define closer to be enabled to wrest yet other secrets from nature. But that is the motive and the

mission of modern dentistry. We must do yet greater and better things, but to do them we must carry our investigations into untried fields and far deeper into the old ones that we may bring more things to light that will help us to grow scientifically and practically and thereby increase our capacity for service to humanity.

CURE OF PROSTATIC HYPERTROPHY BY INTERNAL PRESSURE.

BY EVAN O'NEILL KANE, M.D.

KANE, PA.

Some years ago I wrote an article for the *Medical Times* of Philadelphia, in which I set forth the superior advantages of internal pressure absorption, as a treatment for senile hypertrophy of the prostate gland with its attendant evils, over the usual forms of palliative and operative procedure. I then gave the credit of this mode of cure, as I do now, to the originator of the operation, the late Dr. S. D. Freeman. The details of the procedure being, perhaps, not sufficiently entered into, my article was received without comment, and, so far as I am aware, it has not led any one to perform the operation. The radical and, it would seem to me, the over-heroic course advocated by Dr. White of the Pennsylvania University, in removing the testicles in order to bring about an atrophy of the gland, if it be a satisfactory cure, entails too great a sacrifice upon those subjected to the ordeal to ever become a popular method of treatment. While the attention of the profession is being attracted to this subject through Dr. White's experiment, I have thought it a fitting time to again point out the merits and method of my pressure treatment. Senile hypertrophy of the prostate gland is not a disease worthy of the surgeon's consideration until its enlargement markedly interferes with the free evacuation of the bladder, as shown by the various disorders, painful, frequent and difficult micturition and the like, incident upon a partial retention of urine. The increased development of the muscular elements in the prostatic organ or muscle becomes harmful only in degree with its encroachment upon the caliber of the urethra by distorting or constricting it. If, therefore, the channel of exit from the bladder can be restored to its normal course and caliber nothing further in the way of treatment is necessary.

The technique of internal pressure treatment is simple, and depends for its successful conduct on a thorough knowledge of the anatomic relations of the parts involved, together with a fair degree of skill in the management of the solid sound and silver catheter. Having determined, by means of a flexible instrument that no stricture exists as a primary trouble, or if there be one, having overcome it, the gland is carefully examined per rectum, in order to ascertain its altered relation to the urethral canal and the precise course of the deviations which have been produced. By means of the index and middle finger of the right hand introduced into the rectum the prostatic gland is steadied and manipulated. A large silver catheter, No. 26 or 28 with an S curve, is introduced along the urethra by means of the left hand, until it reaches the point of resistance. At the same time the fingers in the rectum guide the tip of the instrument through the tortuosities of the prostatic urethra. This manipulation is rendered far less difficult of execution if the beak of the instrument is blunt, as large

as the stem and well polished. Its caliber being large it will be enabled to press the urethra into place ahead of it with far greater ease than if it were small and pointed. It will thus fill the canal snugly. Otherwise the mucous membrane, thrown into loose folds before the advancing instrument will tend to catch upon its point and tear, allowing the urethra to become perforated, a false passage resulting. The structure of the organ being mainly muscular, and its enlargement of a fibro-muscular character it is somewhat resistant. Further, being more or less congested and edematous the impinging portions of the gland are readily displaced laterally by the tip of the instrument, provided a moderate amount of pressure, and a sufficient degree of time are allowed to the maneuver. With patience and gentleness, being careful not to exert undue force, the operator is not likely to be disappointed in reaching the bladder in safety and without injury to the urethra. This step in the operation is the only difficult one, and I repeat, should occupy considerable time, especially if the enlarged gland is dense and hard. The catheter is passed until it rests well within the bladder. Here it is retained by guys fastened from eyelets in its open extremity, extending to a band in the usual manner for retaining urethral instruments in place. A cork is inserted in the open end of the catheter to prevent dribbling of urine, and after the effect of the anesthetic has passed off, the necessary amount of opium is administered to insure quiet. The patient is kept lying upon his back with the knees and shoulders elevated by pillows to a sufficient height to keep the abdominal muscles relaxed. Every four hours he should be turned upon his side, the cork withdrawn from the catheter and the contents of the bladder allowed to discharge. I advise, if the urine is foul and ammoniacal, as it generally is in these cases, that the viscus be washed out daily with warm boracic solution until the odor and cloudiness disappear. The opiate may generally be discontinued by the end of the first twenty-four hours, but should signs of increased irritability of the bladder, or much pain ensue, it must again be resorted to.

The silver catheter should not be disturbed for three days, or at least until it is found that it no longer appears to hug closely the walls of the prostatic urethra. If it is found to glide freely in and out when the guys are loosened it may be withdrawn for an hour with safety. It should then be cleansed, polished and replaced. If not withdrawn too early, or allowed to remain out more than an hour, no difficulty will be encountered in its re-introduction. Each day after the first withdrawal of the instrument, it can be allowed to remain out for a longer period of time, although I advise its retention all night and a portion of each forenoon up to the seventh day, after which time it may be removed entirely. I sometimes find it advisable on account of the resiliency of the prostatic tissue, not to remove the instrument at all, for the entire week. No further surgical treatment is necessary after the final removal of the catheter; all that is required being the administration of ordinary absorbent remedies, such as muriate of ammonia or iodid of potassium for a month or two.

On examination per rectum, it will be found that, while the gland has not yet become appreciably reduced in size, the portions of it which had formerly impinged upon the urethra and diverted it from its proper course have, by the pressure brought to bear upon them by the instrument, been absorbed away, the

urethra appearing to occupy its normal situation. The pressure exerted by the instrument is not only immediately beneficial in its action, by restoring the normal caliber and direct course of the urethra. By its presence within the gland, it appears to set up an alterative, or more properly speaking absorptive action, which, after its withdrawal, is continued until the gland finally assumes its ordinary dimensions.

Pressure treatment of the prostate gland will commend itself to every conservative operator as much superior both to the more brilliant and more dangerous operative methods, and to the various palliative measures which simply have the merit of prolonging life without removing many of the attendant miseries; and there is practically no shock connected with the procedure, not a small consideration in an operation performed only upon middle-aged or elderly subjects. There being no cutting or laceration, there is no danger from the absorption of urine or other septic matter. The benefits resulting from the work done are realized immediately, even before the completion of the cure, and there is less difficulty in persuading nervous elderly patients to submit to a treatment wherein there is no cutting.

I would suggest that were the urethra so tortuous, the gland so enlarged, and its structure so dense as to baffle all attempts to discover per rectum the precise position occupied by the urethra, a modification of the operation might be permissible. This modification, though it would necessitate the use of the knife, would still be safe from the usual dangers incident upon opening the urethra or bladder and the dangers incurred through infiltration of urine. The gland might be cut down upon as in operating for stone, the incision in this case not extending actually into the urethra, but simply sufficiently near to it for the operator to ascertain the position of the tip of his instrument and its relations to the urethra through the wound. This would permit him to guide the tip along the canal to its destination within the bladder with ease. The wound could then be sutured and expected to unite without drainage by first intention, since we would have no urine to irritate and keep it open. The exploratory opening needs only to be large enough to admit the index finger, and deep enough to permit the recognition of the urethra within the substance of the gland.

PERITONEAL SUPPORTS—(LIGAMENTUM PERITONEI.)

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(Continued from page 497, Vol. xxv.)

The mesosigmoid is a double right and left-bladed membrane consisting of two serous, polygon-shaped, epithelial-celled layers one on each side, while the middle layer, the essential one, is the membrana mesenterii propria, the real neuro-vascular visceral pedicle. In the membrana mesenterii propria are arranged in definite order the nerves, lymphatics, the arcs and arcades of vessels and the elastic and fibrous tissue bundles which surround and retain in fixed relations the essential structures which maintain the existence of the S-romanum. The nerves which supply the mesosigmoid chiefly arise: 1, from the abdominal brain; 2, from the ganglion at the bifurcation of the aorta, close to the origin of the inferior mesenteric artery; and 3, from nerves arising out of the

lumbar plexus. The inferior mesenteric artery conveys the blood to the mesosigmoidea. The shape of the mesosigmoidea in the adult is very various. It is an unequally S-shaped loop in the human body, in general, and yet there may be in many subjects little in the figure to call one's attention to it. One loop of the S may be very small, or not existing, and the whole of the loop existing in the other loop. Also the S-shaped figure must lie flexible or bent to suit the shape of the dorsal wall. The peculiar shape of the S-iliac is due to three factors: (a), its fixation to the under border of the psoas; (b), to the fixation at the third sacral vertebra (c), to Gruber's fold *i.e.*, to the behavior of the mesocolon as it enters into the neck of the rotating intestinal loop. Gruber's fold is the ligamentum mesenterico-mesocolicum. I designate this duplicature of peritoneum as Gruber's fold, because so far as I am aware, Gruber was the first to describe it. It controls to some extent the mesosigmoid and sustains it from prolapse especially keeping it out of the pelvis. The sigmoid is at first rectilinear. It is situated directly along the mid-dorsal line. It gradually becomes an elongated gentle curve. Finally, it assumes convolutions and lies against the dorsal or pelvic wall. The loop may be in the pelvis, in the right iliac fossa, among the small intestines or rarely on the left iliac fossa. From the tenth week of fetal life its convexity continues to the internal border of the left kidney.

In the evolution of the sigmoid the most notable factor is the left kidney. In the tenth fetal week it is plain to note that the mesosigmoid reaches to the internal border of the left kidney. As the bodily growth progresses the mesosigmoid advances to the interior face of the left kidney and, finally, to the outer border of the kidney as found in adults. The adult position of the ascending colon may be assumed by the eighth to the twelfth week of fetal life, *i.e.*, the descending colon assumes a vertical and may be a sinuous course. It may be noted that old views considered that the sigmoid bowel began at the iliac crest, but modern anatomy starts the sigmoid and ends the descending colon at the external border of the psoas muscle. The upper point of the mesosigmoid often reaches the radix mesenterii and not infrequently the point where the duodenum turns into the jejunum. The whole mesosigmoid may be distorted by inflammations on the lower or left blade, as it lies on the psoas muscle or by old cicatrices on its upper blade especially in Gruber's fold. On account of the variation of the situation and course of the sigmoid and mesosigmoid, it has induced many ingenious views from well-known anatomists. The unequal S-shape to the sigmoid is chiefly due to the length of the ligamentum Gruberii. At the end of the third month the mesosigmoid is generally a lightly curved line reaching from the under pole of the left kidney to the middle of the third sacral vertebra. However, not infrequently the mesosigmoid is quite concave to the left, or the upper point of the mesosigmoid, as it begins to leave the mid-dorsal line, may be pointed to accommodate the intersigmoid fossa formed by the spermatic vessels. In general, at the fourth month the mesosigmoid reaches the fourth lumbar vertebra and then is carried to the left by the lower end of the growing left kidney. If the mesosigmoid be elevated by Gruber's fold during the rotation of the intestinal loop, it will not allow the mesosigmoid to leave the mid-dorsal line so far down. For Gruber's fold may be so con-

tracted by the cecum dragging it upward, as it travels across the abdomen to the under surface, that the upper point of the mesosigmoid may reach as high as the flexura duodeno-jejunalis. Now, since Gruber's fold is attached to the sigmoid at different points, it will induce different sizes to the portions of the S. I have observed that Gruber's fold is frequently attached just below the middle, thus leaving the upper portion of the S the larger. If we look at the upper loop of the S, it will be noted that the sexual gland and the kidney are responsible for it. If we observe the lower loop in its fetal development it may be seen that the sexual gland, later, changes from the lower end of the upper loop and begins to develop that. As time progresses from the fourth month the loops simply grow on slowly. From the sixth fetal month the loops are distinctly pronounced. The sexual gland descends and with the kidney grows rapidly as do the two loops of the S. Meconium now rapidly

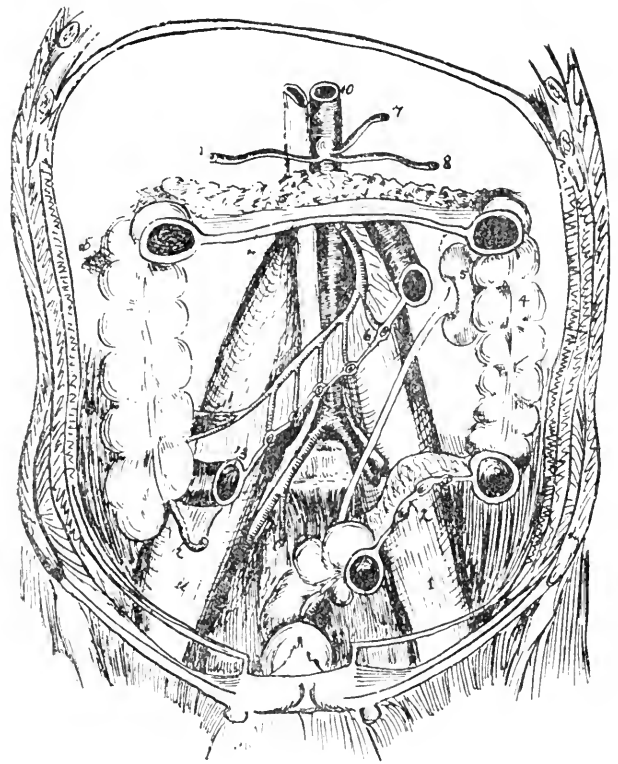


fig. 50 represents the line of the mesosigmoid as it crosses the psoas muscle. I sketched this diagram to show how prominent and what an important rôle the psoas plays in relation to the peritoneum and especially in regard to the mesosigmoid. 1, psoas muscle; 2, cut edges of mesosigmoid; 3, descending colon; 4, kidney; 5, cut edge of mesentery; 6, ilium; 7, appendix; 8, right psoas; 9, hepatic; 10, splenic, and 11, gastric arteries; 12, aorta; 13, cut edge of mesocolon-transversum; 14, hepatic flexure. The peritoneum in the region of the pelvis is important to every practicing physician especially in the female. Several years ago I made considerable investigations in regard to the condition of the peritoneum of the male and female and found that in some animals and man the femoral pelvic peritoneum is the thicker and stronger; probably from ages of experiences of peritoneal trauma and repeated infectious invasions. In the region of the pelvis I shall illustrate the peritoneal supports by various cuts, of my own design and also by those of others. The diagrams are drawn not always exact to nature's lines, but nevertheless they approximate some of its truths.

accumulates and irritates the mucous membrane, inducing blood flow and more active growth and elongation of the loop. The loop may grow very rapidly and so elongate that it must seek room in the right iliac fossa or among the small intestines. In one new-born subject Dr. Waite and I found the very long sigmoid rested in the form of a volvulus with the twist situated at the left pelvic brim at the junction of the sacrum and iliac bones. There is a por-

tion of the descending colon extending from the iliac crest to the external border of the psoas muscle which is frequently more fixed than other portions of the vertical colon, but we must consider that it does not belong to the S-iliac. The unnumbered and indefinite classification given to the situation, and periods of development of the sigmoid are of little use, as the situation varies indefinitely, with an organ possessing a long pedicle and no special times of growth. Yet, as to growth, one can note no very especial change in the first two months, but a very decided change in the third and fourth month. One could well say that in the first two months of fetal life, the mesosigmoid is in a primitive condition. It turns neither to left or to right but holds its ancient course in the mid-dorsal line, until the end of the second month or thereabouts. The mesosigmoid is really the old, original primitive mesentery of the digestive tube.

The primitive period may be succeeded by the period of transition from the child-condition to that of the adult. In this period from the beginning of the third month the portion of gut extending from the lower pole of the left kidney to the third sacral vertebra forms two varying loops, an upper and a lower. The two loops are divided by Gruber's fold of peritoneum at first, but subsequently the whole sigmoid may be represented by one large loop. In general the upper loop (*i.e.*, between the external border of the psoas and the fold of Gruber) is at first the larger, but later the lower loop may become the larger loop as the fecal matter accumulates and exercises its irritative and mechanical power. The sigmoid may show a loop in the right iliac fossa, a loop away up among the intestines, a loop in the pelvis and a double loop which lies partly in the right iliac fossa and other localities. Occasionally one can find the double or single loops entirely in the pelvis. During all the stages of transition the line of the root or that of the insertion of the mesosigmoid is generally straightening out, *i.e.*, the radix mesosigmoidea is becoming a shorter line as growth proceeds. The acute angle between the lower mesentery situated in the mid-dorsal line and the mesentery extending from the lower pole of the left kidney to it is increasing and fast becoming a curved line. In short, the root of the mesosigmoid is gradually descending to the adult situation.

A third period of the mesosigmoid may be called the adult period when the mesosigmoid is fixed. It begins at the external border of the psoas muscle and ends in the pelvis at the third sacral vertebra where the rectum loses its posterior serous covering. The loop lies partly extra- and partly intrapelvic. In the adult it hardly ever lies in the right iliac fossa but chiefly in front of the lumbar and sacral vertebra. In the newborn the sigmoid lies chiefly outside of the pelvis from physical reasons. There is but little room in a child's pelvis for any organs except rectum, bladder and uterus. To resume; at first, there is a double loop in the sigmoid, a little later one loop remains in the iliac fossa, the other ascends in the abdominal cavity and the two loops finally coalesce into one large one as it is generally. The great rôle in forming the two parts of the S-loop is done by Gruber's fold. At first it forms the large part of the loop above and the smaller below, but changes and bowel contents gradually make the lower loop of the large, and, finally, the two parts of the S-loop appear as one

inseparable sling. The accumulation of meconium through its irritative and mechanical power is responsible for the large loop and changes from its primitive condition. The situation of the sigmoid at birth may be described as follows: The gut passes from the iliac crest to the psoas muscle, the loop then crosses the pelvis at a level with its brim. It then reaches more or less in the right iliac fossa (20 per cent.), but most frequently simply comes in contact with the right psoas muscle. It then extends, according to its length more or less up among the intestines. The whole S-loop, however, may be in the pelvis in man or woman. The French contend that to do a colotomy on the newborn incision should be made in the right iliac fossa but this proposition will not generally hold true according to my examinations. According to Boucar who examined 150 infants and found the sigmoid loop in the iliac fossa thirty-three times (22 per cent.) There is little utility in describing a descending, transverse, and ascending loop in the sigmoid. The disagreement of authors in regard to the situation of the sigmoid is due to its changing position from emptying and filling with feces and gas from the peristalsis and the changes and situation of other viscera, especially those of the pelvis and its long mesentery. The conditions which determine what organs lie in the pelvis are: (*a*), the size of the uterus; (*b*), the size of the bladder; (*c*), the size of the rectum; (*d*), the size and situation of the cecum; (*e*), the size and situation of the sigmoid; (*f*), the amount of small intestines in the pelvis.

I can see no advantage in the name iliac, or pelvic colons, as neither may correspond to its indicated name or situation. The long mesosigmoid, with its neuro-vascular pedicle, indicates that it has a wide range of motion and that the situation of the loop will be normal wherever the mesentery allows it to range (except where it becomes fixed). Any mobile organ is dislocated when it is permanently fixed. The sigmoid is dislocated when fixed by adhesions or disturbed by a volvulus. In fifty autopsies I found 75 per cent. of adhesions in the mesosigmoid, and volvulus occurs in the sigmoid in 60 per cent., of such cases.

From years of investigations in the abdominal viscera, I would claim that one can only generalize two positions for the sigmoid flexure. The first and most frequent is when the sigmoid flexure lies suspended by Gruber's fold in the pelvis. The second is when the sigmoid flexure lies above the pelvis against the dorsal wall, chiefly to the front of the lumbar vertebrae and to their left. Most other positions of the sigmoid are uncertain, temporary and variable.

(To be continued.)

INTERESTING CASES OF PERINEAL SECTION, WITH REMARKS.

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(Continued from page 477.)

Case 33: Impermeable Deep Stricture.—A man, 38 years of age, was referred to me by Dr. M. W. Thompson, of Chicago. Had a history of successive attacks of gonorrhea extending over a period of years. Symptoms of urinary obstruction had existed for some four or five years, and had increased until the stricture had become surgically impermeable. I performed perineal section without a guide, found the urethra extremely hard and nodular from the perineo-scrotal junction well down

into the membranous portion. The stricture practically involved the entire extent of the latter. Considering the rather complicated state of affairs the bladder was reached with considerable rapidity, the operation requiring about eight minutes after the opening of the urethra. A small fibrous tumor was found in the right lateral wall of the urethra in the midst of the stricture tissue. This was about the size of a fat pea and was so hard and cartilaginous in consistency that I at first mistook it for a calculus lodged in the urethra at the distal side of the stricture. Several penile strictures required division, one in the scrotal portion of the urethra being especially marked. The urethra was restored to a caliber of 40 French throughout. The drainage tube was removed three days after the operation, and within a short time retention with overflow occurred. For a few hours I overlooked the true condition, inasmuch as the dribbling of urine through the perineal wound was what might have been expected, and indeed what frequently occurs, in cases in which the deep urethra has been widely cut and dilated. Systematic evacuation and the irrigation of the bladder resulted in a complete subsidence of this particular symptom within a week, and the subsequent progress of the case was uneventful. At the present time, two months after operation, the patient takes the 37 French without the slightest difficulty and expresses himself as being in much better health than he has been for many years.

Case 34: Multiple Tortuous Stricture.—Man, about 35 years of age; occupation brakeman. There was in this case a history of repeated gonorrheas, and of possible perineal injury about the age of puberty. The right testis had evidently been the seat of traumatic inflammation and was diffusely enlarged to a moderate extent and quite hard. This condition, he said, was the result of an injury which, as near as he could recollect, also involved the perineum. He had not had, however, any urinary symptoms until within the last year. About a year before consulting me he had noticed that the stream of urine was growing gradually smaller, and that it took some time to empty his bladder. He was otherwise in perfect health. Examination revealed a tortuous stricture extending from the fossa navicularis to the peno-scrotal angle. This admitted a No. 10 French. At the bulbo-membranous junction, in obstruction was encountered through which I at first found it impossible to pass a filiform bougie. Complete retention did not occur. The patient succeeded with considerable effort and expenditure of some time in emptying the bladder sufficiently to afford relief at least. At the end of about a week I succeeded in passing a filiform bougie, and within a few days I succeeded in dilating the deep stricture to a caliber of No. 7 French. The stricture, however, now proved absolutely resistant to treatment, and no further attempts at dilation developed urethral chill. Inasmuch as this condition of affairs was associated with penile strictures, which would probably demand a radical operation, I deemed it wise to perform perineal section. The operation in this case was free from difficulty, but the subsequent course of the case was a little annoying. There was no fever or other untoward symptom following the operation, but the perineal wound healed only in part, the anterior angle remained open and affording an excellent prospect for a permanent fistula. At the end of six weeks I found I could pass a No. 36 French into the bladder without any difficulty, but the fistula showed no signs of repair. I cauterized the small opening with tincture of iodine applied in liberal quantities, a sound meanwhile being left in the urethra. I now passed a single strand of silkworm gut and anchored it with shot. No catheter was introduced into the bladder, the patient being allowed to pass his urine as though no fistula existed. To my gratification the fistula was soundly healed at the end of a week, and not one drop of leakage occurred after the shot suture was introduced.

Case 35: Supra-Pubic Fistula; Multiple Perineal and Penile Strictures of gonorrheal origin: Use of the Retrograde Guide.—Young man, 25 years of age; occupation bookkeeper; history of successive attacks of gonorrhea, first attack having been experienced at the early age of 14. This patient was always very delicate, and his urinary trouble had been very poorly tolerated. Urinary obstruction was first noted four years before I first saw the case. The patient was dissipated and suffered from severe attacks of retention, which were evidently due to congestion and spasm superinduced by excesses. The last attack of severe retention had come on the year before I saw the case. The practitioner who was called in, failing to introduce an instrument per urethram, decided within twenty-four hours to pass a trocar supra-pubically. This was accordingly done with a small retrograde catheter introduced through the trocar. A permanent fistula remained. Numerous attempts were afterward made to enter the bladder with bougies, but

without success. At the time the patient consulted me he was under the impression that the urethra had, as he expressed it, entirely grown together; but that he was so greatly annoyed by the supra-pubic fistula that he was anxious to undergo almost any operation to secure relief. The operation in this case was simplified greatly by the fact that a supra-pubic opening already existed. This was enlarged sufficiently to introduce the finger for the purpose of guiding a flexible bougie of good size into the posterior urethra. The penile urethra was so tightly strictured that it was with great difficulty that a filiform could be introduced down to the perineal portion of the canal. Careful dissection in the perineum enabled me to open the urethra just anterior to the bowel, at which point the canal was not greatly narrowed. The subsequent steps of the operation were very easy, there being no difficulty in finding the posterior portion of the urethra with the assistance of a retrograde guide. I made the attempt to close the supra-pubic fistula by suturing the bladder, when a small opening remained with moderate leakage for about three months, at the end of which time the supra-pubic wound was soundly healed. The penile strictures were cut to a caliber of No. 32 French, a sound of this size being readily passed into the bladder. The patient was last heard from two years after the operation, at which time he was passing No. 30 French without difficulty, and was apparently perfectly well, his general health having markedly improved.

Case 36: Deep Perineal Stricture of Gonorrheal Origin, Complicated by Hypospadias.—Man, 30 years of age; occupation, traveling salesman; singular type of gonorrhea acquired at the age of 25. This had continued with occasional exacerbations, with periods of improvement due to reinfection or otherwise. Urinary obstruction had developed two years previously. Attempts at treatment by dilatation had apparently been harmful. There had been no attacks of retention, but the obstruction to micturition had progressively increased until the patient found it almost impossible to evacuate the bladder and there was, the greater portion of the time, constant dribbling of urine. Examination in this case revealed a complicated condition which proved very annoying; there was a moderate degree of hypospadias, the meatus opening about one-fourth of an inch posterior to the glands. This opening was very narrow and would not admit a sound larger than a No. 8 French. After several sittings I succeeded in passing a filiform into the bladder, but the urethritis increased to such an extent that I hardly felt justified in depending upon the repeated reintroduction of instruments. Complete closure of the stricture from the reactionary inflammation seemed probable. I therefore suggested a perineal section, which was consented to. The pseudo-meatus was enlarged transversely, the penile urethra being found to be free from obstruction. The perineal portion of the canal was quite extensively strictured, the obstruction extending as far forward as the perineo-scrotal angle. The stricture in this case was not well developed, consequently I did not consider it wise to incise as freely as I would otherwise have done. The urethra was therefore enlarged to a caliber of only 30 French; a sound was passed on the fifth day after the operation without difficulty. Instruments were reintroduced at intervals of three or four days for about three weeks, at which time it was found that they could be passed with great difficulty. A week later it was found impossible to pass a sound larger than No. 20 French. I therefore suggested reopening the perineal wound, with division of any contracting bands which might be discovered. I found, on reopening, that the incision made in my first operation was not sufficiently free, a bridge of cicatricial tissue having reformed on the roof of the canal at about the middle portion of the urethra. This was freely divided, the remainder of the canal apparently not requiring attention. The favorable course of the case after the second operation was uninterrupted.

Recontraction had not occurred at the end of six months after the dismissal of the case.

Case 37: Multiple Penile and Perineal Strictures of Gonorrheal Origin; Perineal Fistula from Previous Operation.—Man, 40 years of age; occupation, hardware merchant. This patient had a history of numerous attacks of gonorrhea, the first of which had been experienced at the age of 20. At the age of 35 stricture developed with a progressive obstruction to micturition. Complete retention finally occurred, and two years before I saw the case he had been operated on during an attack of retention. The operation was evidently not thorough, the operator contenting himself with the relief of the retention. Several penile strictures were not interfered with. After the operation sounds of small size were passed for a time, and it was finally found to be impossible to introduce anything larger than filiforms down to the site of the operation. The

fistula remained open. I succeeded in passing a filiform from before backward, bringing it out at the perineal opening. Upon this filiform I tied a strong silk ligature entirely through the urethra and out of the perineal wound. I now tied a No. 4 bougie upon the end of the ligature emerging from the meatus, and drew it down through the perineum. Using this as a guide I divided the perineum thoroughly, found the urethra was free posterior to the fistula, but that it was tightly contracted at the peno-scrotal angle. I divided the stricture upon the roof of the canal by means of a blunt-pointed bistoury, and had no difficulty in introducing a urethrotome and dividing the penile strictures. The urethra in this case was very large, and after the operation I had no difficulty in introducing a No. 40 French into the bladder. The case progressed nicely with the exception of the perineal wound at the site of the old fistula, which was very stubborn in healing. Finally, however, by repeated use of the shotted sutures and applications of iodine I succeeded in closing the opening. This case has not been heard from since three months after the operation, at which time a No. 30 French could be passed with great ease.

Case 38: Intractable Traumatic and Multiple Inflammatory Strictures.—Young man, 25 years of age, referred to me by Dr. Gfroerer, of this city, for the relief of a very tight stricture at the perineo-scrotal angle. Exploration showed several strictures of varying caliber in the penile urethra. The young man gave a history of severe traumatism, sustained some years before, and of several subsequent attacks of gonorrhea. Considerable damage was done to the urethra by the original perineal injury: retention of urine occurred at that time, for the relief of which an attempt was made to pass a catheter with the result that the floor of the urethra was completely perforated and the catheter pushed entirely through the crushed perineal tissues. Perineal abscess and fistula followed. Numerous attempts at a cure of the resulting stricture had been made, including the use of the permanent catheter for weeks at a time and several internal cutting operations. As the gentleman who referred the case to me had not performed any of the operations mentioned, I was unable to obtain accurate data. I proposed perineal section, and the operation was accordingly performed. It was with extreme difficulty that I succeeded in getting a guide through the stricture even under anesthesia. I finally succeeded in introducing a small filiform. The operation showed a dense cicatrix involving the urethra at the perineo-scrotal angle. The perineal fistula, which was still present, showed a line of dense cicatricial tissue running along the urethral wall, the stricture and the indurated fistulous track being intimately blended together. The urethral tissue, which was present at the point of stricture, was so slight in extent that grave doubts existed in my mind as to the ultimate success of the operation. The perineal urethra was restored to a caliber of 38 French. Although the penis in this case was extremely small and apparently undeveloped, no trouble was experienced in enlarging the entire extent of the urethra to the caliber mentioned. The patient did fairly well after the operation, a full-sized sound being passed in the usual manner. Four weeks after convalescence was thoroughly established, recontraction of the stricture began and progressed with extreme rapidity. The patient being willing to undergo a second operation, perineal section was again performed. The penile urethra was found still free from contractions and the perineal stricture had recontracted only at one point, involving the narrow extent of the urethra at the site of the original injury. At this operation I divided the urethra completely through upon the roof and had no difficulty without any further cutting of the penile urethra in introducing a 40 French into the bladder. Two days later I grafted a piece of integument from the outer surface of the patient's thigh upon the roof of the urethra at the site of the stricture, with the result that a small portion of the transplanted integument adhered. The operation was performed early in January. It is now two months since the second operation, and although sounds have been regularly introduced at intervals of from four to seven days, recontraction is beginning again. Recontraction, however, seems to be entirely upon the floor of the canal, the point at which the graft was made seemingly being still perfectly smooth and supple. It is impossible to say at the present time to what extent recontraction will occur. A 33 French can be introduced at the present time, and if recontraction does not progress to an extent sufficient to seriously obstruct the passage of urine, and if it should be possible to maintain a moderate degree of patency of the canal, I shall consider that the operation is a brilliant success. In case further operation becomes necessary, resection of the involved area of the urethra is to be taken into consideration. But I am free to say that I believe that that particular method of operating will in this case be rather difficult,

and it is possible that it may yet become necessary to establish a permanent artificial urethra in the perineum.

Case 39: Impermeable Perineal Stricture with Multiple Fistulae: Suprapubic Cystotomy and Retrograde Catheterization.—Man, 40 years of age; occupation clerk. This man stated that he could hardly remember a time since he was 16 years of age that he did not have a gonorrhea of greater or less severity. His first urinary trouble began at the age of 30, at which time he was said to have a stricture. He was treated by sounds at intervals for several years. About five years after symptoms of stricture first developed he had an attack of retention which was relieved by catheterization. Instrumentation at this time was apparently rough and resulted in the development of perineal abscess. This was opened and found to communicate with the urethra. A succession of abscesses formed, with the formation of numerous sinuses and fistulae, several of which burrowed well out upon the buttocks. One sinus had evidently burrowed backward, involving the ischio-rectal fossa, at which point an abscess had formed with a resulting urinary fistula. The patient was in a fair condition generally, and there was no immediate danger of retention. He was carefully prepared for an operation for one week, at the end of which time perineal section was performed. After prolonged search for the urethra and perineum, a search which was attended with considerable hemorrhage, I decided to open the bladder above the pubes. The passage of a retrograde guide enabled me to find the proximal portion of the urethra with great facility. The sinuses and fistula were laid freely open with the urethra freely divided on its roof. The urethra was restored to a caliber of No. 35 French, with division of several strictures of greater or less caliber in the penile urethra completing the operation. Through and through drainage was instituted in this case, and a considerable degree of cystitis existed, so that I had little hope of obtaining primary union of the suprapubic and vesical wound. At the end of one week the drainage was made entirely perineal. At the end of four weeks both the stricture and perineal wounds were soundly healed, several sinuses and fistulae, which had been laid open, not being entirely cicatrized. I had the opportunity of examining this patient three years later, at which time he was perfectly well and could pass a No. 30 French with no particular difficulty.

Case 40: Deep Stricture of Gonorrheal Origin; Reoperation.—Man, 45 years of age, engineer. This patient had suffered from numerous attacks of gonorrhea and had developed stricture about the age of 35. He had had numerous attacks of retention, which at first were relieved by catheterization. The stricture finally, however, became impermeable, when perineal section was performed. A fistula followed the operation, which lasted eight months and finally closed. In spite of the advice of his surgeon, the patient had neglected instrumentation, when an attack of retention came on which was relieved with great difficulty. Patient finally consulted me, and I found multiple tight penile strictures, in addition to an old perineal stricture which had closed so tightly that I could not introduce a filiform. The penile strictures may or may not have existed at the time of the previous operation, but the patient could give me no information on this point. He was anxious to have something radical done for the relief of his condition. I performed perineal section without a guide. The urethra in this case was restored to a caliber of No. 36 French, the penile strictures being freely divided. There was a chill followed by slight rise of temperature on the third day after the operation, temperature remaining slightly elevated for nearly a week, at the end of which time it became normal. The perineal wound was closed at the end of two weeks; the patient was allowed to get up and about a few days later. I have not heard from this patient since the operation. I have provided him with the necessary sounds, and he was thoroughly appreciative of the necessity of their occasional introduction. I have little doubt that the ultimate result was good.

Case 41: Recent Deep Traumatic Stricture.—Man, 27 years of age, electrician by occupation; referred to me by Drs. P. M. Woodworth and C. A. David. Three months before consulting me this patient fell astride of a joist while working in a building. He suffered severe contusions in the perineum and buttocks, and was confined to his bed for three weeks. For the first week or ten days catheterization was necessary, after which time the urethra was left to take care of itself, with the result that within two months it had almost entirely closed. Micturition was frequent, with straining, and the urine extruded *guttatim* with great difficulty. The patient was otherwise in excellent condition and denied venereal history. I found it impossible in this case to introduce even a filiform guide, the urethra having been so extensively lacerated and encroached upon by cicatricial deposits. Perineal urethrotomy

was performed, and the urethra enlarged to a caliber of No. 40 French. Incision of the meatus being necessary, I introduced an instrument of its size. The penile urethra was found perfectly clear; the perineal wound was consolidated at the end of two weeks, and at the end of six weeks the patient was dismissed. When last seen, three months after the operation, he was passing sounds from 32 to 35 French with great facility. He had regained his health. Recent advices from this patient show that he is still in excellent condition.

Case 42: Deep Stricture with Multiple False Passages.—Man, 38 years of age, hardware merchant by occupation. This man had been a patient of mine before; I operated on him some five years previously for empyema of the gall bladder and cholelithiasis. He had at that time symptoms of stricture and I advised him to give the matter some attention, but the condition for which I operated was so predominant in his mind that he considered the urethral trouble a minor matter. The first intimation of urinary obstruction occurred about the age of 30, he having had several attacks of gonorrhea. The recent acute attack at that time brought on retention. This was relieved by simple measures, but recurred from time to time, and was relieved by catheterization. He had been treated at irregular and spasmodic intervals by dilatation, but with only temporary relief. He had never, he stated, given the various surgeons whom he consulted a fair chance to cure him, and he ceased treatment as soon as he felt a little better. During some of the attempts at catheterization with a view to relieving these numerous attacks of retention, several false passages were made. I found it impossible to introduce even a filiform into the urethral tract on account of the size of the openings and false passages thus formed. Every attempt at instrumentation produced chills and fever. I performed perineal section and found the operation a most difficult one, requiring some time to discover the course of the urethra. Considerable hemorrhage from small vessels was encountered, which necessitated very careful packing of the wound with solid rubber drainage at the completion of the operation. The patient did well. There were slight chills and moderate fever for a few days after the operation. This, however, subsided and the case went to a rapid recovery. By the operation the urethra was restored to a caliber of 35 French, and a caliber of 32 French was permanently retained. It is now three months since the operation and the patient is in excellent condition.

Case 43: Deep Penineal Stricture of Gonorrheal Origin: Multiple Penile Stricture.—Man, 30 years of age; occupation, captain of a small sailing vessel. This man gave a history of previous attacks of gonorrhea and of symptoms of stricture dating back five years. The necessity for careful attention to the stricture had been impressed upon him by several capable surgeons, but on account of his occupation he found it impracticable to follow their advice. The stricture gradually diminished in caliber, with resultant increasing obstruction to micturition. An attack of retention coming on after a drunken bout, while he happened to be on shore, compelled him to seek surgical advice. There was no marked difficulty in introducing a small catheter in this case, but the peculiar circumstances of the patient, and the danger of subsequent attacks of retention induced me to suggest perineal section. A small guide was readily introduced and the stricture divided with great ease. The urethra was restored to a caliber of 35 French, meatotomy being necessary. The perineal wound was practically healed at the end of a week, at which time the patient was passing urine in the natural manner with the greatest possible comfort. He was dismissed at the end of three weeks, and provided with sounds necessary to keep up dilatation. When last heard from, three months after the operation, he had had no further trouble with his urinary organs.

Case 44: Deep Traumatic Stricture Complicating Prostatic Abscess; Prolonged Retention.—Man, 33 years of age; occupation, engineer, consulted me for retention of the urine which had lasted for thirty-six hours. There was a history of numerous attacks of gonorrhea, the first of which occurred ten years before. Symptoms of stricture developed some five years previously, and since that time the patient had been treated at irregular intervals by dilatation. He had never had an attack of retention until the one for which he consulted me. Some six weeks before I saw him he was induced to try electrolysis for his old stricture, which was again troubling him. The result was apparently a prostatic inflammation, and absolute failure as far as relief of the stricture was concerned. I have no criticisms to offer upon the application of electrolysis in this case, as have no means of knowing whether it was properly or improperly applied. I will simply state the history as it was presented to me. On examination I found a large peri-prostatic abscess bulging into the rectum,

and apparently almost ready to rupture. The patient's temperature at this time was 104 Fahr., and he was in a profoundly asthenic condition. The indications seemed to me, however, to be perineal urethrotomy by means of which the abscess above the prostate could also be drained. In accordance with this idea the operation was performed, the urethra restored to a caliber of 35 French. The posterior portion of the incision in the perineum was carried quite deeply, the knife being thrust boldly in after the fashion of Cock's operation, and the peri-prostatic abscess was reached without difficulty. The operation was done without a guide, it being found impossible to introduce one into the bladder. The cavity of the abscess was packed lightly with a strip of gauze, and the usual perineal drainage was instituted. Several slight strictures were divided in the penile urethra, a meatotomy being found necessary. Within three days the temperature had fallen to normal, and aside from the rather slow healing of the sinus left at the posterior portion of the wound, communicating with the abscess, the subsequent course of the case was all that could be desired. The patient was passing his urine entirely per urethram at the end of ten days, but it was nearly three months before the sinus alluded to was closed. This patient has just been dismissed from my charge. Four months after the operation a 32 sound passes readily into the bladder.

Regarding the rôle of electricity in the production of the retention, I will state that at the time when I was endeavoring to test the merits of electrolysis in urethral stricture I had a somewhat similar experience. The retention, however, was relieved by simple measures within twenty-four hours. The stricture in this case was of comparatively large caliber.

Case 45: Deep Linear Stricture of Large Caliber of Gonorrheal Origin; Chronic Prostatitis.—Man, aged 35; clerk by occupation. This patient gave a history of repeated attacks of gonorrhea, the last of which occurred two years before I saw him. Acute prostatitis occurred as a complication of the last attack, and he had been annoyed since that time with an obstinate attack of gleet, with frequent exacerbations of subacute urethritis. The vesical neck remained excessively irritable, and for a few weeks an exacerbation of inflammation of the deep urethra or of the prostate was experienced, with resulting frequent and painful micturition. From time to time the urine contained a small amount of blood. All attempts at deep irrigation, or the passage of instruments, aggravated the trouble. Several surgeons who had examined the case pronounced it one of prostatic and vesical tuberculosis. The patient was thin and worn and had been excessively annoyed by the loss of sleep incidental to frequent micturition. Considerable pain in the back was complained of, and from time to time urinary fever developed, this being invariably the case after attempts at instrumentation of the urethra. The anterior urethra was exceedingly sensitive and was the seat of several strictures of moderately large caliber. Careful examination with the rubber exploring bulbs revealed a linear stricture of large caliber at the bulbo-membranous junction. In view of the condition of the prostate and the vesical neck, and the resistancy of the case to ordinary treatment taken in connection with the tendency to urinary fever, I believed that the combined internal urethrotomy and perineal section with prolonged bladder drainage offered the only reasonable prospect of a cure. The operation was accordingly performed, the urethra restored to a caliber of 35 French. Internal urethrotomy was performed upon the penile strictures and the deep stricture divided via the perineum, very little cutting being necessary to accomplish this end. The posterior urethra was thoroughly dilated and bladder thoroughly explored with the finger, nothing, however, being found. Drainage was kept up via the perineum for three weeks, during which time the patient was perfectly comfortable. The patient was discharged at the end of the fifth week. It is only a few weeks since the patient was dismissed, hence it is hardly fair to form conclusions as to the result. I will state, however, the patient is at the present time perfectly comfortable; has risen but once at night, and urinates about once in three hours during the day time. There is no doubt in my mind but that this patient will perfectly recover.

Case 46: Penile strictures; Reflex Vesical Irritation; Posterior Urethrotomy.—Gentlemen, 45 years of age, consulted me regarding vesical trouble which he had for ten or more years. He recognized the source of his difficulty as a gonorrhea contracted at the age of 30. Some five years after the gonorrhea he developed symptoms of stricture, frequent and painful micturition, a slow and sudden intermittent stream of urine being the principal characteristics. He had been treated in various ways. It was thought at one time that he had a stone and an exploratory supra-pubic cystotomy was performed with the result that no stone was found. Irrigations and topical applications of silver to the deep urethra seemed to aggravate

the condition. The contracted meatus had been slightly cut without any relief. At the time he consulted me the urine was normal, with the exception of a few shreds indicative of chronic urethritis, both the anterior and deep urethra being involved. Micturition occurred seven or eight times at night, and as the patient expressed it, "every few minutes during the day time," considerable effort being necessary to expel the urine, the stream being suddenly shut off several times during the act. This spasmodic shutting off of urine was attended by considerable pain. The patient was markedly neurasthenic, but his general nutrition was fair. Exploration of the urethra revealed three exceedingly irritable penile strictures of large caliber, and the meatus, which, in spite of a meatotomy which had been performed, was considerably contracted.

This case was a type of many which have come under my observation, and the patient's condition seemed obviously the result (1) of reflex irritation from the penile strictures, and (2) from infection extending back from the posterior surface of these strictures. I proposed internal urethrotomy and suggested the advisability of making a perineal section. Thinking there might be a linear band of contraction at the bulbo-membranous junction, and believing moreover that a couple of weeks' drainage and rest for the bladder constituted an important indication, I therefore performed both internal and external urethrotomy. I found the membranous urethra contracted and thickened with chronic inflammation with a large calibered linear stricture at the bulbo-membranous junction. The after-course of the case was uneventful. Drainage was kept up via the perineum for two weeks, at the end of which time the tube was removed and the wound allowed to close. The subsequent course of the case was most gratifying, the patient being now, four weeks after the operation, in excellent condition, rising at night only once to micturate, the act being performed only five or six times during the course of the day. There seems to be a progressive tendency to improvement, and I am perfectly confident that a complete cure will result. The urethra will now admit a sound of caliber of 36 French, although it will not be necessary to maintain the patency of the canal at this standard.

Case 47: Deep Stricture of Gonorrheal Origin with Recurrent Urethrorrhagia.—Man, 32 years of age, bookkeeper by occupation, suffered from a deep stricture of gonorrheal origin. This had been detected some seven years before I saw the case, and had been variously treated by dilatation, electricity and applications of nitrate of silver, etc. The patient stated that from time to time, usually precipitated by intercourse, he had quite free hemorrhages from the urethra. This symptom, he stated, was the most annoying of any that he experienced, and was the one which led him to seek more radical measures of relief than had hitherto been adopted. On examination I found an irritable resilient stricture of large caliber at the bulbo-membranous junction with three distinct coarctations of large caliber in the penile urethra. The exploration brought on very profuse hemorrhage, and it was attended by severe pain. Some days after my examination the patient suffered from quite sharp attack of inflammation of the vesical neck and prostate, this finally being allayed by cautiously attempted treatment by dilatation, the result being a repetition of my previous experience. After three disagreeable experiences of this kind I decided to perform perineal section. I performed internal urethrotomy for the anterior strictures and made a free division of the strictured band in the deep urethra by the external section. The urethra was restored to a caliber of 35 French. It is worthy of note that the hemorrhage at the time of the operation was trivial. I, however, packed about the perineal tube, as a matter of routine, iodoform gauze necessitated by the hemorrhage. The perineal tube was removed in this case on the third day, there being to my mind no necessity for prolonged drainage. Sounds were passed the first time on the fifth day, dilatation being repeated every third day thereafter. Patient was up and about at the end of two weeks, and was discharged at the end of the third week. It is now one month since the patient was discharged from my care, and he is in first-class condition. He has not performed the experiment of sexual intercourse to determine whether the hemorrhage will again occur, but from the facility with which large sound can be introduced, there is no question in my mind but that the operation has resulted in a perfect cure.

Case 48: Deep Stricture of Gonorrheal Origin. A young man, 25 years of age, consulted me regarding a tight stricture of the deep urethra which had existed for three or four years. There was no history of traumatism, and the patient was in doubt as to ever having had a genuine attack of gonorrhea. An obscure history, however, of slight discharge at about the age of 17, which discharge lasted for a year or more, made the case sufficiently plain. There was no special indication for radical

operation in this case, as far as the merits of the stricture itself were concerned, for the stricture appeared readily dilatable, as shown by a week's continuous, followed by intermittent, dilatation. The patient was unable to remain in the city for a sufficient length of time to accomplish much, and was therefore desirous of having a radical operation performed. I did an external urethrotomy, which was devoid of interesting features. The case was an easy and simple one. It has been only two weeks since the operation was done; the patient is about ready to return to his home and the urethra admits with great facility No. 33 French.

Case 49: Deep Gonorrheal Strictures with Multiple Fistulae.—Man, 45 years of age, stockman; had experienced a number of attacks of gonorrhea, none of which had occurred within ten years. There was also a doubtful history of traumatism. Various attempts at treatment by dilatation had been made with temporary relief. Peri-urethral abscess had developed some years before I saw the case and had left several fistulae, one of which involved the scrotum. The history of urinary obstruction dated back some fifteen years. For some time the patient had been rapidly failing in his general health. Attempt at exploration had been followed by chill and sharp "urinary fever." Urinalysis revealed nothing definite regarding the condition of the kidney, but more or less advanced disease of these organs was taken for granted.

After careful preparation by dieting, baths and the administration of urinary antiseptics, perineal section was performed, operation without a guide being necessary. Ether was the anesthetic used. All sinuses were carefully followed out and laid freely open. Hemorrhage from small vessels was unusually profuse, necessitating the Paquelin cautery at some of the deeper points in the divided sinuses and fistulae. The urethra was found only after prolonged search, and at the completion of the operation the patient was greatly exhausted. He reacted fairly well, however, the urethra admitting 32 French and the perineal wound having closed, when two weeks after the operation anuria developed, uremia followed and death occurred within forty-eight hours.

Autopsy revealed a good condition of the operative field. The kidneys were pyelo-nephritic and showed evidences of recent acute congestion. I will remark in this connection that death in such cases is often superinduced by the anesthesia, even where chloroform is given, but especially when ether is used, but the fatal result occurs so long after the operation that the real cause is overlooked. I desire to insist on this point, because we are often unfair to chloroform. The latter drug declares itself in speedy and unequivocal fashion as a rule, while ether often destroys life so remotely that the true cause of death is lost sight of.

(To be continued.)

SELECTIONS.

The Present Status of Animal Therapeutics.—By F. KRAUS.—Manufacturing chemists are constantly producing new remedies, and scientists the world over are seeking specifics for the ills of man. But medicine in our day has certainly inaugurated a new era in the treatment of the parasitic infective diseases of which Behring's antitoxin is the most brilliant success so far. Another branch of it is the new "organ extract" or "animal" therapeutics, which is essentially a modern idea, although there is a suggestion of it in Galen's castoreum, and also in Pliny, where we read that the Romans ate the testes of asses in cases of impotency.

It is based on Brown-Séquard's and Bernard's theory of an "internal secretion" accompanying the external secretions of different glandular formations. The absorption of this internal secretion leads to the formation of important specific products. Bernard was led to this conclusion by observing the production of glycogen in the liver and comparing it with the secretion of gall. The list of organs that perform this function of an internal secretion, according to the latest theories, includes the pancreas, the supra-renal capsules, which seem to have the power to render innocuous certain poisons that develop in the body, the thyroid glands and perhaps also the hypophysis cerebri, the testes, the ovaries and the kidneys. In 1889 Brown-Séquard applied this abstract fact to practical medical use. He announced that the testes supply certain elements to the blood

which impart renewed energy to the nervous system, and in all probability, to the muscles also. Associating D'Arsonval with him in his researches, they soon announced this theory that all the tissues and organs of the body, non-glandular as well as the glandular, secrete specific substances, so that any failure in the function of any special tissue or organ may result in serious organic disturbances. From this theory came the proposition to supply to the organism the fluid extract of a healthy organ to substitute the lacking function of the diseased organ. Among all the numerous attempts to carry this proposition into execution, the administration of the extract or dried tissue of the thyroid gland has been most carefully studied and produced the most notable results. No one longer doubts that the thyroid gland has actually a specific function, since this was established by the experiments of Schiff, Hoehner and Horsley-Semon. Another fact settled is the pathologic identity of cachexia and tetania thyreopriva, of idiopathic myxedema and true thyreopriva cretinism, which are now all classified as cachexia thyreoidica. There is also every probability that exophthalmic goitre and what is called status lymphaticus, and even acromegaly, will be found to be intimately related to the processes of the thyroid glands. We assume to-day that the function of the thyroid gland is to change or destroy certain substances which circulate in the blood and are injurious to the organism. This is called the auto-intoxication theory. In addition to this, the gland performs an important secretory function. Another theory proposed by some, is that these glands secrete a substance of great importance to the growth of the bones, muscles and nerves, and indispensable to the vital processes of the organism. In time these two theories may be found to harmonize into one. Our present morphologic knowledge favors the assumption of this idea. The epithelial cells of the thyroid gland form a wall around the entirely inclosed little pockets of the gland, which are filled with a peculiar, jelly-like or colloid substance. Between these follicles are placed the nerves, the blood and the lymph vessels. This colloid substance is also found in the lymph passages between the pockets. The capillaries are intermingled with the epithelial cells, in some cases even boring into them. Changes in the epithelial cells testify to the fact that they secrete a specific substance. Hürthle distinguished one secretion accompanying growth of the follicular epithelial cells, and another as they degenerated. In the former, what Langendorff calls the colloid cells, are principally involved. This is the first secretory change of the cells in the protoplasm visible to the eye, and yet the secretion accompanying degeneration is the preliminary which makes the other possible, as it precedes subdivision. The protoplasm degenerates and flakes off from the wall of the follicle and mixes with its contents; the follicles pass it along from one to another and into the lymph passages. This dissolution of the epithelial cells is a necrosis inseparable from the vital processes of the organism, and accompanying it, is a special secretion. The process of secretion in the glands is not under the control of the nervous system. The stimulus is imparted by a certain state of the blood. Hürthle has reported certain observations and experiments which directly confirm this theory. One proof of this is seen when the biliary duct is tied and jaundice thus produced; a simultaneous secretion of colloid substances occurs in the thyroid glands, of great intensity, appearing in the colloid cells, the lymph passages and even in the epithelial cells, which did not normally occur. This secretion works its way from the follicles into the lymph passages of the gland either by disintegration of the follicular wall as Biondi believes or through the spaces between the cells, according to Hürthle. These spaces open up when required, but have no permanent character. Whether the colloid substance is then taken directly into the blood or not is still unsettled; in any case it soon finds its way into it somewhere. The thyroid gland and

the suprarenal capsule are the only glands yet discovered in which the transmission of their secretions directly into the blood has been watched and followed by the eye. As yet we have unfortunately no chemical proof of this specific substance. Mucin, or something resembling it, is found in the skin and tissues, in the gastric juice, etc., of patients suffering from idiopathic myxedema, but not in the quantity nor with the regularity we might expect if we accept Horsley's theory that mucin is formed in the tissues to a toxic extent when the thyroid glands fail in their regular functions. The results of Wagner's and Hammerschlag's experiments, injecting mucin into a cat and producing tetanic symptoms, are still waiting for an explanation. Experiments with dead thyroid gland substance on animals, and also on normal and diseased human beings, as well as the thyroidectomy operated on diseased persons, all tend to confirm the theories advanced above. Numerous experiments with normal and goitrous persons also seem to demonstrate the fact that the normal thyroid gland plays an important rôle in controlling and distributing the phosphoric acid in the organism. When this gland fails in its functions, the processes of growth in the bones and nervous system are disturbed because they miss the phosphoric acid necessary to them, or perhaps receive too much of it. If the gland is abnormally extreme in its functions, then P_2O_5 diabetes results, with a lack of phosphoric acid throughout the body. The functions of the thyroid gland are apparently more important to the organism during its development than after maturity. It is in proportion to the total weight, far larger in the newly born. Experimental thyroidectomy is far more fatal in young animals, and in human beings over 30, cases of cachexia following removal of a goitre are almost nil, while before puberty cachexia is an inevitable consequence. Gley and Christiani have asserted that accessory organs can carry on the functions of these glands when necessary; and since Lesas announced that there was a compensatory hypertrophy of the spleen when the thyroid gland was removed, this theory has been coming to the surface again and again. But more recent researches prove that this is a mistake. Albertoni and Tizzoni, and also Gley have found that cachexia does not occur any sooner in animals whose spleen has been removed, than in others with a normal spleen. De Quervain has studied with particular attention the action of the spleen in cachexia thyreopriva without finding any vicarious hypertrophy at any stage of the disease. Examinations of the spleen after death in five cases of strumipriva cachexia, showed it smaller than usual in four cases, with one of normal size.

Virchow has called attention to the analogy between the tissue of the thyroid gland, the envelope of the supra-renal capsule and the large lobe of the hypophysis cerebri. He calls any inflammation of these tissues a struma. Schiff was unable to find any vicarious action in the capsules for the thyroid gland, but Rogowitsch observed changes in the hypophysis of animals after thyroidectomy. Stieda confirmed this observation and recorded the changes. But neither noticed any unusual colloid secretion. Few observations have yet been made on human beings; the English myxedema committee could not discover any change in the hypophysis in five cases investigated. Bourneville and Bricon record a case of sporadic cretinism where the thyroid gland was missing, with a hypertrophied hypophysis. Gley, Vassale and Sacchi have experimentally removed the hypophysis and believe that it was followed by the same results as thyroidectomy. Lange implanted in a dog in the course of a month eight different hypophyses, some under the skin, some in the abdomen, some in the tunica vaginalis and some in the testes. Then he performed thyroidectomy upon him. Cachexia followed in the usual way, a typical case. Dissection showed that each hypophysis had been aborted. I feel that further research is needed before any authoritative opinion can be advanced, and I warn investigators not to draw pathologic

conclusions too hastily from the size of an organ like the hypophysis. The intimate relations between the hypophysis and the thyroid gland can be traced in the development of the organism. Dohrn has demonstrated that the former is evolved out of the ectoderm and believes that it is the remains of an original gill formation in front of the mouth. The hypophysis of the petromyxon has never been removed from its original position and stands on the same plane as the thyroid gland.

Marie and Marinesco were the first to connect the thyroid glands with acromegaly. Souza-Leithe's work on acromegaly announced that atrophy of the glands is far more frequent an accompaniment than hypertrophy, and that the marked increase in the size of the hypophysis is the only inevitable pathologic anatomic indication in acromegaly, which he considers a pituitary cachexia. We are still in doubt as to the functions of the thymus gland, although Marie asserts that in congenital myxedema the thymus is hypertrophied and does not decrease in size. It is also hypertrophied in myxedema after maturity. This persistence of the thymus gland is also noticed in acromegaly and not infrequently in exophthalmic goitre.

The different phenomena in thyroid cachexia in human beings and in animals whose thyroid glands have been removed, all tend to confirm the above theories and suppositions in regard to the functions of the thyroid glands.

All experiments and observations show that this cachexia is toxic. The nervous disturbances accompanying it are either increased action resembling tetanus in its effects or paralysis, producing the opposite effects. The seat of all this nervous trouble is in the medulla oblongata, according to Lanz's investigations, but the tetanic convulsions are controlled by higher centers, we know. Death is produced by a bulbar paralysis of the respiratory organs. Other nervous complications are disturbances in the circulation, respiration, digestion, growth and urogenital functions, accompanied by the special symptoms of decreased pressure of the blood, decrease in the number and power of resistance of the erythrocytes, with leucocytosis, diminished amount of O. in the arterial blood, increased rapidity of respiration, glycuria, depressed sexual function, menstrual disturbances, vomiting, stunted growth and difficulty in swallowing. The chemie theory of animal therapeutics is this, that all these symptoms can be cured by introducing into the organism in some way the substance of which the thyroid gland is composed.

The epoch-making discovery that death could be prevented in animals whose thyroid glands had been removed and the animals restored to health, by implanting sound thyroid glands with subcutaneous injections of thyroid gland extract, was confirmed by the individual researches of Horsley, Eiselsberg, Gley, Vassale, Tizzoni, Centanni and Mouru. In 1889 and 1890 Bircher and Horsley applied this discovery in their practice and implanted a sound thyroid gland in the abdomen in severe cases of cachexia thyreopriva. Horsley preferred to use glands from apes or sheep for intraperitoneal or subcutaneous implantation. Sixteen cases are now on record treated with part human, part animal thyroid glands, some of them with very favorable results, others with only temporary improvement. Only in the cases of Collins and Macpherson was the improvement observed as long as a year and a half. Wölfler's "Surgical Treatment of Goitre" recommends the immediate insertion of a thyroid gland from a lamb, dog or cat in the neck or peritoneum whenever struma maligna has made necessary the removal of a goitrous growth. Even where the effect is only temporary it perhaps may stimulate the accessory glands, the hypophysis cerebri, etc., to an extra compensating function.

It is to a pupil of Horsley's, Murray, that we owe the next advance from these primitive to more scientific methods. Murray prepared for injection a carbolyzed glycerin extract of thyroid glands from animals, which was used in myxedema and cretinism and quite supplanted implantation of the glands.

Bouchard inaugurated a similar improvement in France. MacKenzie in 1892 tried to produce the same results by feeding raw thyroid glands to his patients, which was also attempted by Howitz in Denmark. Since then the dead thyroid gland is administered "per os" almost exclusively. A London druggist, White, prepares a pulverized extract; Vermehren, of Copenhagen, makes a pulverized glycerin extract which he calls thyroidinum, dose 0.01 to 0.03 gram pill.

Merck also prepares a thyroidinum siccatum, of which 0.6 grams equal one thyroid gland (sheep). It is prescribed as follows: Thy. sicc. 2.0. Terr. sil. et mucil. tragacanth. q. s. f. pilulæ No. xx. One to six pills a day. Or else: Thy. sicc. 2.0. Sacchar. lact. 18.0. M. f. trochisci No. 20. Sig. One to six pastilles a day. Nielsen recommends pilulæ gld. thy. siccatae. Leichtenstern orders a glycerin extract. But for reliability of action the Merck preparation is surpassed by Burroughs and Wellcome's tabloids of compressed dry thyroid gland. One tabloid equals one gland (sheep). Usual dose one-half to four tabloids a day, although I have myself administered five and six.

Experiments with these medicines on normal animals show very few results. Woodhead claims that they produce heart disease in rabbits. Hoffmann observed that healthy animals lost flesh rapidly as an effect of copious dosing with them. Vermehren's experiments with healthy persons resulted only in increased diuresis in the young, accompanied by loss of flesh in older persons, with no subjective disturbances or symptoms of any kind.

Many physicians have tested the remedies on themselves. Wendelstadt took several pastilles a day for several weeks with no result except a loss of eight kilograms in weight. Fenwick and Nielsen experimented with negative results, but Beadles, Johnston and Maude reported headaches, more rapid pulsations of the heart and insomnia following subcutaneous injections.

Experiments made quite recently by Bleibtreu and Wendelstadt show that there is a marked decrease in the albumin of the body under the influence of the thyroid gland substance, which a compensating diet failed to restore. Scholz records what had been already noticed in my clinic, that doses which, in healthy persons and in those suffering from exophthalmic goitre, increase the P_2O_5 in the excretions, do not affect the albumin.

The effect of the remedies in disease is largely individual. The younger the patient the more rapid and thorough the results. But even with advanced years the results are favorable. The susceptibility varies very much in different cases. Symptoms occur resembling those of exophthalmic goitre after very large doses (ninety-two grams raw gland in eleven days)! One questionable case is reported of myxedema where death ensued after eating part of a single sheep's gland. In the majority of cases the administration of thyroid glands is followed by a "reaction," which is called "thyroidism" when it assumes formidable proportions. This reaction appears after the first doses, especially in cases of myxedema. It begins by a slight rise of temperature and increased pulse. Too large doses are followed by fainting and collapse. All the phenomena observed in this animal therapeutics pivot, of course, on the stimulus to the central nervous system and the increased processes of change in certain substances in the organism. The increased diuresis is probably due to the action of the heart. The supply of nitrogen is increased, sometimes resulting in albuminuria or glycosuria. In a few cases especially unpleasant effects were noted, epileptic, stenocardiac and uremic attacks, tonic cramps in the extremities, stupor, loss of consciousness, and eruptions, exanthema, urticaria, erythema, etc. A squamous dermatitis often follows a cure of myxedema. These latter phenomena are the foundation for the application of these remedies to skin disorders, and the rapid loss of flesh has indicated thyroidin as a cure for obesity.

The different diseases to which this treatment has been applied are as follows: Congenital and spontaneous myxedema; cachexia and tetania thyreopriva; tetania; struma; parenchymatosa; acromegaly; exophthalmic goitre; general obesity; skin diseases—psoriasis, lupus, eczema; syphilis, leprosy, tuberculosis, cancer; mental disorders, epilepsy.

In myxedema more than 150 cases observed testify that the success of the thyroid preparations is almost absolutely certain in the spontaneous, operative and infantile forms of the disease. The few failures are not to be considered in the presence of such a number of cases cured or vastly improved, any more than the unpleasant but rarely serious attending complications in a few others. The first enthusiasm over this "therapeutic miracle" is still justified in these cases. Only the permanency of the cure is still open to discussion. The psychic complications of myxedema (amentia, stupor, acute melancholy, and mania) are also cured as the cause is removed, as is repeatedly observed in actual practice. There has not been sufficient material accumulated to decide authoritatively in regard to the efficacy of this organ therapy in tetanus. In my own practice I could not detect any appreciable results after its use, although theoretically there ought to have been.

The many points of resemblance between myxedema and exophthalmic goitre led to great expectations in the treatment of the latter with the thyroid extract, but results have not confirmed them. Some cases were made worse by its use others were cured, but only in young persons. I observed personally one cure accomplished by feeding sheep's glands, but the disease was in an early stage. Another similarly treated grew worse until treatment was abandoned. Personally, I have ceased to hope for much in this disease from this treatment.

The casual resemblance between myxedema and acromegaly stimulated many to experiment with the latter in the same way, and in a few cases a certain amount of success was obtained.

But it was in struma that the advocates of animal therapeutics hoped to score their most valuable success. Of course cystic, fibrous and malignant struma are too far advanced to derive any benefit from this treatment but simple parenchymatous struma in young persons yields to it rapidly, and permanent cures ensue in case after case. Bruns reports nine out of twelve cases cured and all improved. Four children (4-12) were entirely cured in four weeks. He used large doses but did not notice any decrease in weight except in one case. He administered fresh raw glands from calves and sheep. Reinhold fed raw sheep glands to cases where mental disorders accompanied the struma, and in five cases out of six the struma disappeared quite rapidly and completely. No inconveniences were noticed. Ewald reports eight cases of struma treated with thyroid tablets, in all of which the abnormal size of neck was decreased. Leichtenstern reports one case treated with tablets that showed no improvement. Mieulicz uses the thymus gland. With the exception of the goitre, all the symptoms in a case of Basedow's disease were benefited by eating thymus glands.

I hope that every practitioner will assume the responsibility of assisting in the accumulation of knowledge in regard to the effect of this thyroid treatment on struma. In all the cases reported so far, we find it is the diffuse hyperplasia in the young which responds best to it.

The results of this treatment in mental disorders have been very meager. Macphail, Bruce and Wagner have used it, and a few epileptics have been successfully treated with it. But I consider this application of it as well as the use of it in cutaneous troubles, foreign to its physiologic foundations, and destined eventually to bring discredit upon it, although Menzies reports certain favorable results attained in malignant syphilis.

Tuberculosis also is outside the pale of favorable results from this animal therapeutics, as Bramwell has shown and my own

experiments have confirmed. It has no influence whatever on the local processes in the lungs.

But in the treatment of general obesity, it seems to have a promising future, as has quite recently been demonstrated by York Davies, Leichtenstern and Wendelstadt.

Twenty-four successful cases out of twenty-seven is a percentage that establishes this treatment as an efficient cure for obesity. As it tends to weaken the patient, no change is made in the diet or mode of life, so that the general health is undisturbed. The greater the amount of flesh the more rapidly it vanishes with this treatment. The diuresis was increased at first. The anemic obese seemed specially benefited. Leichtenstern's successes in this line are very important. If the results are permanent and the treatment without perilous after-consequences, we will certainly have in animal therapeutics a specific against undue obesity.

But my own observations and experiences lead me to call attention to its limitations, as it is only in certain kinds of obesity that it is beneficial. Robust, red-lipped young people, with strong muscles and a good appetite, did not lose more than two to five k. in their weight, and I noticed symptoms of palpitation of the heart after treatment. Anemic obesity is the kind benefited, and in all cases the action of the heart must be watched.

I have taken pains to place before you the details of the medicatio thyreoida as a shining example of what can be accomplished by concerted effort, in experimental research and the clinic. It is in fact, a brilliant, almost marvelous achievement which may be a stepping-stone to future successes of vital importance.

The pancreas has also been used in treatment like the thyroid gland, but with little or no success, although such men as Minkowski, Hedon and Gley have tried it in every form. Several times I have used it in my own practice, and should try it again in cases of diabetes that indicated pancreatic disturbance. The best method of administering it is "per os."

Experiments with the supra-renal capsule show that its removal in animals is followed by emaciation, feebleness and death, and that injections of fresh extract of the organ retard death at least. Abelous, Langlois, Pfaunder and Holl have been especially active in these researches. The latter announce that the capsules secrete a substance in the form of very fine granules, which find their way into the blood, but not through the lymph passages of the gland; a discovery that ranks in importance beside Hürthle's in regard to the secretions of the thyroid glands. No practical results have been secured yet: a few cases of Addison's disease have been treated, but with no success except an increased diuresis.

The much-criticised medicatio orchitica was inaugurated by an interesting experiment by its author, Brown-Séquard, on his own person. By injections of the secretions of the testes he believed that he had regained all the energy of earlier years. He was able to resume his work in the laboratory, and the dynamometer registered increased motor power. Diuresis increased and the torpid condition of the bowels gave way to normal processes. Experiments on other persons resulted also in increased cerebral action and revived sexual impulses. Brown-Séquard drew the conclusion from these facts that the secretions of the testes exerted a specific dynamogenic force on the nervous system. He concluded, also, from these premises, that early castration in men and animals produced profound disturbances in the nutrition and growth, and that sexual excesses must play an important role as one of the causes of various nervous diseases.

The best preparation of Brown-Séquard's testes extract is that made by W. Vogt in Geneva. It is for subcutaneous use, in doses of from 2 to 8 grams a day. The indications for its use are conditions of weakness, senile or resulting from malaria, hemorrhages, leprosy or tuberculosis, and nervous troubles,

especially tabes dorsalis, neurasthenia, epilepsy, chorea, paralysis agitans and psychic disorders.

Fürbringer, Senator, Ewald, and some others, consider this orchitic remedy utterly valueless, and the only effects produced due to auto-suggestion alone. In my own experience, I have never known it to succeed in cases of impotency, but I have witnessed surprising improvement in muscular energy in several cases of neurasthenia. Pregl, of the Rollet Institute, is soon to publish an account of his observations on this subject, which will probably add much to our knowledge of it.

Babes and Paul have made a glycerin brain extract, which seems to be only an offshoot of the orchitic remedy idea. It has scarcely been tested as yet.

The spinal cord seems to possess a certain curative power in anemia, but it is not yet time to express any opinion in regard to it. In conclusion, I will say that animal therapeutics constitutes an advance in therapeutics which every practitioner must appreciate. But I do not disguise the fact that it includes a certain danger for our science.

It seems a serious matter to me to consider these therapeutic methods as such *in genere*, and the attempt to substitute directly a sound for a diseased organ is certainly an absurd undertaking. An industry, not any too careful, has already assumed control of this animal therapeutics, and a crowd of indiscriminating writers will probably continue to announce signs and wonders that throws the old women's remedies, "virgin's urine," etc., into the shade. The only way to separate the wheat from the chaff is not by way of the laboratory alone. Physiologic chemistry and experimental physiology may separate the secretions of the organs into their components and determine their toxic processes, but, after all, it is the practicing physician who applies the facts they discover. He must be neither too skeptical nor too confiding, but remember what Dedalus said when he entrusted his wings to his son: "In medio tutissimus ibis." Translated from the *Therapeutische Wochenschrift* of Jan. 26, 1896.

Technical Terms in Electricity; Their Simplicity and Practical Importance. We are confronted by the manifestations of electricity on every hand nowadays, and the modern physician should be posted not only in regard to his own little therapeutic electric machines, but also in regard to the applications of electricity on a large scale, in order to prevent accidents, and manage them after they occur. The technical terms used in electricity are beautifully simple and practical, while they commemorate the names of men whose contributions to science and industry are inestimable. For the sake of convenience, we speak of the electric current as a fluid, which it is not. We must remember that this is a figurative language. The fact is, that nothing actually flows from one pole to the other, but that the intervening substance has imparted to it by the electrification some "mode of motion," some condition of matter, some "vibration or tension of the molecules of the body said to be electrified." But it resembles a fluid in many respects; for instance, the way in which the electricity always rushes from the higher potential to the lower, through the intervening wires or substances, as water always seeks the lower level. The measure of the force which the electricity exerts in this, is called a volt. The measure of the resistance offered by the conductors to this electromotive force, similar to the resistance and friction offered by the pipes to flowing water, is called an ohm. As the electric force triumphs over the resistance, the amount of electricity that passes on over the circuit, divided by the time, produces the measure of the intensity of the current, the ampère. The unit of electrical power is the product of the pressure (electromotive force) of a current in volts, when multiplied by the volume expressed in ampères. The watt is the term used to express this volt ampère unit of electrical energy. It equals 1.746 horsepower. The watt is the force of a current one ampère at a tension of one volt, and this term shows best the admirable simplicity of this technical language. If you wish to light your residence with twelve lamps of fifteen candle power each, when you are told that each candle power represents 3.5 watts, you know at once that you require 15×3.5

watts, which is 52.5 watts, and for twelve lamps, 630 watts. The other terms used are the farad, the unity of capacity; and the coulomb, the working unit of electricity. This represents a current having the strength of one ampère, passing through a one-ohm resistance conductor in one second of time. With these terms we all ought to be familiar, and not send back for the volts, when an invoice of "fifty lamps of twenty candle-power and forty-five volts" is delivered at your house, as the story is told of some one. —*Journal des Sciences Méd. de Lille*, January 4.

Filaria of the Eye. According to the *Annales d'Oculistique*, Dr. Hirschberg has recently exhibited before the Berlin Medical Society a specimen of filaria which was extracted from the eye of a negro. It was situated between the conjunctiva and the sclera. It was recognized as a female worm by its rounded head and pointed tail. In the last century a French physician, Vigo, while traveling in the province of Angola, noticed that this worm was frequently present in the eyes of negroes. Vigo performed five operations for its removal, two of which were successful. He introduced a curved needle between the worm and the sclera and pressed on the worm with this needle so as to force it out through the conjunctiva. During the present century, a physician of the French navy removed a similar parasite from the eye of a Congo negro. Another physician at the Gaboon observed analogous cases and claims to have found that the worm could emigrate from one eye to the other by a subcutaneous route around the root of the nose. He stated that the patient could feel the passage of the parasite, and that there was intense pain when the worm approached the cornea, into which, however, it never penetrated. This parasite was also observed in America and in the Antilles at the time when slaves were imported. Europeans who reside, or who have resided, in countries where this parasite exists may also be bearers of it. A Scotch woman, thirty-two years of age, who had lived at the Mission Station of Old Calabar, in the northwest of the Cameroons, found, on her return to Europe, that she had a worm in her eye. It was extracted by Dr. Argyll Robertson. The mechanism of the introduction of the worm into the eye is not understood. It has been suggested the mosquito is the host in which the larvæ of this parasite are developed. After being thus developed in the insect they are then introduced into water. The worm exists in endemic condition from Angola to the Gaboon, from the fifth degree of north latitude to the tenth degree of south latitude on the west coast of Africa.

Chronic Cancer of the Breast of more than Thirty Years' Duration.—Munn (*British Medical Journal*, Feb. 22, 1896) read a paper before the Clinical Society of London concerning chronic cancer of the breast, which formed a continuation of two former papers read before this Society in 1872 and 1878 and recorded in Vols. vi and vii of the Transactions. The patient first came under observation in 1862, being then 37 years old, and mother of one child. Menstruation had ceased at 30. There was then a scirrhus tumor of the breast and a chain of enlarged glands in the axilla. The breast was removed by Mr. Munn in September, 1862. Four years later pain was complained of in the muscles of the arms and the fingers; this pain soon passed away. In 1868 the patient was no worse. In 1878 a limited recurrence took place in the upper angle of the scar. In 1893, more than 30 years from the commencement of the tumor there was an increase in the cancer deposits, and the arm was swollen. In October, 1895, Munn found the patient still living and energetic, and doing work as a charwoman. The patient in Case 2 (1878) died a year after Munn's report of the case. The autopsy revealed secondary tumors in the lungs and in the liver. The exact duration of the disease in this case is not mentioned in Mr. Munn's last paper. Drawings were presented showing the carcinomatous structure. As a further illustration of chronic cancer mention was made of a case of which microscopic sections of the recurrent tumor removed by Mr. Munn were presented to London Pathological Society in 1880, the original tumor having been removed seven years previously by Mr. Curling. A second recurrence was operated upon by Mr. Lawson in 1882, and the patient was, until lately, still living. In the discussion Mr. Marsh recalled the case of a woman, now 71 years of age, who has had a carcinoma of the breast almost continuously for eighteen years. A few weeks ago he has made the tenth operation which she had undergone. These cases show that patients in whom recurrence does not take place within three years can not always be regarded as cured.

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On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Gentlemen already members of the Association should send their annual subscription to the Treasurer, or direct to the JOURNAL office.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 86 Fifth Avenue, Chicago.

SATURDAY, MARCH 14, 1896.

THE ATLANTA MEETING.

The universal recognition of scientific progress and revolution can not be avoided. The man who doubts this must be very blind and very deaf and very feeble mentally.

In all the large cities the progress in electricity forces itself into observation, and an intense expectancy pervades everywhere. The field of medicine is no exception. The Baltimore meeting appeared like many others which had gone before. Members who listened to the various papers read failed largely to recognize their true significance. Only after, when these papers appeared in the JOURNAL from week to week, did the fact dawn that medicine was advancing. This Baltimore meeting, more than all others, exhibited a restless onward movement of medicine outside of conventional lines and boundaries of the past. This was not so much apparent in the novelties and innovations proposed as in the doubt and questioning, and demand for evidence for the present theories.

The pages of the JOURNAL show that a new era has dawned for American medicine, and the AMERICAN MEDICAL ASSOCIATION gives voice and expression to this more clearly than ever before.

Local and State societies, and societies of specialists, all have a power and place in this movement, but the National society, of all others, must concentrate, mobilize and direct this progress. The coming meeting will show a great advance in many ways and higher ground will be occupied along many lines of science. The application in medicine of the new photography from the Roentgen rays will be presented with some new results. New discoveries of brain anatomy, and new facts along many practical lines of work, are already promised. The scientific outlook for the

coming meeting is of unusual interest. National medicine has passed beyond any personal local influences and demands the best facts from every source. The village and country doctor is welcomed for any facts he may bring. Distinctions of place and position all become insignificant compared with truth and new facts, and new evidence from any source.

The many sectional meetings give every man a chance to compare his experience and opinions with others from all parts of the country.

Critical physicians may stand aloof and sneer down the ASSOCIATION as a medical ring, and mob convention, but the fact can not be ignored that it is the most influential gathering on this continent. The JOURNAL and its contents are the unmistakable evidence of this fact. Not far away this will be recognized and the ASSOCIATION meetings will have thousands in attendance where it has only hundreds now.

The Atlanta meeting will bring out a large number of active men in the new South land who will be leaders in the years to come. All members from the West and North should embrace this opportunity to create a new scientific interest, and enlist a new class of men, who will bring new facts and new experiences to our work. It should be a duty and source of pride to every member of our ASSOCIATION to attend its annual meetings and prove to their home circle of friends that they are not merely medical hewers of wood and mechanical nurses, but scientific men interested in the great movements for the welfare of humanity.

More than this every member who attends the ASSOCIATION meetings secures a certain character and position, not only to himself personally, but to those he comes in contact with. This can not be bought with money or power; it only comes from association and interest in medicine with others at these great National gatherings.

Let every one show his interest in science, in humanity, and in the struggle against disease and death, and come to Atlanta, and he will go back stronger and better fitted for his work.

THE SIGNIFICANCE OF GRADE, RANK AND TITLE
IN THEIR NAVAL MEDICAL RELATIONS.

The development of the new Navy is a matter of popular concern and the expensive outlay it involves is acquiesced in by the most exacting appropriation watchers. That the *personnel*, barely sufficient for a few old time wooden vessels, needs to be similarly expanded in men and officers apace with modern battle-ships, cruisers and coast-defenders is not questioned, but Washington correspondents declare that Congress finds such difficulty in reconciling the opposing factions of the Navy that in all probability the session will close without any legislation in this direction. It may be profitable for us as physicians to inquire in

what manner the interests of our naval medical confrères are affected by this internecine conflict, and who is responsible for obstructing the reorganization which is admittedly necessary.

It is well known that the officers of the Navy have been for many years divided into two bitterly hostile parties—one comprehensively termed the *line*, charged with the executive, navigating and artillerist duties—the other collectively, the *staff*, comprising the medical, pay, engineer, construction and certain minor corps. The same divisions of line and staff exist in the Army but without factional friction and enmity, and the civilian, the citizen soldier and the regular army officer are equally unable to understand why this antagonism should prevail in the navy which is unknown in the army—why it should exist in the navy of the United States and not in that of other nations. The naval medical officer is as accomplished, as competent, as well appearing and as well descended as his army colleague; why then should a naval line officer seek to assert a military superiority over his medical associate which never occurs to the army line officer to exhibit toward the medical officers of his own military family? The embryo naval cadets come from the same sources as the military cadets; they represent every class of society; some of them are of very humble antecedents, but a single term at the Naval Academy often makes the son of the laborer as the son of the millionaire an arrogant and offensively supercilious pretender to inherent superiority (though his own father and brother may be staff officers), which neither his duties nor requirements justify.

The status of the army officer is as well understood outside the army as within its ranks, through the wide distribution of the volunteer forces and national guard. Every one knows how they are graded; everyone knows what is a colonel though he be of the engineers or artillery, a major though of the medical corps or cavalry, a captain though of the infantry or pay corps—the special arm or corps being indicated when officially necessary by distinctive titles and uniform, and on occasions of merely social intercourse being never considered. This is so simple and rational that it is puzzling to understand why there should be any difficulty about it in the navy. The commissioned officers of the navy are arranged by law in certain *grades*: rear admiral, commodore, captain, commander, lieutenant-commander, lieutenant, lieutenant of the junior grade, and ensign, which are commonly but erroneously spoken of as *ranks*, the terms *grade*, *rank* and *title* being confounded and assumed to be synonymous and appropriated by the line as their generic distinctions, whence their claim that they alone constitute the navy, while all other officers, whose commissions are phrased in identical terms with their own, except as to *title*, are, they assert, only accessory but not essential, and this fallacy is the single *casus belli*

in the service, as a clear understanding of the significance of terms will make evident.

Grade is that something, the law has conferred upon *all commissioned officers*, which serves to show the officer's place, position or status in a military organization. *Rank* means simply seniority or precedence in the several grades and depends upon the date of the officer's commission; thus, one officer ranks another in his own grade. While custom has sanctioned using grade and rank as synonymous, this is not correct, since the word rank is not employed in the statutes to give any officer his official place or position in the naval organization any more than in the military. Grades in the military organizations of all civilized nations are practically the same, corresponding names being given these grades in the several languages, and to show the correspondence of naval grades with these military grades, the law defines that a rear admiral shall have the relative rank of major general, commodore that of brigade general, captain that of colonel, etc., the expression *relative rank* not implying any other relation than that of absolute equivalence. Unfortunately, the same term *relative rank* has been used in defining the correspondence of the grades into which the staff corps have been divided with those of the line, for while the intent of the law is precisely the same in the one case as in the other, sea-lawyers have quibbled to make it appear that relative rank as applied to staff officers is not real, though the same reasoning would invalidate their own precedence with the army. In the case of the medical corps the grades are medical director, medical inspector, surgeon, passed assistant surgeon and assistant surgeon—these being in fact only *titles* and not *grades*; since a medical director may have the relative rank of commodore or captain, a surgeon that of lieutenant-commander or lieutenant, and a passed assistant surgeon that of lieutenant or lieutenant of the junior grade; while in the engineer corps the confusion is still greater, for the *title* chief engineer is bestowed upon five separate grades of officers. The sole cause of the lamentable dissensions in the navy is the assumption by the line of a vested right to be considered the navy, all other officers not being officers at all, because they are not specifically stated to be of the same grades as themselves and they oppose legislation to this effect, affecting to believe that it would lead to conflict of authority, herein making the mistake that authority is inherent in any grade, and in face of the army precedent where no such conflict occurs. It is unnecessary to declare that no medical officer in the navy aspires to be confounded with any line officer, nor does he wish to exercise his functions, nor desire anything but to have the actual grade to which his commission entitles him established as has been done in the army, coupling with it the corps to which he belongs, and if

necessary a distinctive medical title to indicate his specific duty.

The significance of the terms grade, rank and title are, it is hoped made apparent. There is no reason why, as in the army where Colonel—, Fourth Artillery, Major —, Engineer Corps, and Captain —, Medical Corps U. S. Army, sufficiently indicate the individual and his office, Captain — of the Line, Commander — of the Medical Corps and Lieutenant — of the Engineer Corps, U. S. Navy, should not be equally distinctive. The precedent already exists in the Navy, where Captain — of the Marine Corps fills his comparatively junior grade, despite his title without in any way detracting from the greater glory of Captain —, who may command the vessel on which both are serving. As already stated, the misunderstanding in the navy arises from the false premise that the titular grades of the line indicate inherent duties instead of being merely gradation terms. The word captain denotes nothing more than the third grade of commissioned officers in the navy, as it does the sixth in the army and marine corps, and not an individual, who of necessity commands a first rate man-of-war. When such duty is assigned to him, his distinctive title becomes "captain commanding," which sufficiently indicates his specific duty. There are to-day on board the flagship *New York*, three men who are officially designated as captain, the captain commanding the ship, the commander who is chief of staff and the captain commanding the marine guard. Nothing has been heard of a conflict of authority between these men by reason of all possessing the same title, although they belong to three different grades, the word captain in the case of the marine officer, as in the army, being three grades below that of captain in the line. Why should there be any conflict if the medical officer or engineer were so designated in their respective corps? Congress has therefore only to declare that all commissioned officers of the navy shall be divided into certain grades, as in the army, the corps to which each officer belongs being appended, and no more will be heard of line and staff contentions. Indeed the only dissension will be that which has recently developed between the young officers of the line, who wish to turn out the old ones, and these old line officers, who do not wish to be turned out, arguing most plausibly that the man who has seen thirty years faithful, efficient, honorable service has far more claim upon his country than the youth, who has served but three.

ACUTE LEUKEMIA.

Leukemia and other forms of essentially chronic blood disease are of more than ordinary interest because of their as yet unknown etiology. It would seem that not until their genesis is fully made clear can there be any reasonable chance for securing effi-

cient therapeutic measures. Any observations that throw some new light upon such obscure diseases as leukemia are consequently of great value from a practical as well as from a theoretical point of view. Leukemia occasionally appears in the form of an acute disease. This manifestation might, if thoroughly studied, furnish some reliable indications as to the direction in which the solution of the etiologic problem referred to should be sought.

A. FRAENKEL¹ has recently published a series of articles upon the acute form of leukemia. He deals with the observations relative to six male and four female patients. The duration of the disease varied from twenty days to sixteen weeks. In four patients the age was between 13 and 18 years, in six between 24 and 34. Characteristic in all the cases was the sudden onset and the early appearance of symptoms such as multiple hemorrhages, which in chronic leukemia are observed only in the latter periods of the disease. In eight cases, in which the blood was carefully examined, the findings were uniform but of a somewhat different nature, in some respects, than in chronic leukemia. In addition to the falling off in the red corpuscles and the increase in the white, it was found that the excess of white cells depended exclusively upon the presence of an increased number of mono-nuclear elements, or lymphocytes. These lymphocytes were of varying size. They showed transition forms, however, that pointed to their all belonging to the same developmental series. The larger were the most numerous and showed a large nucleus, poor in chromatin, that almost filled the whole protoplasmic cell body. The nuclei occasionally presented divisions into two. Eosinophile or neutrophile cells were not present. Basophile cells were found occasionally. The number of polynuclear leucocytes was very small. In three cases mitotic figures were present in the blood in the capillaries of various internal organs. Nucleated red corpuscles were found in small numbers; only in two cases were such cells rather numerous. On the warm stage these lymphocytes failed to exhibit any amoeboid movement.

Smear preparations from the spleen, the bonemarrow and the lymphatic glands showed that the mono-nuclear white cells were most numerous in the swollen lymphatic glands; sections from the lymphatic glands showed appearances favoring this conclusion. There was consequently a lymphemia, the youthful forms of leucocytes predominating; hence the proliferation of white cells must be very active and their passing from the seat of formation into the circulation must ensue rapidly. This corresponds to the acuteness of the clinical picture. In chronic leukemia this passage into the circulation takes longer time and the lymphocytes have a chance to undergo transformation into

¹ Deutsche med. Wochenschrift, 1895, Nos. 39 to 43, and No. 45.

cells with granulations in their interior and to form polynuclear elements. The latter forms are actually and relatively diminished in number in acute leukemia: the conditions necessary for the transformation of their early stages of development—the youthful lymphocytes—are not present or have been disturbed.

In all probability the etiologic factors are identical in the acute as well as in the chronic forms of leukemia. Transition forms between the acute and the chronic varieties have been described by reliable observers.

The course of acute leukemia points to its being an infectious disease. In two of FRAENKEL'S cases the complete absence of bacteria in the blood was fully demonstrated. The question as to an auto-intoxication from the gastro-intestinal tract is an open one. The early and constant swelling of the cervical lymphatic glands points to the possibility that the virus may enter from the mouth or from the pharyngeal cavity.

Two of FRAENKEL'S cases are noteworthy on account of the manner of their termination, namely, a rapid and constant subsidence of all leukemic manifestations up to the very moment of death. This occurred under the influence of an intercurrent bacterial infection, a septicemia due to staphylococci, and colon bacilli respectively. Disintegration of the leucocytes in the blood and in their seats of formation occurred in these two cases as shown by the appearance of the blood and of the glands, and this was accompanied with a rapid exacerbation of the general condition which led to the belief that a ferment intoxication was taking place; in one of these cases there was also a marked increase in the excretion of uric acid. The disintegration of the white cells must consequently be of essential influence upon the amount of uric acid excretion.

These latter phenomena that occurred apparently as a direct consequence of the bacterial infection leads FRAENKEL to direct attention to the possibility of a rational therapy: The treatment of leukemia with bacterial products or with other substances that exercise a formative stimulus upon the blood-forming organs and favor the normal transformation of the young leucocytic cell forms into polynuclear leucocytes.

MORAL INSANITY.

Recently a very reputable medical man was convicted of a heinous crime and sentenced to prison for life. In the effort to collect facts to be used in securing pardon, the counsel discovered a most unusual life of hypocrisy. He had been cruel and harsh from boyhood. He enjoyed causing pain and suffering in others, and as a student he fairly reveled in the agony of animals in vivisections, and the pain of persons diseased. To this was added great egotism and love

of personal praise. He ruined his father's property in apparent speculation. He was a bitter enemy to his brothers and sisters, and was indirectly the cause of the death of his wife, and drove his children from home. He was not miserly but was, in his inner life, thoroughly dishonest, and without the slightest conception of honor or duty to others. Yet he kept up a fair exterior, was a teacher in a medical college, with a large practice, and had no popular vices such as drinking or gambling. The more his history was studied the worse it appeared. Deception, fraud and dishonesty marked every stage, and yet it was largely purposeless and without reasonable motive.

The facts taken together had only one conclusion and that was moral insanity. Some condition of the brain was literally deranged and malformed. Some central part that had not developed had been steadily retrograding. However difficult it may be to explain and make clear this term, there are classes of facts that can be described by no other name.

The common expressions, vice, wickedness and depravity, used in the moral sense, become more and more confusing with each advance of science, and their use in any technical way is unfortunate for accuracy. The higher governing centers of the brain are clearly distinct from the lower, and what is moral, meaning the consciousness of duty and obligation to others, and conceptions of right and wrong, is clearly a later development. Evidently these centers are governed by the same laws which work in harmony in the healthy person, but may diverge greatly in other conditions. The belief that these centers may be undeveloped and diseased is along the line and sustained by both the physiologic and psychologic laws of existence and growth.

The legal fear that the recognition of this disorder will be an excuse for crime is purely theoretical and visionary.

The greatest danger comes from the want of recognition of the actual physical states which are manifest in criminal immoral conduct, conduct that may not come under legal recognition, but is nevertheless disease and wide departure from the normal standard.

Every physician comes in contact with persons who show by their acts insanity of every element that enters into the higher mentality. The terms commonly used to describe this condition should pass out of all accurate language.

Medical men should study the facts of these cases, confident that they will all be found to come under some general law of disease and degeneration.

Had the actual physical condition of this doctor been known, the disaster of his life and the suffering of others might have been averted. Arguments over definitions and terms are absurd, the reality of moral insanity can be proven from facts which have no other meaning.

THE MEDICAL EXAMINERS' BILL IN THE NEW YORK STATE LEGISLATURE.

Another and very serious attempt is being made in the New York Legislature to secure the abolition of the office of coroner, by a bill that will create a system of medical examination that will in large measure be divorced from politics. The medical examiners will be bona fide medico-legal officers, since they are to be appointed by the Appellate Divisions of the Supreme Court in each of the four Appellate Districts of the State. The number of examiners has not yet been settled definitely.

The medical examiners must be physicians of good standing, fulfilling the requirements which the Appellate Divisions of the Supreme Court are authorized to establish. They are required to give bonds for the proper performance of their duties, and are removable by the appointing power. Several of the Appellate Judges have been consulted about the placing of the appointing power in that branch of the State government, and they are in favor of it, for the reason, chiefly, that the new officers will be as far as possible removed from political influences. Their salaries will be fixed by the Court in proportion to the amount of work required of them in their several districts. Their term of office will be six years.

The medical examiners and assistant medical examiners shall be duly licensed and registered physicians, and their appointment shall be made according to merit and fitness, to be ascertained, so far as practicable, by such examinations as the Appellate Divisions for each department shall prescribe.

In case of the death, resignation or removal of any medical examiner, or assistant medical examiner, in the district of the Appellate Judges who appointed him, the same division may appoint his successor for the full term of six years. Any medical examiner, or assistant medical examiner, may be removed at any time for cause shown by the Appellate Division of the judicial department which appointed him.

Each medical examiner and each assistant medical examiner shall give bonds for \$5,000, conditioned on the faithful performance of their duties.

Coroners' juries are abolished, because they are only training schools for witnesses, and because their findings have no force whatever.

CORRESPONDENCE.

A Permanent Badge for the American Medical Association.

DETROIT, MICH., March 6, 1896.

To the Editor:—I have been very much interested in the discussion on the subject of insignia of the medical department U. S. A. Now that the board of officers, of which Col. Chas. H. Alden, Assistant Surgeon General U. S. A., is president, has concluded its labors and rendered its report and recommendation to the Surgeon General, it may not be amiss to con-

sider the subject of a permanent badge for the AMERICAN MEDICAL ASSOCIATION.

At each annual meeting of the ASSOCIATION we are presented with a new badge. At San Francisco the badge consisted of an escutcheon bearing the arms of California, etc. The escutcheon, which was made of silver, was suspended from a pin made in the semblance of a bear, composed of some kind of metal coated with gold. It was a beautiful badge, and cost the local medical societies and those who contributed to it quite a large sum of money. Sometimes we are decorated with a badge that would do credit to a firemen's parade. Now, if we had a permanent badge that could be worn by members of the ASSOCIATION at all times, it would serve as a method of recognition at the annual meetings, or whenever two members of the ASSOCIATION should meet by chance.

The best form of badge would probably be a button worn in the lapel. At the annual meetings a ribbon could be suspended from it, bearing the name of the State represented by the delegate.

I have considered a number of designs for such a badge, among them, the red cross of the Geneva Convention on a white field and surrounded by a narrow band of blue. This would be an appropriate design, red, white and blue. By referring to the paper of Col. R. French Stone, Surgeon General Indiana National Guard, entitled "Proposed International Medical Insignia," which was published in the JOURNAL, February 29, the outline of design referred to will be seen on page 405; Col. Stone suggested this emblem for use not only by the army but by the doctors in civil life throughout the world. He recommended a dark green field with a modified form of the red Maltese cross surrounded by a narrow strip of gold. His suggestion may be more appropriate than mine, but I do not think the contrast between the red cross and the dark green field is as marked as that between the white, red and blue which I have recommended.

The object of my communication, however, is to excite interest in the subject of a permanent badge for the AMERICAN MEDICAL ASSOCIATION, leaving the design to be considered afterward, first finding out whether a permanent badge of the ASSOCIATION is desired or not.

In conversation with several prominent members of the ASSOCIATION, at different times, I have broached the subject of a permanent badge, and the suggestion has been viewed with so much favor that I feel justified in presenting the matter more generally to the ASSOCIATION through the columns of the JOURNAL. I would be glad to receive any communication on the subject from members of the ASSOCIATION. Address communications to 106 Charlotte Avenue, Detroit, Mich.

F. E. STEWART, M.D.

The Use of Proto-Nuclein.

GOSHEN, IND., March 7, 1896.

To the Editor:—I am much obliged to you for the space you were kind enough to give my article on proto-nuclein and a case treated with that medicine alone. I am still prescribing proto-nuclein in my daily practice, with increased confidence. I am free to state I have had more satisfactory results from this medicine than from any one remedy I have ever prescribed, except, perhaps quinin in malaria. Having had quite a long experience in the practice of medicine, I trust I am not entirely deceived. Allow me briefly to note a case.

Early in the morning of October 15, last, I was called to attend a Mrs. S., aged 30, residing in this city. I learned she was taken violently sick in the night, six hours before I saw her. Had chills, very high fever, temperature 104, pain and sore throat. On examination I found the right tonsil entirely covered with a thick diphtheritic membrane. About 2 o'clock in the afternoon the exudation made its appearance on the left tonsil, extending back to the fauces and posterior nares. The

patient had a hoarse cough and smothering sensation, indicating that the disease was extending to larynx and trachea. As local treatment, using the powder blower, I covered the diseased parts with proto-nuclein special every four hours, blowing the same up the nostrils, and having patient inhale the dust as much as possible. For internal treatment, three grain doses of proto-nuclein powder were given every three hours, and continued for six days. The effect of this treatment was to check and hold the disease from the very beginning. On the second day the membrane began to loosen and thin out, and by the evening of the third day it had entirely disappeared. Two days later flakes of membrane were raised from the larynx and trachea, which had evidently formed on the first day. No other medicine, whatever, was given, except a dose of morphin at night. This patient made a delightful recovery, free from the weak and poisoned condition that follows even a mild diphtheria. And this is the *beauty* of the proto-nuclein treatment, convalescents invariably come out bright and fresh, free from defective secretions and poisoned blood.

In this locality the past season, almost every malignant diphtheria has extended to the larynx and trachea and those cases have been invariably fatal—such, no doubt, would have been the result in this case, only for the prompt arrest. I never saw a more violent attack. There were three persons exposed, mother, husband and little son. As preventive they were all given the same internal treatment, the main patient was taking. The husband had a very mild diphtheria, which required a couple of local treatments. The other two escaped entirely.

Respectfully,

A. C. JACKSON.

A New Picture Process.

DES MOINES, IOWA, March 9, 1896.

To the Editor:—I have taken considerable interest in the published reports of the penetration of Roentgen's X rays and the application of the discovery to surgery; as well as to reports of similar results without the use of Crookes tubes. By virtue of accident I can report similar result independent of Crookes tube, dynamo, or any other agent of electrical light or force, so far as I know. Some months ago I placed a piece of sensitized paper in a book and it was forgotten. When discovered a few days ago, the page of the book was clearly and legibly printed upon the sensitized paper, as a positive. The discovery was so bewildering that I did not think of fixing it at the time, but next morning, when I went to do so, the image had vanished, and I lost the evidence of what I saw. The experiment, however, can be repeated by any one. If the impression had been from ink or oil it would not have faded.

A. G. FIELD, M.D.

PUBLIC HEALTH.

Effect of Water on Diphtheria Germs. Demetria has been experimenting on the Löffler bacillus to determine whether it retains its virulence in water. (*Arch. de Méd. exp.*) He found that it rapidly loses its primitive virulence in distilled water as well as in sterilized, and also in running water, but that it promptly regains it when transplanted to a favorable soil. Fresh, running water seems most destructive to the bacilli, as they disappear in it in seven to nine days. *Revista de Ciencias Modernas*, February 5.

An Infectious Disease Hospital to be Located on Manhattan Island.—There has been introduced into the legislature a bill authorizing the mayor and aldermen of New York city to convey to the Diphtheria and Scarlet Fever Hospital a site at East Seventeenth Street and the East River. This is the hospital which is to be built and managed by Mrs. Minturn and a number of other spirited ladies of New York city. The location is isolated and there has been no objection to the bill because it would

endanger public health. There is now no hospital on Manhattan Island which will receive persons stricken with diphtheria or scarlet fever, and they must be bundled off to the Pest Hospital on Randall's Island. The proposed hospital is to fill that want, and the bill will pass.

Vulpine Rabies in Russia. The *Sanitary Record* refers to the fine paternal care displayed by the Russian government on behalf of the unfortunates who fall victims to the bite of the wolf. It says: "The following is the record of the Pasteur Institute in Paris for 1894: 1,387 patients were treated, 7 of whom died. When Pasteur made his anti-rabic discovery he was besieged by men from Russia, some of whom had been bitten by wolves. Many of them could reach Paris only when too late, and the Czar at once, on being convinced of the efficacy of the treatment, sent pupils to be trained, and established centers of cure in Russia that have obviated the necessity of the long journey, so that during the year but one patient came from Russia, while 128 came from near-by England."

New York State Board of Health.—At a meeting of this Board held February 28, Dr. Lewis, chairman, presented a report on the sanitary program for 1896 in the State. He also submitted a report on the condition of the rendering works on Barren Island. He recommended that the services of the present inspector, Arthur Hollick, be dispensed with after April 1, and that Orville Lewis, of Brooklyn, be appointed in his stead. Orville Lewis is a relative of Dr. Lewis. The salary is \$5,000 a year. Dr. F. O'Donohue, chairman of the standing commission on tuberculosis, reported that 527 animals suffering from the disease had been killed since July 15, 1895. The appropriation for the work, \$30,000, he said, was not enough. After the meeting a conference was held with the New York City Board of Health, at which it was agreed to petition the legislature for a larger appropriation in order to deal effectually with tuberculosis.

Opposition, on Sanitary Grounds, to the Ringing of Church Bells at Untimely Hours. Commissioner Dr. Emery, of the Brooklyn Department of Health, having been in the receipt of many complaints of citizens regarding the very early or very prolonged ringing of church bells, he caused to be issued, on February 14, the following note of warning, from the point of view of injury to health to invalids and others resident near churches possessing large bells:

"Notice to the Governing Authorities of Places of Religious Worship Owning and Using Large Bells:—Whereas, frequent complaints have been made to this department against the ringing of church bells at hours, and for prolonged periods, in such manner that it is alleged to be injurious to the health of invalids and others living in the neighborhood of the churches owning such bells, it is incumbent upon me to advise you that section 177 of the sanitary ordinances expressly prohibits the ringing of large bells in such manner as to become a prejudice or peril to the life or health of any human being. All church authorities and others having control over the ringing of large bells in neighborhoods that are thickly settled are hereby requested to prevent the bell ringing before 7 A. M., and in localities where complaints by invalids are brought to their notice, to restrict the bell ringing in the day time to as few strokes as possible."

A Good Way to Get Bad Statistics.—The January *Bulletin* of the Connecticut State Board of Health contains a kind of despairing comment by the secretary, Dr. C. A. Lindsley, on the poor annual vital statistic abstracts that he has to labor over in order to get out his own annual report. The annual abstracts are made up by the town clerks of the various towns, and they are required by law to be sent to the superintendent of registration on or before January 25, in each year. This document is still wanting from three towns. Of the 165 annual abstracts received, 77 have been returned to be corrected, and 12 have been returned the second time. It is quite obvious that any attempt to tabulate the numerous facts in a consolidated form will be blocked effectually, until the numerical

errors in the abstracts are corrected. For instance, if in one table it is stated that there were 9 deaths in May, and in another table that 10 deaths occurred in May, the discrepancy must be removed before the condensed tabulation can proceed. The explanation of these seemingly careless, troublesome and vexatious mistakes is found in the inexperience of town clerks as statisticians. But these many arithmetical mistakes are also indications of still other errors, of which the superintendent has no means of detection. It can not be doubted that in so complicated a matter as summarizing, classifying and tabulating the vital statistics of the population of the State of Connecticut, we have adopted about the worst method that would be thought of. A plan which involves the tabulation of all the original certificates of births, marriages and deaths in the whole State in 168 separate parcels, by as many different persons, nearly all of whom are unfamiliar with such work, does not commend itself to any statistician or promise very accurate results.

Sanitary Considerations Affecting the Tall Office Building. A writer in the *Independent* makes an estimate that the value of the land upon which one of the tall "sky-scrapers" on Broadway, New York city, rests will be at the rate of \$8,000,000 per acre. This explains the development of the huge structures in our cities, and it also explains that financial considerations have outmatched and overmatched those that pertain to health. The writer remarks, first, upon the elements of risk to life by fire, and says: "Considerations of hygiene, esthetics, of the personal rights of others, and of public morals, not being actively represented by anybody, come up slowly and rather feebly. Thus it is already manifest, although nobody is more than mildly impressed by the fact, that the tall office building which New York has rushed of late years into constructing, has risks and problems not yet fully measured. The fire hazard is one of the most serious, and there is no guaranty that the earthquake may not yet be another. Grant that the insufficiency of water pressure is offset by the slow-burning construction, we know that granite and marble are almost as wax in a fierce heat, nothing enduring like brick; the steel skeleton, with its veneer of stone bolted to it, is not so bad as the iron front, but how it will behave under the blast of a great fire is yet to be ascertained. The tall building has also converted the streets, especially the narrow ones, into the likeness of clefts or canyons, through which wind currents rush with exaggerated power. More serious still is the cutting off of daylight from lower floors and from the streets themselves, the sun never more than just visiting them for a few moments, and not doing even that in all places. Viewed from a high point, downtown no longer has streets—there are merely clefts or crevices in the pile of walls. The effect to the eye is startling and suggestive: the consequences, more or less serious, must be in several ways injurious. What is to be done about it? There has been some discussion, and a bill is now before the legislature which proposes to make fifteen times the square root of the street width the limit of height of buildings hereafter to be erected: on a 100-foot street this would make the limit 150. Opposition has appeared already; yet it is plain that if the apparent commercial demand does not continue to prompt the erection of 'sky-scrapers' restriction will not interfere with anybody, and that if this demand does continue restriction of some sort is necessary. In the social state, one can not do quite as he pleases with his own."

The Campaign Against Tubercular Dust.—Dust is becoming as much of a bugbear to the medical profession as it ever was to a model New England housekeeper. A vigorous campaign has recently been inaugurated against dust in hospitals. All angles are tabooed. The walls must have rounded corners where they meet, and where they join the floor and ceiling. The floor should slope to an opening, so that it can be washed with abundance of water or antiseptic solutions. All the furniture

should be of iron, with no ornaments or projections of any kind. No dry sweeping is allowed now. Damp sawdust or something of the kind must be used, and damp cloths to dust the walls and furniture daily. Water should be kept in the cuspidors to prevent the drying of sputa, and the contents carefully burnt. All the water used for drinking and washing hands, instruments, and wounds, should be sterilized. Tarnier has had smooth, sloping, roof-canopies placed over all the old-fashioned furniture, wardrobes, etc., in his hospital in Paris, to collect the dust until it can be washed off. Contagion from tuberculosis in hospitals is just now causing much discussion, and a more vigorous hygiene would be a most efficient aid in settling the question.

The use of sanitary spit mugs in all wards where consumptives are treated, has become a necessity. These are made of thick heavy paper and kept in a frame, from which they are daily removed and burned. This form of spit mug has been used in the U. S. Marine-Hospital service for the past six years.

In the *Medical Press and Circular* for February 19, the Paris correspondent quotes the following statement by Dr. M. Terrier, physician to the Hospital Bichat, that a heavy mortality by tuberculosis has occurred among hospital nurses and attendants. Dr. Terrier says:

"The contagiousness of tuberculosis is a question of capital importance in hospital practice. In many hospitals the phthisical are freely mixed with other patients. I consider tuberculosis extremely contagious. Mathematical proof of this fact can not be given from observation of hospital patients since the disease does not declare itself until after discharge from the hospital, but ample proof is afforded among hospital nurses and attendants at consumption hospitals. Out of twenty-five male and female nurses of the Hôpital Bichat who died in the service, no less than twenty perished of tuberculosis. The contagiousness is further proved by the number of pupils and house surgeons who develop the disease; and it always manifests itself most among those who work hardest and remain longest in hospital. The laboratories have afforded striking evidence; and M. Francois-Franck records the cases of two pupils affected after experimenting with desiccated tuberculous products. There can be no doubt that the dust of apartments where tuberculous patients remain becomes charged with bacilli. Suspected cases should be isolated, and in order to determine the question, an injection of tuberculin ought to be administered. It is only in this way that the dangers of contagion in hospital can be guarded against."

The Vile Yard-vault, or "Midden" still Supreme.—Dr. Francis Vacher, Health officer for Birkenhead, England, in a recent address on the prevention of epidemics urged upon his fellow officers to do their utmost for the *rapid* removal of decomposing animal refuse, as opposed to the primitive and filthy storage of much of it in the back yards of inhabited premises. His remarks are reported in *Public Health* for November. In his opinion, the sanitary needs of the case are hardly met if there is not a daily removal of human excreta. He said:

"From a sanitary point of view, decomposing refuse is of three kinds—1, human excreta; 2, house refuse, and 3, trade refuse. Will anyone assert that the ordinary way of dealing with this material secures its rapid removal? Commonly, the first two kinds are hoarded up in middensteads, in close proximity to inhabited houses; and the third is deposited on wasteland, or turned into a running stream. Much, doubtless, has been done of late to induce manufacturers to use or consume their decomposable waste, and much is still being done. But as for the ubiquitous midden, it is yet supreme. Sanitary authorities rarely attempt its abolition, dissipating their strength in projects for its improvement. It is to be made smaller and shallower, is to be cemented over, and roofed and ventilated, etc. Certainly, you may make it less offensive in this manner, but storing decomposable stuff is an insanitary practice *per se*, and therefore any receptacle for its storage is bad; and improvements, making it a little more tolerable, continue it in existence from year to year. Some recently altered middens are scarcely more tolerable than the most primitive. There are districts where these receptacles are being divided, converting each compound-midden into a midden and cess-pool; and other districts where pails (to be emptied weekly) have been placed under the seats. I can find no smooth word for the

midden, no excuse for those who are content with it. In all its pristine foulness, it is execrable; and, as metamorphosed and modified in various ways, it is yet altogether abominable. Wherever it exists, conditions are present which assist in the spread of many diseases, epidemic and endemic. Where it nestles in the narrow yard of each little dwelling in the poor quarter of a town, who can wonder that the visits of such disease are frequent, and their stay prolonged?

When the invited epidemic comes, attempts are made to discover the cause. It is ascribed to 'the usually neglected condition of the middens,' 'defective construction of the middens,' 'foul water in the middens,' 'overflowing middens,' etc. And what is implied, if not expressly stated, is, that were the middens altered somewhat, or the scavenging improved, all would be right. So the middens are altered, and the scavenging improved. However, when the next outbreak of disease occurs, it spreads. All was *not* right, and never will be, as long as the middens remain. Much of this does not apply to rural districts. Certainly, the daily collection and burning of refuse would not ordinarily be necessary in country places, but checking the practice of hoarding decomposing refuse in contiguity to dwelling-houses is necessary, and can be effected. A compound-midden here and there in the country will not be powerful for harm like long rows of them in crowded towns; but a compound-midden is an odious thing wherever it exists, and should not be tolerated by any sanitary authority."

Health Reports. The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX UNITED STATES.

Ohio: Dayton, February 27 to March 5, 2 deaths.
Michigan: Detroit, March 1 to 7, 2 cases, 1 death; Imlay Township, Ionia, Riga Township and Saginaw, smallpox reported February 22 to 29.
Louisiana: New Orleans February 22 to 29, 53 cases, 2 deaths; Shreveport, March 7, 2 cases.
New York: Brooklyn, January 1 to 31, 1 death.
Texas: El Paso, March 4, 1 case.

SMALLPOX FOREIGN.

Dublin, February 15 to 22, 1 case.
Buda-Pesth, February 5 to 12, 5 cases.
Calcutta, January 18 to 25, 1 death.
Cardiff, February 15 to 22, 4 cases.
Corunna, February 1 to 22, 2 deaths.
Genoa, February 8 to 15, 3 cases, 1 death.
London, Eng., February 1 to 8, 64 cases.
Moscow, February 8 to 15, 1 case.
Naples, February 7 to 14, 29 cases, 9 deaths.
Odessa, February 8 to 15, 1 case, 2 deaths.
Prague, February 8 to 15, 5 cases.
Swansea, February 15 to 22, 2 cases.
Tuxpan, February 15 to 22, 3 deaths.
Warsaw, February 8 to 15, 3 deaths.

CHOLERA FOREIGN.

Bombay, January 28 to February 4, 1 death.
Calcutta, January 18 to 25, 45 deaths.
St. Petersburg, February 8 to 15, 1 case, 1 death.
Japan: Chiba Ken, February 3 to 11, 7 cases.

ASSOCIATION NEWS.

Section on Surgery and Anatomy.

SOUTH BETHLEHEM, PA., Feb. 27, 1896.

To the Editor: We have been fortunate in securing the promise of papers on the special subject for discussion, *i. e.*, "The Surgery of the Cerebro-spinal Axis and Its Bony Encasement," from representative surgeons throughout the country. It is now desirable to have the program completed as soon as possible. Permit me through the medium of the JOURNAL to request all members who desire to present papers on the special subject, or any other branch of surgery, to notify me or the chairman of the Surgical Section, Dr. C. A. Wheaton, St. Paul, as soon as possible. In every case the title of the paper should accompany the request for place on the program.

W. L. ESTES,

Secretary Surgical Section.

Local Committee of Arrangements. The Local Committee of Arrangements for the Atlanta meeting consists of the following:

Chairman, W. F. Westmoreland; Vice-chairman, W. S. Elkin; Secretary, J. McF. Gaston, Jr.; Treasurer, Louis H. Jones. L. B. Grandy, George H. Noble, J. M. Crawford, W. P. Nicolson, A. W. Calhoun, L. P. Stephens, W. L. Champion, Bernard Wolf, C. D. Hunt, B. W. Bizzell, R. R. Kime, W. C. Jarnagin, R. B. Ridley, L. Amster, L. A. Felder, J. C. Olmstead, W. S. Kendrick, J. S. Todd, Hugh Hagan, V. O. Hardon.

SUBCOMMITTEES.

Committee on Ways and Means. Geo. H. Noble, Chairman. W. C. Jarnagin, C. D. Hunt, R. R. Kime, L. Amster, L. B. Grandy, J. M. Crawford.

Committee on Entertainment. W. S. Elkin, Chairman. W. P. Nicolson, B. W. Bizzell, R. B. Ridley, A. W. Calhoun.

Committee on Registration. J. McF. Gaston, Jr., Chairman. L. P. Stephens, L. A. Felder.

Committee on Reception. Hugh Hagan, Chairman. V. O. Hardon, J. S. Todd, Bernard Wolf.

Committee on Exhibits. Louis Jones, Chairman. W. S. Kendrick, J. C. Olmstead, W. L. Champion.

SOCIETY NEWS.

The Tippecanoe County (Ind.) Medical Society at its last meeting elected the following officers: President, Dr. R. S. Tea; Vice-President, Dr. B. Wetherill; Secretary, Dr. Geo. F. Keiper; Treasurer, Dr. Geo. F. Beasley; Censors, Drs. G. K. Throckmorton, W. R. Moffit, E. C. Davidson. The laboratories of Purdue University are thrown open to the profession. In the last six weeks Dr. Bitting, of the University, has lectures on experiments with tuberculin on cattle, and Professor Burrage, the sanitarian, on typhoid fever. On March 16, Professor Duff will demonstrate the cathode rays to the society. The society is enjoying a prosperous year. Meetings on the first and third Mondays.

New York State Medical Association. The following letter has been issued:

Troy, N. Y., Feb. 29, 1896.

Dear Doctor: The Twelfth Volume of our Transactions is nearly completed, and will be distributed in the near future. It is fully equal to any of its predecessors. To those who were not at the annual meeting, and have not paid dues, I enclose bill for the same.

The AMERICAN MEDICAL ASSOCIATION will meet this year at Atlanta, Ga., on May 5-8. Those who wish to attend should notify me at once, that I may send credentials. To those who do not intend to go to the meeting, and who have not yet joined the AMERICAN MEDICAL ASSOCIATION, I wish to call their attention to the fact that they can join the National Organization at any time. The improved and enlarged JOURNAL OF THE ASSOCIATION is now well worth the annual fee of five dollars. Blanks for application can be obtained of me. I hope our membership in the national body will be materially increased this year.

I wish also at this time to request each one intending to read a paper at our Annual Meeting in October to send the title at an early date to me, or to the chairman of the Committee of Arrangements, Dr. J. G. Truax, 17 E. 127th Street, New York City.

Our meetings can only be made as successful as we could wish by personal attendance, securing the attendance of others and contributions to the scientific work. I bespeak your active interest in our Thirteenth Annual Meeting.

Sincerely,

E. D. FERGUSON, Sec'y and Treas.

Third International Congress of Dermatology to be held in London, August 4 to 8, 1896. Tuesday, August 4, preliminary business. Presidential address, "Prurigo," Dr. Besnier, Paris; Dr. J. C. White, Boston; Prof. Kaposi, Vienna; Dr. Payne, London.

Wednesday, August 5, Clinical demonstration of cases, "The Etiology and Varieties of Keratosis," Dr. Unna, Hamburg; Prof. V. Mibelli, Parma; Dr. H. G. Brooke, Manchester; Dr. W. Dubreuilh, Bordeaux. "Syphilitic Re-infection,"

Prof. Fournier, Paris; Mr. Alfred Cooper, London; Prof. Lang, Vienna; Dr. Fitzgibbon, Dublin.

Thursday, August 6. Clinical demonstration of cases. "The Connection of Tuberculosis with Diseases of the Skin other than Lupus Vulgaris," Dr. J. Nevins Hyde, Chicago; Dr. Radcliffe Crocker, London; Dr. Hallepeau, Paris; Dr. J. Riehl, Vienna. "The Duration of the Period of Contagion of Syphilis," Mr. Hutchinson, London; Prof. Lassar, Berlin; Prof. Campana, Rome; Dr. Fuelard, Paris. "Ringworm and the Tricophytons," Dr. Sabouraud, Paris; Prof. Rosenbach, Göttingen; Mr. Malcolm Morris, London. Many contributions to this debate promised.

Friday, August 7. Clinical demonstration of cases. "The Nature and Relations of the Erythema Multiform Group," Prof. De Amicis, Naples; Dr. P. A. Morrow, New York; Dr. T. H. Viel, Stuttgart; Dr. Stephen Mackenzie, London. "Malignant Syphilis," Prof. Handlung, Copenhagen; Prof. Neisser, Breslau; Prof. Tarnovsky, St. Petersburg.

Saturday, August 8. Clinical demonstration of cases, followed by papers.

NOTE. The Congress has been fortunate enough to secure for its use the building known as Examination Hall, on the Victoria Embankment. This will afford every facility for all kinds of demonstrations, cases, pictures, museum, etc. Special efforts are being made to have large demonstrations of cases, and all who have been in London know how rich is the material there. It is of the greatest importance that those intending to join the Congress should notify the Secretary, Dr. J. J. Pringle, 23 Lower Seymour Street, London, W., of their intention as soon as possible. The membership fee is \$5, which should be sent in the form of a one pound sterling draft on London, or P. O. order to the same amount.

GEO. THOS. JACKSON, 14 East 31st St., New York.
Secretary for the United States.

The Medico-Legal Society of Chicago.—A regular meeting was held in Handel Hall, March 7, 1896, with the President, DR. E. J. DOERING, in the chair.

DR. D. R. BROWER, chairman of the committee appointed to present resolutions on the papers presented at the last meeting on "The Habitual Criminal," made the following report, which was adopted:

Mr. President and Members of the Chicago Medico-Legal Society:

Your committee, appointed to consider the papers and addresses presented at the last meeting of the Society on "The Habitual Criminal," after due consideration of these productions and a review of the subject generally, beg leave to submit the following report:

1. That crime is increasing. A comparison of the census of 1850 with the census of 1890, shows that the population has increased 170 per cent, and criminals 445 per cent.

2. As causes of this increase in crime we find vicious parentage and bad environments; as important contributing factors, intemperance, a constant increase in the urban population, unrestricted immigration, and the unreasonable manner in which laws are administered.

3. We regard the habitual criminal as an abnormal man, this abnormality manifesting itself 1, physically, by stigmata in cranial and cerebral development; by criminal physiognomy; by anomalies in the muscular, respiratory and cardiac circulatory systems; by anomalies in motor activity and in physical sensibility; and 2, psychically, by moral insensibility; by a lack of forethought; by a low grade of intelligence; by his vanity; by his emotional instability, and by his slang.

4. The proper treatment of the habitual criminal is a medico-legal question, and not purely a legal one. As a general proposition, the social and biologic conditions of the prisoner, and not the accident of the crime, should determine the degree and kind of punishment.

For the diminution of crime we suggest that there should be radical modifications in the laws. 1, marriage should be regulated. The marriage license, in addition to the present requirements, should demand evidence that both the parties are in

good health; that they are not alcoholic nor narcotic inebriates; that they are not tuberculous, or epileptic; that they have not active venereal disease; that they are not sexual perverts; that they are not insane, criminals, nor paupers. 2, the courts should appoint suitable custodians for neglected children. 3, the pardoning power should be taken out of the hands of the governors of States and placed under the control of a Board of Pardons, who should be skilled in criminal anthropology. 4, in certain special cases asexualization may be indicated or, at least, is worthy of serious consideration. 5, there should be four classes of institutions in which criminals should undergo detention and treatment: Local jails for the retention of prisoners awaiting trial, in which segregation should be complete; reform schools for minor children; reformatories for older criminals who can be reformed; penitentiaries for the life-long incarceration of the incurables.

D. R. BROWER, M.D.,
JAMES BURY, M.D.,
G. FRANK LYDSTON, M.D.,

Committee.

DR. G. FRANK LYDSTON contributed a paper entitled "A Discussion of some of the Fallacies of our Last Symposium."

The paper was freely discussed, after which the Society adjourned.

NECROLOGY.

HIRAM CORSON, M.D., of Plymouth Meeting, Pa., the oldest member of the AMERICAN MEDICAL ASSOCIATION, died March 4. He was born in Plymouth, Oct. 8, 1804 and was descended on the paternal side from the Huguenots, and on the maternal side from the Quaker Dickinsons of England. He was educated at Friends' schools at Plymouth Meeting and Philadelphia, and was graduated from the medical department of the University of Pennsylvania in the spring of 1828, at which time he settled in Plymouth Meeting. He was a member of the Philadelphia Medical Society; of the Montgomery County Medical Society, of which he was president in 1849; of the State Medical Association, of which he was president in 1852; and of the AMERICAN MEDICAL ASSOCIATION since 1847. He was elected a member of the Meigs and Mason Academy of Medicine in Ohio, in 1873; associate member of the Philadelphia Obstetric Society in 1874; and associate Fellow of the College of Physicians of Philadelphia in 1876. His contributions to medical literature include papers on "Epidemic Jaundice"; "Belladonna in Pertussis," and "Measles," also numerous papers addressed to the State Society on "Ice in Scarlet Fever and Diphtheria, Externally and Internally," (a treatment of which he was the originator); on "Food for Infants;" on "Erysipelas following Vaccination;" on "Midwifery in the Country," and many other subjects, beside various contributions to medical journals.

SMITH ELY, M.D., for many years a leading physician and surgeon in Newburgh, N. Y., died February 28, of heart disease, 68 years old. He studied medicine in New York and Woodstock, Vt., graduating from the Vermont Medical College in 1850. For a time he was one of the resident physicians at the Emigrants' Hospital, Ward's Island, and afterward made several voyages as surgeon on the steamer *Franklin*, between New York and Havre. He had been a director of the Highland National Bank since 1875.

JAMES WOODWARD ELLIOT, M.D., of New York city, died February 28. He was 72 years old, was born in England and came to this country with his father's family when quite young. He was graduated in 1850 from the New York College of Physicians and Surgeons. Only two members of his class are now alive. He began his practice in old Greenwich Village, at No. 11 Abington Square. There he conducted a general practice until thirteen years ago, when he moved to the house in Fourteenth Street, where he died. For twenty years he was connected with the City Mission, and superintendent of the Sunday school of St. Barnabas' chapel. He had been an enthusiastic member of the old New York Cricket Club on

Staten Island. He remained English in his sympathies all his life. He leaves two sons and one daughter.

WILLIAM J. PURCELL, M.D., of New York city, one of the oldest vaccinators in the public schools, and one who had held a place with the Bureau of Contagious Diseases since May, 1875, died on February 17. He was an alumnus of Bellevue Hospital Medical College, class of 1867. He was a member of the County Society and the Society for the Relief of Widows and Orphans of Medical Men, also of the Medico-Legal Society. He was a man of great geniality of disposition, and had a host of warm friends in and out of the profession.

HENRY H. HOUSE, M.D., postmaster of Rockland Lake, N. Y., and for years the only resident physician there, died February 21, from injuries received by being struck by an engine on the West Shore Railroad, at Congers. His skull was fractured and he remained unconscious until his death. Dr. House was about fifty-five years old, and was born in Ulster County. He received his medical diploma in 1863, at University Medical College, and had lived in Rockland Lake since 1874. He was prominently identified with many interests in the country, being a school trustee and health officer. He leaves a widow and two sons.

DAVID L. DAGGETT, M.D., died of pneumonia on February 23, at his residence, in New Haven, Conn. He was born June 24, 1820, in New Haven, where his father and grandfather were also born. The grandfather, Judge David Daggett, was mayor of the city, a senator of the United States, professor of law in Yale and judge of the superior court of Connecticut. Dr. Daggett graduated from Yale in 1839 and went to Virginia, where he taught school. He graduated from the Yale Medical School in 1843, and was assistant surgeon and surgeon at the Old Knight Hospital. He has been president of the New Haven and County Medical Associations, and a member of the State Medical Society. Dr. Daggett was married in 1848, to Margaret, daughter of Dr. Wilbur Gibbons, of Wilmington, Del. Mrs. Daggett died in 1865. He leaves three sons, David, Dr. W. G. and L. M. Daggett, all of New Haven.

ASHBEL W. BARROWS, M.D., of Hartford, Conn., who died early in January, 1896, was the medical director of the Phenix Life Insurance Company. He was born at Mansfield, in that State, in December, 1816. At the age of 21 he entered Yale Medical School, and graduated in 1841. He first practiced at Rocky Hill, and removed to Hartford in 1847, where he has since resided. He was one of the six original physicians of the Hartford Hospital, which was founded in 1857. He was a visiting physician until 1874. Since then, up to the time of his death, he was one of the consulting physicians. In 1851 he became connected with the Phenix Mutual Life Insurance Company as assistant medical examiner. In 1853 he was appointed medical director of the company, a position which he held until his death. He was a member of the State, County and City Medical Societies. Of the two former societies he was president at different times, and of the latter he had been vice-president for the past two years. He was an early member of the AMERICAN MEDICAL ASSOCIATION, having united therewith in 1853.

HERBERT JAMES SAUNDERS, M.D., of Kingston, Ontario, died February 16, in his fiftieth year. He had been ill for six weeks with septic pneumonia. Dr. Saunders held the chair of clinical medicine and dermatology in Queen's University Medical Department. He was a surgeon-major in the Canadian Militia, and was considered one of the ablest Canadian physicians. He held the degree of M.R.C.S.E., from the year 1870, as well as that of M.D., from the Queen's University. In the College of Physicians and Surgeons of Ontario, he was in 1892 and 1893 a member of the Board of Examiners, taking the subject of the Theory and Practice of Medicine.

WILLIAM O'MEAGHER, M.D., a New York city coroner, died February 21, after a rapidly progressive attack by pneumonia.

Dr. O'Meagher was born in Ireland sixty-five years ago. He graduated in arts from Queen's College, Galway, Ireland, and graduated as a physician from the Medical Department of the University of New York in 1857. He served as a surgeon of the Sixty-ninth regiment for four and a half years during the civil war. He was a member of the Medico-Legal Society, the Harlem Medical and Chirurgical Society and the New York Academy of Medicine. At one time he was house surgeon and physician in St. Vincent's Hospital, a physician in the New York Dispensary and a health inspector of Richmond county and New York city. He leaves a daughter, Mrs. Eveline Donohue, and four grandchildren.

MISCELLANY.

Care of the Feeble Minded in Denmark.—The private establishments for this purpose in Denmark have received an allowance from the government until recently, when a law was passed to transform them into state institutions.

"A Cocada." The Peruvian Indians have as a measure of distance the cocada, which means the ground a cargo-bearer can walk under the stimulus of one quid of this leaf—the impulse lasts from thirty to forty minutes, and a man can pass over three kilometers.

Wafers: Light and Red.—Man's faith in human knowledge is illustrated in the picture of the bald-headed physician prescribing for baldness in a patient. As long as the world lasts, people will trust in the power of medical science to restore lost tissue.

He Had Previously Complied. The black-bearded pirate, with a knife between his teeth, boarded the passenger ship. "Throw up your hands!" he shouted. The passenger hanging over the rails smiled feebly: "I think I did, not less than an hour ago," he said gaspingly.

Pennsylvania Prohibits Exhibitions of Deformities.—An act was passed in Pennsylvania in 1895 making it unlawful, and affixing a heavy penalty for any person to exhibit in any public hall, museum, theater or any other building, tent, booth or public place for a pecuniary consideration or reward, any insane, idiotic or deformed person, or any imbecile.

Bacillus Pyocyaneus in Urine.—Le Noir reports a case of urinary calculi and pyelitis in a young man, in whose urine were found the bacillus pyocyaneus and the bacterium coli. Pyocyanin was extracted with chloroform from the bouillon in which the cultures of the bacillus pyocyaneus had been made.—*Gaz. Méd. de Paris*, February 1.

Draining Lake Texcoco.—We have received from the Department of the Interior of Mexico an interesting series of charts and diagrams in regard to the great enterprise of drying up Lake Texcoco, near the city of Mexico. The sewers of the city have drained into it from time immemorial, but the completion of the new canal and tunnel will empty it almost entirely of water, and reclaim the land for agriculture, which is considered an important sanitary measure.

Iron Stairways on Outside of Hospitals. Taking effect Oct. 1, 1895, it is required by law in New York State that all hospital buildings used for general hospital purposes, or hospitals or asylums for the insane, or any hospital or buildings which are more than two stories high, other than those which are fire-proof in their construction shall have properly constructed iron stairways on the outside thereof, with suitable doorways leading thereto from each story above the first, for use in case of fire.

Large Bequest to a Philadelphia Hospital. The will of the late Mrs. Anna R. Aspinwall, of Pittsburg, Pa., who died in Edinburgh, Scotland, last December, leaves her entire estate, estimated to be worth from \$1,000,000 to \$3,000,000, to the Hospital

of the Protestant Episcopal Church, Philadelphia. This hospital is maintained for the benefit of white female sick or convalescent orphan children. The will stipulates that there shall be no denominational discrimination, and asks that preference be given to children who have lost both parents. A contest of the will is threatened, but the presumption in favor of its validity is said to be very strong.

Anti-venom Serum.—Animals inoculated with Calmette's anti-venom serum, and then exposed to be bitten by venomous serpents, are found to be immune. Until recently no experiments had been made on human beings, but Dr. Lépinay, of Saigon, reports a life saved with it. An Annamite who had been bitten by a *naja tripudians* was inoculated with the Calmette serum an hour afterward, and recovered. Calmette is at the head of the Pasteur Institute at Lille.—*Nord Médical*, February 1.

Tetanus Accompanied by Exophthalmic Goitre.—Steinlechner describes in a Vienna exchange a case of tetanus and Basedow's disease in a young woman, beginning with painful cramps in the extremities. Tracheotomy was performed to prevent death from suffocation, and death followed from an intercurrent purulent bronchitis, about a year after first symptoms developed. The necropsy disclosed exophthalmic goitre with dilatation of the heart, bronchial and pulmonary lesions, and also acute gastritis and enteritis, with an acute hemorrhagic nephritis.—*Gaz. degli Osp. e Clin.*, January 28.

The Charity Club Hospital of Boston.—The building, located on the top of Parker Hill, Roxbury, has a fine outlook and an abundant areation. It is in the charge of Dr. Elizabeth T. Gray, a graduate of the Woman's Medical College of the New York Infirmary, and her assistant superintendent. Beside these, the staff consists of a housekeeper and corps of eight servants, a head-nurse and ten under-nurses, a staff of six prominent surgeons attend the operations, each on their allotted service. The hospital wards contain from twenty to twenty-five beds, usually all occupied. Dr. Gray has also a training school for nurses.

Formol as a Preservative of Laboratory Specimens.—The Société des Sciences Méd. de Lille devoted some time at a recent meeting to endorsing formol as a cheap and effective preservative of macroscopic pieces. It penetrates, hardens and preserves tissues without retraction, without staining or injuring instruments or any caustic effect on the skin. One to 100 is a strong enough solution for most specimens, but especially fragile ones can be put in a 2 to 4 per 100. A weak solution is especially valuable in preserving urine. It also prevents the transformation of urea into ammonium carbonate, and the only disadvantage it has is that it turns blood a grayish color. *Nord Médical*, February 1.

Improved Preventive.—Weisel presented an article at a recent meeting of the Medical Association at Prague, first remarking that since the Medical Congress at Amsterdam, when Drysdale first publicly announced that there were occasions when a physician was justified in supplying a patient with some means to prevent conception, many devices have been invented, but none have proved reliable except Mensinga's pessarium. Even this has the disadvantage that it can only be inserted by a physician. Weisel's invention is similar to this, but is made so simple and so strong that no skill is required to introduce it. It consists of a hollow rubber cone and rubber disc connected by a spring. The disc fits tight in the vagina, which it closes completely, without inconvenience of any kind. Waldek and Wagner, of Prague and Vienna, are the manufacturers *Wiener klin. Rundschau*, February 9.

"White Salt" in Congo-land.—According to the *Independent*, the following estimate of the value of salt in Central Africa, and especially in the interior of the Congo Free State, is derived from the letters of a medical man who has recently been traveling in Congo-land. He says that of all the white man's pos-

sessions, the one most coveted is "white salt," so called to distinguish it from the home product, which is a sort of black cinder-like substance, and so scarce as to cause much suffering. There are many parasitical diseases, both external and internal, caused by this lack. If a white man gives them a spoonful, it is most carefully divided, and if in the distribution there has been a miscount, the "overlooked" man will lick the palm of the hand in which the original treasure lay to secure the last grain. Some poorly informed person lately produced an article called, "Why salt?" in which he fancied he made out a case of man's going without salt. He had little physiologic knowledge and had never read how the entire deprivation of salt ruins animals.

Mastoiditis and Otitis. Ueherman read a paper recently before the Congrès des Chir. du Nord on suppurating inflammations of the ear, in which he advocated prompt surgical intervention whenever the pain, edema and fever accompanying acute inflammation of the mastoid cavity and cells fail to yield to antiphlogistic and local treatment. 2, in chronic mastoiditis with repeated tumefactions, fistulas or abscesses. 3, in acute suppurative inflammation of the middle ear when fever keeps up after tympanum has been punctured. 4, in similar cases that have become chronic and are accompanied by fever when flow ceases. 5, in tumors of the connective tissue with caries of the apophysis, which it is impossible to reach and treat through the natural passages. 6, in chronic fetid otorrhea which will not yield to local treatment, especially if complicated with cerebral disturbances. *La Province Médicale*, January 4.

Antitoxin in Bordeaux. Bordeaux has reduced the annual death rate from diphtheria from 103.43 to 18 by its fine antitoxin service. A set of culture tubes, nickel spatula and circular of directions are given free to any physician who applies for them at any of the numerous sub-stations, when he has a case of suspected diphtheria. He makes the culture and sends the tubes to the central laboratory where they are examined by an expert. If diphtheria bacilli develops in the tubes the latter sends immediately, at the expense of the city, sufficient antitoxin for the physician to treat the case properly. Seven hundred and eighty-nine cultures were made last year, 389 of which proved to be diphtheria. In this way the antitoxin was not wasted, nor inflicted on any except those who actually required it. Five horses supply the serum. *Bulletin Médical*, February 5.

Provision in New York as to Hydrophobia.—There was a law passed in New York in 1895 which provided that overseers of the poor, or other officers having charge of the dispensation of public charity in the several counties of the State should send to the Pasteur Institute in the city of New York all persons duly certified by regular physicians to have been bitten by rabid animals or otherwise put in danger of infection with rabies. The transportation of such persons, with necessary attendant or attendants, to and from the city of New York, shall be a charge upon the counties in which they reside. The sustenance, nursing and preventive treatment of such persons, for the time adjudged necessary, shall be provided by the Pasteur Institute. An appropriation of \$6,000 was made to compensate the institute for the services named. It is also required to be at all times open to the inspection of the governor and of the State board of health or of the accredited representative of either, and it is to annually make a report to the legislature.

Lectures of Benjamin Rush. Rush Medical College, Chicago, has recently come into possession of a volume of notes in the handwriting of a medical student who attended the lectures of Dr. Benjamin Rush in 1784. The volume, quite antique and dilapidated in appearance, contains 278 pages written in a clear hand, and presents a brief outline of the symptoms of disease

with the modes of treatment as conducted by the distinguished lecturer. Scribbled on several of the pages are various opinions, quotations and considerable matter irrelevant to the subjects of the lectures. Advice to students as regards to character, behavior, dignity, and avoidance of quackery, seems to have been as needful a century ago as now. A lecture is devoted to this subject. This interesting volume was for many years early in the century, the property of Dr. John K. Briggs, of Dedham, Mass., and was presented to Rush Medical College through Charles C. Hyde, Esq., by Dr. F. M. Briggs, of Boston.

Expert Opinions as to the Future. Every expert opinion as to the future, founded upon present conditions, is, and must necessarily be, uncertain; but the fact that it is so uncertain, the supreme court of the State of Washington holds, in the case of *Mitchell vs. Tacoma Railway and Motor Co.*, decided Jan. 30, 1896, does not prevent the opinion of an expert being given as to the probable results.

Thyroid Treatment for Obesity and Stunted Growth. At the meeting of the Société de Biologie of January 18, Bourneville reported several cases of obesity and stunted growth in children treated with thyroid glands. The loss of flesh was rapid for a while, and then the treatment seemed to lose all efficacy, but the dwarfed children showed a marked increase in height under the influence of the thyroid treatment. He was induced to try the thyroid treatment by observing its effect on three cases of myxedematous idiocy. — *Gaz. Méd. de Paris*, February 1.

Evidence Admitted to Show Pain.—In an action brought to recover damages for personal injuries to feet, legs, side, back, spine and womb, by which it was alleged that the plaintiff became sick, very lame, diseased and disabled, and suffered great pain, the supreme court of Michigan holds that it was proper to admit her testimony as to pains in her head and stomach, not to prove injuries to the head and stomach, but as showing the pain suffered from the injury to other members. The court also holds, in the same case, *Will vs. Village of Mendon*, decided Feb. 7, 1896, that while the husband could not testify to a sensation experienced by the wife, he might testify to her complaints and statements as to the location, nature, and extent of her pain and suffering made at the time she was feeling the pain, and as to a numbness of her arm, as observed by him.

Abnormal Secretion of Sulphur in an Experiment on a Dog.—Smith Jerome writes to *Pflüger's Arch.*, No. LX, p. 233, describing some experiments with a dog, fed only with dog-biscuit and water, to whom he administered ethylsulphid and potassium carbanthio-glycolate. With the former 66.5 of the total amount of sulphur was oxydized into sulphuric acid. After the potassium carbanthio-glycolate was administered the total fell to 68.4 per cent., remained 66 per cent. for four days, and fell to 50 per cent. before the ethylsulphid was given again. It remained at this low figure during this period and for more than two months afterward, when calomel and jalap were administered causing it to rise to 70 per cent. The proportions between the total amounts of sulphur and nitrogen were altered in that the increase in the amount of sulphur was not only relative but absolute. It was all in the neutral form, however. Jerome queries whether the proportion of neutral to oxydized sulphur in the urine may not be less constant than we suppose, and suggests that the secretion of sulphur may serve as a means to determine the amount of albumin decomposed in the organism. — *Centralblatt für Phys.*, Oct. 5, 1895.

Wounds in Modern Warfare. Professor Delorme read a paper on the wounds produced by modern firearms at close range, before the meeting of the Paris Acad. de Méd. of January 27, which concluded as follows: 1. The shock from the small bullets (Lebel), now eight millimeters instead of eleven, is not so great as it used to be from larger balls. 2. The holes through

which the bullet enters and passes out are smaller, and the hemorrhage proportionately less. 3. Particles of clothing are usually carried with it into the wound, but they are eliminated with the pus, which they discolor. 4. The new bullets usually fly to pieces when they strike a wall or hard substance, and the flying fragments produce special injuries. Professor Delorme had peculiar facilities for studying this class of wounds, as he took charge of the injured at Fournies fifteen days after the affair. They were all struck by Lebel balls within a range of 100 meters. Eight were killed outright, but the other thirty-four wounded all recovered in spite of apparently desperate injuries. He closed by remarking that if the general health of the soldiers is carefully looked after, so that it will second the efforts of nature and the surgeon, modern warfare is not as destructive as is supposed. — *Bulletin Médical*, February 5.

Pennsylvania Physicians must Report Infectious Diseases.—A law passed in Pennsylvania in 1895 provides that every physician located or practicing in any of the municipalities of that commonwealth, who shall know that any person whom he or she is called upon to visit, or who comes or is brought to him or her for examination, is suffering from, or is afflicted with cholera, smallpox (variola or varioloid), diphtheria, diphtheritic croup, membranous croup, scarlet fever, typhoid fever, typhus fever, yellow fever, epidemic cerebro-spinal fever, relapsing fever or leprosy, shall forthwith make report in writing, or upon blanks to be furnished for that purpose, to the health authorities of the municipality in which said person may be located, which said report shall be over his or her own signature, state the name of the disease, and the name, age and sex of the person suffering therefrom and shall also set forth by street and number, or otherwise sufficiently designate the house, room or other place in which said person may be located, together with such other information relating thereto as may be deemed important by said health authorities. In case of all of the above diseases, except typhoid fever and epidemic cerebro-spinal fever, it is provided that the health authorities may have placards giving name of disease placed on or near house, or place guards upon the premises. The duties of undertakers are prescribed by the same statute, which also provides for private funerals and advertisements stating cause of death, etc.

Dr. Jenner's Midwinter Ride in 1786.—The London *Lancet* brings to light a letter written by the immortal Jenner in January, 1786, that shows by how narrow a margin the discoverer of vaccination escaped an untimely death by cold and exposure, in which we call now-a-days a "blizzard." The letter runs as follows:

"JANUARY 3, 1786. — I was under the necessity of going from hence (Berkeley) to Kingscote. The air felt more intensely cold than I even remembered to experience it. The ground was deeply covered with snow and it blew quite a hurricane, accompanied with continual snow. Being well clothed, I did not find the cold make much impression upon me until I ascended the hills, and then I began to find myself benumbed. There was no possibility of keeping the snow from driving under my hat, so that half my face and neck was for a long time wrapped in ice. There was no retreating, and I had still two miles to go, the greatest part of the way over the highest downs in the country. As the sense of external cold increased, the heat about the stomach seemed to increase. I had the same sensation as if I had drunk a considerable quantity of wine or brandy, and my spirits rose in proportion to this sensation. I felt, as if it were, like one intoxicated, and could not forbear singing, etc. My hands at last grew extremely painful, and this distressed my spirits in some degree. When I came to the house I was unable to dismount without assistance. I was almost senseless; but I had just recollection and power enough left to prevent the servants bringing me to a fire. I was carried to the stable first, and from thence was gradually introduced to a warmer atmosphere. I could bear no greater heat than that of the stable for some time. Rubbing my hands in snow took off the pain very quickly. The parts which had been most benumbed felt for some time afterward as if they had been slightly burnt. My horse lost part of the enticel and hair at the upper part of the neck, and also

from his ears. I had not the least inclination to take wine or any kind of refreshment. One man perished a few miles from Kingscote at the same time and from the same cause."

The comment of the *Lancet* on the foregoing is as follows: The correspondent who sent us the above extract from a letter of Edward Jenner, being a medical man, must feel, as we do, grateful that January, 1896, has not opened with the rigor of January, 1786. We print it because it paints a remarkably true and vivid picture of the alteration of sensation under the influence of extreme cold.

One hundred and twenty-five days later, on May 14, Dr. Jenner vaccinated a boy of eight years, with lymph taken from a vesicle on the hand of a dairymaid, and six weeks later he inoculated the same boy with the virus from smallpox. The experiment shows the protective influence of the lymph, and in June, 1798 an account was published of the greatest life-saving experiment the world has yet seen.

Waiver of Privilege as to Consulting Physician. On an appeal from a judgment obtained against a railway company for personal injuries, the only question involved arose upon exceptions taken by the company's counsel to the exclusion of certain evidence, offered by him, bearing upon the extent and nature of the plaintiff's injuries. About the time of the commencement of the action two physicians attended the plaintiff for the purpose of making an examination of her case. She called one of them as a witness in her behalf at the trial. His testimony tended to show that she was affected with some spinal trouble as the result of a railway accident. His opinion was based mainly upon the result of the personal examination which he made upon the occasion referred to with his associate physician. But the plaintiff did not call the other physician to testify, and the defendant company did, and propounded to him certain questions, intended to elicit his opinion as to the nature and extent of the plaintiff's injuries from his observation of her person on the occasion of the examination. These questions were all objected to as inadmissible, and the court sustained the objection. The court of appeals of New York, however, takes a different view of the matter, in a decision rendered Dec. 19, 1895, *Morris vs. New York, O. & W. Ry. Co.*, and reverses the judgment given. First of all, it holds that the relation of physician and patient existed. Then, it declares that a construction of the statute which permits a patient who has been attended by two physicians at the same examination or consultation to call one of them as a witness to prove what took place, or what he learned, thus making public the whole interview, and still retain the right to object to the other, is unreasonable and unjust, and should not be followed. The waiver is complete as to that consultation when one of them is used as a witness. The considerations and reasons upon which the statute was founded no longer exist when full disclosure is made by either with the consent of the patient, and every party to the transaction thus disclosed is relieved from any injunction of secrecy. The patient can not limit the scope or effect of the waiver when made any more than she can recall it. When the plaintiff in this case called one of the physicians, who disclosed the whole consultation, the law determined the legal effect of that act, irrespective of any mental reservations on her part. Upon every principle of reason and justice this act amounted to a waiver of the right to object to the testimony of the other physician, when called by the defendant, as to the same transaction. For these reasons, the court thinks that the testimony excluded was admissible, and holds as already stated.

Practical Notes.

Non-tuberculous Ulcers in Tuberculous Patients.—Claude reports two cases of ulcerous condition of the tongue in consumptives, neither of which were produced directly by the Koch bacillus. One was a granulated process, and the other caused by secondary microorganisms in the mouth of a cachectic. —*Gaz. Méd. de Paris*, February 1.

Dr. Willems of Ghent. Our French exchanges mention the recent death of Dr. Willems of Ghent, and recall his services during the Franco-Prussian war, when he devoted himself to the care of the wounded, sharing in all the hardships and dangers of the campaigns, and only returning to his home in Belgium when incapacitated by illness.

Bite of Jackal, Probably Rabid. One of the successful cases that fell under the treatment of the Institut Pasteur, at Paris, in 1895, was that of an Englishman, formerly resident near Calcutta, Bengal, who had been bitten by a jackal. The injured person hurriedly left India, by the advice of his physicians in Calcutta. As the bite was received while the patient was in camp, it could not be determined that the jackal was rabid, but that was the belief of the onlookers. About a year later the patient was reported to be in excellent health.

Cetrarin. According to Kobert, cetrarin, the active principle of the *lichen islandicus*, stimulates the peristaltic action of the stomach and the bowels, increases the number of the blood corpuscles in cases where they have diminished in the course of disease, and is a general tonic for the nervous system. Cetrarin, therefore, is indicated in chlorotic, anemic cases, where there is constipation and loss of appetite. Dose prescribed: one-eleventh gram. —*Progrès Médical*, February 8.

Formalin in Disinfecting Catgut. This journal recently noted the advantages of formalin in preserving macroscopic specimens, as it hardens and strengthens the tissues. Hlavacek now announces that it is exceptionally valuable in sterilizing catgut. It does not kill the bacteria: they emerge unharmed after soaking hours in it, and being exposed to the vapor. But it hardens the catgut so that it will stand boiling. This result is accomplished by soaking it twelve hours in a 5 per cent. solution of formalin, or three hours in a 20 per cent. solution. The catgut can then be boiled twenty minutes without injury. If then it is kept in a 1 per cent. solution of sublimate, it is always ready for use, strong and solid and absolutely sterile. —*Wiener klin. Rundschau*, February 8.

Influences of Temperature on the Digestibility of Foods. Hayem has been experimenting with Ewald's test-meal at different temperatures, and he announces that heat, and especially cold, exert a most important influence on the chemie action of the stomach. They increase the secretion of free hydrochloric acid, and also of the gastric juice, symptoms of hyperemia of the mucous membrane and increased glandular activity. He draws the conclusions that tepid foods should be taken in hyperpeptic dyspepsia, while they should be taken cold in hypopeptic conditions. He intends to publish a series of studies on the processes of digestion at varying temperatures, and hopes that other scientists will coöperate with him in studying them, taking the Ewald test-meal for the basis of their researches. —*Wiener klin. Rundschau*, February 8.

Yersin's Plague Bacillus. The "cocco-bacillus" stated by Yersin to be the cause of the plague can be easily cultivated on gelatinized peptone. It is pathogenic for the rat, mouse, guinea pig and rabbit. By transmissions, bacilli of fixed virulence can be obtained for one kind of animal. But it requires a series of transmissions to acquire a maximum and fixed virulence for another kind. Filtered cultures have no effect upon animals: a large amount of dead bacilli must be injected to secure inoculation. The serum of a horse immunized by intravenous injections will immunize other kinds of animals. No other serum has any effect on the development of the disease, as was demonstrated by many tests with the normal serum of the horse, the anti-diphtheria serum, Marmorek's serum, Roux's anti-tetanus serum and Calmette's anti-venom serum. —*Nord Médical*, January 15.

Treatment of Imperfect Circulation. Bum's essay on the mechanical-gymnastic treatment of disturbances in the circulation is given at length in the *Wiener klin. Rundschau*, of February 9.

He advocates massage of the extremities and of the neck, and places great emphasis on the benefit to be derived from deep breathing, which draws the venous blood upward to the heart by means of the differences in pressure in the thoracic cavity. He insists that exercise and rest must strictly alternate. Gymnastic exercise should coincide with the systole of the heart, and be commenced with apparatus offering the least resistance. Further treatment is the shaking of the heart and the thorax, thumping on the region of the heart and spine, until the whole thorax vibrates. Also passive exercises calling the large joints into play. This treatment is contra-indicated in arterial aneurysms and sclerosis and also in degeneration of the myocardium. The best results are obtained where there is a general lack of tone in the circulation, and in hypertrophy and incipient fatty degeneration.

Treatment of Night Sweats in Phthisis.—The *Nouveaux Remèdes* gives the following prescriptions for night sweats in tuberculosis:

R. Fowler's solution 3 grams.
Tinct. of belladonna 3 grams.
Water of bitter almonds 20 grams.

Misce. Take xv xx drops of this solution about 5 P.M.

R. Codein 0.5 grams.
Dist. water 120.0 grams.
Simple syrup 20.0 grams.
Alcohol 10.0 grams.

Misce. Take a tablespoonful about 8 P.M.

R. Hydrated chloral 6 grams.
Dist. water 100 grams.
Alcohol 100 grams.

Misce. Rub the body with this before retiring.

Louisville Notes.

"SPOTTED FEVER."—Dr. Cashin, the State bacteriologist, in his report to the State Board of Health in regard to his visit to Edmonson County, states that in all there have been thirty-three cases, ten have died, and fifteen are now under treatment. The type of the disease is much milder now than when it first made its appearance, some six weeks ago. The first case developed in the person of a young man who had not been out of the county for months. One autopsy was made by Dr. Cashin and cultures made of cerebro-spinal fluid, the details of which are not yet complete.

Excitement is high in Wolfe County on account of a death from spotted fever. Several other cases are reported, and it is feared another outbreak such as occurred in Edmonson County will prevail.

PHARMACY LAWS. By a recent enactment of the legislature the very comprehensive laws governing the practice of pharmacy have been made to be effective in every county of the State.

DEATH REPORT. There were 66 deaths during the past week, 40 male and 26 female. Pneumonia caused 6 deaths. There were 8 cases of diphtheria placarded and three cases of scarlet fever.

LEGISLATIVE ACTS. In addition to the pharmacy laws being extended the legislature appropriated \$100,000 to establish two houses of reform, one for boys and one for girls. This is a much needed measure.

A favorable report was also made upon the bill to provide coroners in certain counties with stenographers.

Detroit Notes.

THE CHILDREN'S FREE HOSPITAL ASSOCIATION has just sent out its ninth annual report. The medical staff has been enlarged and is complete as follows: Medical staff: Drs. C. A. Lavendorf, L. Connor, J. K. Gailey, H. A. Cleland, D. Laferte, Justin E. Emerson. Dental surgeon: Dr. E. M. Thompson. Assistant physicians: Drs. R. A. Newman, A. P. Biddle. Consulting staff: Drs. Donald Maclean, G. E. Frothingham, C. G. Jennings. Outdoor Department: Director and physician, Dr. Wm. F. Lyster. Surgeons: Drs. J. K. Gailey, D.

Laferte. Assistant: Dr. W. C. Marten. Ophthalmologist: Dr. A. Turner. Neurologist: Dr. J. E. Emerson. Dermatologist: Dr. A. P. Biddle. House Physician: Dr. P. C. McEwen. In the recording secretary's report we see that there are thirty-three beds kept up by one or more individuals. The treasurer's report shows receipts for the ensuing year \$7,120.40, and disbursements \$6,986.31.

THE WAYNE COUNTY MEDICAL SOCIETY at its regular meeting Thursday, March 5, listened to a paper by Dr. Edward K. Bacon, entitled "Epilepsy," which was principally historical.

AT THE REGULAR MEETING of the Detroit Medical and Library Association held Monday, March 2, Dr. F. D. Summers presented a paper entitled "Pyosalpinx."

HEALTH OFFICE REPORT for week ending Feb. 29, 1896: Deaths under 5 years 35, total 78. Births: Male 56, female 44, total 100. Contagious diseases: Diphtheria, last report 12, new cases 17, recovered 6, died 3, now sick 20. Scarlet fever, last report 15, new cases 4, recovered 3, died none, now sick 16. Smallpox, last report 3, new cases 3, recovered none, died 3, now sick 3.

Health Office Report for week ending March 7, 1896: Deaths under 5 years 40, total 88. Births: Male 60, female 57, total 117. Contagious diseases: Diphtheria, last report 20, new cases 6, recovered 15, died 2, now sick 9. Scarlet fever, last report 16, new cases 5, recovered 6, died none, now sick 15. Smallpox, last report 3, new cases 2, recovered 2, died 1, now sick 2. Measles, last report none, new cases 2, recovered none, died none, now sick 2.

Washington Notes.

THE POST-GRADUATE MEDICAL SCHOOL.—The Board of Directors of the Post-Graduate School of Medicine held their first meeting on March 5, under the charter granted by Congress.

THE WOMEN'S CLINIC.—The Board of Directors of the Women's Clinic held their regular monthly meeting on the 7th inst. in their new home. Important business was transacted and the report of the staff showed the work to be steadily on the increase.

MEDICAL SOCIETY.—At the regular meeting of the Society held on the 4th inst., Dr. Barrie read an essay on the clinical symptoms of renal casts. Dr. Bishop on cerebral hemiplegia, its differential diagnosis and rational treatment. Dr. S. S. Adams reported an interesting case of convulsions in a young child: the first attack was apparently caused by a piece of glass in the stomach, and the second from two beans. Both attacks occurred within two weeks; the child recovered.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the meeting of the Society held on the 6th inst., Dr. Stone read an instructive paper on post-operative results in pelvic and abdominal surgery. Dr. Stone presented an appendix and a fibroid removed by abdominal section. Dr. Bovee presented a extra-uterine pregnancy with fetus successfully removed, also a tubo-ovarian cyst. Dr. J. T. Johnson reported a case of hysterectomy for fibroid. Dr. H. L. E. Johnson reported a case of cystic ovary and double salpinx successfully removed.

MEDICAL PRACTICE ACT. The Senate District Committee has favorably reported the House Bill to regulate the practice of medicine in the District with amendment as follows: The bill is to take effect from July 1, 1896, instead of from the date of its becoming a law. The provisions as to admitting to practice physicians coming here from other States is altered to read as follows: A license to practice shall be issued "to physicians who may change their residence to the District of Columbia from any State or territory where medical laws and medical examining boards exist, the presentation of a certificate or license from a medical examining board, if found upon due inquiry to be true and genuine, being sufficient right of registration and certification under the provisions of this act."

It is provided by the Senate amendments that appeals from the board of medical supervisors to the court of appeals, instead of to the Commissioners, in all cases where the names of physicians are stricken from the register.

Cincinnati Notes.

THE MORTALITY REPORT for the week gives: Membranous croup 1, diphtheria 4, measles 6, scarlet fever 1, typhoid fever 4, other zymotic diseases 7; cancer 3, phthisis 19, other constitutional diseases 4; bronchitis 2, convulsions 3, meningitis 6, heart disease 3, nephritis 2, pneumonia 11, other local diseases 28; total 120; under 5 years 40, annual rate 17.82; preceding week 147, corresponding week 1895, 123.

THE BRANCH HOSPITAL is at last to be used as a hospital for tubercular cases. This matter has been agitated for a long time and is undoubtedly a most excellent move. Heretofore the institution has been used for the reception of smallpox cases only and therefore was empty for years at a time. It is beautifully located about eight miles from the city on one of the highest points, and the buildings are well adapted for isolation purposes. The staff is to be selected from those members of the profession who have made this disease a careful study.

THE ANNUAL REPORT of the Ophthalmic Hospital shows: Admissions 2,286; in-door 107; dispensary 2,179; total dispensary attendance 10,909; average daily attendance 35; major operations 154; minor operations 218.

DR. PRENDERGAST, the Health Officer, is endeavoring to have the cases of contagious diseases isolated, and recommends the establishment of a hospital on the cottage plan, to be located outside the city. Each cottage is to accommodate about six or eight patients and to be limited to one disease.

THE OPPOSITION PARTY to the Pure Food and Dairy Laws have called attention to the fees paid and the commission during the past year, which they quote as follows: Attorneys \$17,023.09; chemists \$9,287.58.

A FIFTY-THREE year old inmate of the City Infirmary died last week while at dinner as a result of a piece of meat lodging in his trachea.

THE FOLLOWING INTERNES have been appointed for the Cincinnati Hospital for the coming year: W. Hall, L. F. Palmer, Allan Ramsey, Chas. H. Williamson, Dana E. Robinson, Fred Harpold, George C. Shafer, Arthur Freericks, Frank Scheerer, Lewis A. Maloney and Chas. Meyers.

THE CINCINNATI COLLEGE of Medicine and Surgery opened a bacteriologic course for practitioners February 9.

A COMMITTEE OF DRUGGISTS from throughout the State have visited this city during the past week and solicited the aid of the medical profession in securing an amendment to the present Pure Food and Dairy law, but they met with poor success, as the physicians feel that the law is a good one and should stand, they being in probably a better position than any other class of men to appreciate the urgent necessity for the rigid enforcement of laws to prevent adulteration.

THE ANNUAL REPORT of the Children's Hospital shows 62 admissions in the medical ward, 126 in the surgical, 47 in the ophthalmic, and 16 in the dental; total 151. Mortality: Medical 3; surgical 2; ophthalmic and aural 1.

THE HYGEIA MEDICAL COLLEGE have presented a petition to Governor Bushnell asking for recognition on the Board of Medical Examiners. This is the school whose graduates Dr. Prendergast, the Health Officer, has refused to register, and the coroner in several instances has refused to recognize death certificates signed by them and has criticised their treatment.

DR. B. F. LYLE has been appointed physician to the Branch Hospital or "Pest House," vice Dr. Geo. B. Twitchell, resigned.

Philadelphia Notes.

THE MUNICIPAL HOSPITAL.—The annual report of Dr. Wm. M. Welch, physician in charge of the Municipal Hospital

(where contagious diseases only are treated) has just been submitted to the Board of Health. The number of admissions during 1895, exceeds that of any preceding year since the epidemic of smallpox in 1871-72. The increase is attributed to the recognition by the community of the fact that the health not only of the public but also of individuals is better protected by isolation in a hospital of every case of contagious disease of a dangerous character. Scarletina and diphtheria have furnished by far the largest proportion of the cases admitted to the hospital during the last few years. The large increase in the number of patients, however, appears to be mainly due to diphtheria, the number of admissions for this disease during the last two years being greater than that of the aggregate of all other diseases. The diphtheria pavilion erected two years ago, was, during the past year, several times filled to its utmost capacity, and at the present time it is so crowded as to require two patients to occupy the same bed in more than one instance. Enlargement of this ward is urged as a necessity. Antitoxin was used in 302 cases under Dr. Welch's supervision, during the past year; 85 of these patients died making the death rate 28.14 per cent. Of the diphtheria patients who did not receive antitoxin the death rate was only 25.99 per cent. The total number of cases of diphtheria was 757.

INTRA-CRANIAL TUMORS.—The special meeting of the College of Physicians was held February 19, for the discussion of the subject of Intra-cranial Tumors, Drs. S. Weir Mitchell, W. W. Keen, Wm. F. Norris and Charles K. Mills took part in the discussion.

DR. WM. THOMSON, Professor of Ophthalmology at Jefferson College, has been chosen by the Managers of Wills Eye Hospital to fill the vacancy in the staff caused by the death of Dr. H. Earnest Goodman. Dr. Thomson was originally elected a surgeon to the Wills Hospital in 1870, but in 1877, in order to enable him to devote his attention to his clinic at the Jefferson Hospital, he was made Emeritus surgeon, and he has held this position until the present time, making twenty-six years of continuous efficient connection with the institution where he now resumes active duty upon the medical staff.

A PHYSICIANS AND SURGEONS' office building, ten stories high to be erected in the neighborhood of 18th and Chestnut Streets, has been planned and will probably be built during the coming year.

FILTRATION OF THE WATER SUPPLY is under consideration by City Councils and is so strongly supported by public opinion that an appropriation will doubtless be made for the purpose.

A CASE OF FILARIA SANGUINIS HOMINIS. Dr. Frederick P. Henry, at the last meeting of the County Medical Society, reported the finding of this parasite in the blood of a patient at the Woman's Hospital, who had developed chyluria after labor. The patient was a white woman, who has lived in Philadelphia not quite a year. Microscopic slides were shown at the meeting, demonstrating the presence of the living embryos. Dr. Henry thought that the parasite had been originally acquired during residence in the south, and that a rupture of a lymph-vessel during the strain of labor had led to the chyluria, and this suggested examination of the blood. He referred to a former case of chyluria, which he had reported to the Society, that of a Cuban, and who had since died. At the autopsy, the abdominal lymph-channels were found distended; but neither embryonic nor mature filariae could be detected, although he still held that the case was of this character. Cases of chyluria in which the parasite had not been discovered were also reported by Drs. Tyson, Wilson and Cohen, and it was stated that the above case of Dr. Henry's, which represented the nocturnal form of filarial manifestation, was the first one reported in this city, in which the parasite had been demonstrated.

THE AMERICAN SOCIETY of Superintendents of Training Schools for Nurses have just concluded a very successful and

profitable meeting in this city at which a number of interesting and practical papers were read and discussed: the annual dinner was held at the Colonnade Hotel. The officers elected were: President, Miss M. A. Nutting, of Johns Hopkins Hospital; Vice President, Miss M. E. P. Davis, University of Pennsylvania Hospital; Secretary, Miss Dock, Cook County Hospital; Treasurer, Miss L. Drown, Boston City Hospital. Next place of meeting, Baltimore during the second week in February, 1897.

DR. DANIEL G. BRINTON is delivering a course of eight lectures, free to the public, at the Academy of Natural Sciences, on Friday afternoon, on the Scientific Study of Man. The lectures are well illustrated and are popular in style, and attract large audiences. His topics are: The Universe and Man from the Standpoint of Science; Man's Position in the Chain of Animal Life; The Origin of Man; Races and Varieties of Man; Geographic Distribution of Man; Man as a Wild and as a Domesticated Animal; The Metaphysical in Man; The Man of the Present and the Future.

THE RÖNTGEN RAYS IN SURGERY. At the meeting of the College of Physicians March 4, Drs. E. P. Davis and W. W. Keen gave a demonstration of the clinical use of Röntgen's Rays, and Prof. W. F. Magie, Ph.D., explained the technical method and physical character of the phenomena. A patient was presented who had received a gunshot wound in his forearm fifteen years ago, by a 32 caliber bullet. He applied for treatment at the Pennsylvania Hospital, where he was under the treatment of Dr. Agnew, who could not find the ball nor could Dr. Hart, who was resident surgeon at the time. The patient was a policeman but was obliged to retire from active duties on account of the wound. Lately he has had a good deal of pain in the extremity, interfering very much with the use of his hand. Dr. Hart had a photograph taken by the Röntgen process and in the negative exhibited the ball was seen to be located near the styloid process of the ulna, making the indication for operation very definite. A case of united fracture of the bones of the forearm in a young man, was presented and a photograph made at the meeting, and the negative was immediately developed, beautifully showing the lines of fracture in both the radius and ulna, and the deformity due to deflection of the ulna.

Dr. Davis, editor of the *American Journal of Medical Sciences* stated that a number of experiments had been made by direction of that journal and that the demonstration on this evening was the outcome of that work. They had found by experiments upon the cadaver that foreign bodies particularly those consisting of metal or of glass, when introduced into the tissues, could be located with tolerable certainty, and that a diagnosis between an abscess and a solid tumor could be made. Experiments made in the bacteriologic laboratory showed that the new rays have no influence in retarding the growth of bacilli. In a pregnant woman he had succeeded in obtaining a shadow picture of the fetal head, or that part of it lying above the brim of the pelvis. He thought that this method might prove useful in the diagnosis of pregnancy. Professor Magie presented the physical aspect of the subject and explained the apparatus which consisted of a dozen storage cells, a Ruhmkorff coil, a Crooke's tube and the ordinary plate holder containing a sensitive photographic glass-plate which was entirely enclosed. The X rays proceed in straight lines from the Crooke's tube, and are neither reflected nor refracted: the object to be examined is placed between the tube and the plate, during exposure to the rays. Professor Magie showed an instrument consisting of a telescopic tube, at the large end of which was placed a diaphragm of opaque material saturated with a compound salt of platinum, which has the property of becoming luminous under the influence of the Röntgen's rays. With this instrument, the shadows were made visible, which in the other process were fixed by photography. As regards

the nature of the phenomena, he said without hesitation that the X rays are not the ultra-violet rays of the spectrum, because they can not be reflected nor refracted. He could not accept the view that they are the ordinary cathode rays although Goldstein of Berlin holds that there are two species, of cathode rays, one of which can be deflected by a magnet and the other not. It is possible that the latter are identical with Röntgen's rays. Another theory is that they are due to molecules shot off from the negative pole. There is another view, which receives support from a recent paper by Woodman in which he discusses the electro-magnetic theory of light. Röntgen has proposed the hypothesis that the rays are due to longitudinal vibrations of ethereal molecules which, if found to be true will be one of the great discoveries of the century and will place its author on a par with Faraday.

Dr. Keen approved the name suggested by Dr. Cantell of skiagraphy for the Röntgen process and "skiagraphs" for the photographic results. The applications to surgery are valuable but in a limited range. Where bony walls intervened, like the pelvis or the skull, not much information could be gained, but for deformities of the bones, tumors, discolorations, fractures, it may be useful in discovering any abnormality. After the dressings are applied, you could see without disturbing the dressings, if the fracture has been properly adjusted or not. While we may not determine the existence of a stone in the bladder, on account of the surrounding pelvic bones, we may be able to detect a stone in the kidney, but a stone in the gall-bladder will scarcely be seen in this way. Needles, or pieces of glass, imbedded in the tissues of the hand for instance are readily located by this means which is a valuable aid in diagnosis in these common injuries.

THE PUBLIC SERVICES.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the ten days ended February 29, 1896.

- P. A. Surgeon G. T. Vaughan, leave of absence for seven days granted Feb. 17, 1896, revoked Feb. 27, 1896.
- P. A. Surgeon G. M. Guiteras, directed to proceed on March 25, 1896, from Gulf Quarantine Station to Key West, Fla., and assume command of Service, Feb. 27, 1896.
- P. A. Surgeon A. C. Smith, to proceed from Memphis, Tenn., to Gulf Quarantine for duty, Feb. 25, 1896.
- P. A. Surgeon G. B. Young, when relieved at Key West, Fla., to proceed to Memphis, Tenn., and assume command of Service, Feb. 27, 1896.
- Asst. Surgeon H. W. Wickes, to assume temporary command of Service at Memphis, Tenn. Upon being relieved to rejoin station at New Orleans, La., Feb. 24, 1896.

Change of Address.

- Brenner, F. T., from 514 Maine St. to 700 Maine St., Quincy, Ill.
- Hall, W. W., from Thomasville, Ga., to Springfield, Ohio; Hildreth, M. L., Sioux City, Iowa, to Lyons, Neb.
- Sims, S. N., from St. Joseph to 310½ Hazel St., Danville, Ill.; Sutton, E. M., from Canton to Rooms 11 and 12, Masonic Temple, Peoria, Ill.
- Wenton, H. N., from 922 Sutler St. to 406 Sutler St., San Francisco, Cal.

LETTERS RECEIVED.

- Allport, Frank, Minneapolis, Minn.; Alexander, L. C., (Miss) Philadelphia, Pa.; Alta Pharmacal Co., St. Louis, Mo.
- Burlingame, D. E., Elgin, Ill.; Bulette, W. W., Pueblo, Colo.; Brown, F. F., Advertising Agency, New York, N. Y.; Bulley, H. L., Washington, D. C.; Bulson, A. E., Jr., Fort Wayne, Ind.
- Crothers, T. D., Hartford, Conn.; Chaddock, C. G., St. Louis, Mo.; Cobleigh, C. A., Chattanooga, Tenn.; Carveth, J. A. & Co., Toronto, Ont.; Chase, Arthur H., Concord, N. H.; Cullen, G. I., Cincinnati, Ohio; Chaffee, Geo., Brooklyn, N. Y.; Carter, Geo. T., New York, N. Y.
- Dallas, Alexander, Bayonne City, N. J.; Daniel, Jos. A., Davenport, Iowa; Dougherty, G. F., Neogo, Ill.; Donovan, Jno. A., Gagetown, Mich.; Davis, G. W., San Francisco, Cal.
- Evaus, J. R., Troy, Ohio; Eckelman, F. C., Elkhart, Ind.
- Fairclieve, G. W., North End, O. T.
- Garcelon, A., Lewiston, Me.; Gargden, A., Jackson, La.
- Hummel, A. L., Advertising Agency, (3) New York, N. Y.; Hektoen, L., Chicago, Ill.
- Johnson & Emigh, San Francisco, Cal.
- Laughlin, John, Rantoul, Ill.; Linjer, O. E., Starbuck, Minn.
- Meshaue, J. T., Indianapolis, Ind.; Morris, D. W., Birmingham, Ala.; McLeod, Jas. H., St. Louis, Mo.; Musgrove, Thos. W., Puyallup, Wash.
- Moyer, Harold N., Chicago, Ill.
- Opie, Thomas, Baltimore, Md.
- Publisher's Collection Agency, St. Paul, Minn.
- Raymond, K. K., Evanston, Ill.; Reed & Carrick, New York, N. Y.
- Rochelle, W. F., Jackson, Tenn.
- Scott, X. C., Cleveland, Ohio; Smith, C. J., Pendleton, Ore.; Sykes, G. A., New York, N. Y.; Smith Chas. W., Toledo, O.; Snover, E., Rawlings, Wyo.; Stewart, F. E., Detroit, Mich.
- Tomlinson, F. W., Wilmington, Del.; Twilley, W. S., Baltimore, Md.
- Vetter, J. C. & Co., New York, N. Y.
- Weaver, Geo. H., Chicago, Ill.; Whitford, Wm., Chicago, Ill.
- Yimling, J., Baltimore, Md.

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ADDRESS.

CLOSING EXERCISES OF THE SESSION 1895-96. ARMY MEDICAL SCHOOL.

INCLUDING AN ADDRESS
BY JOHN H. BRINTON, M.D.
PHILADELPHIA.

The closing exercises of the second session of the Army Medical School were held in the hall of the Library of the Surgeon-General's Office, Washington, D. C., on Friday, March 13, at 3 P.M. Card invitations had been sent out and by the hour mentioned the medical profession of the city of Washington was well represented in the audience with many War Department officials and a large contingent of ladies. The library for the time being, put off its air of silent study and assumed quite a gay appearance, as the sunbeams through the west windows lit up the colors of the flags which draped the walls and made brighter the bright eyes and interested faces which met the gaze of Colonel Charles H. Alden, President of the Faculty as he arose to open the proceedings.

It is not necessary, he said, to go into any extended account of the school; but as some might be present who would like to know something of the work it is doing, he would state briefly that the school is a post-graduate institution designed to teach the young medical officer on his entrance into the service, and before he goes out to his first duty, branches that are of especial importance to him as an army medical officer. These are branches either not taught in the general medical school from which he has graduated, or whose application to army service needs to be brought out. Further, its purpose is to familiarize him as far as practicable with the new conditions under which he is about to be placed, and the duties he will be called upon to perform. The school is open also to medical officers of older date who may be able to avail themselves of its privileges.

Established in June, 1893, by order of the Secretary of War on the recommendation of Surgeon-General Sternberg, its first session was held from November, 1893 to March, 1894. No session was held in the winter of 1894-95, as the number of medical officers had been reduced, and there were no new assistants to enter the school. The laboratories, chemic and bacteriologic, were open, however, and several medical officers availed themselves of the instruction given therein. The present session began Nov. 18, 1895, and lasted four months.

The teachers of the school are medical officers of the army stationed in Washington and vicinity, who give instruction during the session in addition to performing the regular duties to which they are assigned. During the session now closing, in addition to the five recently appointed medical officers who entered the school immediately after passing the examination

for admission and receiving their appointments in November, 1895, four older assistants have been in attendance, one having taken leave and come to Washington for the purpose, the others, being stationed in Washington and vicinity, have taken such part of the course, especially the laboratory work, as their regular duties admitted. Two medical officers of the District of Columbia National Guard and one from the Massachusetts Volunteer militia have been present during a part of the time and received instruction in some of the subjects treated, especially the lectures and hospital corps drill.

To carry out the purposes of the school, the following courses of instruction were laid down in the order establishing it, and have been carried out during the past session: On the duties of army medical officers; on military surgery; military medicine; military hygiene; sanitary chemistry; clinical and sanitary microscopy, including bacteriology (chemistry and microscopy being laboratory courses); hospital corps drill and first aid. It has been the object of the lecturer on the duties of medical officers to familiarize the student officer with his future official duties so far as practicable; to give him sound notions as to military discipline and his true relations to the commanding officer and others in the military service, as to his proper position as a sanitary officer, the obligations involved in the care of his patients, and correct ideas as to his responsibility for the care of public property entrusted to his charge. He was given practical instruction in the examination of recruits, in making sanitary inspections of posts, in preparing certificates of disability for discharge, and other important papers. The course in military surgery included the care of wounded on the battlefield, their transportation from the scene of action, hospital administration, an account of modern weapons, the wounds they cause and their appropriate treatment, according to the latest and most approved methods. The lectures on military medicine treated of diseases due to the aggregation of men in armies, camps and garrisons, to exposure to climatic extremes, and to infectious diseases and the mode of prevention and treatment. The course on military hygiene included the subjects of pure air, water and food, their impurities and the source of them, the dangers resulting from their contamination, and the methods of detecting and remedying the evils resulting therefrom. The important subjects of the disposal of sewage, of climatology, quarantine and public health, were also treated of.

An examination of the order of daily duties will show that the lecture courses consumed a brief portion of each day, being held from 3 to 4 P.M. A larger part of the time of the students was passed in the pathologic and chemic laboratories. The instruction in the former, lasting from 9 to 12 daily, was of a very important character, covering the study of the forms and life history of the more important

disease-producing bacteria, so as to enable the medical officer to recognize the existence of the germs of infectious diseases and to apply the most approved methods of destruction or exclusion. When we consider the number of diseases now recognized to be due to specific germs, their widespread diffusion and their ravages, one disease alone, tuberculosis, causing more deaths than any known disorder; when we consider that an accurate knowledge of the germs causing suppuration and septic infection has alone made possible the triumphs of modern surgery, we will see that the prominence given to this laboratory work is amply justified by its importance. The course on sanitary chemistry lasted from 1 to 3 P.M. each day, and included the analysis of air, water and food, the detection and estimation of their impurities and adulterations, the detection of poisons, and the study of the animal fluids. It is designed to fit the medical officer to become the sanitary expert and inspector of the command to which he may be in future attached. The instructor in hospital corps drill, after giving the students a preliminary training in the school of the soldier so as to improve his military bearing, took up litter and ambulance drill, first practically with the students as litter bearers and afterward as instructors of the men in the hospital corps company at Washington Barracks. The methods of first aid were also taught, and finally the young officers were given instruction in riding at Fort Myer, Va., through the kindness of the commanding officer and one of his lieutenants.

In addition to the regular courses referred to, a short but very important course on military law was delivered by Lieut.-Colonel G. B. Davis, Deputy Judge Advocate, Professor of Military Law, U. S. Military Academy, West Point, N. Y.; Dr. Robert Fletcher, F.R.C.S., principal Assistant Librarian, Surgeon-General's Office, delivered an instructive and interesting lecture on the Army Medical Library; and Professor Stiles of the Department of Agriculture repeated his valuable instruction on Parasites in Man, given on a former occasion. The class has received clinical instruction in mental diseases at the Government Hospital for the Insane, Washington, D. C., through the kindness of the Superintendent, Dr. W. W. Godding; and a practical course in operative surgery has been given by the Professor of Military Surgery.

This brief summary will give an idea, though a very imperfect one, of the subjects treated, and will show that the time of the student officer has been fully occupied.

It has been a source of great satisfaction to the Faculty of the school, and I am sure it must be to the far-seeing officer at whose instance it was established, to find that the young medical officers who have gone out from the school have acquitted themselves most creditably, and in such a manner as to show that the training here gained has been a positive advantage to them, and not only so, but that these young officers have become teachers in turn, and have communicated the instruction given them in bacteriologic and chemie manipulations to their comrades who have been less fortunate than themselves in opportunity for instruction. There is every reason to believe that the members of the class now leaving the school will acquit themselves with equal credit. They have, as student officers, been as a rule prompt in attendance and attention to their duties, and displayed commen-

dable diligence and an intelligent interest in their work. They have the warmest wishes of the Faculty for their future welfare and success.

Colonel Alden then introduced Dr. John H. Brinton, Professor of Surgery, Jefferson Medical College, Philadelphia. Dr. Brinton, during the progress of our civil war, had been requested to deliver an address at the inauguration of a proposed army medical school. All was ready in 1863; but the projected school did not receive final official approbation and failed to become a reality. Not until thirty years later did it become established and now he is about to address this school. Speaking of the failure of the effort to establish it during the war, Dr. Brinton said:

DR. BRINTON'S ADDRESS.

The disappointment was great to those who had anticipated much from the proposed school and who believed that, once established, its influence would be most happy and far-reaching. No one felt this regret more deeply than the speaker, but at the same time ever with the earnest hope and firm conviction that the establishment of an Army Medical School was but a matter of time; that sooner or later its necessity would be recognized, and that the day would come when the Medical Department of the Army of the United States would stand, as regards medical education, fully abreast with the medical services of nations beyond the seas.

And it has come. How do you know? By the wise direction of the Secretary of War, at the recommendation of a Surgeon-General, who combines true military zeal with the highest scientific professional attainments. These efforts of the chief of the department to elevate and maintain the professional status of the medical corps have been nobly seconded by the President and Faculty of the Army Medical School. There is no more difficult and responsible post than that of teacher, and our country is most happy in commanding in this school the services of a faculty who to past experiences in active warfare, add the judicial influences of thought and study. That under such impulses the school has prospered and has assumed its true position, this public gathering, this official presence bear ample witness.

Through personal kindness, and I fear unwise partiality, I have been asked to say to you, members of the graduating class, a few words. Let me at once confess that in accepting this flattering and delicate duty, I have been influenced by the recollection of many kindnesses I have received from cherished friends in the old army and by the desire, almost craving, to renew with them, or their successors, my past associations.

In the presence of such an audience I scarce know how to choose my words, yet it must not be forgotten that we come here to assist in the closing exercises of a session and to commemorate the passing out of you graduates into the active duties of your calling. Your functions as military medical officers will be discharged under circumstances widely differing from those of your predecessors, and these conditions have doubtless been bettered to some extent by the lessons of a past experience. Are they not in some degree due to the practical and varied teaching of the great war through which our nation passed thirty years ago? What has been for the Medical Department of the Army the professional output of the war of 1861? Apart from the vast and wide-spread individual experiences, the

example and memory of which can never die, we have the Army Medical Museum, its catalogues and literature, and the circulars, medical and surgical, of the Surgeon-General's office; above all we have the massive volumes of the Medical and Surgical History of the War, known, read and studied the world over.

I think, too, that the library of the Surgeon-General's office may fairly be regarded as one of the secondary results of the war, and from the library under the supervision of its accomplished Director, Dr. Billings, and its learned Librarian, that courtly man of letters, Dr. Fletcher, sprung its inestimable catalogue and I may venture to add the *Index Medicus*, the value of which to medical writers now and in all time can not be overrated. With all of these productions of the war you are conversant. I trust, nevertheless, that it will not be tedious to you if I briefly refer to the small beginnings of one (the Museum) and consider in a few words its influence upon the army surgeon and his work.

The official history of the Army Medical Museum has long since been published and its catalogue prepared under the direction of the Surgeon-General in 1866, is familiar to you all. It is not, however, generally known that in January, 1863, a preliminary catalogue was issued, setting forth the character of 1,349 objects which had been collected for the Museum in the five months since its establishment in August, 1862. Of these, 985 were surgical, 106 medical, and 133 were missiles. The curator of the Museum at that time stated in his prefatory report that the catalogue was offered simply as a numerical list of objects in the Museum, and that no attempt had been made to classify or describe them; that work must be deferred for the future when it would demand volumes.

On the title page of the original copy of this catalogue is the manuscript entry: "Many specimens from battle-field sources are in this catalogue credited to medical officers in the field who were opposed to the collection of specimens. By this means opponents often become later enthusiastic contributors to the Museum." This undoubtedly was a pious fraud, harmless, but useful.

The proposed establishment of the Museum was announced in Circular No. 2, Surgeon-General's Office, May 21, 1862. Its title at first was the "Military Medical Museum," but in the catalogue published Jan. 1, 1863, the name "Army Medical Museum" appears, and since that time the collection has been so designated officially. When its foundation was decided upon circular letters were sent to medical officers of the regular and volunteer corps and to all medical officers in charge of field and permanent hospitals setting forth the object of the Museum and inviting their earnest and intelligent coöperation. It was not intended to impose upon them the labor of preparation, but only to command their services in saving and forwarding to the Surgeon-General's office as many specimens as could be procured and saved from the vast number of daily casualties in the Army. By many of the most intelligent officers these orders were received and executed in good faith; by others they were neglected, and not a few looked upon the project with derision and stigmatized the future Museum as "a collection of old bones." At first, too, there was some natural aversion on the part of the wounded soldiers and their friends. The topic was a ghastly one, yet often a streak of humor would appear. I can recollect one instance of a very rare and carefully studied

case of leg injury. The patient died and was buried in soldier fashion. His bosom friends sat up and watched to prevent the much-feared desecration. The nefarious collector came. So great was his earnestness, so deep his sympathy, so moving his eloquence, so unanswerable his argument that patriotic bones rest better in Government cases than in a Virginia trench, that the stony hearts of the watchers were softened. Slowly and mournfully the former comrades marched to the burial spot. The leg was exhumed, the bone taken out and carefully inspected by the mourners, the chief of whom remarked, as the procession sadly moved campward, "After all, John would rather be of some use to the very end." *Quis custodiet custodes?*

It was no easy matter to popularize, if one may use the expression, the surrender to the Surgeon-General's office human specimens. It was only when medical officers in field and hospital felt that the Medical Department was really in earnest, that a great work was in progress that objects of the highest interest to military surgery and to the wounded of the future, were in contemplation, then only was the work of preservation and collection efficiently carried on. To obtain specimens accruing after action on the field, and in field, division and corps hospitals, the curator and his assistants were constantly sent to the front. The find, the aggregate of the operating tables roughly cleaned, were packed in barrels and forwarded to Washington. By General Order No. 116, May 22, 1863, Headquarters Military District of Washington, the schoolhouse on H street, between Thirteenth and Fourteenth, owned by Mr. Corcoran, had been taken possession of by the government and turned over to the Medical Department for the use of the Army Museum. This edifice and the outbuildings attached were immediately fitted up by order of the Acting Surgeon-General as a museum and working laboratory, and on Sept. 1, 1863, the Secretary of War authorized the transfer of the specimens from the room of the Surgeon-General's office to the newly selected Museum. The beginning of the Museum in August, 1862, was very modest, consisting of three dried and varnished specimens placed on the little shelf above the ink stand on the desk of the recently appointed curator. These were duly inspected and admired by the office officials and for a while, as a novelty, they had numerous visitors from the surgeons on duty in and around the city. "How is the Museum?" was the joking question of the day, and I doubt if anyone seriously believed that from this apparently ridiculous beginning would arise the magnificent Military Medical Museum which I believe influences and will influence to no slight degree the future of American military surgery.

But a start had been made, professional zeal had been excited, and the idea got around that perhaps after all there was something in the notion that even "dry bones may live." Soon kegs and boxes from the field and general hospitals began to arrive. The preparer of the bones, Friederich Schaffhirt, who under the unpretentious name of hospital steward, had been procured from the University of Pennsylvania, where he had long labored as an assistant to the immortal Leidy, was overworked. And here let me pay my tribute of respect to the memory of one who at this time did so much for the Museum, and without whom, perhaps, the collection had not then taken shape.

When specimens were gathered at the front their

preservation and transportation were no easy matter. The former involved the use of alcohol or whisky, at all times, within army lines, a fluid most apt to suffer mysterious leakage. "Tapping the Admiral" is a well-known nautical phrase, and it is said that in 1848 or 1849 when certain bodies of Russian Cossacks camped near the museum of Professor Hyrtl the alcoholic exosmosis from his jars was difficult, or perhaps easy, to explain. With us, indeed, it often happened that whisky on its way to the front, even though in barrels marked benzine or petroleum, was sure to leak, and kegs reaching their destination would show ingeniously plugged gimlet holes. How and why this was done I learned only the other day from a tottering veteran who had once been on duty on the line of the Aquia Creek Railroad. His explanation of the gimlet hole, and inserted pipestem seemed credible, and the twinkle of his eye, suggested the motto: "Experto Crede." But the stimulant had other than preservative qualities and the Museum was well supplied with it in this wise: In war times, in Washington the provost marshal's department confiscated all wines and liquors brought to the city save on official permit, and all confiscated and condemned packages were turned over to the Museum for the distillation of pure alcohol, which was carried on in a lot adjoining the laboratory. So many a basket of champagne and box of Rhine wine and dozen of liqueurs found their way into Schafhirt's insatiate still. Now and then a keg of cherry brandy or the like, peculiarly soothing to military nerves, was saved and served as a ready passport for the Museum Messenger in search of pathologic specimens. In fact, in most commands he was a welcome guest and a dispatch announcing his coming was honored as if it were the order of a secretary of war. Ah, I can see now the honest face of Sergeant K., who, with the compliments of Captain M. of the 105th Cavalry, had ridden down with two or three led animals to serve as escort and guide. How carefully the kegs were lashed on the pack saddle of the old roan, "and this keg is for the officers' mess, and this for the men's, and sure, sor, we must be riding now, if ye would reach camp and be getting something warm before taps."

Occasionally it would happen that a specimen would be contributed to the Museum by its former owner. No. 1335, resulting from a leg crushed by a twelve-pound shot at Gettysburg, and for which thigh amputation was performed, was forwarded to the Museum in an extemporized coffin on which was tacked a visiting card "with the compliments of Major General D. E. S., United States Volunteers." But all were not so complaisant. On one occasion a man from the ranks demanded the return of a limb, an arm, I think. He was informed that the member in question could not be given up. "But it is mine," said he, "part of myself," earnestly enforcing his claim, and his demand to the lay mind seemed reasonable. Yet to surrender a specimen was very much like yielding a principle. "Stop," said the quick-witted young assistant curator to the claimant, "for how long have you enlisted?" "For three years or the war," "Then," replied the official "the contract is not yet terminated, come back at the end of the war or at the expiration of your three years' service and you can have your bone. In the meantime one detachment of you is stationed in this Museum on government duty, the other wherever you may be ordered. Such is the opinion of the Attorney General." The reply and its

reason seemed conclusive, and the bone remained in its place.

But enough of old-time anecdote. Let us consider the Museum, not as a collection of curiosities or objects of historic interest, but rather as a teaching school of the first grade. For in it, I believe that lessons of much value in military medicine and surgery may be learned, which nowhere else in this country can be so fully illustrated. As an adjuvant to the Army School its influence must be potent, for among its contents can be found exhibitions of pathologic conditions of most of the diseases and injuries met with in the warfare of the past. Look at the jars in which are shown the lesions which marked the so-called typho-malarial fevers. How mutely eloquent they are, how much they tell you of the soldiers of our great war, how they lived, how they suffered, how and why they died. Study these preparations in the light of our recent knowledge of sepsis and bacteriology, and we can almost see the country through which these men marched, and we fancy we can inhale the air they breathed, and taste the water which they drank. Indeed, and we can imagine every noxious influence by which they were surrounded. Then we cease to wonder that so many perished; we rather marvel that so many lived through it all. The thoughtful student of to-day will ask himself how these unhappy conditions can be minimized or warded off hereafter, and the professors in your school will tell you and impart to you a knowledge which we never had. Look at that gunshot splintering near the knee condemned at first sight because of the joint fissure; then amputation was the only remedy. Now, thanks to Sir Joseph Lister and the outcome of his teachings, wrought out by busy brains, and by none more patiently and successfully than by him who heads your corps, the limb fares otherwise. Salvation, not destruction, is the motto to-day. Compare the small-arm missiles of the past with those of the present time, the leaden bullet with the jacketed projectile. Consider their relative velocities, ranges, penetrative powers and modes of flight, and almost at a glance their wound tracks will be understood. The Museum makes easy of comprehension the phenomena of the modern gunshot injuries. The past helps us to judge the present, and almost foresee the future. These truths, too, are easily learned, for they are taught as objective lessons. In the quaint language of three centuries ago: "For speech, how perspicuous and eloquent soever it be, it can not so vividly express anything as that which is subjected to the faithful eyes and hands." As for the military surgery of the future, no one, however great his experience, may speak with certainty; he can but forecast, basing his guess upon deductions from the relics of past wars. These are even better than books since they permit, indeed invite, an individual judgment. Nowadays the teachings of books in our profession soon merge. The ink of an edition is scarce dried ere its doctrines become obsolete. New modes of study are found out and even as I write, the magic subtlety of Röntgen's ray would seem to banish touch and substitute the sense of vision. What next?

In an elaborate address by one who has shed much luster on American surgery, Professor Senn, the conservative character of the surgery of future battle-fields is strongly dwelt on. In his opinion the dangers of hemorrhage and infection will be lessened by improved hemostasis and by the enforcement of more thorough

asepsis and antisepsis. It is quite probable that the hemorrhage caused by the modern projectile will be greater than that produced by the old-fashioned round or elongated Minie ball, as it was called. The greater velocity of the former and its increased axial rotation will give to the resulting wound more of an incised nature. However, as it will cause less bruising and laceration, the risk of secondary bleeding will be diminished. To prevent the infection of battle wounds doubtless every immediate precaution will be taken, but I fancy that the fighting line must be much as in the past, and despite the soldiers' antiseptic package that the real, effective surgical antisepsis will be exerted at the field hospitals in the rear. Here the wounds will be carefully examined, their diagnosis arrived at, the prognosis established and the operations, treatment and dressings deliberately and definitely entered upon to be persistently carried out. Many of the sad results which have followed the injuries of war must be avoided in times to come. This humane tendency will grow greater with fresh knowledge and with that increased and more efficient skill which knowledge brings, and so the condition of the wounded will be ameliorated. Think what it was in 1535 when Paré writes of the campaign of the French against the army of the German Emperor at Turin: "We entered the throng in the Citie and passed over the dead bodies and some of which were not yet dead. We heard the cry under our horses' feet which made my heart relent to hear them, and probably I repented to have forsaken Paris to see so pitiful a spectacle. Being in the Citie I entered a stable thinking to lodge my own and my man's horse, where I found four dead soldiers and three which were leaning against the wall, their faces wholly disfigured and neither saw nor heard nor spoke, and their clothes did yet flame with gun powder which had burned them. Beholding them with pity, then happened to come an ould soldier who asked me if there were any possible means to cure them. I told him no. He presently approached to them and cut their throats without anger. Seeing this great cruelty I told him he was a wicked man. He answered me that he prayed to God that whenever he should be in such a case that he might find some one that would do as much to him that he might not miserably languish."

And here at Turin, Paré obtained by gifts and presents from a surgeon famed above all others for curing gunshot wounds, the recipe for his excellent balsam. He thus gives it: "Boil young whelps newly pupped, in oil of lillies, prepared earth worms with turpentine of Venice," and adds, "then was I joyful and my heart made glad that I had understood his remedy." Great stress in those old days was laid upon the composition of these "vulnaria," or wound powders, ointments and balsams from which much healing value was expected. I would have you note that in the decoctions of worms, puppies and geese there was a plentiful admixture of turpentine, aloes and myrrh, poppy, hyoscyamus and gentian, tolu, red wine and oil of juniper, and here we have articles of real therapeutic and almost antiseptic value. Such were the accompaniments of war three centuries ago; such was the surgery at the hands of one of the princes of our craft who, conferring great gifts on humanity, was destined to professional immortality. Think of the import of this sentence regarding amputations: "The ends of the vessels lying hid in the flesh must be drawn forth. To conclude, when you have so drawn

them forth, bind them with a strong double thread."

Quite recently I was told by an aged and venerable friend this, which may not be irrelevant: Fifty years since in the Philadelphia library was a small medical folio on the side of which was stamped the royal arms of England. It had been bequeathed to the library by a book collector, but a visitor from London recognized it as the former property of the British Museum, from which it had been stolen, and it was returned. In it was the following: "Take three blind puppies, put them in a mortar and pound them well, add" so and so, what at this long interval my informant had forgotten. In a marginal manuscript note, identified as the handwriting of King Charles I., were these words: "Tried this on the Prince. It did his business."

As one with the experience of later years walks through the National Military Museum, he can not fail to be impressed with the lessons which confront him on every side. He feels that the mutilating amputations and resections once so common must in future wars be greatly diminished in proportion. The new projectiles are far more humane in their effect upon the bony system. They penetrate rather than crush, and shattered wounds even when they occur will be, thanks to antisepsis, far more amenable to conservative treatment than of old. A limb may be saved and a joint preserved when once it would have gone as a matter of course, and our attempts at preservation now cease to be experimental, and have become recognized treatment. Professional opinion has changed, old judgments are reversed, new lines of study opened, new conclusions arrived at. These changes have been gradual but steadily progressive. In the aggregate they amount to revolution. I have often wondered what would be the impression of those of our brethren who have gone to rest twenty, fifteen, ten years ago, if they could now arise from their dust and view the existing state of the art once theirs. They would indeed find old manners changed, old customs gone, and realize that the greatest savant of yesterday would be the merest tyro of to-day.

Following out this idea of incessant and bewildering change, let me ask you to reflect for one moment on the marvels which have marked the onward strides of abdominal surgery, for in this direction perhaps first and most decisively has antisepsis achieved her victories, and these successes have been reached through the practice of an aggressive surgical interference, guarded by a strict precautionary antisepsis. Years ago, and not so many either, the unfortunate recipient of a penetrating wound of the abdomen was looked upon as little less than a dead man, his way was through that portal which those who enter leave all hope behind. Look at these well-weighed figures of our Otis in the Surgical History of the Rebellion, 3,717 cases, 3,031 deaths, a mortality of 87.2 per cent. In the British army of the Crimea the death rate was over 92 per cent. and in the French army of the East this rate was almost the same; in the German army at the siege of Paris, the rate was 94 per cent., and in the French army at Sedan an equal ratio. It is, of course, impossible now in times of peace to make comparison with the results above quoted, but I feel assured that hereafter when comparisons may be practicable the finding will be very different, for have we not laparotomy and all of the abdominal technique, washing and drainage, intestinal anastomosis, and the ectomies? From the practice spring fresh confidence

and firm convictions and a new born courage, the offspring of these convictions. We know how great a success has crowned the endeavors of civil surgeons and we may rightly conclude that when the time comes a like result will be attained in military practice, for there must be a new surgery of the battlefield. How different was it in pre-antiseptic days. I can recall memories far too sad to dwell upon. I can almost see before me the phantoms of the many who have perished from just such injuries as those alluded to. With every wish to help them and with every known effort so little in reality was done. The best knowledge of that day could not even accomplish a respectable diagnosis; the treatment was expectancy with folded hands. The quoted figures speak for the results. The idea of searching for a bullet in a penetrating abdominal wound was not entertained. In the solitary recorded instance in which a world-famed operator asked "why not open the cavity and search for the ball," the very question was regarded as an evidence of genius gone astray and the suggestion was not even considered. Yet to-day the medical student in his second year could rightly formulate the treatment, now laparotomy, hemostasis, packing, drainage.

So, too, in regard to chest injuries. The experience of the last few years has shown that portions of the ribs and chest walls can be raised or even removed without injurious consequences. Estlander's operation is familiar to every surgeon and it can not be doubted that this operation may be so modified as to permit access to the pleura and the subjacent lung. I believe that deeply placed foreign substances will be traced, detected and removed and that hidden abscesses may be aspirated and emptied. Indeed the surgery of the chest is in its infancy, and when developed must prove life-saving. Instances of gunshot wounds of the chest occur to me, in which postmortem examinations revealed the presence of bullets which I am sure could have been found and removed by the methods of thorectomy alluded to. The pity was that we did not know; you do.

The internal study of the skull cavity is not beyond our powers, and when the cranial walls are perforated by gunshot or otherwise a suitable craniectomy is indicated. The sources of internal bleeding can be ascertained and arrested by ligation, pressure or otherwise, and at the same time foreign bodies may be taken away. In more chronic cases, abscesses may be located and opened and all this can be done, as many recent brain operations have shown, without unjustifiable risk to life. More could be added but time and place forbid. Thus in a few words I have sought to indicate something of the progressive nature of your art and show you what great changes are being gradually but surely wrought in surgery, and that by these the character of the military surgery of the future must be largely altered. You, as its servants, will be expected to know far more than your predecessors. You will be required to have a deeper knowledge of the modern doctrines of pathology and to comprehend their practical application in your every day work. All of these matters have been exhaustively presented to you by able teachers.

When you leave this school and enter upon your active duties, you will assume higher responsibilities than those which usually fall to young medical officers. In addition to the instruction which in civil life precedes the acquisition of your professional degree, you have been especially taught many details

which will affect your military life. You will thus be spared some of those hard lessons of laborious and dearly bought experience which have fallen to your predecessors. You now know to some extent, what is before you, what you have to do and how it is to be done. In a professional point of view, you have had exceptional opportunities. You have enjoyed time for reflection and have been able to weigh well the teachings of the civil school and under the supervision of your military professors to adjust your previously acquired information to the exigencies and changing phases of military life and I believe, moreover, that perhaps for some of you there may be a new function not yet covered by any paragraph of regulations. I mean a teaching function. I think that going hence, rightly having used your opportunities, you may be instrumental in disseminating the garnered experiences of many lives. You may become missionaries of military medical science. I pray God, that one day some great Apostle may issue from this school who may by practice and by precept, so spread its name and reputation that men shall turn and look hither with reverence.

Ah, graduates, young officers, I almost doubt whether you fully estimate the advantages of your position. You enter upon your professional life at a moment when the bright rays of advancement illuminate the whole horizon. We know and see enough to feel that a future which no man can foretell, is dawning upon our profession. Oh, that I could throw from my shoulders the burdens of the last forty years and be among you and with you and of you; for I see, and not darkly, that your corps has a glorious future, a future which it deserves and has earned in the past, by self sacrifice and conscientious devotion to duty.

As a result, great institutions, the Museum, the Library and now the Army Medical School have grown up, they have called forth the admiration of the professional world and stand as enduring moments to the zeal, industry and learning of the Department. In this good report of your corps you will share. Do more, contribute to its advancement. Be jealous of its good name. In every proper way, seek to further its interest. Especially let your professional work be earnest, persistent and well directed so that your names may not pass away. Do not live in vain. There was something noble in the last words of that good old surgeon "My lamp is almost extinguished, I hope that it has burned for the benefit of others."

Let such be your life purpose. Remember that you have a triple duty before you: As members of our noble profession, let suffering humanity be your care. As officers, serve faithfully and devotedly; thus honorably will you uphold the flag of your country. As physicians, officers and gentlemen, be ever true to the dear old medical Department of the Army of the United States.

Dr. Brinton's address was warmly applauded at its conclusion, and indeed during its progress the audience showed its interest in the speaker's words and responded to his humorous paragraphs with appreciative smiles.

Senator Hawley then delivered their certificates to the members of the graduating class in the order of their standing at the recent examinations on the subjects embraced in the curriculum. This order was not that in which the young men entered the service

in October last; for while they then stood: 1. J. T. Kilpatrick, 2. J. H. Stone, 3. I. W. Rand, 4. P. C. Fauntleroy, 5. J. S. Wilson, their standing at the close of the session was: 1. Stone, 2. Rand, 3. Fauntleroy, 4. Kilpatrick and 5. Wilson. Senator Hawley spoke in his usual easy but sympathetic and earnest manner. He remarked that he had been saved a deal of trouble by the previous speaker as it had been his intention to refer to the great advances in medicine and surgery that had been made during the past few years in order that he might congratulate the young officers upon having their lives before them or upon not having lived earlier. He reminded them that although they had completed their school life they were only beginning their course of study in the practical work of life. Progress is rapid in this age of the world, and earnest and constant study is required to enable one to keep up with its advance. Can anything be more wonderful than what has happened in recent years even in the life-time of many who are yet young enough to take a hand in the work? Here General Hawley took a rapid and humorous survey of progress in many fields relating to medicine and surgery from the first administration of ether as an anesthetic in the operating room of the Massachusetts Hospital to the shadow pictures produced by the Röntgen rays. He then referred to the altered and elevated position of the army medical officer as compared with his status during the Napoleonic wars. Out of the memory of his own war experiences he paid a high tribute to Dr. Francis Bacon and Dr. George C. Jarvis, both of the 7th Connecticut Volunteers, for the excellent sanitary condition and the low sick and mortality rates that prevailed in his regiment and brigade. These officers did good work in caring for the sick and wounded; but it was in preventing sickness, in protecting the men from insanitary conditions and preserving the fighting strength of the command at its maximum that the work of these officers was specially commendable. Senator Hawley then congratulated the student officers on having had the advantages of the Army Medical School and concluded by wishing them all success professionally and socially.

At the close of this address the audience broke up into groups and inspected the library and museum and the lecture room and laboratories of the school. In the evening there was a social gathering at the residence of Surgeon-General and Mrs. Sternberg, at which the members of the class had an opportunity of becoming acquainted with the medical officers of the Army and Navy stationed in or near the city and the ladies of their families. This reception constituted a pleasant close to their months of study and a social send-off to be remembered with pleasure in after years.

ORIGINAL ARTICLES.

THE TREATMENT OF RETRODEVIATIONS OF THE UTERUS.

Read before the Steuben County (Ind.) Medical Society, Aug. 23, 1895.

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In the treatment of retrodeviation of the uterus, as in fact, in any abnormal condition, either medical or surgical, a thorough understanding of the etiology, pathology and complications is demanded in order

that the desired results may be obtained. Without this knowledge failure will, as in the past, attend our efforts in a lamentably large proportion of cases. I believe that the statement will stand unchallenged that, until recently, the treatment of retrodeviations was most unsatisfactory and unsuccessful and that the cause of such frequent failure was the attempt to treat all cases by a similar method, either without due regard to, or in ignorance of, their causes and possible complications.

For years, the vaginal tampon and pessaries, aside from certain plastic operations on the vagina and perineum, constituted our sole means for the correction of uterine displacements. It can not, therefore, be considered a cause for surprise that innumerable forms of pessaries, ingenious and otherwise, were employed in the vain and, as we now recognize it, unreasonable attempt to correct these displacements.

With the ever increasing experience in pelvic and abdominal surgery, naturally came a better knowledge of the complications so frequently associated with retrodeviations and it was readily seen how futile the wearing of a pessary must be in many cases and how dangerous in others.

Upon opening the abdomen in cases of retrodeviation, even with a movable fundus and seemingly without grave complications, we occasionally find one or both ovaries, with their accompanying tubes, prolapsed along the side of, or even behind, the uterus and attached to it by adhesions either slight or extensive. In the absence of adhesions between the fundus and the posterior wall of the cul-de-sac, such a uterus could be replaced by manipulation through the vagina. Such a replacement, having met the only then recognized requirement prior to the introduction of a pessary, would have been followed by the propping up of the uterus by the manipulator's favorite pessary.

We now realize, what he then did not, that the pressure and irritation of a pessary under such conditions may be productive of most serious results. Plastic lymph is poured out in increased quantity, adhesion follows adhesion, binding the displaced and distorted organs more firmly, pain becomes augmented and all symptoms, distressing before, now become so greatly aggravated as to make almost unbearable the sufferings of the invalided woman. Pelvic inflammations are rekindled and what was looked upon as an instrument of relief and even cure, has been the unsuspected cause of disastrous structural disease and most unnecessary suffering.

It is a matter for congratulation that, while abdominal surgery taught us how faulty and how frequently misapplied was the treatment by pessaries, it enabled us to evolve more correct and successful methods of treatment, so that now surgical procedures advantageously supplement the employment of pessaries. It is to be regretted, however, that from certain quarters we hear the use of pessaries unqualifiedly condemned and resort to surgical methods advised in all cases. Such a practice can not be considered other than an unnecessary and unjustifiable resort to surgery, for before surgical methods were employed, the most reliable statistics, as collected by Davenport, showed that at least 10 per cent. of all retrodeviations were absolutely cured by the use of pessaries, while an additional 15 per cent. were symptomatically cured, although the displacements remained after the wearing of pessaries was discontinued. The same class of cases and certainly as large a percentage of all can,

and should still be cured, absolutely or symptomatically, by pessaries, while surgery must be content in the attempt to cure the large percentage remaining.

Although there are some noted exceptions, I find the impression quite general among the gynecologists of the country that Davenport's statistics are too low and that considerably more than 25 per cent. of retrodeviations are absolutely or symptomatically cured by pessaries. I am well aware that personal impressions, unsubstantiated by statistics, can not be too closely relied upon, and yet I am satisfied that Davenport's statistics, to say the least, do not place the percentage of cures too high.

In addition to this 25 per cent., or more, who are cured by pessaries, there is a class of patients whose symptoms are nearly or entirely held in abeyance while wearing a pessary and who suffer little or no annoyance from its presence. Such patients frequently prefer the continuous and indefinite wearing of a pessary to a surgical operation, be it ever so simple and safe, and certainly should be granted the method of their choice. Such cases, however, must not be classed among the cured.

Nothing so forcefully illustrates the wide-spread dissatisfaction among the profession with this universal treatment by pessaries, as the eagerness with which Alexander's operation was adopted and put into practice. It was extensively employed in many cases, both suitable and unsuitable. Through ignorance as to its limited scope and the indications for its employment, or from a faulty technique, many failures resulted, made necessary, frequently, from the very nature of the cases in which it was unwarrantably applied. An operation should not be condemned because of failure, when wrongfully instituted. Alexander's operation has now been employed for a sufficient length of time to establish its worth and has certainly shown itself to be a beneficent procedure in properly selected cases. To be sure, the range of its applicability is limited, but such can be said of many measures in medicine and surgery. Alexander's operation meets the requirements in by far the great majority of those cases which are relieved by the use of a pessary but which relapse into their former annoying condition as soon as the pessary is removed.

The methods of Dudley and Wylie, consisting of an intra-peritoneal shortening of the round ligaments by folding them upon themselves, have not been extensively employed except by their originators and a limited number of other operators. They do not bid fair to prove successful rivals to hysterorrhaphy, the only other operation with which they can be compared. It would be manifestly unfair to compare them with Alexander's operation which does not necessitate opening the peritoneal cavity. As compared with hysterorrhaphy, the claim is made for these two methods that the uterus is held in place by its shortened normal ligaments, whereas in hysterorrhaphy an artificial or abnormal ligament is created and thus the former bring about a condition more nearly approaching the normal than does the latter. I believe, however, that these advantages are more fanciful than real.

Hysterorrhaphy, after somewhat numerous methods, is the only other surgical procedure for the cure of retrodeviations as yet worthy of extended consideration. This was advanced as a secondary or supplementary operation to be performed when some co-existing disease made necessary a celiotomy. Being

the only means applicable to many cases of retrodeviation and having rendered such excellent results when employed as a secondary operation, it was but natural that its performance as a primary operation should be strongly advocated. Some of my most gratifying results in abdominal surgery have followed the performance of hysterorrhaphy as a primary operation, the separation of adhesions to the uterus and its appendages being considered as but a step in the technique.

Hysterorrhaphy is indicated in a much larger proportion of cases than is Alexander's operation, as it is the only proper procedure when the retrodeviation is complicated by disease of the adnexa, or by adhesions between the uterus, the tubes or the ovaries and contiguous structures.

The method of hysterorrhaphy which I prefer and always employ is that of Kelly, in which the posterior surface of the fundus is stitched to the abdominal wall between the lower angle of the incision and the bladder. This method places the uterus in ante flexion, in which position it remains, freely movable, but prevented from tilting backward by the resulting adhesions. I have been able in every case but one in which I have performed this operation to subsequently demonstrate to the satisfaction of others, as well as of myself, the existence of a movable fundus. The only case where I have not been able to show this is that of a patient from Nebraska whom I have not seen since she left the hospital.

This question of a movable or fixed fundus after operation for the cure of retrodeviation has provoked a discussion which, seemingly, is not yet approaching a close. The opponents of hysterorrhaphy urge as a serious objection to its performance that it leaves the fundus fixed, in an abnormal position, to the abdominal wall. Such objection is fallacious, for a properly suspended uterus is not fixed like a ship tied to her wharf, but, like one at anchor, has free motion restricted within safe limits.

In 1894 I had occasion to open the abdomen of a young, unmarried woman for the removal of an inflamed and adherent tube and ovary. For a number of years she had suffered from a retrodeviation for which a pessary had been worn with but slight if any benefit. Advantage was taken of the open abdomen to suspend the uterus, which was done in the usual way. One year later it became necessary to reopen the abdomen for the removal of the remaining tube and ovary. The condition following the hysterorrhaphy was most interesting. Whereas, one year before, the uterus had been tied snugly against the abdominal wall, it was now simply anchored to it by an adhesion or, more correctly speaking, an additional ligament, one and one-fourth inches long, one-half an inch wide and somewhat thicker than a sheet of blotting paper. This ligament, all must admit, gave the uterus a possible range of motion from side to side of two inches, and in the direction of its axis, and from before backward, of over an inch. That uterus could not be called fixed, yet it was held in ante flexion and the patient was entirely relieved of the symptoms produced by the displacement.

I will not attempt to deny that hysterorrhaphy may be, and occasionally is, followed by a fixed fundus, but I hold that such fixation should be charged to the technique of the operator, and not to the operation *per se*. If the operator, following the earlier methods of ventro-fixation, freely scarifies the uterus and

stitches it broadly into the abdominal incision, the resulting adhesion will be broad, firm and practically unyielding. Naturally, the fundus will, in the great majority of cases, remain immovably fixed. On the other hand, if the uterus be scarified but slightly, or not at all, and be stitched to the abdominal wall below the incision so that the wound in the peritoneum does not, when sutured, come in contact with the uterus, the resulting adhesion will be but a narrow band or cord. This adhesion will possess sufficient strength to act, as do the normal uterine ligaments, as a guy to retain the uterus in a comparatively normal position against the bladder, allowing the intra-abdominal pressure to be exerted, as is naturally the case, on the posterior surface of the uterus.

It is surprising that some gynecologists persist in confounding the indications for Alexander's operation and hysterorrhaphy, and endeavor to compare the two as if they were rival methods. There should be no such comparisons nor thoughts of rivalry applied to these two operations, for each has its separate and distinct field of usefulness and is indicated under different conditions, while the value of one does not in the least detract from that of the other. In fact, in the application of pessaries, the performance of Alexander's operation and of hysterorrhaphy, we have three valuable and indispensable methods for the treatment of retrodeviations.

The majority of cases of retrodeviation are, unquestionably, post-puerperal in time of occurrence and are due to a subinvolution of the uterus, rendering it large and heavy, and to a similar condition of the relaxed uterine ligaments. Relaxation of the sacro-uterine ligaments plays a most important rôle, not in causing the displacement, but in allowing the cervix to slip forward and downward, bringing the uterus into the axis of the vagina. Laceration of the perineum is another important factor in the production of backward displacements, in that, during defecation, the posterior vaginal wall is bulged forward and the posterior lip of the cervix consequently dragged upon in a downward direction. This one fact should impress upon us the necessity for the repair of lacerations of the perineum prior to, or coincident with, the treatment of retrodeviations.

The dorsal recumbent posture, which the woman assumes after confinement, and to which she later so frequently resorts for relief from her distressing backache, favors a backward displacement, the force of gravity meeting with no resistance from the relaxed ligaments. In the upright posture a slight prolapse occurs, permitted by the relaxation of the tissues, and with the prolapse, a straightening of the natural anterior curve of the uterus takes place. A full bladder adds its pressure as a displacing force, the fundus uteri is pushed backward, completing the displacement, and the intestines, crowding down in front of the fundus, tend to retain the weakened organ in its displaced position. The tonicities of the uterine walls and its ligaments being greatly impaired, with all forces acting to maintain the uterus in its unnatural position, it is far from probable that the organ will ever, unaided, regain its natural position. Circulatory disturbances in the nature of passive congestion follow, resulting in an impairment of nutritive processes. Chronic endometritis and metritis soon become engrafted upon such a uterus, and add their detrimental influences as complications of the displacement.

Under such circumstances as the above, pregnancy seldom occurs, the woman proving relatively sterile. When pregnancy does take place, abortion is apt to follow before the fourth month, owing to the pressure of the enlarging uterus against the sacrum and its promontory, under which it may become more or less firmly wedged.

The frequent repetition of abortion in a retrodeviated uterus may be the cause of subinvolution, the conditions of cause and effect, as described above, being reversed, the displacement causing the subinvolution, through frequent abortions, rather than the subinvolution causing the displacement.

When subinvolution, with its attendant endometritis and metritis, is associated with backward displacement, either as cause or effect, the efforts directed toward the cure of the displacement resolve themselves largely into means for the relief of the complications. Uterine inflammation must be subdued, circulation restored to its normal activity, involution secured and the displacement rectified. For quick results, nothing is so satisfactory as a thorough instrumental dilation of the uterus, aseptic curettage with the sharp instrument, followed by gauze packing and drainage. The curettage is to be followed, at the same sitting, by one of two procedures, either manual replacement of the uterus with maintenance of position by wool tampons, to be later followed by a pessary, or performance of either Alexander's operation or hysterorrhaphy.

We often find that the cure of the complications by the curettage and the maintenance of the uterus in position for a few months, by means of a pessary, is sufficient to secure permanent restoration of the uterus to its normal position. Where this treatment fails, in that the pessary can not be removed without subsequent return of the uterus to its abnormal position, with its attendant symptoms, Alexander's operation is indicated. It is, possibly, advisable to treat all of this class of cases as above mentioned, but as the curettage necessitates anesthesia, advantage may be taken of the latter to at once perform Alexander's operation, and thus save the patient the many annoyances attendant upon the wearing of a pessary. A second resort to anesthesia for the performance of the operation made necessary by the failure of the pessary, may then be forestalled. Many a woman with a retrodeviation is allowed to suffer unnecessarily without receiving the attention from her physician which her condition requires. Her importunate demands are satisfied, from time to time, by the insertion of a pessary which, while it may temporarily relieve, does not cure. Alexander's operation is safe, and ordinarily gives satisfactory results, and such a woman is entitled to its benefits if she so elects.

When, however, adhesions have formed between the uterus or its appendages and the walls of Douglas' cul-de-sac, or when the appendages are diseased, especially if there be a history of salpingitis and pelvic peritonitis, neither pessaries nor Alexander's operation will meet the requirements. Nothing will answer but hysterorrhaphy with separation of all adhesions by the fingers within the abdomen.

The constant weight of the heavy uterus, causing irritation by pressure and friction between the opposed peritoneal surfaces, is frequently a cause of adhesions between the uterus and the posterior wall of the cul-de-sac. In a long-standing retrodeviation the tubes and ovaries, by the traction of the uterus, are dragged

backward and downward into the lateral portions of the cul-de-sac, where, subject to pressure, irritation and congestion, they are liable to fixation by an outpouring of plastic lymph. Salpingitis and pelvic peritonitis complicate many cases of retrodeviation and are, without doubt, responsible for the presence of adhesions in the majority of cases. It is the presence of the adhesions, fixing the uterus or the appendages, or both, which renders futile and even dangerous the wearing of a pessary and contraindicates Alexander's operation.

Without entering into a consideration of the recently advocated vaginal methods of operating for retrodeviations, I will offer the following conclusions:

1. In simple, uncomplicated retrodeviations, producing symptoms, pessaries should first be employed, to be followed, in the event of failure, by Alexander's operation.

2. In movable retrodeviations with healthy appendages but complicated by mild subinvolution, endometritis and metritis, Alexander's operation, preceded by curettage, is indicated. Curettage and pessaries may cure a limited number of this class.

3. In retrodeviations complicated by marked subinvolution, endometritis and metritis, or by tubal or ovarian disease, or by adhesions, hysterorrhaphy, preceded by curettage, is the only method permissible.

ELECTRICITY IN THE TREATMENT OF FIBROIDS OF THE UTERUS.

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CURRENT.

In the treatment of fibroids of the uterus by electricity the direct current, or what is more commonly known as the galvanic current, is the form of electricity almost invariably employed. The maximum strength of current employed, 250 milliamperes, or one-fourth of one ampere, requires an apparatus which will possess an electro-motive force of 30 to 40 volts. The amount of voltage required varies in different cases with the varying resistance of the electrodes and the tissues of the uterus and abdominal wall through which the current must act. This resistance may be from 60 to 300 ohms. This deviating resistance is accounted for by the use of different kinds of electrodes and the variation in the resistance of the same tissues in different individuals.

APPARATUS.

The direct current may be generated for medical uses from *a*, primary batteries, *b*, from dynamos of the non-alternating or non-interrupting variety employed for incandescent street or house lighting and *c*, storage or secondary batteries.

PRIMARY BATTERY.

There are several distinct forms of primary cells employed by gynecologists in the treatment of fibroids:

Portable Battery. The old reliable portable battery is the one with zinc and carbon elements excited by a fluid of sulphuric acid and bichromate of potassium in water in cells of glass, or better, hard rubber. The voltage of each of these cells when freshly charged is about 2 volts. Therefore a battery of this description of about 18 cells properly connected makes a very suitable portable battery for the treatment of fibroids.

There are several so-called dry-cell batteries of secret construction which appeal to one on superficial

observation, because of the claims of their inventors, of cleanliness, durability, and freedom from objectionable fluids. All such batteries should be looked upon with suspicion, until they have proved themselves capable of furnishing an electro-motive force of from 30 to 40 volts for periods of five to ten minutes, several times a day for several months, otherwise the cost of recharging makes them too expensive.

Office Batteries.—For office battery where portability is not required, the Law cell, the improved Le Clanche, the Diamond Carbon, or cells of similar construction should be employed. They should be attached to a selective switchboard of such a construction that any portion of the battery may be employed at will. These cells may be placed in an adjoining closet or cellar and connected with the switchboard by a cable of wire, or they may be placed in a cabinet beneath the switchboard. As these cells have an average voltage of one or one and a quarter volts each, a battery of about 40 cells should be selected.

Street Wire Current.—One of the most satisfactory office fixtures for electricity is a connection from an incandescent lighting system of the uninterrupted or non-alternating variety reduced by some safe form of rheostat. One of the simplest rheostats is the McIntosh (Fig. 1). It is compact, easily comprehended and regulates the current in gradations from zero to the full strength of the street current, and reverse, without the slightest possibility of a break. A fuse box is also connected with this rheostat which will burn out and disconnect the current from the patient in case of an accidental dangerous increase of the electricity from any unlooked for source.

Storage batteries may be used as a source of electricity for gynecologic practice. However, as they are not economical and wherever they can be used to advantage they must be near some other source of electricity, it is obvious that one would seldom select this form of battery.

MILLIAMPERE METER.

To employ galvanism in gynecologic practice without a milliampere meter is criminal. There are three reasons for this: 1, because the resistance through the abdominal walls is so small and variable, that no one, no matter how experienced, can even approximately estimate the amperage of a current by the number of cells employed. 2, because of the powerful current often required in this kind of work, a dangerous dose might easily be given, and 3, because of inaccuracy in recording cases.

A milliampere meter should be selected which has two readings: One scale reading to 500 milliamperes and one reading to 50 milliamperes. This presupposes in reality a double instrument. By changing a switch either reading may be selected without the necessity of changing the connections.

The best milliampere meter I am acquainted with is the Weston. It is reliable, convenient, double reading, dead beat, and can be used in any position on a level without regard to the poles of the earth. The principal objection to this instrument for general use is its expense (Fig. 2).

An instrument which I have employed more than any other in my work outside of the office is the McIntosh instrument (Fig. 3). It is of the galvanometer type and much cheaper than the Weston. It is approximately correct, and barring the fact that it must be carefully adjusted to the polarity of the earth, be-

fore each using, and that the indicator is not dead beat, it is a very satisfactory instrument. It has a double reading; is made in two sizes, one large for office use and one small for portable purposes.

ELECTRODES.

In describing electrodes for use in the treatment of fibroid tumors I will limit my description to those which I actually employ in my own work and leave the innumerable confusing curiosities which adorn the ordinary instrument catalogues unmentioned.

Abdominal electrodes in use by me are of two kinds according to the dose required. When a current of less than 50 milliamperes is employed a large sponge, a large felt or a large spongio-pyoline instrument may be employed. These electrodes should be not less than six by eight inches of an oval shape. They should be thoroughly washed in warm water before using, and all surplus water squeezed out before the application is made. For a current above 50 milliamperes a clay electrode or the author's membranous

For internal electrodes I employ intrauterine, vaginal and rectal instruments.

The intrauterine electrodes are of two varieties; flexible concentration and soft copper.

The flexible concentration consists of platinum wire wound spirally over soft copper for varying distances tipped with hard rubber, and the portion of the instrument not active, is covered with some insulating material as rubber or linen covered with shellac. These instruments may be made of any diameter. I have them in sets of two, three and five millimeters in diameter respectively. The active surface which I ordinarily employ is four square centimeters (Fig. 5). In knowing accurately the active surface of an electrode, one can estimate more definitely the particular effect to be expected from a known current. This will be explained more comprehensively when we consider treatment technique.

Soft copper electrodes are employed in order that the uterine mucous membrane and deeper tissues may become infiltrated by cataphoresis with the salts of

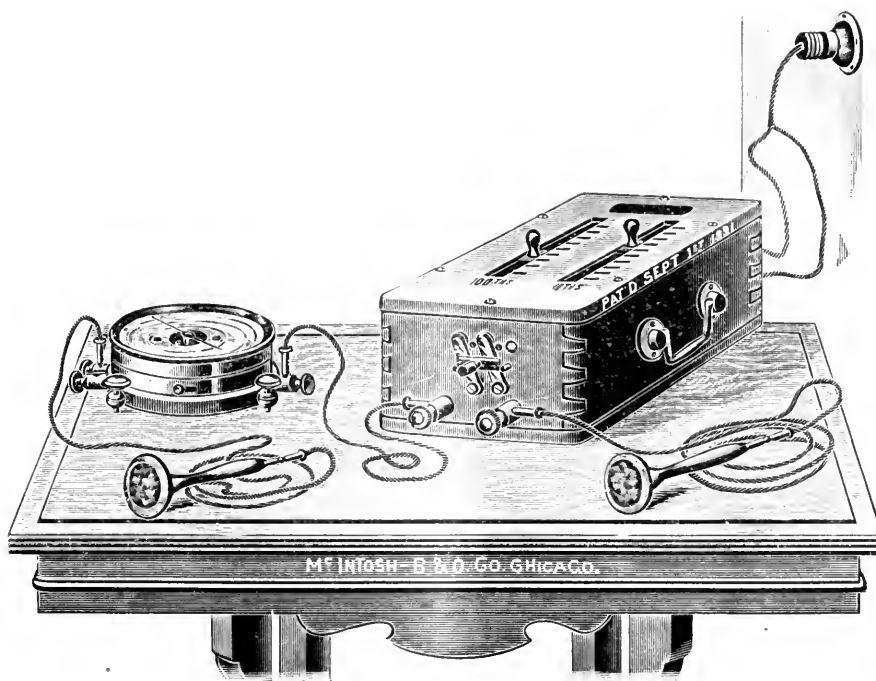


FIGURE 1.

abdominal electrode should be employed. These being the only instruments which I have found in my experience which will uniformly distribute the current and prevent burning of the skin in spots.

The clay electrode is the cheapest form of the two. If made as recommended by Goelet, wrapped in cheese cloth with a rubber back it is comparatively clean and makes a suitable instrument where efficiency and economy alone is desirable. It is constructed of potter's clay of the consistency of putty molded into a cake, about eight by six inches in diameter by one inch in thickness.

The membranous abdominal electrode devised by the writer, is a water electrode, the cavity of the disk holding the water being covered with animal membrane, the membrane furnishing the surface of contact (Fig. 4). This instrument when filled with warm water makes an ideal electrode. It is cleanly, its temperature is easily regulated and it diffuses the current perfectly.

copper produced by a combination of tissue and copper electrolysis, which occurs at the positive pole. I have these electrodes made in sets of three instruments, each instrument having an electrode of different caliber on either end (Fig. 6). This makes six diameters—2, 4, 6, 8, 10 and 12 millimeters. The length of each electrode surface is six inches. The portion of the staff not employed in the uterine canal is insulated with a loose rubber muff.

Vaginal electrode.—I employ an instrument for this purpose like the one shown in Fig. 7. It has an active surface of about sixteen square centimeters, the staff of it being insulated with hard rubber over a copper core. The instrument is about six inches long and about three-quarters of an inch in diameter.

Rectal electrode.—I employ a long bulbous-pointed instrument about four inches long and one-half inch in diameter for a rectal electrode. The insulated portion has a metal surface of about ten square centimeters. The staff is insulated with hard rubber.

Effects of Galvanism on Living Tissues.—Fortunately the effects of electricity upon living tissues has been so thoroughly studied, clinically and experimentally, in the last few years that we are in a position to make some pretty definite statements about its

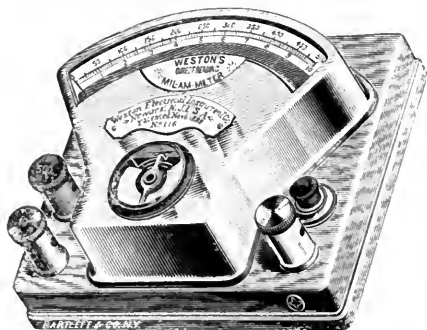


FIGURE 2.

action. These studies, too, have not been limited to the living tissues, but have been carried into the chemic, physiologic and bacteriologic laboratories to such an extent that we have many experimental proofs

Effect on Sensibility.—The positive pole or anode acts as a sedative while the negative pole acts as a cathode. This effect on the sensory nerves is called the electro-tonic effect and the two effects are expressed as the anelectro-tonic effect (sedative) and the catelectro-tonic effect (irritant). The use of electricity

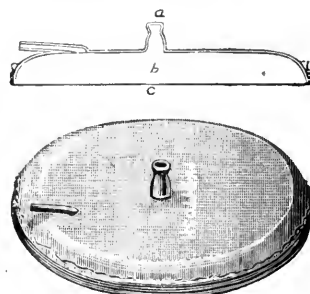


FIGURE 4.

in gynecology with its employment of large doses has abundantly demonstrated to me the electro-tonic effect of galvanism.

Effect on Blood Vessels.—The positive pole con-



FIGURE 3.



97.

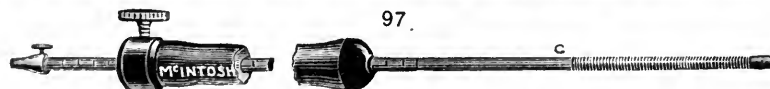


FIGURE 5.



FIGURE 6.



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FIGURE 7.



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FIGURE 8.

which have proved true several former theories and exploded many others.

In applying galvanism to the tissues of the body the employment of two electrodes is necessary. In applying electricity to fibroids of the uterus the internal electrode is usually termed the active pole while the external one is called the passive pole. We speak, therefore, of three kinds of effects from the application of the current in this manner: Polar effects, inter-polar effects and general effects.

The polar effects differ materially with the pole employed. In several respects the effects at the two poles are diametrically opposed.

tracts blood vessels in its immediate neighborhood while the negative pole dilates them. These vaso-constrictor and vaso-dilator effects are easily demonstrated.

Chemical Reaction.—The result of tissue electrolysis between the poles produces an accumulation of alkaline elements at the negative pole and acid elements at the positive pole. This results in an acid reaction obtaining at the positive pole and an alkaline reaction at the negative pole. If the electrolysis is persisted in with a powerful dose these polar accumulations become caustic acids and caustic alkalies respectively.

Effect on Tissue.—The acid accumulation at the

positive pole when it becomes sufficiently concentrated from the effect of a strong dose coagulates the soft tissues and renders them for a short distance from the pole hard and dry. On the other hand the alkaline accumulation at the negative pole when strongly concentrated by a strong dose of electricity, dissolves the tissues and liquifies in the same manner as does caustic alkalies.

Effect on Pathogenic Microbes.—A zone of uterine tissue around the positive pole of a depth varying from a fraction of a millimeter to one or two millimeters according to whether the dose of current is small or great is rendered bacteriologically sterile by the employment of the galvanic current. This effect according to experiments made by Gautier, Apostoli, Enrico Burei, Vittorio Frascani and others, is not due to the electricity direct but rather to the chemie changes occurring around the positive pole as the result of electrolysis. For instance, if a copper electrode is employed oxychlorid of copper is formed as the result of a combination between the electrolyzed tissues and copper. This chemie combination is an active germ destroyer and in solution it is driven by cataphoresis into the tissues to a considerable distance, carrying its antiseptic properties with it. There is scarcely any antiseptic effect at the negative pole.

INTERPOLAR EFFECTS.

While it is easy to demonstrate polar action it is not an easy matter to make an ocular demonstration of the interpolar effects of the galvanic current on living tissues.

From experience in the employment of this current on living healthy and pathologic tissue, experience of many earnest investigators extending over a period now of several years, we are convinced that evidence enough has accumulated to justify us in saying that the following definite effects occur in tissues so acted upon: 1, interpolar electrolysis, 2, stimulation of trophic nerves, 3, cataphoric action.

Interpolar Electrolysis undoubtedly occurs between the poles as well as at the metal poles themselves. When such electrolysis occurs in a fibroid uterus it is easy to account for the reduction in size of that growth. When the molecules of weaker tenacity in such tissues become decomposed into their constituent elements oxygen, hydrogen, carbon, etc., these elements, as gas or solid particles, immediately on their release become foreign substances. While seeking for new combinations some of them are taken into some of the many absorbents traversing the tissues and are carried out of the system. Others form new combinations with free elements in the tissues, or with the decomposed material of the electrodes, or fluids surrounding the electrodes on the surface, and still others are liberated at the poles as solids or gases.

Stimulation of Trophic Nerves.—While the electrolytic effect of the current may account for reduction or absorption of growths, I believe that this result is materially hastened by powerful stimulation of the trophic apparatus of the uterus by electricity. We are forced to believe this by the fact that the general nutrition and functional activity of all the organs, any way coming under the influence of the current, are markedly improved.

The Cataphoric Action of the Galvanic Current.—This is the property of a current of electricity which enables it to push or conduct fluids in bulk through membranous or porous conductors in the direction of

the current flow, from the positive toward the negative pole. This is also called electrical cataphoresis. Fluids near or on the positive pole, either simple or holding in solution drugs or chemicals, will be driven into the living tissues when living tissues are made a portion of the conductor. So that the tissues of the uterus may become impregnated with any drug which can be dissolved in water by surrounding an intra-uterine positive electrode with a film of cotton saturated with the particular fluid and causing a current to traverse the tissues.

The general effect of galvanism upon the tissues is that of a powerful tonic. Irregular practitioners, for a large number of years, employed electricity in some form successfully because of its power to stimulate general nutrition. It mattered but little what form of electricity was employed, or where it was applied so long as some portion of the sick man became a part of an electric circuit; it was sure to stimulate him, improve his nutrition and make him feel a stronger man. The powerful doses employed in the use of galvanism in the treatment of fibroids exaggerates this tonic effect of electricity to such a degree that many physicians have endeavored to attribute to it all the credit for improvement of fibroids under electricity.

Summary of Effects of Galvanism in the Treatment of Fibroids of the Uterus.

Polar Action: *Negative Pole* a. Irritant; b. Vaso-dilator; c. Alkaline; d. Liquifies tissues; e. Antiseptic (slightly). *Positive Pole* a. Sedative; b. Vaso-constrictor; c. Acid; d. Coagulates tissues; e. Antiseptic (powerful).

Interpolar action: Electrolysis and trophic stimulation.

General Action: Powerful tonic.

THE APPLICATION OF GALVANISM TO THE TREATMENT OF FIBROIDS.

What is the present status of the treatment of these benign tumors by electricity? With the brilliant results of present surgery as a competitor, one must have considerable courage to offer electricity as a remedy at all in these cases. But as an abdominal surgeon with at least average success, and at the same time as one who interested himself early and enthusiastically in the much-lauded Apostoli treatment when it made its *début* in this country, I am constrained by sense of justice, knowing well both sides, to say that in the interest of those who have fibroids of the uterus, that the knife, even in these times of brilliant successes in surgery, is used too often and electricity too little. If a brilliant hysterectomy with its average mortality of 5 per cent. ended the matter, and the 95 per cent. recovering gained health immediately, we could have but little to say. When, however, we must reckon on the months of nervous suffering with which the majority of these patients who have their tumors removed have to contend, after this operation, before they receive the well-earned cure, and when we take into consideration the not large but certain percentage of fistulas, hernias and other well-known distressing sequelæ following operations, and last but not least when we remember the grim specter of that 5 or 10 per cent. who did not recover, are we not justified if we have a conscience (especially when we realize that a fibroid of the uterus when left alone seldom proves fatal) in giving our patients the benefit of a treatment, which seldom fails to *relieve* these cases, and while it frequently fails to cure, *never kills* and *never*

does harm and never interferes with the success of an operation, if it in the end fails to cure?

Experience in the treatment of fibroids of the uterus by electricity has taught me how to select my cases, when to encourage a patient to receive electricity and when to encourage her to select an operation. Rules which I have formulated and allowed to influence me but not control me (because I make frequent exceptions to them in individual cases) are as follows:

WHEN. ELECTRICITY IS SPECIALLY INDICATED.

1. In bleeding fibroids in women approaching the menopause.
2. In all inoperable cases.
3. In incipient fibroids in women over 40 years of age.
4. In all bleeding fibroids of the smooth interstitial variety which have no symptoms but hemorrhage.
5. In all cases (not accompanied by pelvic pus accumulation) which refuse to have an operation.

TECHNIQUE OF TREATMENT OF TYPICAL CASES.

A typical case for the successful treatment of fibroids of the uterus by electricity is that of the interstitial variety, in which the new tissue is uniformly distributed throughout the uterus, enlarging it to a symmetrical tumor of varying sizes, and proportionately expanding the uterine canal. These cases are almost invariably of the hemorrhagic variety because of the expansion of the uterine mucous membrane. The hemorrhage occurs as an exaggerated menstrual flow. These tumors vary in size from a growth the size of one's fist to a tumor filling the abdomen with a uterine canal many inches deep. Those not exceeding six to eight inches in length and three to four inches in lateral diameter are the ones in which electricity accomplishes the best results.

METHOD OF PROCEDURE.

We seek in these cases, *a*, to transmit through these tumors, for its electrolytic effect, as strong a current of galvanism as the patient will bear, without severe discomfort, and, at the same time, not to severely cauterize the tissue at the poles. *b*, We seek to get acid accumulation at the positive pole located in the uterus, of sufficient density to coagulate the tissues and thus lessen the bleeding. *c*, This same acid at the positive pole we expect too combine with the copper of the electrode and form salts, which salts in solution by the cataphoric action of the current will be driven into the uterine tissues, immediately surrounding the electrode, and as a styptic materially aid in curing excessive flow. *d*, We seek further to obtain the powerful antiseptic effect as the result of chemic changes occurring around the internal electrode, in order to cure the endometritis which almost invariably exists as a painful accompaniment of fibroids.

After an antiseptic vaginal douche the patient to be treated is placed upon a table on her back with her buttocks drawn well to the edge and feet supported by stirrups. The size, shape and direction of the uterine canal is obtained by the use of large, flexible sounds. A large copper electrode then, of suitable diameter, is properly shaped and passed to the bottom of the uterine canal, and the vaginal portion insulated with the rubber muff. This electrode is then attached to the positive terminal of the battery. A clay, or the writer's membranous abdominal electrode, is next

passed under the loose clothing and placed on the abdomen and then attached to the negative pole of the battery.

The current is now gradually turned on while the milliamperere meter is carefully watched and the features of the patient are closely scanned for signs of pain, until the current reaches 100 to 150 or even 200 milliamperes, according to the tolerance of the patient and the size of the active internal electrode. If the active electrode is of the ordinary diameter of from 3 to 5 millimeters, a current strength of 100 milliamperes can be used safely in any particular case for every two inches in length of this electrode which is active. *To be more accurate, the current should not exceed in strength 25 milliamperes for each square centimeter of active surface of the internal electrode.*

So that in the general run of cases one can safely give the patient as strong a current as she will bear without danger of producing excessive cauterization at the active pole. This will vary from 100 to 200 milliamperes. The time of each treatment should be five minutes for the maximum current employed. The treatment should be given as often as every second day. Except in cases of continuous flowing, the treatments are best given between the menstrual periods.

These cases begin to improve almost immediately. The first improvement is in relief of neuralgic and so-called pressure pain. In a few days they find that their general strength is improved. Reflex disturbances such as stomach irritation, palpitation of the heart, occipital headache and backache will be relieved. The patient will begin to eat and sleep naturally. There is a general feeling of well being engendered. In a few days the leucorrhea or purulent discharge from the endometrium will diminish. As the patient arrives near the menstrual period, she finds that the old premenstrual aches are not present, the old despondency is absent. If the treatment has been sufficiently active the menstrual flow will arrive without pain frequently. Occasionally, the first month the flowing is fully as free as usual, although frequently it is much less. If the treatment is continued for two or three months these patients will begin to maintain that they feel perfectly well. All the old distressing symptoms will very often disappear entirely, they will gain flesh and the uterine discharge will become normal. While the tumor will still be apparent to the physician's examination it will almost invariably be found to be much diminished in size. When the time arrives in the treatment that these patients are symptomatically cured, that is when they feel no symptoms, I usually discharge them. I always inform them that the tumor has not disappeared, and that sometime it may again give them the old difficulties. As long as they are free from these they may be satisfied that the tumor is not growing—on the contrary decreasing in size. However, if the old symptoms begin to return I instruct them to seek relief again in the electricity.

The above treatment applies to the typical bleeding fibroids of interstitial variety.

Where the uterus is large and the canal is deep, it is necessary sometimes to attack the mucous membrane by piecemeal, in order to get sufficient concentration with the dose tolerated to accomplish sufficient changes in the endometrium to check hemorrhage. The concentration necessary should approximate 25

milliamperes for each square centimeter of the electrode in contact with the mucous membrane. For example, if a patient will only bear a current of 100 milliamperes, one should select an electrode of copper or zinc or platinum with a diameter of proper dimensions, insulated to all but 4 square centimeters of its distal end. The depth of the canal is measured. Then commencing with the distal end of the cavity, the exposed active surface of the electrode is made to cover in successive treatments its whole surface. By doing this the whole mucous membrane is acted upon uniformly without employing at any time a larger dose than 100 milliamperes.

INOPERABLE AND COMPLICATED CASES.

The cases which are referred to the writer for electrical treatment, in these days when active surgery offers such a large percentage of recoveries from hysterectomies, are for the most part complicated cases, which the ordinary surgeon shuns.

One complication which frequently induces the surgeon to shift the responsibility of these cases, is that of severe purulent metritis and endometritis, accompanied frequently with discharges of gangrenous masses from submucous fibroids, all accompanied with much pain, more or less hemorrhage, and with the discharges inclined to be very offensive. The patients are usually poorly nourished, with white and waxy skin in consequence of septic absorptions. When they reach this stage they are frequently pronounced malignant. The outlook for an operation certainly is not flattering.

Now the writer has been honored frequently by having such cases sent to him for electrical treatment, by different friends of his who are conscientious surgeons.

What have we to deal with? Usually a tumor of large size extending to the navel. It is soft, with nodular masses projecting from its peritoneal surfaces. The cervix is soft and patulous, with a canal large and irregular. Sometimes a small nodular mass is presenting at the cervix. This is usually soft and easily broken down. The endometrium and all cavities from which masses have been projected or from which masses have sloughed away are infected and ulcerating, and emitting a discharge which rapidly becomes offensive. From the large mucous membrane periodic and irregular uterine discharges are occurring, serving to swell the already copious outpour.

The writer has treated by electricity and symptomatically cured several of these cases in which a diagnosis of cancer had been made by men of more than ordinary talent.

I prefer, when it is practicable, to dilate the canals carefully in these cases, and remove with a dull curette the superficial debris before beginning the electricity.

I then select one of the largest copper electrodes which can be inserted and make it the active positive pole, inserting it to the bottom of the canal with its whole surface uninsulated. With the abdominal electrode in place, a current is gradually turned on until a strength of 200 milliamperes is reached, or the maximum amount under that strength that the patient will tolerate.

These treatments should be given every other day. Antiseptic douches should be employed night and morning.

These cases respond rapidly. The powerful antiseptic action on the mucous membrane makes itself

apparent by the decreased odor of the discharge. The passing and withdrawing of the electrode opens and provides free drainage for the secretions. The tissues become tanned by the salts of copper which are forced into them by cataphoresis, and the discharge of blood is lessened. The patient is toned by the general effect of electricity on her system. In a word, it is frequently marvelous what a transformation will take place in these apparently hopeless cases in a few weeks of judicious galvanic treatment.

While these cases are apparently hopeless, oftentimes when they are "given over" by the surgeon, they are frequently symptomatically cured by this simple remedy. The writer has a long list of such cases, and they constitute some of the most satisfactory work he has ever had placed to his credit.

INOPERABLE TUMORS TREATED BY OTHER THAN THE INTRAUTERINE METHOD.

There is a class of complicated cases of different kinds in which it is impossible, because of the contortions of the growth, to enter the uterine canal with an electrode. Occasionally the tumor has displaced the cervix so that it is drawn high in the vagina above the bladder, out of reach of finger or sound; while again it is drawn up posteriorly with the uterine canal forming an acute angle with the vagina. In all cases where it is impossible to reach the canal, if they are treated by electricity, it is necessary to employ it without the advantages of an intrauterine electrode.

Only in the most desperate cases, in which submitting to an operation is clearly suicidal, would one think of employing electricity as a means of treatment, when an intrauterine electrode was impossible. But it is in just these cases, with their distressing neuralgic and pressure symptoms, with dyspeptic complaints and bowel irritations, the result of reflex nerve disturbances, in which an operation is discouraged, that we find patients ready to catch at any straw.

In many of these cases I believe that electricity not only offers a straw, but a veritable lifeboat to their despairing bodies.

When an intrauterine electrode is not practicable, then we should employ some other form of internal electrode which will have the effect of causing the current of galvanism to pass directly through the largest portion of the tumor.

If the vagina is not distorted so but that a vaginal electrode may be employed, that instrument should be used (Fig. 7), placing its active point posterior to the tumor. This should be made the negative pole. The abdominal electrode should be placed in such a position that the largest diameter of the tumor is interposed between it and the vaginal electrode. A current of 50 to 100 milliamperes may be safely employed, if tolerated, for a period of five minutes. The treatments may be given as often as every second day, and in a few cases every day where it is well borne.

When a vaginal electrode can not be employed to advantage in these cases, a rectal electrode (Fig. 8) should be employed. This should be placed well up opposite the tumor. It should be employed as the negative pole. It should have an active surface of more than eight centimeters and the current should never exceed 200 milliamperes.

All we can expect to accomplish in this treatment is that beneficial action derived from passing a strong direct current through any tissue containing muscles, nerves, lymphatics and blood vessels, viz., a powerful

trophic stimulation to the part, and incidentally a powerful general tonic effect on the general system.

These cases get great relief. Neuralgias stop. Troublesome abdominal reflexes cease. Circulation is improved. Nutrition is stimulated. Sleeplessness disappears. Bowels are stimulated and relieved of troublesome distension symptoms. The tumors often seem to decrease in size. The degree to which each of these symptoms are relieved varies, of course, much in individual cases. The writer has seen a large number of cases completely and for an indefinite time, relieved of all these symptoms. In fact, some of the most gratifying cases of relief he has, are of this variety. Their cases are apparently so hopeless that often any relief is very gratifying.

THE RELATION OF GENERAL DISEASE TO THE FORMATION OF CATARACT.

Read before the Medical Society of the District of Columbia.

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The etiology of cataract may be classed under the following heads: Disease of the eye; diseases, which by some influence, exerted through the blood or the nervous system, interfere or impair the nutrition of the lens; and senile degeneration, certain pathologic conditions within the eyeball, especially of the choroid, are great factors in the production of cataract; yet may not the general or constitutional trouble manifest itself upon the choroid and these changes be secondary to the lowered health condition? The occurrence of cataract after middle life indicates the influence of senile change. It is generally conceded that senility or age exerts a powerful influence in the production of this condition of the lens. Cataract, in opinion of the writer, is not due to age, in the sense as we say that poisoning is due to the poison, or iodism to the iodine; it is senile in the same sense as atheroma of the arteries; it is a condition found associated with age, but all aged persons do not suffer from this condition. Clinical experience teaches us that the so-called senile cataract, after its beginning, is not steadily progressive, but may be marked by a steady increase, or periods of little or no change, and sometimes by a diminution of the opacity. Cases are on record where the patient having an incipient cataract, was told that it would be rapidly progressive; the physician was then informed that six years before the patient had been told the same thing by another ophthalmologist, and that between these times no diminution of sight had occurred, nor was the opacity greater. We frequently meet with cases the etiology of which is obscure, therefore, the causes which originate the opacity is of importance and of great interest. If the general physician were to become more familiar with the use of the ophthalmoscope, and were to make a careful examination of the media and fundus of the eyes, as one of the methods employed in the study of the symptomatology of general disease, much valuable information could be thus obtained in this direction and the ophthalmologist would then receive valuable data and not be compelled to gather it from scattered reports through the literature, the value of which may be questionable, and may only prove a coincidence; also, he will not have to

rely upon the statements of patients in ascertaining all the particulars as to the beginning of the opacity, and as to any history of general disease. Clinic patients are very uncertain and their statements are not always reliable. In the hospitals and clinics the physician and the ophthalmologist serve together in their respective capacities; this would seem to me to be an excellent opportunity to combine their skill in the study and treatment of general diseases from beginning to the end. The information thus gained would be invaluable, and add much to the literature of medical ophthalmology. I have for this reason brought this subject before the Society, hoping that it may be the means of gaining the aid and coöperation of the general physician in our researches along these lines.

I shall now present to you some of the general diseases which seem to have some relation to the formation of cataract.

Malaria.—Bagot reports two cases in which he says that two mulattoes after a severe malarial illness, had diminution of vision, and in a few months double soft cataract developed, which were operated upon, and visual acuity resulted, there being no disease of the fundus. Malaria will, we know, produce lesions of the vitreous and choroid, hemorrhages, which after absorption, leaves atrophic areas in the choroid; also, muscular paralysis, amblyopia and blindness, sometimes with no ophthalmoscopic findings. Then again it may be associated with congestion and edema of the papilla. Dubelir reports a case of blindness with exophthalmus and intermittent strabismus. Sulzer's cases had hyperemia of the disk, slight obscuration of the fundus, photophobia and seeing sparks; other complications which have been observed are iritis, suppurative choroiditis, chorio-retinitis, unilateral retro-bulbar neuritis with central color scotoma and hemianopsia.

Epidemic Influenza.—The epidemic of recent years seemed to affect the eyes to a considerable extent. In a variety of inflammatory affections Rampoldi made an analysis of 532 cases of eye affections which he saw in the spring of 1890; among that number were 48 who attributed their ocular trouble to this disease. These were corneal inflammations and abscesses, irido-cyclitis, conjunctival troubles, detachment of retina and muscular troubles, both internal and external. It would seem that such a disturbance as this disease caused in the eyes of those patients, that it might be more than probable that cataract would follow. In my own experience, this disease produces in those suffering from it the various ocular diseases such as I have named; also optic atrophy, both unilateral and double.

Typhoid and Typhus Fevers.—These two diseases cause considerable ocular disturbance, and we frequently find patients who state that their eyes began to give them trouble or to fail them after some intense febrile manifestation. Arens reports two cases, brother and sister, whose eyes became cataractous after an attack of typhus fever; an extraction gave good results. Trelat reports a cataract following typhoid fever, in a young girl. Fonton reports three cases of cataracta punctata, post-typhoidal cataract, which he thought was due to the disturbed circulation. Of these three cases, two of them, one a 28-year-old man, the other a 42-year-old woman, went on to maturity, and were extracted with good results. During convalescence, paresis of accommodation, with dilatation of pupil is frequent, not a true paralysis, but

as a part of the general debility; there is a tendency to phlyctenular affections of conjunctiva and cornea, sometimes passing into keratomalacia. Von Peterhausen reports double neuro-retinitis with macular hemorrhages. Leber and Deuschmann reported a case of double blindness with secondary optic atrophy and pigmentation of the entrance of the nerve. A case of a boy who had typhoid, examined by the writer, had an affection of the nerve and retina; his sight was much affected and his accommodation paralyzed. Four members of the same family had typhoid fever and the eyes of three were affected. The literature is full of the ocular affections due to these diseases.

Diabetes.—The frequent development of cataract in this disease is well known, and is due to disease of the vessels in the ciliary processes and to the disturbance of the nutrition of the lens. Knies states that it occurs mostly in young people, and that the cataracts are of a broad, striped variety, soft in character, which are associated at first with swelling of the lens. Frey reports double cataract in a girl of 9 years of age, one year after the beginning of the disease. The theories as to the causes of development of cataract in this disease are various. Knies cites the following, which have been advanced: 1. General marasmus, although feeble diabetics are not always attacked by cataract. 2. The removal of fluid from the lens through the medium of the sugar dissolved in the tissue juices; in two-thirds of the cases sugar has been detected in the lens and still more often in the aqueous humor and vitreous. According to this theory, the presence of a certain amount of sugar for a certain period, would produce cataract in all diabetics; this is not borne out by experience. Leber says that the clear as well as the opaque lens may contain sugar in diabetes, and Becker states that the cataract of one eye may contain sugar while the other does not. 3. The conversion of sugar in the aqueous humor into lactic acid, is stated as a cause. As the aqueous fluid is alkaline in diabetic cataract this seems to be a hypothesis; and then the opacity does not commence in the anterior cortical substance. As to the pathology of this disease, Deuschmann reports four cases of diabetic cataract, in which he found proliferation of the layer of pigment cells on the posterior surface of the iris. There were vesicular cells in the lens, and all changes from normal nuclei to entire nuclear disintegration; he therefore concludes that the opacity is due to a necrotic tendency of the epithelial structures; that if the epithelium is normal no pathologic process of diffusion can take place, even should the aqueous and vitreous contain sugar, but when the lenticular cells become necrosed, there are currents of abnormal diffusion set up and opacity is the result. Knies says that the cataract develops under the same conditions as spontaneous cataract, the result of processes in the choroid and particularly in the ciliary processes, which supply nourishment to the lens, the swelling of the lens and the proliferation process in its elements would tend to show that irritating substances are present, which stimulate the living cells to proliferation and then cause their destruction. Galezowski reports 544 diabetic eye cases, in which 31 per cent. of them had cataract and only 19 per cent. had retinal changes. Maulthuer believes that the abstraction of water from the tissues, with the presence of glucose, produces cataract, in diabetics.

Syphilis.—By the disturbance of the nutritive pro-

cess in the eyes secondary cataract sometimes follows this disease. Bos describes several cases of true syphilitic cataract, seen in Bandall's clinic, also speaks of cases seen by Rominee and Heller. He divides them into two classes, capsular cataracts in which iritis is present and lenticular or true cataracts, which are directly due to this disease, and are not frequent. They appear in the secondary period of the disease, and are soft in character, with no inflammatory process of the ocular coats.

Rachitis.—This disease is often the cause of laminated cataract, due to an intense disorder of nutrition in the lens. If it develops at a very early period or is intra-uterine, a central cataract forms. When this adheres to the capsule of the lens at the anterior and posterior poles, it contracts into a slender opacity and forms the so-called spindle-shaped cataract. Laminated cataract appears to be cortical in character. The opacity may at a later period move away from the capsule on account of new normal cortical substance being formed. This form of cataract is symmetrical in both eyes, but sometimes is unilateral, and sometimes congenital. The larger number of cases develop in the early life of rachitics. Knies says that it is not the rachitis, but the violent and long continued convulsions that cause the cataract, and that these spasms must occur at a period when the growth of the lens is still active, *i. e.*, before six years of age, to cause the lenticular opacity. Arlt does not believe the real cause to be the general convulsions and the consequent concussion of the body, but the nutritive disturbance of the lens due to the violent spasm of the ciliary muscle associated with spasm of the muscular coat of the vessels. The opacity usually develops from a few days to several weeks after the convulsions; in rare cases it spontaneously disappears. In cases of congenital cataract, or if developed at a very early period and is very dense, psychic blindness may develop after an extraction, due to the imperfect development of the tracts between the brain and the eye. Horner says that an analogous condition is observed under similar circumstances, in another organ, which is genetically coördinate with the lens, *viz.*, the enamel of the permanent teeth, particularly the upper incisors, exhibit horizontal grooves and ridges, *i. e.*, places where the enamel is alternately present and absent, the change is only distinctly seen during the first years after the appearance of the teeth.

Diseases of the Skin.—Mooren states that he has often seen cataract develop during chronic cutaneous eruption. Rothmund saw it develop in early childhood among the children of three families, these having a peculiar skin affection. He states the disease to be reticular, fatty degeneration of the stratum of Malpighi and of the papillae, with secondary atrophy of the latter and rarefaction of the epidermis; this disease began from the third to the sixth month of life, the cataract between the ages of 3 and 6 years. Of fourteen children of three families living in three adjacent villages, seven suffered from skin disease, and five of these had cataract. Nieden observed the formation of cataract in a girl 22 years of age who suffered from telangiectatic dilatation of the capillaries of the entire integument of the face; he also emphasizes the relation between skin diseases and cataract.

Whooping Cough.—Wright reports a case of a boy, 18 months of age, who had this disease and afterward developed cataract. Knapp saw bilateral blindness, from retinal ischemia. Loomis says blindness in per-

tussis occurs almost exclusively in those who die later of pneumonia. Jacobi reports cases of sudden maximum mydriasis and immobility of the pupil, together with double optic neuritis. Alexander and Landesberg, both report hemorrhage into the optic nerve, terminating in optic atrophy. The latter person, also saw the obliteration of the two upper branches of the retinal arteries and subluxation downward of the right lens.

Nervous Diseases.—Logetsehnkow reports fifteen cases between 16 and 37 years of age, who suffered from convulsions and who afterward developed cataract; all had had good vision except one, before the seizure. He thinks that the cataract is in relationship not alone with the convulsive seizures, but with the nervous lesion, which is the cause of the convulsions. Sewill reports a case of spasm of the right orbicularis, and the subsequent development of cataract; the spasm was caused by a carious tooth which upon being removed, ceased. He explains this phenomenon as due to trophic changes in connection with the trigeminal ganglion. Bock reports five cases between 34 and 39 years of age, who had meningitis and who subsequently developed cataract, underwent an operation and good vision resulted. No convulsions were present in these cases.

Pellagra.—The characteristic ocular sign of this peculiar disease is night blindness, although ophthalmoscopic findings are not uncommon. Stroppa saw two cases of optic atrophy; Neusser, diplopia and amblyopia; Rampoldi, retinitis pigmentosa, optic atrophy, disappearance of the choroidal pigment, ulcers and necroses of cornea, opacities of lens and vitreous.

Nephritis.—Deuschmann calls attention to the possibility of a connection between this disease and cataract; he reports twenty-one cases of lenticular opacity, finding albumin in 7 per cent. of these, and in six established the presence of nephritis. In 1881 he found among fifty-three cataract patients 9.5 per cent. of these had Bright's disease. Still later he examined 230 patients with uncomplicated cataract, 5 per cent. of whom were nephritic, and 11.1 affected with Bright's disease. Landesberg examined 376 patients with uncomplicated opacity of lens; he found sugar in the urine of 3, sugar and albumin in 2, and albumin in 44, and 327 with normal analyses. Rothzeigle found albumin in about half of his cases, and describes fifteen cases of chronic nephritis with cataract. Evezky, in investigating Deuschmann's theory, adopted three methods; he examined 200 cataract cases for albumin, 35 being under and 165 over 50 years of age. In thirty-eight he found albumin, 19 per cent.; in sixteen the albumin was constant; in 9 per cent. there were albumin and tube casts, these were under 50 years of age. He examined ninety-seven cases of chronic nephritis; seventy under 50 and twenty-seven older. The eye affections were albuminuria, retinitis, cataract, posterior synechia, opacities in vitreous, detached retina and synchysis scintillans. Incipient cataract was found in eight cases 8.2 per cent. Of 584 old persons examined 15.2 per cent. had incipient cataract, of these 2.09 per cent. were in the 6th decade, 45.75 in the 7th, 52.6 in the 8th and 66.6 in the 9th. In fifty-nine cases, 10.5 per cent. of albumin was found in the urine, and in 1.6 per cent. tube casts; 10.5 per cent. of the cataract cases showed albumin; of the non-cataractous, 9.8 per cent. True nephritis was found in the cataractous

cases in 0.8 per cent. and 2.1 per cent. in the non-cataractous cases. He concludes that albumin does not mean nephritis, that nephritis and cataract may combine, that there is no cataract in young nephritics, and in old ones, no more than is usually found in those without the sign of Bright's disease. The exact relationship between the development of cataract and nephritic disease, may not be positively shown. Yet there is evidence sufficient to lead one to believe that there is some such relation and in all cases of incipient cataract the urine should be carefully examined. Webster Fox very wisely says, "Whether albuminuria causes cataract may be a matter of doubt, but one is struck with the frequent coincidence of albuminuria in cataract patients. Michel says that cataract and albuminuria are the results of alterations produced simultaneously in the eyes and in the kidneys, from the same general cause, arterio-sclerosis.

Diseases of Heart and Blood Vessels.—Michel says that opacity of the lens is a symptom of a local or general disturbance and that cataract is caused by sclerotic changes in the walls of the carotid, in fifty-three cases he examined, fourteen of them had monocular cataract with atheroma of the carotid on same side; in fourteen there was double cataract, more developed in one eye corresponding to the side of the greater atheroma; in nine cases there were double cataract, which developed simultaneously with a double carotid atheroma; in eight cases of cataract there was sclerotic change in the carotid and on this same side there was thyroid enlargement. Karwat gives cases which confirm Michel's report, stating that there is a relationship between atheroma of the carotid and the formation of cataract.

In conclusion I would enter a plea to the general physician to aid us as much as possible in our research in this direction, that the etiology of many of our cataract cases which are now obscure, may be cleared up and better understood. I would suggest that the eyes be tested for their visual acuteness, at regular intervals; the interior of the eye should also be examined to determine if cataract be present, and as to how far the sight is affected by it, and if other causes are present, how far the impairment of vision is due to them. We must exercise careful supervision of the patient for any symptoms which point to impairment of the general health, and especially for any which show trouble of circulation and digestion. The interest of the patient demands this supervision, for by it we will become more familiar with the nature, prevention and removal of the general conditions which may be the cause of the formation of cataract. As before stated, in all cases of incipient cataract, careful analysis of the urine should be made at different intervals. Though we may not have proven a direct connection between general disease and the formation of cataract, yet it can not be denied the existence of a predisposing cause in all diseases where there is impairment of nutrition and lessened vitality.

1016 I Street, N.W.

Cold Baths in Delirium Tremens. The *Presse Méd.*, 1896, No. 4, announces that cold baths, eighteen degrees C., have been found very effective in quieting even the most violent attacks of delirium tremens. The patient is placed in the water up to his shoulders and it is poured over his head. The bath is repeated two or three times in the same day. The effect was surprising in two cases described, where all other treatment had been without results. A few glasses of warm wine were given afterward, followed by quiet sleep for two hours.

REPORT ON AMPUTATIONS AT THE JUNCTURE OF THE TARSAL AND METATARSAL ARTICULATION.

Delivered at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY W. J. GALBRAITH, M.D.
CHIEF SURGEON UNION PACIFIC RAILWAY.
OMAHA, NEB.

I regret exceedingly that neither of the cases I desired to exhibit at this meeting are here. Owing to the fact that I am obliged to return to Omaha to-night, they will not be here in time for me to exhibit them. I secured transportation and gave them the necessary means to pay their expenses, but some unavoidable accident has delayed them.

I believe the treatment that was applied to this case and one other since that I have operated is entirely unique. It is very difficult for me to describe to you accurately the treatment this case received. It was impossible for me to make a Lisfranc operation on account of the destruction of the tissues a little proximal to the tarsal and metatarsal articulation. In the customary treatment of these cases a Symes or Pirogoff operation would undoubtedly have been made. I explained to the patient, who was a railroad man, that I would like to experiment to a certain extent upon this foot, that the experiment would not be injurious to him in any manner, only that it might retard for two or three weeks the repair in his case. He was very willing that I should try anything that would save any part of his foot. The tissues, as in many railroad injuries, were completely pulpified, lacerated and contused. The point of complete separation, as I have described, was at the tarsal and metatarsal articulation. You will all readily understand the amount of retraction there is in the skin after an injury of this kind. I proposed to the man that I make a complete section, that is, taking my knife and trimming all the tissues transversely at the seat of the injury across the foot, going back just a little above the metatarsal articulation. The head of the metatarsal bone was removed by the saw or forceps, I do not remember which. It was my object to cut it as high up into the tissue as possible. Thorough antiseptic precaution was preserved throughout the entire operation. A moist dressing was applied for four or five days, and about this time it was changed and a stimulating dressing, composed of equal parts of sterilized balsam of Peru and sweet oil was applied directly over the wound, in order to stimulate and secure as early as possible a granulating process. After securing, at the end of about eighteen or nineteen days, a good bed, so to speak, of healthy granulations, I skin-grafted after the method of Thiersch with excellent results.

Now, I believe, in fact I am positive, that I saved at the least several inches of that man's foot, enabling him to perform the duties of a switchman nearly as well as he did before he met with the accident. It would be utterly impossible with a Symes or Pirogoff operation for a man to perform these duties. You know as well as I that many surgeons to-day, especially in the East, are recommending in preference to the Symes and Pirogoff operation, an amputation of the middle or lower third of the leg. Now, what is the result? In this case we have succeeded in getting a foot that a man can perform his duties with. He goes about nearly as well as he ever did. And the result to the railroad is what? This man's case was settled for \$200. If a Pirogoff operation, or an amputation at

the middle third, which is often preferred, had been performed, the amount paid would have been perhaps \$2,500.

Now there are a great many points to be observed in the treatment that I have applied to this case, and the other one which has been equally as successful. You all readily understand how slow granulation takes place over a cartilaginous substance. It requires weeks and even months, and by the time you have secured a granulating surface over the articulating surface of the bone, the surrounding granulations are exuberant, broken down, or indolent, and your skin-grafting is a failure. The object is to secure as good a bed of granulations and at as early a date as possible, and I believe you will accomplish the same results that I have in this case.

DISCUSSION.

DR. H. REINEKING, of Sheboygan, Wis.—I was very much interested in the report of Dr. Galbraith, on account of two patients which I have recently had occasion to see. I will first speak of a case Dr. Etley, of New Richmond, presented at the last meeting of the Wisconsin State Medical Association, a case where all the soft tissues of the sole of the foot had been torn off in a railroad accident. As he described it, the bone was perfectly bare. He resorted, not to the skin-grafting of the tissues, but to skin transplantation after the plan of Krause. He showed the patient at that meeting and the result was indeed beautiful.

In a case that I treated recently, an injury resulting from a boiler explosion, the injury consisted in a compound fracture of the olecranon process with a severe scalding of the entire posterior surface of the arm. The burn was of the third degree. The body was also extensively scalded, but in that location just where the elasticity was most wanted after the bones united, there was a very deep burn. Here I resorted to the same mode of skin transplantation, transplanting the whole thickness of the skin down to the adipose layer. The area covered had a length of fourteen inches, and at the widest portion, four to six inches in width. Four elliptical portions were taken from the patient's thigh and cut into small sections and transplanted to his arm. Every particle of this skin, I am glad to say, adhered and in about two weeks' time success was assured.

This process of skin transplantation I believe superior to Thiersch grafting. It is not necessary to have a granulating surface, in fact the granulations were all carefully scraped away in this case. According to Krause, skin grafting in this way can be made on bare bone, cartilage, fibrous tissue, or almost any tissue in fact as long as the surface on which we transplant is absolutely aseptic. Asepsis is the one great requirement for success in these cases. It is not necessary to first have a healthy granulating surface: it can be done in recent injuries; it can be done in various shapes after scraping away the entire skin and, as I say, the healthy granulated surface is not essential.

DR. MAYNARD—In connection with this case, and in the same line of thought, about 1876, or 1877, I learned how to borrow skin for grafting. I did not know anything about grafting then, but I found in an arm injury, for instance, if you cut too close and get a slough just take a piece of strap and put a pine shingle on and make a little steady pulling and it is wonderful how much skin you can borrow with which to cover your granulation. I seldom graft if I can borrow. Make a steady pressure and it is wonderful how the skin will give and will grow. It will apparently make new skin. It probably would not have answered in Dr. Galbraith's case, but had it been my case, I should have put on a little slow tension with a rubber band or a rubber strip over the front and base of the foot, and would have tried to get it that way. If you will try this you will be surprised with the results you will get.

DR. BEVAN—I would like to make one remark in the same line of work on the importance of conservative work in finger and toes and hands in railroad surgery. For a number of years I have made it a point practically never to make a peremptory amputation of any part of the hand after a railroad crisis, except where the part was entirely crushed from the hand, and have not cut away any portion of the tissue, except that which was entirely destroyed. Next in this connection, is the value of a wet boracic acid or borax dressing. I have always employed wet dressings and kept them continually wet in these cases until I could determine the amount of tissue that had been destroyed. Borax or boracic acid in the strength of about one to one hundred is not antiseptic, but it does inhibit the growth of germs and I have repeatedly taken fingers, which were turning black and becoming gangrenous, and wrapped them in wet boracic acid and watched them for from ten days to two weeks. They have simply mummified without any infection. One point I would like to mention in regard to Thiersch's graft and skin transplantation: Skin transplantation is the ideal operation if it can be made successfully. It can not be made successfully in enough cases to warrant us in employing it. Skin transplantation certainly in large masses, as far as my own experience is concerned, and it is fairly wide in this matter, has not been successful in more than about half of my cases: in about half the cases there has been failure of fusion, and this same experience has been met with in the hands of my colleagues at the Presbyterian Hospital. There is this objection to transplantation, that if you remove a large area of skin and it fails to unite you have done an injury to the patient and he feels that he has been to a certain extent mutilated by the removal of the entire thickness of his skin. In the Thiersch graft, where you split the skin, you can remove fifty square inches from the patient's thigh, and in a week he is practically as sound and well as ever. So I do not believe that we could make this statement that skin transplantation will take the place of the Thiersch graft because of the facts that I mention.

DR. REED—I only have a word to say. I regret I did not hear all the doctor's report. I wish to speak only in reference to the manner of transplantation of skin. The objection spoken of by Dr. Bevan is one which we all know patients are liable to make: that is, in being skinned themselves in some part to cover some other part. It is sometimes necessary to borrow integument from some of their neighbors, and it seems to me that the use of the frog skin in cases of this kind obviates to a large extent this objection, and would give, so far as my experience is concerned, practically the same results. I know of several instances in which the frog skin has been used. One I recall in a patient who had a very large ulcer. This, however, was a varicose ulcer, but it answers the same purpose to demonstrate the use of the transplantation of skin in a case in which I had little confidence. In this case we used a live frog and skinned off the integument of the abdomen and placed it over the ulcer and the results were quite gratifying, rapid, and not only rapid but they were perfect, just as much so as in another case that was operated about the same time in which we used the Thiersch graft. I simply make this suggestion in the hope that it may help out in cases of this kind where we can not get integument safely from the patient or his friends.

DR. KIBLER—One word on the subject of skin graft. I have a plan of my own on that point which I have not said much about. I do not use skin at all, but I use the epithelial tissue, the rough, horny epithelium that you get from a working man's hand. I recently had a case of skin injury received by an elderly gentleman sixty odd years old, from scalding, some four hundred square inches in area, and to-day his skin is perfect and his muscles are seemingly as limber as ever, without much contraction. Simply take the rough, horny epithelial tissues which you will find upon the palm of a working man, or upon

the sole of the foot of any man, and you have a good substance for grafting as you can possibly ask for. Try it.

A MEMBER—I will ask the doctor to give the technique.

DR. KIBLER—First the ulcerating surface should be washed thoroughly with a boracic acid solution; then take a little piece of thin tissue from this horny surface that I speak of, not thicker than tissue paper and not larger than a split bean perhaps. This is placed directly upon this raw surface, covering it with a protective, over which is put adhesive plaster. When the plaster is removed it does not disturb the grafting whatever, whereas, if you should put the plaster directly on the grafts themselves, they would likely be withdrawn whenever the plaster was removed. This little mackintosh covering or oiled silk, if you wish, affords a substance to give you the finest results.

THE USE OF COCAIN IN MINOR AMPUTATIONS.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons held at Chicago, Ill., Sept. 25-27, 1895.

BY C. M. DANIELS, M.D.

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Appreciating that at this, the second meeting of the Academy of Railway Surgeons, many papers of highly scientific and scholarly character would be read, I have ventured to tender one that may be as a rest "between the acts," but of a strictly practical character, and based entirely upon personal experience. I offer this brief paper as a fragmentary contribution to the literature upon cocaine as a local anesthetic.

The question and study of anesthetics is always germane to the subject of surgery, and as railway surgeons we are close observers of the action of chloroform, ether and the other essentials used by way of inhalation for the purpose of producing neurotic narcosis for the relief of pain in our operative work.

Safety is, or always should be, our first consideration. The loss of sensibility, known as anesthesia, may be general or local, being dependent upon the agent and method used to induce the same; and the scope of this paper deals entirely with that of a local character. If experience is of value, I believe it will lead many of our surgeons to entirely abandon the use of chloroform, ether, etc., in minor amputations.

I feel that there are many members of the Academy, as well as others, who may have greater experience than myself, but from the meagre amount of literature upon the subject, they certainly have not given us the benefit of their experience. The text books mention the subject of cocaine in minor surgical operations, but do not clearly define the technique in a way sufficiently practical to cause the surgeon to give the subject but a passing glance.

All do not have the benefit of hospitals, with trained assistants and conveniences and I hope this paper may especially benefit those surgeons who do much of their work out along the line where minor amputations are of frequent occurrence and the surgeon is without competent aid.

For the past eighteen months I have used muriate of cocaine in very weak solution, *exclusively* in minor amputations and feel like shouting "eureka" at the conclusion of every operation, except, of course, that I am not entitled to use the personal pronoun.

For the benefit of those interested, I will briefly detail method of procedure, taking for instance a crushed finger.

If the stump is long enough, after putting it through the preparatory toilet of soap, water, ether, etc., I tie

a narrow wet bandage which is always at hand and acts as a firm cord, tightly around it close to the knuckle joint. Then with a clean hypodermic syringe and needle I inject about ten or fifteen minims of a 2 per cent. solution of cocain, freshly prepared with sterilized water, immediately behind the proposed incisions, introducing the needle as follows: First upon the dorsal aspect letting it enter about one-half inch to one side and expelling three or four drops of the solution. I then partially withdraw the needle and gently turn to the opposite side expelling the same amount; then partially withdraw it again up to the median line and deposit an equal amount at the point of entrance immediately beneath the skin.

You will note that fully one-half of the finger stump has received the solution and with but one puncture of the skin. Turn the hand over and repeat this from the palmar surface and in six minutes go ahead and amputate the finger and your patient will be in blissful ignorance of the pain. After completion of the operation and before closing the flaps squeeze, or I might say "milk" out, the cocain solution from the tissues, which can be quickly and readily done. Remove the constricting bandage, see that all bleeding is controlled, close the flaps in the usual way, and you will have performed a painless operation and one entirely free from the danger of poisoning, for if properly done, in my judgment, there will not be to exceed $\frac{1}{3}$ of a grain of cocain absorbed, which amount we all know is absolutely harmless.

One-fourth of a grain for each finger I deem ample, and as I commenced with a 4 per cent. solution in the early part of my experience and am now using but a 2 per cent. I think the strength may be still further reduced, but recommend that a larger quantity of the solution be injected, practically "flushing" the tissues at and immediately above the point of operation.

For operations at the knuckle or immediately behind, I use the same method with the constriction, but find it necessary to work a little more rapidly on account of absorption of a portion of the solution as the operation proceeds.

While I have especially referred to the hand in a descriptive or explanatory way, operative work under cocain may, in my judgement, be liberally extended.

DISCUSSION.

DR. ELISHA GRISWOLD—I would like to ask Dr. Daniels whether in his opinion, when injecting cocain as described in this paper, the anesthesia extends from the point of injection some considerable distance from the end of the finger: that is to say, suppose you make a flap half an inch from the end of the finger, at which point you inject the cocain, is that point anesthetized as a general rule? Furthermore, I will say, I have used cocain a good deal in small operations, not much in amputation of the fingers, but to a considerable extent in the excision of small tumors. In some cases I have used it as a matter of election because the patients desired it. One patient, an old lady, 81 years of age, had an epithelioma involving the bridge of the nose and extending slightly into the cheek. She had insufficiency of the aortic valves, so that she was not a good subject for anesthesia by the ordinary method. But she was quite willing that cocain should be tried, and in her case about three years ago I injected it at points about one-quarter of an inch apart all around the tumors as near as I could. I used a 4 or 5 per cent. solution. In removing the tumor I cut a branch of the nasal artery, but by compression and torsion I was enabled to stop the hemorrhage, although it was quite a time before it was completely arrested. An effort was made to cover the open surface of the wound as well as possible with skin, but

I could not do so because there was not enough skin with which to do it. When I went to insert the sutures some little distance beyond the point at which the cocain was injected, the patient felt the needle somewhat but not severely, and I find this to be the case with the removal of other tumors. In the case of a fatty tumor on the back I found, after removing the tumor and getting ready to insert my sutures, that the patient felt the needle, although she had not felt the knife in the removal of the growth. And so I would like to know if Dr. Daniels in his experience in amputating fingers with cocain, can tell us whether the anesthesia extends from the point of the finger so as to give plenty of room to operate, and so that the patient will not feel pain in making the flap.

DR. HENRY W. COE—Any one who has used cocain to any great extent in surgical practice, especially in very strong solutions, must have seen some very sick patients, for he does not know beforehand exactly how his patients are going to react. I consider cocain a dangerous analgesic, as ordinarily used. I think it is dangerous where a patient has serious heart trouble, and that in such case chloroform would be preferable. I know, of course, that the matter of personal equation comes in here. I know I would much prefer to use chloroform. I remember a case in which I began to operate for hemorrhoids, in which some authors would have said that cocain should always be used, and I am sure will never use it again. My patient came so near dying that I was frightened half to death myself. The method the doctor advocates, however, consists largely in complete saturation of the tissues. He uses a 2 per cent. solution. I have used even a weaker solution than that and a considerable amount of it with which to saturate the tissues. If we use a weak solution we need to operate rapidly because of the fact that the fluid will pass out through the wound, which is a point the doctor did not bring out in his paper.

DR. WEBB J. KELLY—Dr. Coe speaks in the discussion of the use of cocain during an operation for hemorrhoids. I do not know what the experience of other members of the Academy has been, but it has been mine when any operation has to be performed for hemorrhoids or other conditions in this locality, that chloroform or any anesthetic is likely to act badly: and I think probably that this fact is one reason why he has had so much trouble with cocain in operating on the rectum. I have had experience with cocain personally, inasmuch as Dr. Straight, last winter, sawed out a large piece of bone from my nose, using a 20 per cent. solution. They walked me around for three or four hours in order to keep me from dying, consequently I know what it is. Personally, I do not like to use it.

DR. L. E. LEMEN—I do not feel that I can go home satisfied without contributing a little to this paper in the way of discussion. For some time I have performed all amputations of the fingers very much in the manner that the essayist has described, more particularly in those cases that come to the physician's office where it is quite inconvenient to use a general anesthetic. If a general anesthetic were used in one's private office, he would have to wait until the patient recovered from the influence of the anesthetic, and send for a janitor to clean up the mess afterward. I have used a 4 per cent. cocain solution for several years in amputating fingers, the amount being governed by the number of drops I would put in. I wait for fifteen minutes instead of six, after using the injection before I begin my operation, and have my attendants watching to see whether the patient flinches or not. The anesthesia lasts from five to eight minutes, which gives the surgeon the ordinary length of time to perform the operation and insert sutures. Instead of using gauze I use rubber bands. I take a rubber band, drop it in the solution, if I use antiseptics (I keep sterilized water in my office for this purpose), keep it in the solution for a little while prior to giving the injection of cocain, and then I put the band around the finger so as to localize the anesthesia. This

controls hemorrhage completely. I have had no trouble from the use of cocain in this way, and I have amputated as many as two and three fingers at a time. I would amputate one finger, then I would inject the second finger, operate, sew up the flaps, disposing of one finger after another. There is only one objection to cocain, and that is its tendency to produce more or less edema in the neighborhood of the tissues that have been injected with the solution. I believe any solution, even pure or salt water would produce the same effect. While it may not come under the head of railroad surgery altogether, I will say that in children it is not well to use it because they struggle against your efforts. In adults I use it for the purpose of circumcision, and use a rubber band to control the hemorrhage as well as to localize the anesthesia. We will find subjects occasionally on whom, owing to their nervous temperament, no matter how slight the operation may be, cocain has a depressing effect. I have seen people faint from ordinary vaccination, even before I put the lancet to their arms. It is the mental effect, the very thought of being operated upon. In these subjects, where the nervous temperament exists to any great extent, I believe it would be better to use an ordinary anesthetic on account of the depression which may continue for some time: in other words, there is more shock than we ought to have from a simple surgical operation. In people of a nervous temperament I would advise a general anesthetic where it is not contraindicated.

DR. F. J. HODGES—I believe if the gentlemen using cocain will experiment with it a little, they will use much weaker solutions than have been mentioned here and still get good results. A great many men use a solution which would probably be not more than one-half of 1 per cent. of cocain, containing common salt, and a very small proportion of carbolic acid and a moderate amount of morphin. Their philosophy of this procedure is this, that after all it is the pressure of the fluid within the tissues which is the active factor in producing anesthesia. There are a number of physicians in my part of the country who use regularly this solution in the strength I have indicated and do perfectly painless minor operations.

DR. JOHN E. OWENS—The last speaker mentioned the fact that he thought perhaps even weaker solutions would be useful. Some gentleman wrote an able article upon this matter in one of our Chicago medical journals, in which he recommends the use of weak solutions, and said that almost infinitesimal doses were followed by gratifying results. I suppose it would be in order to mention another local anesthetic, although the paper is on cocain. I would like to call the attention of the gentlemen present to ethyl chlorid, which surpasses anything I have used up to date. It is a fluid contained in a glass reservoir and costs a dollar. It is kept from spilling by means of a cap at the conical end. It is an excellent local anesthetic for the removal of small growths. I have removed a small growth of the breast with it and also amputated a little finger. I believe it is a good substitute for cocain.

DR. DANIELS (closing the discussion) Replying to the inquiry of Dr. Griswold, I will state that I have always found that I could operate from the knuckle to the distal point of the finger, in injecting between the knuckle and middle joint, without any pain whatever. But it is my practice always to inject the cocain immediately behind the point where I am to operate, and not to inject near the knuckle, but as far down as the operation is to be performed, consequently I am sure of anesthetizing the point desired.

As far as mentioning the use of cocain for the purpose of removing larger growths is concerned, I will say that my paper dealt entirely with its use in minor amputations. I have also used it in removing small tumors as described by other gentlemen.

Dr. Hodges' remark in regard to weak solutions is only an echo of the remark I made in closing, that a much weaker solu-

tion can be used with equal benefit. I commenced with a 4 per cent. solution, and have reduced it in some cases to 2 per cent. and the results were the same; only in using the latter I used a little bit more. It may have the same effect he refers to, so far as the tissues are concerned, on account of the presence of what may be termed a foreign body. I also think constriction of the finger under pressure bandage may have something of an anesthetizing effect. I have amputated on several occasions four fingers. I would inject one with cocain, amputate it, then inject another, amputate it, etc. I have not used it in cases of circumcision, but for the purposes mentioned in the paper I have used it for the last two or three years exclusively.

GANGRENE OF THE EAR.

BY S. S. BISHOP, M.D.

Attending Surgeon to the Illinois Charitable Eye and Ear Infirmary; Professor of Otology in the Post-Graduate Medical School and Hospital; Professor of Diseases of the Nose, Throat and Ear in the Illinois Medical College, etc.

CHICAGO.

Gangrene affecting the ear is a very rare disease. It is mentioned in but three out of seven books on the ear, in my library. I have never seen a case in private practice, nor in my service at the various hos-



FIG. 1.—Showing extent of gangrene of auricle (dark area).

pitals and dispensaries, until the following one appeared at my clinic at the Illinois Charitable Eye and Ear Infirmary:

Jan. 8, 1896, George T., 2 years old, was admitted as a house case. Five months ago he was placed by his mother in an orphan asylum. Two months ago suppuration of the right middle ear developed and continued to the present time, and five days since, the concha turned black and emitted a foul stench. The characteristics of the pulpy form of hospital gangrene were present, and Dr. Lieberthal, the dermatologist, who saw the case with me, confirmed the diagnosis of gangrene.

The necrotic process involved both anterior and posterior surfaces of the concha to the extent of the dark area shown in Fig. 1, and had begun to invade the integument covering the mastoid process.

The child was placed in the care of one of my assistants with instructions to give a nutritious and stimulating diet, for it was badly nourished, and to

remove the necrotic tissue and apply warmth to the parts so as to increase the blood supply.

January 8, my assistant removed with scissors the diseased concha, leaving an aperture the size of the dark spot in Fig. 1, and also the discolored skin of the mastoid, adjacent to the auricle. The soft tissues of the canal were excised and the mastoid operation was performed, Fig. 2, for the necrotic process had extended to the osseous structures. The wound was dressed with iodoform powder, iodoform gauze, absorbent cotton and an eight bandage. The child rallied well. At 8 P.M. the temperature was 101° F. On the 9th, A.M., temperature was 100.3° F., and the odor had disappeared. A few points of dark grayish discoloration appeared and were removed.

Progress was excellent until measles developed on January 25, followed by pneumonia. Then all granulation formation ceased. The wound assumed a dried, anemic and withered appearance, and the little patient died on January 31. Its mother had just buried one of her other children, all of whom had measles. Had



Fig. 2.—Auricle reflected forward, showing mastoid operation completed.

the child lived I should have resorted to a plastic operation to cover the denuded bone.

Post-mortem examination, as reported by my assistant, showed miliary tuberculosis of the lungs and pneumonia of the right lung, hyperemia of the cerebral meninges, hydrocephalus; heart normal.

Among more than twenty thousand cases of diseases of the ear treated at the Infirmary we had no record of a gangrene of the auricle, although Politzer, Schwartz, Kurekenberg, Moos, Nottingham, Riegler, Eitelberg, Boyer, Obre and Bourdillot have met with it. In the present instance, the cause of the gangrene was a chronic suppurative inflammation of the middle ear and external canal, combined with malnutrition. Whether the auricle had been subjected to pressure or severe cold could not be ascertained, since the mother had not seen her child for five months, and no definite information was obtainable at the orphan asylum.

Gangrene sometimes arises without any assignable cause; but any condition that vitiates the blood, lowers vitality and the powers of resistance, in the pres-

ence of a local exciting cause such as cold, pressure, acrid discharges, burns, etc., predisposes to this necrotic process.

Bourdillot and Nottingham reported cases following measles, while in my case this order was reversed.

I am indebted to Dr. Carl Theodor Gramm for the photographs for my engravings.

103 State Street.

THE CAUSE OF DEATH OF PROMINENT PERSONS.

BY RALPH S. MICHEL, M.D.

SPRINGBORO, OHIO.

A curious interest attaches to the demise of a friend. When "the rider on the pale horse" stops at the house of a friend, we seldom fail to inquire the cause of death. Death is to us so deep a mystery. It changes a being full of energy and life and hope, into an inanimate object, with a rapidity that is appalling. We stand aghast in its presence. The friend, whose welcome smile we meet to-day, is dead to-morrow. We eagerly inquire the cause. So it seemed to me that it would be of interest to make a collection of facts in regard to the death of celebrated persons: those whom we have learned to know and love from their written pages; and those whose deeds have moved men's hearts, in the times in which they lived. It is impossible to ascertain the cause of death in many instances. Diagnosis has acquired a degree of accuracy but very recently. In many cases the cause of death is given as "a fever," which is indefinite. And often the cause is unknown or not stated. The following, however, is believed to be reasonably accurate.

Early in the spring of 1616 Shakespeare and his boon companions, Ben Jonson and Michael Drayton, spent the evening at a tavern at New Place. All became too much intoxicated to reach home, and laid out all night on the ground. The consequence to Shakespeare was a "fever" of which he died in a few days. It was undoubtedly pneumonia.

Lord Bacon died at 65, a martyr to science. While riding one winter day, it occurred to him that snow would preserve flesh, as well as salt. Accordingly he alighted, bought a hen, and stuffed it with snow—at which operation he became much chilled. He was too sick to return home, but stopped at the house of a friend. Their kind hands put him in a cold damp bed—the "best room" perhaps—and he died in a few days. Probably pneumonia.

Burton, author of the "The Anatomy of Melancholy," believed in astrology. He calculated by the stars the time of his death. He died at the time assigned, but was suspected of taking something to hasten it in order to make it conform to his calculation.

"O Rare" Ben Jonson had several attacks of apoplexy. As a consequence his mental faculties became much impaired. His last days were dark and gloomy.

Motherwell died at 38 of apoplexy.

Ben Franklin had gout; also cystic calculus and the attendant inflammation of the bladder confined him to bed for a year. He was then 84. The immediate cause of death however was abscess of the lung.

Washington died at 67 of acute laryngitis, complicated with edema of the glottis. On Dec. 12, 1799, he rode over his estate on horseback. It was a day of rain and sleet, and he became thoroughly chilled. He contracted a severe cold, and at the end of two days

was very sick. Before sending for the doctor he had his overseer to bleed him. When the doctor came he bled him again. Still there being no improvement a consulting physician was called. They bled him again. Being no better, they gave him tartar emetic and calomel. They also applied fly blisters to his throat. The medical treatment has been the subject of much criticism.

Edward Gibbon, the historian, had the largest hydrocele on record—as large as a bucket. Repeated operations for relief exhausted him, and he died of a “fever” brought on thereby at 57.

Napoleon died of cancer of the stomach.

Thomas Gray, author of “An Elegy Written in a Country Churchyard” died at 55. He was subject to hereditary gout. One day at dinner, he was taken suddenly and violently sick, with pain in the stomach, and died on the sixth day.

William Collins, the poet, died at 36 of paresis or insanity, brought on by dissolute and intemperate habits.

Akenside died suddenly at 49 of diphtheria.

Burns died at 37. Of convivial habits, he perished from drink and exposure. One day in January, 1796, he dined at a tavern in Dumfries. He was barely convalescent from a spell of sickness, and was in no condition to stand exposure. The night was cold, and Burns, wandering homeward in an intoxicated condition, sat down upon a doorstep, and fell asleep. Rheumatism supervened, and although he lived until the next July, he never recovered. During the last few days of life, he was in a state of low muttering delirium.

Byron was born with “club foot.” His mother, who was a misanthrope, always spoke of him as a “lame brat.” This defect was finally remedied to the extent of enabling him to wear a common boot. He early showed signs of obesity. This was to him a matter of much chagrin, and he combatted the tendency by very low diet, and medicine. He died in Greece at the age of 36 of heart complication, coming up during an attack of acute inflammatory rheumatism. Death was sudden.

Oliver Goldsmith died at 45. He was a man of somewhat irregular habits, and was attacked with dysuria, probably amounting to strangury. His death was attributed to “James’ powders” which he would take contrary to the advice of his physician. But as he died of “strong convulsions,” it is likely death was caused by uremia. “James’ powders” was a secret remedy. It can not now be prepared as it was by Dr. James, owing to ambiguity in the specifications placed on file in the Court of Chancery. But it is composed of antimonious acid and phosphate of lime, with some sesqui-oxid of antimony. Dr. James was contemporary with Goldsmith, and the powder he used was probably prepared by Dr. James himself. Its action, however, is very similar to that of tartar emetic. If Goldsmith had perished from an overdose of it, his symptoms would have been vomiting, purging, and collapse.

James Beattie died of “palsy.”

Robert Fergusson, who was intemperate, died insane.

Chatterton died at 17, of arsenical poisoning—a suicide. He was driven to the act by poverty and neglect.

Falconer, the author of “Shipwreck,” was drowned by the foundering of a ship off the east coast of Africa.

Martin Luther died of “violent inflammation in his stomach.”

Cromwell died of remittent fever.

John Leyden died of the same fever in Java.

Sir Walter Scott had several strokes of apoplexy. His memory failed, and softening supervened. The end came at 61.

Shelly was drowned by the capsizing of a boat in the bay of Spezia.

Keats and Charles Wolfe, both died of consumption.

Voltaire died of strangury, probably due to enlarged prostate. Very much has been said by ecclesiastics about the agony of his last days, as though it was a judgment for his outspoken agnosticism. What nonsense! In the days of 1778, when this condition received no treatment worthy of the name, what physician would doubt but that the last days of Voltaire dying at 84, of strangury, must of necessity have been agonizing?

Galileo had stone in the bladder. With care he might have lived to shed upon that benighted time the rays of his intellectuality much longer. But he and the church differed on astronomy. Galileo asserted that the earth travels around the sun. The church would brook no such heresy. Galileo was dragged out in winter, jolted over rough roads in bad weather, to appear before the Inquisition. Exposure, imprisonment and ill usage killed him—a martyr to progress.

John Milton died at 65, of “gout fever,” or “gout struck in,” as it was called—our gout retrocedent. It is a condition in which gout leaves the joints, and attacks some internal organ.

John Bunyan rode home in a heavy rain, took a “fever” and died.

Sir Isaac Newton was long a sufferer from gout and stone in the bladder. He is supposed to have died from the latter.

Dean Swift once pointed to a dying tree, and said: “I shall be like that tree—I shall die at the top.” He had Ménière’s disease, producing paralysis, then aphasia, and finally a decay of all the mental faculties. He lived a year without speaking a word.

Edgar A. Poe was picked up in the streets of Baltimore, one morning in 1849, and taken to a hospital, where he died without regaining consciousness. His death was attributed to drink and exposure. There has always been a suspicion that he may have been the victim of an assault. Age 38.

Letitia E. Landon—“L. E. L.”—died of an overdose of prussic acid.

Washington Irving died at 76, suddenly, of disease of the heart, in his own “Sleepy Hollow.”

TO BE A DOCTOR.

BY BAYARD HOLMES, M.D.

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Of all callings, medicine and surgery seems to me the noblest. What occupation can be more elevating to its followers, or more beneficial to mankind, than the alleviating of human suffering? The work is hard and the pay none too good; but the life of a medical man is active and stirring, and both the study and practice of the science have a singular fascination for those who follow it *con amore*. And not only so, but the scope of its discoveries and of its application is constantly expanding, so that there is always something new to sustain the interest. There are other professions which by the survival of a rather foolish conventionalism, occupy a higher social grade, and in which the

pecuniary return is greater, but to my mind none are so elevated and so elevating as this.—ANON.

The Choice of a Profession.—Many young men, just completing their literary education, are looking about the world for a useful and honorable occupation. Some turn to the church, and here find a field limited in its usefulness by dogmatic prejudice and by contracted sentiment of conservative congregations. Others turn to law and discover in it the most restricted freedom of thought and action and they find it a profession which presents the greatest dangers and temptations to the beginner to lead a life of grasping selfishness. Others undertake some branch of technology and find too late that the young electrical or civil engineer has but a single or only a few possible employers and that he is helpless to command reasonable compensation. Others go or attempt to go into business, only to find at last that all avenues of remunerative trade are filled by greedy corporations, that their small patrimony is swallowed up in a hopeless competition and that they themselves must become the servants of their unequal rival. A few through force of circumstances over which they have no control take up education as a life work and a part of these have those exuberant qualities and that profound enthusiasm which win success and make teaching fill a happy life.

But some will turn to medicine and surgery as the freest, the commonest and the most inspiring of all services to which a good man and true can devote an earnest life. It is free because the doctor depends on no one class of society for opportunity and support. It is the commonest because no class of society and hardly any individual can do without the services of the doctor. It is the most inspiring because it is a life of service diversified by the strongest incentives for study in a field at once scientific and social.

The life of the physician and surgeon is one of devotion. He enters into the confidence of his patient for the good of the patient alone. To him the treasures of home and the destinies of families are entrusted. He comes to his patient in sympathy. He decides upon the conditions of disease. He fixes upon methods of treatment and then he undertakes to carry out the dictates of his own judgment. He performs the function of the advocate, the expert investigator, the judge, the jury, and the executive of the law. No other single man in modern society holds such power of life and death, of health and misery as the doctor does. It is not surprising then that the career of the physician and surgeon attracts men of the highest, the most noble and the most unselfish impulses. To become a wicked physician one must needs have been either a very bad or a very stupid man. An indifferent man after years of medical practice often becomes a true and noble fellow. In no other walk of life is there such training of character, such obliteration of sham and pretense, and such incentives for the cultivation of a kind and helpful disposition.

It is worth while then to consider what sort of a young man is best adapted to become a useful and successful physician and surgeon. What sort of a body should he have? What sort of a mind should he cultivate? And what sort of an education should he pursue?

His body.—The young man who aims to become the most useful doctor should have a perfect body. He should not be lame, blind or deformed. He should

have strong and well developed hands. He should have a steady and well balanced nervous system and a cheerful, even hopeful or sanguine temperament. The doctor's life is a hard one. His time is broken, his meals and sleep are irregular. The death rate among physicians is higher than among any other class of professional man. They are more exposed than others to all contagious diseases. To endure these unusual trials the young man who would be a doctor should be free from defects and perfectly developed. It is not enough that his body be strong, it must be well-trained. The medical student should have that dexterity and common sense which an intimate contact with nature and a masterly understanding of nature's laws alone can give. He should be a handy man, ready at all times to do anything or all things. Therefore he ought to train himself in all the arts of home life. He should work in the garden and orchard, noticing every form of life, every manifestation of chemic, physical and biologic force and turning all to the use and beauty appropriate to it. He should put himself on intimate and friendly terms with all domestic animals, learning their secrets and studying their habits. He should follow the sportsman and fisherman and cultivate a quick perception and a sturdy endurance. He should row, sail and swim, climb trees and engage in sports and games of strength suitable to his years and physical development. In no one thing should he try to be first, but rather to be good in all. He should see to it that as he approaches the age of 17 and 18 years he has a proper and adequate development of the thorax, a well balanced musculature and a sharp and quick circle of nervous reflexes. He will naturally be a pretty good manual tradesman, a good carpenter, a fair blacksmith, and a respectable tailor or shoemaker. There are many things he should not allow himself to do. He should not spoil his finger joints with baseball. He should not pinch and deform his feet with ready-made shoes. He should not eat or sleep too much. He should not keep late hours. He should not have vicious habits, such as smoking tobacco, drinking whisky, spitting tobacco juice or munching candy. When this young man decides to begin the study of medicine he should not be less than 17 years old, he should not weigh less than 61 kilograms (135 pounds), and stand 171 c. high in his bare feet (5 ft. 7 in.) His chest on full inspiration should measure not less than 89 c. (35 inches), his head should measure 19.5 by 15.5 c. He should not have any heart lesion, nor any varicocele or hemorrhoids. There should be no evidence of tubercular disease of the lungs. His skin should be clean, tough and thin.

His mind.—The mental training of the young man must be based on the same broad view of life and hope for usefulness. The contact with nature so necessary for physical development is essential also to the healthy growth of the mind to self-understanding and self-mastery, and to a mastery of the outside world. The ear develops in the silence of the woods, in hunting and fishing, in the pursuit of the creatures of air and water, in the strain and concentration of critical movements in games and work. Feeling is the master sense. It grows with the struggles with nature, in play, in work and in the laboratories of the schools. Contact with nature makes a boy truthful to himself, and begets stability of character. The laws of nature are always just, and nature is never deceived, nor does she fail to punish smartly any one who tries to deceive himself.

Contact with real things, develops the real and essential qualities of the mind, curiosity and self reliance.

But the young man who would become thoroughly trained for his profession must not shun men. In all places and at all times he must be a good fellow well met with all human beings. Medicine recognizes no classes, no grades, no social distinctions. Culture, education, social or political position influence in no degree the conduct, obligations or sort of services of the true medical man to his patient. Degradation, crime, misery and unworthiness do not detract from the claims of the sick to the services of the true doctor. Therefore the young man ambitious for medical service and usefulness must early begin to fraternize with all sorts and conditions of man. He must live with all kinds of people. When he goes out for a tour on his wheel he will have ample opportunity to meet familiarly many peculiar folks. While a tire is being mended the time can be put to advantage by a talk with the village shoemaker. Every vacation should be spent thus in learning thoroughly and intimately some new phase of life. There are no more learned people than the tramps. Their acquaintance should therefore be cultivated. This can never be done except by a familiar life with them. In his own home the young man should be helpful and sympathetic. Mothers are usually wiser than fathers and more easily approached, but there are thousands of fathers whose hearts are aching for the confidence and affection of their sons. Therefore cultivate father and mother. It is a great loss to a boy to have no younger brothers and sisters to train him in self-sacrifice and helpfulness, but in other situations in the neighborhood, in the church and in the school almost the same end may be attained.

The ordinary high school course should be finished both because it will give a good preparation for college and because the boy can thus measure himself with all the boys in his community and learn to know on a common level all alike, the sons of the rich and the poor, of the cultured and uncultured.

Happy is the young man who has a real teacher during his years of preparation for college. This is perhaps the most important of his years of education in school. He is then most moved by his models and most directed by the purposes and aspirations of others. During this time his library should slowly grow. The books he loves should be put in handsome covers on his shelf. He should have the faces of a few of his heroes on the walls of his study and some good work of his own hand should be put in a place of honor. Much that he thinks good now may later be thrown into the rubbish, but for the present it is good.

During the high school course no effort should be made for high marks. Nearly all boys from ten years up to eighteen are far behind girls of their age. He should not fret or worry or get nervous during this trying time. He must do his best with a reasonable number of hours of study and let the rest of the time be put in at games and sports, at work and excursions.

Above all things he should learn to read and write English before he leaves the high school. He should prepare for college by taking Latin and Greek because these are the best acquired during early life. He should finish his high school and enter college with a full line of credits in Latin and as much Greek as he can get. In exceptional cases high schools have good teachers of modern languages and sciences, but un-

less this is the case he should take as little as possible of the time necessary for Latin and Greek for these "soft snaps" as they are often called.

The Literary Course.—In his college course he should continue one of his classics for at least two years. Probably he will select Latin. Greek is however more humane, inspiring and refining. He will find it possible now to take up a thorough study of physics, chemistry and biology. There is really no end to any one of these great fields of nature and no part of nature is unfruitful to the young medical student. It is rather the development of the scientific conscience and the scientific method than any thorough knowledge of any of these subjects that is sought for. He should select, therefore, teachers rather than subjects. If he can do advanced biologic work, especially in comparative anatomy, in physiology and in histology, it will be a real help in the professional school. Experimental psychology as taught in many universities is invaluable both because of its intrinsic usefulness and because it is a fine study of the value of evidence in observation.

Among the studies of the university years some course in sociology should be selected. Under inspiring teachers who use the seminar and laboratory method this department furnishes the basis of the most useful study. English literature and history ought also to occupy a large amount of time and study. When the mind has been prepared for historical studies by the removal of prejudice and by familiarity with all classes of men and their various lives and labors, history has a strong influence in making character. Above all things then the college course must be finished and the bachelor's degree taken. Honors should not be sought for during this course but all work should be thoroughly and well done. Something should be completed every year, some essay, thesis or investigation. Some paper should be published in the best college journal or read to a society.

When the college courses is needed and the young man is ready for the medical school, he should find himself prepared as follows: He stands well in all classes and has a good record in athletics. He reads biologic and chemic theses in German and French understandingly. He has an intense interest in some department of biology or chemistry, and a general knowledge of physics, chemistry, biology and anthropology. A few medical schools give such students special privileges, such as a shorter course—three years—or an honorarium in fees.

The Medical School.—The study of medicine now requires four years in the lecture rooms, the laboratories and the clinics of the medical college. There is no need of the preceptor who used to play so important a part in the medical education of our grandfathers, but the friendly services of an educated physician is just as valuable as ever. He will help the student select the school in which he will study and he will give him useful object lessons in those problems of daily practice, not to be learned from books nor in the school, and he will show him many interesting cases in a manner best adapted to close observation at a time when the student has abundant leisure for study and meditation.

The study of medicine is the development of knowledge of physiology, pathology and therapeutics; the living healthy human body, the human body sick, and the methods of treatment. Anatomy, histology, em-

bryology and hygiene are parts of the first, pathologic anatomy, microscopic anatomy, and clinical medicine are parts of the second; and the practice of medicine and surgery in all their divisions are parts of the third. These groups are pursued in our medical schools somewhat in the order mentioned and they consume each about a third of the time and labor of the course. Each group has a very gradual merging into the other groups and no one branch of medical study stands alone. If these three groups be represented by three overlapping circles an idea of their interdependence can be gained.

The study of anatomy seems to many at first thought very repulsive, but few men find it distasteful after the work is seriously begun. This is a branch of medicine which is well worked out and may be looked upon as relatively complete, yet there are still some dark contents even in anatomy and the ambitious anatomist will find room for adventure.

Physiology is the greatest of all the foundation studies of medicine, new discoveries are made in this department every year. Physiology is best studied by the laboratory and seminar method. Lectures are valuable also when given to students with sufficient knowledge derived from the laboratory work and from reading. Much good teaching of anatomy, physiology and histology is now done in the universities and colleges of the country. The study of pathology and therapeutics can best be carried on where many post-mortems are held and where large ambulatory and hospital clinics are to be found. The closer the student comes to the patient and the more careful he studies each case, the better able he will be to read pathology and therapeutics understandingly. The examinations for the medical degree are now usually held at the end of each year of study. Credits are given for work done and when the necessary credits are received and the necessary time spent at the school the doctors degree is granted. In some States this degree carries with it the right to practice medicine and surgery, but in other States an examination before a State board is necessary. Students of the better colleges are usually able to get the certificate to practice, a year or so before they are entitled to their degree. If the student can get his certificate before he graduates, he sometimes finds an opportunity to practice and get valuable experience. The medical course in the very best equipped schools is still very inadequate. Sometimes the student feels this deficiency. The better the student and the better he has done his work the more likely he is to feel his need of further study. The place for this further study is the hospital.

The Hospital Course—The conscientious young doctor of medicine must immediately take a course of about two years as a resident physician in a hospital. He can obtain the best position only by an examination. These examinations are usually held at the end of the school year. They are unfortunately confined to written papers. Usually these examinations are set by men who have no experience in teaching and as a result they are a poor test of fitness of the applicant for the position. Much depends therefore upon a ready wit, rapid and clear answers and an ability to detect the foibles of the examiner. It is purely a game of chance. The well prepared men are, however, at an advantage, but stuffing and cramming so disastrous to true scholarship are encouraged. Under present conditions only a small proportion of gradu-

ates in medicine can secure hospital positions. The hospital authorities do not like to board many internes and prefer to overwork them. The hospital furnishes its house staff with rooms, board and washing. Sometimes a small honorarium, a case of instruments or a microscope. All hospitals give a certificate to those who maintain a good record during the term of service. When the young interne begins his service in the hospital, he is assigned the poorest quarters, and is attached to a senior house physician or house surgeon under whose orders he works. He writes histories, takes temperatures and makes chemic and physical examinations on the medical side, or if on the surgical side, he does minor dressings. The senior is usually somewhat exacting but always helpful if his junior is not "too fresh." If he knows his place and is willing to learn he soon has the confidence of all and his mistakes in diagnosis or his clumsiness in treatment are pointed out in a friendly way. But woe unto the junior interne who feels his importance as a doctor of medicine and shows that he feels it. His errors will be held up to ridicule in season and out of season. His clumsy casts and his errors in treatment will be carried before him wherever he shows himself. His meals will be garnished with his blunders and his sleep will be disturbed by visions of his ignorance. When the junior service is over the interne has become acquainted with the rules and customs of the hospital. He usually has for the first time a clear knowledge of the more common diseases and some skill in diagnosis. The next service is one of greater independence and less drudgery. It usually consists in a term in the post-mortem room or one in the examining room. In the post-mortem room the study of pathologic anatomy is for the first time advantageously undertaken. At first there is a distaste for the monotony of the work but at last it becomes under the encouragement of the careful pathologist, almost a passion. Here is felt and seen the real lesions sought for with such imperfect success at the bedside. It will often be possible for the interne to demonstrate on the post-mortem table conditions only suspected at the bedside a few weeks before. These exercises give an individuality and vivid concreteness to ideas of disease hard to obtain in any other way. They stand to the postmortems observed as a student from the benches as a solid model stands to a picture. In the examining room again a new factor comes into the young doctor's experience. Elsewhere he has been considering disease in the abstract, disease as affecting some particular human being and diseased tissues on the table. Now men and woman come to him applying for hospital treatment. He must decide in a few moments and under rather unfavorable circumstances whether or not the man or woman is sick; if sick, then whether it is a disease or condition requiring hospital treatment. If not a case requiring hospital treatment, then what disposal shall be made of the person. Must the person be sent to the poorhouse or to a dispensary. In no other position in the hospital can an interne show himself so much a man as here. For the first time he must reckon with conditions beyond chemistry, physics and biology. For the first time he tastes practice as he will find it in the world outside books and hospitals. Now he will come in contact with hospital authorities who often are inspired with a desire to keep down the number of admissions or limit some particular class of patients. He will feel that the interests of the patients are not properly considered by the

hospital managers and little unpleasantnesses will arise of which before he has only heard fatuous rumors.

Contact with the managers of the hospital is apt to make the interne think less highly of hospitals, of his own position and of medicine and medical charities, but if he is a true man he will endure rebuff, professional contempt and heartless rulings in such a manner as to command from the hospital authorities a reluctant respect for himself, and a recognition of the ideals of professional conduct. When he begins his service in the examining room the examining doctor should tabulate for himself all the cases that require instant diagnosis and rapid institution of treatment. He must be ready in such cases to act promptly and direct in person the first treatment, thus acting for the house physician and surgeon until their arrival. As examples of these emergency cases let me mention sunstroke and poisoning by morphin. In these cases the diagnosis can often be made before the patient is removed from the ambulance and treatment can be begun at once. For his own conduct toward the patient the examining physician must make the strictest rules. Unfortunately the study of medicine abroad has brought to America foreign traditions and customs which are not to be imitated by any American. The unsympathetic and even cruel examination of patients so prevalent now in many dispensaries and hospitals is unbecoming the true doctor. Let your rules be unwritten except upon your conscience if you will but let this be the first: Every person be he diseased, though ignorant, suspicious, dirty, disgusting or cruel deserves gentleness, sympathy and fraternity.

When the interne becomes house surgeon or house physician, his responsibilities and opportunities increase. He now has charge of the wards, gives orders to the nurses, receives and discharges patients and signs death certificates. He makes rounds with the attending physician or surgeon, carries out his directions and is his first assistant on all occasions. This position develops self-reliance, loyalty and dignity; self-reliance because the house physician is chief in the absence of the attending man, loyalty because there always should exist the same relations between the interne and the attending man that exist between the doctor and his consultant in outside practice, and dignity because the house physician or surgeon has one or two junior internes, several nurses and all the patients looking to him for service, advice, direction and assistance. It is a fact that some attending men and even some hospital authorities do not have this exalted idea of the position of the house surgeon and house physician. Some few attending men at the beginning of their services are arrogant and overbearing and a few take delight in scolding and publicly humiliating a house man. But such instances are unknown among gentlemen and are rare as hospitals go. These bores must be endured with dignity, and an early opportunity should be taken by the interne in the quiet of the attending man's home for an understanding. The position is everything to the house surgeon, and he should be as diplomatic and yet so open and firm as to secure an adjustment of the difficulty. It is necessary in some cases to resign or humbly endure abuse. Such unfortunate examples of attending men are overbalanced by those who take the never ending stream of house men into their hearts and lives and homes. These attending men are always sought for. They are met by the internes at the door of the hospital.

They are relieved of the every burden possible. For them the histories are all well written and carefully digested. Chemic and pathologic examinations are made in advance and the fluff is cleared away for the serious work of diagnosis or treatment. These men find the ward, the operating room and the laboratory in order at their coming and all the surroundings adapted to the best professional work. Their cases are watched and cared for with more than necessary fidelity, and their clinical material is worked up by the house man greatly to the advantage of all concerned.

PERITONEAL SUPPORTS—(LIGAMENTUM PERITONEI.)

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CHICAGO.

(Concluded from page 565.)

The internal border of the broad ligament is where it diverges to receive the uterus. It is the junction of the lateral border of the uterus and broad ligament. This internal border of the broad ligament is very important, as it has relation to the side of the uterus and uterine artery as it courses through the internal edge of the broad ligament. The figure I chose to

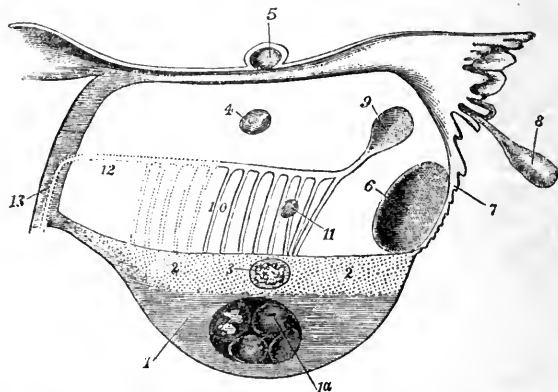


Fig. 60 (after Doran, 1884) represents a diagram of the structures in and adjacent to the broad ligament. 1, framework of the ovary; 1a, simple or glandular multilocular cyst; 2, tissue of hilum, with 3, papillomatous cysts; 4, broad ligament cyst, independent of parovarium or Fallopian tube; 5, a cyst in broad ligament above the tube but not connected with it; 6, broad ligament cyst; 7, ovarian fimbria of tube; 8, the hydatid of Morgagni; 9, Kobelt's tube enlarged. Cysts 4, 5, 6, 8 and 9 are always lined internally with a simple layer of endothelium; 10, the parovarium, the dotted lines represent the inner portion, always more or less obsolete in the adult; 11, a small cyst developed from a vertical tube. Cysts that have this origin or that spring from the obsolete portion, have a lining of cubical or ciliated epithelium and tend to develop papillomatous growths, as do cysts in the tissue of the hilum; 12, Gartner's duct, often persistent in adults and animals as fibrous; 13, tract of duct in uterine wall, unobliterated portions are, according to Coblenz, the origin of papillomatous cysts in the uterus. All these structures may be seen in the broad ligament by the unaided eye.

illustrate the relation of the internal border of the broad ligament to the uterus is a diagrammatic one from Ranney, Fig. 61. The figure shows the relations of the two blades of the peritoneum to the uterus. It shows that the insertion of the ligament begins at the fundus and ends at the internal os. It is diagrammatic, as the living female does not present such figurative outline in the insertion of the broad ligament into the uterus. The figure is self-explanatory. The next figure to illustrate the internal border of the broad ligament is taken from the classical anatomist, Hyrtl. It beautifully illustrates not only the uterine artery, but it shows the perpendicular arteries in a most natural manner as the nerves follow the blood vessels, it shows the nerve routes. The above short sketch points out the one free border and the three attached borders of the broad ligament, and with the

figures will give some practical views of its use and structure.

We will now take up its anterior and posterior surface. The posterior surface of the broad ligament is that portion forming a part of the walls of the posterior pelvic peritoneal cavity. It is the surface of chief interest to the gynecologist. From Doran we will select figure No. 57 to illustrate the posterior peritoneal surface. Pelvic peritonitis is very apt to occur on this surface. The ovary projects backward on this surface. The relation of this surface to the rectum aids in enhancing peritonitis from restless motion, dilatation and contraction.

The anterior surface of the peritoneum forming the broad ligament is not so large as the posterior. It is best seen by lifting up the uterus, thus putting

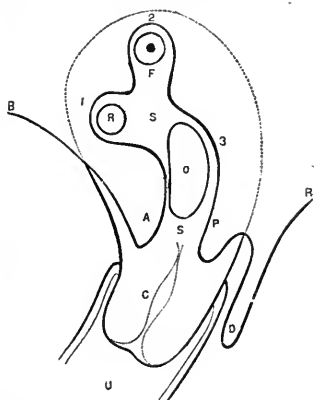


Fig. 61 (after Ranney, 1883) is a diagram designed to illustrate the three minor folds of each broad ligament of the uterus and the structures which are contained between its two layers, as seen in a lateral sagittal pelvic section, cutting the ligament close to the uterus. 1, 2, 3, anterior, middle and posterior folds; R, round ligament; F, Fallopian tube; O, ovary, its anterior border lying in close contact with the peritoneum; V, vagina; D, Douglas' pouch; C, outline of cervical cavity; A, anterior layer of broad ligament; P, posterior layer of same; R, reflection of peritoneum to bladder; S, space filled up with blood vessels, nerves, lymphatics, connective and muscular tissue.

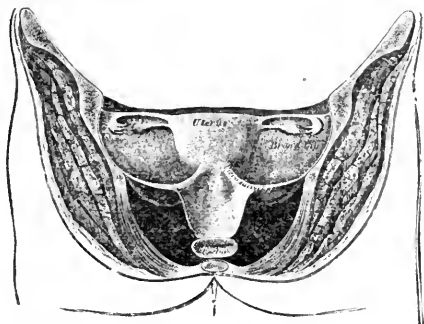


Fig. 62 (after Hodge) is a partly diagrammatic cut to illustrate a transverse section in a posterior view. It shows the relative positions of the peritoneal and subperitoneal tissues and structures. The subperitoneal space is well shown. Both subperitoneal and peritoneal surfaces are equally important to the gynecologist. A few still hold to pelvic cellulitis as the chief disease, but natural pathology indicates that the first, primary and chief disease is peritonitis, and secondly, by inversion by contiguity, cellulitis.

the double blades on a stretch. It is in relation with the bladder and to some extent with the ureter. Both anterior and posterior surfaces of the broad ligament are free in their whole extent. The contents of the broad ligament are closely related to the folds covering them. In fact, so closely related are the ligaments and their contents that they should be discussed together. It must be remembered that the mesosalpinx and the broad ligament are not identical. The broad ligament is larger than the mesosalpinx. The mesosalpinx is a triangular double-bladed membrane, its base is directed toward the side wall of the pelvis, while its apex points to the uterus. The mesosalpinx

is bounded above by the Fallopian tube, below by the ovarian ligament and the ovary, externally by the tubo-ovarian fimbriae and the ligamentum infundibulo-ovaricum of Henle. Its apex points toward the uterus. This triangular double fold of peritoneum is the mesosalpinx, the ala vesperilionis or the middle fold of the broad ligament. It is only a part of the broad ligament:

The contents of the broad ligament are:

1. The Fallopian tube.
2. The ovary and its ligament.
3. Parovarian.
4. The round ligament.
5. The uterine and ovarian arteries.

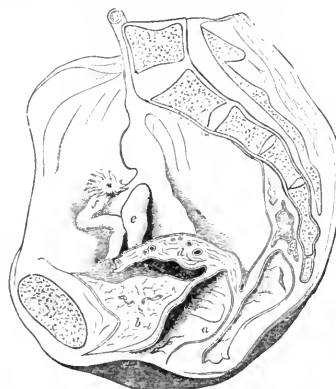


Fig. 63 (after Hart and Barbour, 1883) represents the broad ligament cut to show its contents: f, Fallopian tube; e, ovary; d, broad ligament cut near the side of the uterus. In this cut surface one can note the shape and contour of the ligament, marked d, and also contents, blood vessels, connective tissue and nerves; b, shows a sliced surface of the bladder; a, vagina.

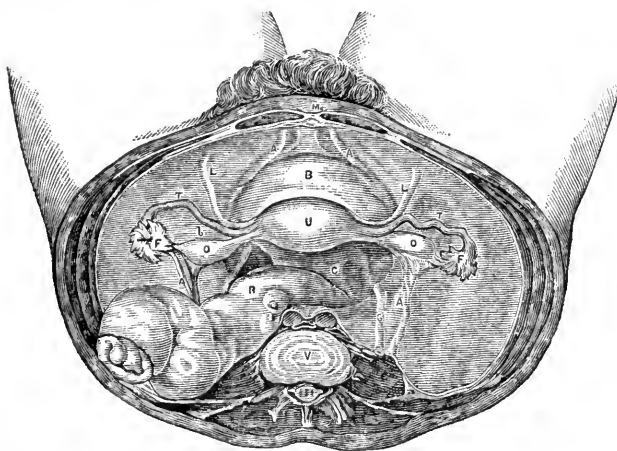


Fig. 64 (after Savage, 1880) is a figure intended to show the relations of the female pelvic organs with the pelvis and with one another. It is a horizontal section of the abdomen immediately above the iliac crests and behind between the last lumbar vertebra and sacral, about an inch above the pubes, and shows well a superior view of the pelvic organs with their peritoneal folds. U, uterus; B, bladder; O, ovary; T, Fallopian tube; M, urachus; L, round ligament; R, rectum; V, vertebra; G, ureter; C, utero-rectal ligaments; A (in front), obliterated remains of hypogastric arteries and A (behind), spermatic vessels.

6. The plexus pampiniformis.
7. Muscular and connective tissue.
8. Lymphatics.
9. Nerves.
10. Remnants of urinary organs and germ epithelia.
11. The ureter to a varying degree in different individuals.

The intimate relations of every one of the above eleven structures to the broad ligament folds in disease is sufficient to call attention to both ligament and structures at the same time. When the peritoneum covering the contents of the broad ligament is infected the consequent inflammation may spread to

any and all the structures. Infection which produces broad ligament peritonitis may produce parovarian cysts, phlebitis, and straighten out and dilate the vein. It may infect the ovary, causing cystic degeneration or lymphangitis. In some fifty bodies which I have examined carefully I found that old pelvic peritonitis had involved the connective tissue in the broad ligament, producing veritable cellulitis. Such bodies showed pelvic cellulitis in about 10 per cent. In some, cellulitis was so severe that the ureter had, during contraction and dilatation, while the soft exudate existed, tunneled out a hole and held it firmly and stiffly open. Myoma may develop in the broad ligament. The utility of the broad ligament as a peritoneal fold may be enumerated as:

1. It is a bed for structures.
2. It preserves the definite relations of its contents.
3. It holds its organs so related that function coördinates, *e. g.*, tubal peristalsis and ovulation are so coördinated by the ligamentum ovaricum that the ovum is definitely carried into the uterus.
4. The broad ligament acts as a guy rope to the uterus. It is a secondary uterine support. However, its chief office is to transmit and sustain structures.

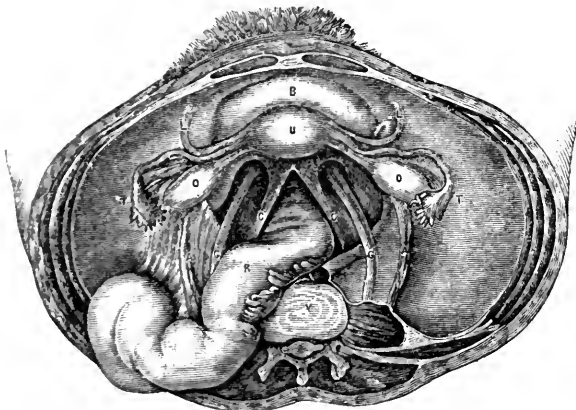


Fig. 65 (after Savage, 1880) is designed to show the sacro-uterine, or better, recto-uterine, ligaments. It is an excellent diagram, in which the uterus is drawn well downward in the vagina by a volsellum forceps. The noticeable features in the figure are the peritoneal folds posterior to the uterus, as AA, spermatic vessels GG, ureters, and CC, recto-uterine ligaments; B, bladder; U, uterus; R, rectum; V, vertebra; O, ovary; T, Fallopian tube (fallopian); L, round ligament. The proximity of the ureters, GG, to the uterus, should be ample warning to surgeons in operative procedures. This figure merits attention. It shows the mechanism of the structures supporting the uterus and opposing its displacement.

The sacro-uterine ligaments or utero-rectal ligaments are the chief uterine supports. They are known as the folds of Douglas. These folds contain muscular fibers and were called by Luschka retractores uteri. The muscular fibers which they contain are a continuation of the vaginal walls, so that the vagina and the utero-sacral ligaments together form a supporting beam on which the uterus rests. The folds of peritoneum are well seen in the figure which accompanies the text, taken from Savage. Many dissections have convinced me that the utero-rectal folds of the peritoneum are the chief supports of the uterus, especially prolapsus uteri. They are very strong folds. These folds are subject frequently to a chronic inflammation which shortens or thickens one or both. The disease of the ligaments seems to be due to a slow, progressive, infectious process. By practicing traction on the uterus it is plain to observe in the cadaver that the main tension falls on the peritoneal folds known as the utero-sacral or, better, utero-rectal ligaments. They are primary uterine supports.

Minor peritoneal supports or ligaments will be de-

scribed with the visceral tracing of the peritoneum. The pelvic peritoneum is thrown into frequent folds which are accompanied by peritoneal pouches. Hodges' diagram, Fig. 62, shows the folds well. Here the peritoneum like a sheet is spread over the pelvic viscera and its folds tuck themselves in between the visceral clefts. The peritoneal ridges indicate the presence of organs projecting upward from below.

Special characteristics of the pelvic peritoneum are

- a. Elasticity.
- b. Capacity to resist infection and trauma.
- c. Thickness and strength in the female, over that of the male.
- d. Numerous folds and pouches.
- e. Extensive subperitoneal areolar tissue bed.
- f. The wide range of motion that the peritoneal attachments allow the pelvic viscera.
- g. An opening in the pelvic peritoneum in the female.

IMPROVED HYPODERMIC SYRINGE AND REMEDY CASE.

Read by title in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY ELMER LEE, A.M., M.D., PH.B.

CHICAGO.

In these utilitarian days, that which comes the nearest to the urgent requirements of the practicing physician during the hours of the day and the visits of the night, in the way of supplying remedies for emergencies, is the desire of practical physicians. There are times when drug stores are inaccessible, and there are times when there is not a minute to spare between the arrival of the doctor and the demand for immediate action, which make it imperative that remedies should be carried by the physician.

The present hypodermic case, which is for the first time brought before your attention, is not only a hypodermic case, but is also an *emergency* case. It contains a hypodermic syringe of the simplest, and, in my opinion, the best pattern that has ever been made. The syringe is light, it is cleanable, it is inexpensive, it is effective. These are qualities that are to be desired. The syringe is made of glass for the barrel, and hard rubber for the fittings. The needle points are attached to hard-rubber butts which fit the nozzle of the syringe without a thread. This is the simplest form of connection between the needle and the syringe, and it is the best one. The syringe that accompanies this case is durable and sufficiently strong for every purpose for which a hypodermic syringe is intended. It is sufficiently inexpensive, so that instead of having the syringe repaired when a part is broken or lost, it may be replaced at a cost not likely to exceed that of repairing an ordinary syringe. The syringe is placed in the middle of the upper half of the plate on which are arranged the glass tubes containing the tablets. The needles are held in a short glass tube in the middle portion of the lower half of the metal case. On either side of the syringe and the needle tube are spaces for thirteen tubes of hypodermic tablets and one glass tube in which are contained the brass wires for keeping open the needles. These hypodermic tablet tubes lie in regular order and are in sufficient number to provide medication in any instance where a physician may require such medicaments. In addition to serving as medicaments to be used with the hypodermic syringe, they

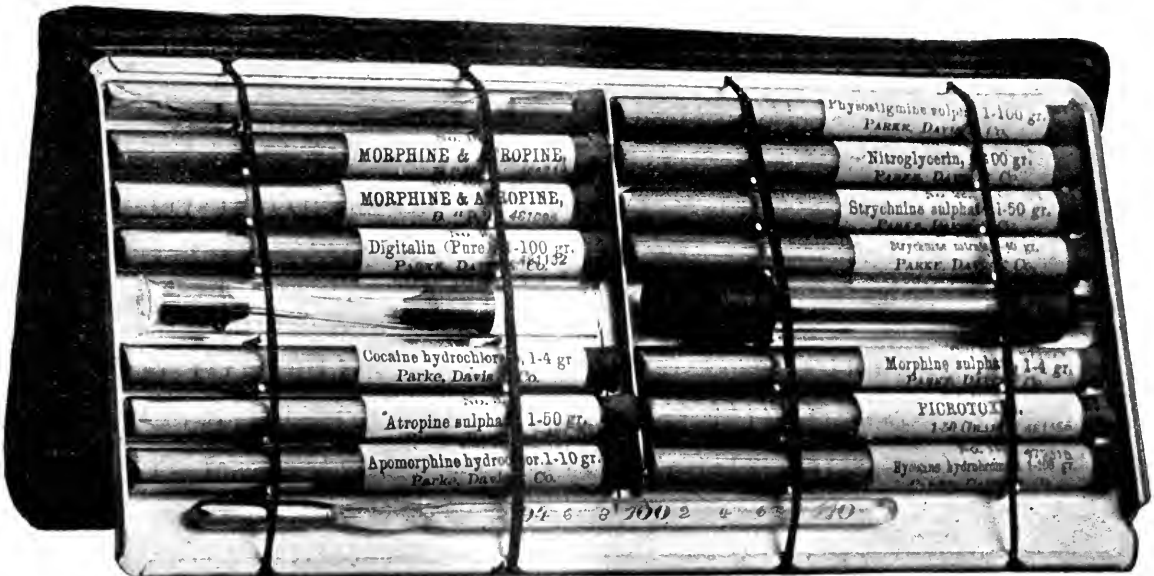
form, equally well, remedies which may be administered by mouth, thus constituting a remedy emergency case. This is very desirable, for in the present day patients look more and more to the physician during his visits to supply them with temporary remedial aid, and it is a very effective measure for the physician to take from the case carried in his pocket suitable tablets and leave them with proper instructions for the use of the patient. It not only gratifies the caprice of patients, but it is indeed a very useful measure, and one that begets a friendly sympathy from the patient in behalf of the doctor. The patients are eager to be served quickly, and if the doctor has a suitable case of remedies upon which he can draw temporarily, it is fortunate for the patient, and will give the doctor himself considerable satisfaction.

In addition to the hypodermic syringe, the needle bottle and the tube of hypodermic tablets, a place has been arranged on the outer edge of the metallic case for a fever thermometer, which is held in place by a suitable arrangement. It has been proven by experience and usage as not likely either to fall out of its place or to get broken any more than it would if

its protection. In the leather case there is a pocket which is intended so carry an envelope which may be supplied with surgeon's silk and needles and perhaps a few small pieces of adhesive or court plaster; or the pocket may be used to contain any other articles that are not bulky, which the physician may elect.

This combination of hypodermic tablets and thermometer constitutes a small yet ample emergency or remedy case, which may be carried in the upper vest pocket at all times and under all circumstances. It is attractive in appearance, light in weight, and contains enough tablets to meet almost every variety of emergency calling for immediate remedies.

The glass tubes, the syringe and thermometer are held in their places against the metal back by elastic rubber bands. These bands are of no particular kind or quality, and if one should give out, as anyone knows, a rubber band can be easily and quickly procured in any community, and the broken one can with little or no trouble be replaced. Various friends have suggested that a better substitute for the bands would be another metallic covering for the front of the case; others have suggested that there might be a



carried in any other manner in the pocket. The addition of the thermometer was a later thought in reference to the perfection of the case, and has pleased me a great deal in being able to have a thermometer so accessible and at the same time avoid carrying an additional piece of furniture in my vest pocket. The case is intended to be placed in the upper vest pocket, and supposed to have the exclusive use of whichever pocket it has been assigned to by the doctor who wishes to use it.

The case consists, as may be seen, of a sheet of aluminum with crimped sides and folded ends in order better to serve the purpose for which the case is intended, as well as to give additional strength. Then there is a partition between the upper and lower half, in the middle, which serves as a rest for the row of bottles and the syringe. The divisions for the tablet tubes are made by metal posts screwed into the aluminum back and riveted, so that they are secure and durable. The weight of the case is so inconsiderable that it is a source of surprise that so many remedies, including the thermometer and syringe, can be carried with so little inconvenience.

The hypodermic case fits into a leather pocket for

narrow strip of metal passing from one side of the case to the other and fastened with a clasp; another has suggested that instead of using the little posts that are fastened into the back of the case that spring clasps such as are used in some hand cases would do away with the necessity for using the rubber bands or any other method of holding the contents of the case in their places. Now all these suggestions, together with others, are not considered equally good as the simple device of holding the tubes in position by the elastic rubber band. This is sufficiently practical as I know from experience, and it is the most inexpensive and most aseptic method, and at the same time it is the simplest way; and in these days when we are looking to the practical and utilitarian side of every new proposition that promises improvement, simplicity and economy of space are imperative. Now after a great deal of reflection, and having considered the many interesting suggestions of medical friends, it is my conclusion that there is presented in this case, for the use of my colleagues, a series of useful features which surpass any similar provision of which there is any knowledge. We all know how awkward it is to be in the presence of emergencies requiring remedies

and not have our hypodermic case with us, or any remedies at hand; and we all know how vexatious it is to have a hypodermic syringe, at the moment when it is desired to use it, the packings dry and the syringe fail to work; but it must be remembered that any instrument, whether it be a syringe or not, must be kept in working order, and that means that it must receive its proportionate amount of attention; and if this simple syringe receives a very little attention it will last a long time and remain in condition for immediate use as long as any other syringe, and if it is lost or broken it is so inexpensive that it can be replaced at a trifling cost.

The division posts in the metal case have been located especially with reference to taking tubes of a uniform size, such as are made by Parke, Davis & Co. The case, including its leather covering, is shapely, and sufficiently light, not being thick or bulky, it may be easily and naturally carried in the upper vest pocket, at all times providing us with a great variety of useful and convenient remedies.

103 State Street.

NEW INSTRUMENTS.

A KNIFE PROTECTOR.

BY C. A. VEASEY, M.D.

Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic;
Chief Clinical Assistant to the Ophthalmological Department
of the Jefferson Medical College Hospital; Consulting
Ophthalmologist to the Philadelphia Lying-In
Charity Hospital, etc.

Almost everyone who has had occasion to employ a Graefe cataract knife or a keratome, has at some time or other had the misfortune to have had the point blunted or the edge dulled by coming in contact with the sides of the dish in which sterilization was being performed, either while the instruments were being sterilized or while the dish containing them was being moved.



If one has a rack in which to place all of the delicate cutting eye instruments the above misfortune is not likely to occur. But as a rack is not always to be had when needed, the author has devised an instrument shown in the accompanying diagram, so small as to be easily carried in the instrument case, which will protect the point and edge of the knife while being sterilized or moved about prior to the operation.

The device is so well shown in the diagram that any detailed description would be superfluous. Suffice it to say that it consists of a body, the sides of which are sufficiently high to protect the edge of the knife, extending from which we have an arm for the support of the knife handle, the latter being held firmly in position by a double spring. It is made from one piece of metal so that it can be completely and quickly sterilized.

The keratome protector is made similar to the above, the only difference being that its sides opposite the blade are sufficiently high to protect the edges and point of the largest keratome.

I am indebted to Messrs. Charles Lentz and Sons, of this city, for their assistance in perfecting the device and for the above cut, from whom the instrument may be obtained.

47 North 17th Street.

SELECTIONS.

Operations for Prostatic Hypertrophy.—Our foreign exchanges all contain articles on this subject, recommending some the resection of the vas deferens, others castration, and still others merely the subcutaneous section of the vas deferens. Each reports cases of relief and cure, some of them almost miraculous. The last mentioned operation has not been performed on many persons yet, but theoretically it answers the purpose completely, as experience tends to show that all that is necessary to reduce the hypertrophy of the prostate gland is to sever the vas deferens in some way; it is suggested by Lauenstein, of Hamburg, in the *Centralblatt f. Chir.*, February 15. Guyon describes some experiments on dogs in the *France Méd.*, 1895, 43, and states it as his belief that the results of these operations are due to the diminished congestion brought about by reflex means. He found that the prostate gland responded more rapidly to resection of the vas deferens than to castration in his experiments on dogs.

Experiments on the Secretory Excitability of the Alimentary Canal.—Dolinsky has been making a series of experiments on dogs carrying pancreas and stomach fistulas, which show that the secretions of the pancreas are stimulated when the lining of the duodenum comes in contact with acids—diluted vinegar acid, mineral acids, lactic acid, or sour drinks (kwass), etc. It also affects noticeably the secretion of the gastric juice. Alkaline liquids do not produce it, nor neutral liquid foods, when the latter are introduced without the knowledge of the animal, as this always stimulates the secretion of gastric juice. Special experiments with dogs who had, besides the two fistulas, an opening into the esophagus, showed that the psychical effect of giving food, even when the animal was deceived with pretended food, was to excite the secretion of gastric juice, the hydrochloric acid of which stimulated in turn the secretion of the pancreas. Dolinsky considers these facts important in a teleologic sense, as the alkaline secretion of the pancreas neutralizes the acidity of the gastric juice. Fats also excite a reflex pancreatic secretion, and alcohol in a slighter degree. *Centralblatt f. Chir.*, February 8.

Is Surgical Intervention Warranted in Primary Renal Tuberculosis?—This question was the subject of an able address delivered before the last French Medical Congress, by Dr. Pousson, the well-known surgeon. He first described the different methods of invasion in primary and secondary infection, as the bacilli locate in the vascular zone of the organ in the former case, and produce the phenomena of congestion, pains and hematuria. Secondary infection attacks the zone of the pyramids and is a mixed process starting in the bladder, and revealing its presence chiefly by suppurative lesions, or pyuria. The hematuria is often the only symptom of infection for quite a while, and he cites many cases where it persisted alone for months. Here he thinks surgical intervention entirely uncalled for, as this form is not exposed to complications from other infections, owing to the isolated position of the organ. Only when it is accompanied by severe pains preventing rest, or excessive, weakening hematuria, which forces the hand of the surgeon, as it were, is a surgical operation legitimate, and nephrectomy indicated. In all cases where the other organs seem to be exempt, he agrees with the majority of French physicians, that local attempts to exterminate these bacilli from the system are apt to be fruitless and followed by their reappearance there or elsewhere.—*Archives Clin. de Bordeaux*, January.

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SATURDAY, MARCH 28, 1896.

NATIONAL BOARD OF HEALTH.

Information comes to us from New York that the State Board of Health is aiding in a movement to secure the reestablishment of a National Board of Health, believing it to be for the best interests of the various States, in warding off invasion of epidemic diseases. Secretary B. T. SMELZER, M. D., has received a letter from the aged Dr. STEPHEN SMITH, of New York City, as chairman of a sub-committee of the New York Academy of Medicine, which is considering a bill to be laid before Congress upon the matter.

Dr. SMITH says an effort is being made to secure the united action of all medical organizations interested in such legislation on the proposed bill, which has been prepared by the committee of the Academy. When this bill is matured and approved by the profession it is proposed to make it public and invite the coöperation of all the friends of the measure to secure its enactment by Congress.

One feature in the proposed bill is said to include a provision to have a representative member of the profession and of this National Board who shall be a Cabinet officer.

We suggest to the distinguished sanitarian that he print the proposed bill in the JOURNAL now, so that the members may read and discuss it.

THE SURGICAL TREATMENT OF EPILEPSY.

Surgical operative interference for the relief of epilepsy is probably less popular at the present time than it was a few years ago. The utterances of high authorities like AGNEW and others condemning or rather discouraging the practice, and the well-merited criticisms of many of the reported successes have

markedly diminished the enthusiasm that existed with the dawn of modern cerebral surgery, in regard to the operative treatment of this ailment. It would, however, be altogether incorrect to say that the operation of trephining for epilepsy is a thing of the past, for reports are still frequent in medical literature. An article by Dr. E. G. MASON in the *Medical News* of March 21 is in evidence of this. The writer takes the view that trephining for epilepsy is a "rational procedure and has come to stay," limiting, however, the operation to well-selected, favorable cases, presumably those in which the convulsive attacks have been of comparatively recent traumatic origin. He does not specify this, however, but expressly says: "If there is evidence of a trauma in a position corresponding to the initial symptoms of the fit, an operation is usually justifiable." This is the only statement he offers that approaches a positive recommendation, and it would evidently only apply to a small proportion of cases. The results he claims as indicated by statistics, are the cure of a small percentage, a somewhat larger percentage improved, and temporary cessation of fits in almost any case.

Even a remote possibility of the cure of such a morbid condition as epilepsy would, in the opinion of many, justify the operation, while admitting for it a certain actual danger to life. To properly estimate its advantages, however, more than the mere apparent results must be taken into consideration. The cure must be rationally connected with the operation and its possibility without it must be excluded. While Dr. MASON takes a rather reasonably conservative view of his subject and recognizes the possibilities of mistakes, he evidently is inclined to give the operation all due credit and may possibly be carried away to some extent by his predilections. A certain small number of cases of epilepsy are apparently cured by drugs, another very minute proportion seems to have a spontaneous cure, and cases have been reported of recovery after various operations other than those upon the brain. Any and every procedure that makes a strong mental impression, whether it be a seton in the neck, a change of doctors, drugs or of locality is likely to be followed by a more or less temporary modification of the symptoms, which might easily, following the common practice of many of the reporters of cerebral surgery, lead to the erroneous diagnosis of a cure. While it is probable that most, if not all of the 4.3 per cent. of recoveries he finds after operation are genuine cures, it would be more satisfactory in estimating the value of the operation could we be absolutely sure no other factors had intervened. It is worthy of note in this connection that the only one of the twenty-six cases he tabulates with his paper, that is reported cured, is that of a child, 12 years old, one of a class in which the bromid treatment is sometimes strikingly successful. If there are any

cases which can be considered more amenable to treatment of all kinds than others, a certain proportion of those of young children in whom the epileptic habit has not become fixed and the development of the nervous system is still partly in the future, may properly be counted among them.

The proportion of cures of, or rather of recoveries from, epilepsy, is probably larger than is commonly estimated by the medical profession. Some individuals have epileptic attacks at certain periods of their lives which cease spontaneously and never recur, others have a single isolated attack, due to a special temporary cause. These facts must be kept in mind in estimating cures of this symptom with any treatment, and the rarity of recovery after operation is such that it suggests a comparison with these hardly less frequent occurrences. Any interruption of the attacks may in some instances give a needed opportunity for repair to the irritable cortex, whether this interruption be due to a surgical operation or to any other cause whatever.

While the results of the surgical treatment of epilepsy are not brilliant and a certain reserve is at least judicious in estimating the best of those reported, there is enough of a possible utility in surgical interference in special selected cases to yet prevent the practice from becoming altogether obsolete. In recent traumatic cases, especially in young subjects, it may be admitted as a justifiable operation. Any operation, however, not absolutely necessitated as a last resort for saving life, the statistics of which give, as in this by DR. MASON's showing, a larger percentage of mortality, small as this may be, than of cases in which it is effective for good, can not be regarded as a triumph of surgery.

THE PHAGOCYTIC ACTION OF GIANT CELLS IN TUBERCULOSIS.

The nature and the significance of giant cells, found in many pathologic conditions, but especially in tuberculosis, have not been satisfactorily determined. The results of elaborate investigations concerning these structures do not agree. The opinions that at present obtain concerning their significance may be divided into two groups. Thus WEIGERT¹ and BAUMGARTEN² believe that giant cells (in tuberculous foci) represent a partial necrosis of cells in the act of proliferation. The tubercle bacillus in the interior of the cell exerts sufficient stimulus upon the nucleus so that nuclear division may occur, but a division of the cell body does not take place because it has suffered necrosis under the influence of the bacilli. For the same reason the bacilli in the giant cells are found in the vicinity of the nuclei; the part that is not nucleated contains but few or no bacilli because the soil of this, the necrotic district, has been exhausted. METSCH-

NIKOFF, on the other hand, maintains that the giant cells have considerable vitality and play an active part against the tubercle bacilli. He claims that there exists a definite relation between the course and the duration of tuberculosis and the phagocytosis of giant cells.³ METSCHNIKOFF interpreted certain appearances on the part of tubercle bacilli enclosed in giant cells as indicating the gradual destruction of the bacilli, and this belief was supported by KOCH in his large work on the etiology of tuberculosis. STSCHASTNY,⁴ SOUDAKEWITSH⁵ and KLEBS⁶ all side with METSCHNIKOFF. KLEBS regards the giant cells as peculiar tissue formations that serve to protect the organism. Quite a discussion has been carried on between the supporters of these two diametrically contradictory views. WEIGERT⁷ regards the destruction of bacilli in the interior of the cells as not proven. The finding of dead bacilli and masses traceable to them in the giant cells does not prove phagocytosis on the part of the latter. And BAUMGARTEN⁸ concluded from his elaborate studies that the bacilli in the interior of giant cells do not show the slightest indication of disintegration. He believes that METSCHNIKOFF in his experiments employed cultures that contained bacilli of diminished vitality.

With these contradictory interpretations before him WELCKER⁹ concluded to re-investigate the whole question according to the methods employed by METSCHNIKOFF¹⁰ and STSCHASTNY,¹⁰ but avoiding the objectionable features criticised by BAUMGARTEN and others.

METSCHNIKOFF's observations were based, in part at least, upon experiments made by injecting tubercle bacilli into certain animals closely related to our gophers—the *spermophilus guttatus*. These gophers were thought to be especially refractory to tuberculosis, but it subsequently turned out, as shown by WELCKER's new experiments, and already explained by METSCHNIKOFF,¹¹ that the gophers are comparatively insusceptible to avian tuberculosis, but not to human, falling ready victims to the latter, and that METSCHNIKOFF had employed cultures of avian tuberculosis in his work. WELCKER consequently had to repeat the gopher experiments with the bacilli of avian tuberculosis in order to be able to test the results of METSCHNIKOFF. Simultaneously with these experiments he carried along a second similar series, using the bacilli of human tuberculosis. WELCKER planned these experiments so that some light might be thrown also upon the mode of origin of giant cells, and the question of their power of independent motion and of inclusion of foreign bodies. The same quantity of young, luxuriant pure growths of avian and human tubercular bacilli was injected into the abdom-

³ Virch. Arch., Bd. 113, p. 63.

⁴ Annales de l'Institut Pasteur, III, 1889, p. 221.

⁵ Virch. Arch., Bd. 115, p. 261.

⁶ Die Allgemeine Pathologie, 1889, II, p. 575.

⁷ Fortschritte der Medizin, 1888, p. 809.

⁸ Baumgarten's Jahresbericht, 1888, p. 181.

⁹ Ziegler's Beiträge, Bd. xviii, Heft. III, p. 539.

¹⁰ Loc. cit.

¹¹ Legons sur la pathologie comparée de l'inflammation, Paris, 1892.

¹ Zur Theorie der Tuberculösen Riesenzellen, Deutsche med. Wochenschr., 1885, p. 599.

² Lehrbuch der path. Mykologie, 1890, p. 571.

inal cavity of the same number of gophers. After a varying length of time the animals were killed and fresh, warm pieces of various organs, especially of the liver and the spleen, were examined microscopically upon a warm stage at the temperature of the body. Pieces from the different organs were also fixed and stained according to the best modern methods.

The general results obtained from these two series of experiments may be summarized as follows: After the injection of pure cultures tubercles develop in the same manner in the omentum of the animals of both the series and then, after a few days, in the liver and spleen. While the gophers treated with human tuberculosis show a process that gradually increases in intensity and accompanied with multiplication of the bacilli, those treated with the avian form present tissue changes that do not pass beyond a certain limit. The stimulus of the avian tubercle bacilli and their toxic products seems to exhaust itself, necrosis does not ensue in the foci of proliferation and emigration, and there follows a gradual involution of the tuberculous areas.

The first change observed after the injection was a small accumulation of leucocytes and then followed a proliferation of the fixed tissue cells recognized by finding karyokinetic figures in the connective tissue and endothelial cells. The epithelioid cells of the tubercles could readily be traced to the proliferating fixed cells, but also to large leucocytes. The presence of giant cells could be positively demonstrated on the fifteenth day after the injection. The size and the shape of the giant cells were found to vary very much. The same remark also applies to the number, the size and the shape, as well as the arrangement of their nuclei. In their interior there was found occasionally leucocytes, tubercle bacilli in rather small numbers, and also yellowish, sausage-shaped bodies. As regards the origin of the giant cell WELCKER concludes that they are formed by a fragmentation of the nucleus of an epithelioid cell, while the protoplasm of the cell continues to grow. At the same time he was not able to definitely exclude the possibility of their arising from the coalescence of several epithelioid cells because occasionally appearances were observed in which the outlines of individual cells could still be recognized. There were no conclusive evidences noticed of karyokinetic division of the nuclei of giant cells.

Active, independent motion was not observed to occur in the living giant cells examined on the warm stage and the examination as regards this point was very thorough indeed. It will be recollected that METSCHNIKOFF claims that giant cells are capable of ameboid motion and that he looks upon this as an evidence of their phagocytic action. This claim is consequently not supported by WELCKER's results. METSCHNIKOFF also claims that the phagocytic action

of giant cells is shown by their containing, in their interior, bacilli tubercle that present peculiar changes of form and of staining reactions—changes that he believes are due to the action of the cells. WELCKER found similarly changed bacilli in the interior of the epithelioid and giant cells of the tuberculous organs of the gophers he experimented with. Strangely enough, he found also that these peculiar, glistening, sausage-shaped masses give the iron reaction with sulphid of ammonium or ferrocyanid of potassium and hydrochloric acid. He believes that these bodies represent tubercle bacilli that have been changed as a result of cellular activity, but he can not definitely exclude the possibility that these evidences of degeneration occur in bacilli that have been acted upon by other not well understood, extra-cellular influences. It is consequently not proven that, in experimental avian or mammalian tuberculosis in gophers, the tubercle bacilli are destroyed directly by the activity of the cells and that a struggle takes place between the cells and the bacilli. WELCKER was not able to find the products of altered tubercle bacilli referred to in tuberculous material from other sources than gopher tuberculosis. Material from various sources, such as the skin of lupus, was examined with negative results as far as this point is concerned. The principal conclusion to be drawn from WELCKER's investigations are that certain gophers are very susceptible to mammalian tuberculosis, but relatively immune to the bacilli of avian tuberculosis; that giant cells are formed in the main from epithelioid cells whose nuclei have undergone fragmentation; that the giant cells in the tuberculous foci of gophers do not possess ameboid movement; and that the power of giant cells to destroy tubercle bacilli is not definitely demonstrated, although they frequently contain altered and apparently dead bacilli. The function of the giant cell in tuberculosis is consequently not well understood.

A VOICE FROM THE PAST.

In connection with the attempt being made by the medical officers of the Navy to obtain the same rank, pay and emoluments as the medical officers of the Army, in which they have received the unanimous support of the AMERICAN MEDICAL ASSOCIATION, the AMERICAN ACADEMY OF MEDICINE, and the ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES, the subjoined letter to a former Secretary of the Navy, written eighty years ago and signed by the senior line officers of the Navy, the heroes of the war of 1812, will be of interest to the members of the medical profession. The hearty indorsement of the claims of the medical officers of the Navy to consideration, the generous appreciation of the value of their services, the unqualified recognition of their military status, and the declaration "that justice requires they should, at all events, receive a compensation and rank equal to

what has been enjoyed by the medical officers of the Army," by these men whose names are historic, ought to shame the youngsters, who, as partisans in the wretched line and staff dissension which to-day disgraces the Navy, are seeking to deprive the officers of the Medical Corps of the rights, privileges and dignities of military rank, relegating them to a position of inferiority to the youngest graduate of the Naval Academy, denying them authority even in their own department and according them only an undefined "disciplinary control" over their own subordinates.

It puzzles a soldier's, as it does a citizen's, comprehension, why the medical officers in the U. S. Marine Hospital Service, like those in the U. S. Army, should *command* the commissioned and non-commissioned officers, men and employes of the Hospitals to which they are detailed, while the medical officers of the Navy are only ordered "*in charge of*," even such superb institutions as the U. S. Naval Hospitals at New York, Norfolk, and Mare Island, where the military personnel of officers, seamen, marines and employes numbers several hundred persons.

It is earnestly hoped that the members of the medical profession, who are in the Senate and House of Representatives of the present Congress will insist that justice shall at last be done this well-deserving and long neglected body of their professional confrères; and it is also the duty of the military medical men all over the United States, who are prominent members of every soldiers' and veteran organization in the country, to demand of their several representatives in Congress that the medical officers of the Navy shall be put upon precisely the same footing in rank, privileges and pay as their colleagues in the Army. It is time to put a stop to the puerile quibble that medical officers are only in or with the Navy but "not of the Navy," and therefore are not entitled to rank and equal privileges with the line—that they are only auxiliary and non-essential, and to the studied disparagement of them as non-combatants, in face of the statistical fact of their proportional losses by casualties in time of war.

The memorial of the line officers of the Navy at the time of the famous victories of the second war with Great Britain is as follows:

NEW YORK, May 16, 1816.

SIR. We have heard with pleasure, that it is the intention of the medical officers of the Navy, to address a respectful memorial to you, requesting that measures might be taken by the Department to obtain for them a definite rank in the service, an increase of pay, and the establishment by law of the rank of hospital surgeon. It has also been suggested to us that the opinion of the senior officers of the Navy on the justice and expediency of these claims, might not be without benefit. We feel it, therefore, as a duty incumbent on us to state, that we consider the Medical Department of such great importance to the Navy of our country, that no reasonable measure ought to be omitted, which could have a tendency to retain in the service the professional ability of these gentlemen, who, by their experience, knowledge, zeal and humanity, have procured

the esteem and confidence of those with whom they have been associated; and we also beg leave to express our belief that no reasonable inducements would be objected to by Congress, to procure for those who are engaged in a perilous service, and who are constantly exposed to the diseases of all climates, the best medical aid the country affords.

To effect this it must be obvious that the rank and pecuniary emolument of medical officers ought to bear some proportion to what gentlemen of professional eminence would be entitled to in private life: and we consider that justice requires they should, at all events, receive a compensation and rank equal to what has been enjoyed by medical officers of the Army. * *

* * * * *

With the most profound respect, Sir,

Your obedient servants,

SAMUEL EVANS,
JOSEPH BAINBRIDGE,
S. ANGUS,
JAMES RENSHAW,
GEO. W. RODGERS,
JAMES T. LEONARD,
EDWARD TRENCHARD,
JAMES JONES,
L. WARRINGTON.

To the HON. BENJAMIN W. CROWINSHIELDS, Sec'y Navy.

A similar paper, dated Dec. 13, 1816, in almost the same language and addressed as above, received the following signatures:

WILLIAM BAINBRIDGE,
ISAAC HULL,
D. D. DEACON,
ALEX. W. WADSWORTH.

EXTENSION OF HOSPITAL CORPS DRILL IN THE ARMY.

Of late there has been a marked activity in the Medical Department of the Army, the tendency of which is specially directed toward increased efficiency in field service. We may note, for instance, the recent modification and improvement in the hospital corps pouches, the disuse of the heavy and useless side arms with which the men were encumbered, the adoption of a new litter weighing six pounds less than the old one and the convention of a board to remodel the Drill Regulations. Were a similar activity manifested by the other War Department bureaus we might be warranted in concluding that a prospect of war was operating as a stimulus. It is true that the Ordnance Department is always progressive, that the Commissary Department is considering an "emergency ration" and that the other bureaus are active in their special lines; but nevertheless we understand that, so far as the Medical Department is concerned, this progress in the direction of efficiency for active service is no transient exhibition of energy in view of imminent possibilities, but a steady advance on well matured plans for the improvement of the Corps. We are led to make these remarks by the publication of the 13th inst. of an order from Head Quarters of the Army requiring all enlisted men of the army to be drilled by their company officers in litter-carrying and in the methods of rendering first aid to the sick and wounded; and by the same order the surgeon of the post is called upon to

thoroughly instruct such captains as may volunteer therefor and all lieutenants serving with troops in the professional knowledge required. Up to this time Army Regulations directed that four men from each company should be so instructed. These men were called company bearers and their duties were to aid the sick and wounded until relieved by members of the hospital corps. Some energetic medical officers have already succeeded in instructing most of the men at their posts by having the company bearers relieved by fresh men as soon as they were proficient in their duties. We print the recent order on another page.

THE ATLANTA MEETING.

During the past week, the Editor made a trip to Atlanta to become acquainted with the arrangements for the coming meeting, and after an interview with the chairman of the Committee of Arrangements, Dr. W. F. WESTMORELAND, he became satisfied that the Sections would be well provided for, and that the hotel space would be ample to meet the requirements of the members. Owing to the elevation of the city (1600 ft.) the heat is never great, even in midsummer, and all may expect a pleasant climate. The good people, with that generous hospitality for which Georgia has ever been famous, propose to give the members of the ASSOCIATION a barbecue which will rank with the famous clambake at the Newport meeting.

The arrangements are now complete for the JOURNAL special train, which will carry PRESIDENT COLE, the Trustees and others, direct from Chicago to Atlanta. The "Big Four," "Queen and Crescent" and "Southern" Railways, have been selected as the route of the JOURNAL special, and as said in commercial circles, "none others are genuine." The equipment of this special is as fine as the Company can furnish, and we are sure that our fellow members will be satisfied with the comforts provided for them on the JOURNAL train. This train runs on its own time and will make very few stops. It may be joined at Indianapolis or Cincinnati by sending notice to this office. The rates of fare are uniform from all points, one fare and one third. Please send on your name without delay, if you intend joining us.

Patrons of the JOURNAL special train may be assured that whatever of advantage accrues is in the interest of the ASSOCIATION treasury.

One physician in Chicago, because a pass was not promised for his wife, makes terms with another route whereby his family may have a pass, in consideration whereof he circularizes the profession generally, and advises them to go with him. A drug firm in another city running a medical journal in Chicago, also proposes to send out a special train in the interest of their enterprise. Whether the JOURNAL ever runs another special to any of the meetings depends upon the view the members take of it.

CORRESPONDENCE.

Ophthalmology.

To the Editor: In the editorial of March 21 entitled "Ashamed of What They Should be Proudest of" the patriotism of the writer has apparently obscured his meaning in some respects. We who practice the art are of course proud of the achievements of American Ophthalmology, and heartily believe that we can do as good work and often do better work, in securing the highest degree of visual acuteness possible for our patients; still it may be doubted if all the strictures and epithets used by the writer in any respect add to the fog-penetrating power of the "eagle's scream." The particular things of which ophthalmologists should be "proudest of," are not very definitely stated, but the implication is that the writer refers to the discovery (?) of the great importance of the eye muscles in producing "eye-strain," blepharitis, trachoma, cataract, and "numerous other ocular ills." As there undoubtedly exists a considerable diversity of opinion upon the whole "muscle business," perhaps he can tell us the particular advances which merit the display of our pride. For example, does he think that coördination of the movements of the eyes in looking at objects, is different from, or differently governed from muscular coördinations elsewhere, as in walking, writing, playing the piano, etc.? Does he think that a "tendency" to imperfect coördination as indicated by the expressions, heterophoria, esophoria and exophoria, is worthy of pathologic classification?

Does he believe in the existence of anything like "muscular equilibrium," and if so, does he believe that it is peculiar to the eye muscles?

Does he think that the human being comes into the world with the eye muscles tuned to a definite equilibrium, and that when there is a failure to "balance" they can be "equilibrated" into tune?

Does he believe asthenopia is a local disease, curable by "refracting" the eyes and equilibrating the muscles?

These questions are asked because unless he regards the condition of the eye muscles, their length, strength and innervation, as having a very great importance, a predominating importance, in the production of not only eye strain but disease, his reference to the American Ophthalmologic Society is apparently motiveless. The members of the Society can speak for themselves, but there are many, not members, who think that too much time at meetings, and too much space in literature has lately been occupied with what might be termed pseudo-scientific essays; and so termed because, while presented in a scientific manner, they failed in the accurate statement of premises. There are many facts in regard to the action of the external eye muscles, separately and in binocular vision, also much that is known about the shape and size of retinal images; many experiments in physiologic optics and a very great amount of clinic history, that must be explained before the doctrine as to the great importance of the muscles in causing disease, or even symptoms of eye-strain, can be accepted.

Without emulating the ardor with which the future, twenty years ahead is predicted for us, it may be altogether too conservative to believe that a dogmatism which ignores the principles of evolution, overrides comparative anatomy, suppresses a long chain of experimental results in physiologic optics, and enunciates a pathologic theory, a new nomenclature, and a wildly brilliant system of therapeutics, all in one decade, may be "out of sight" twenty years hence. Meanwhile "conservatives" who see in eye-strain and muscular incoördinations symptoms having their origin in widely differing conditions, will treat the patient instead of the symptom, with quite as good results as their brethren who equilibrate according to the readings of the phorometer.

"HALLER."

The Standing of American Ophthalmology.

MILWAUKEE, March, 23, 1896.

To the Editor: Exception may well be taken to the arrangement of ophthalmic surgeons generally and of ophthalmology in the rather rambling editorial published in the issue of March 21, which is intended to impress the reader with the idea that American ophthalmic authors, particularly those of the American Ophthalmological Society are "ashamed of what they should be proud of."

The innuendoes of this editorial are certainly distasteful to the majority of the 267 members of the Section on Ophthalmology of the AMERICAN MEDICAL ASSOCIATION, and may be particularly so to a considerable number of those who are also members of the American Ophthalmological Society. Perhaps there may be cause to criticize the 1895 Transactions of the latter. I am, however, unwilling that such a stricture should be passed upon American Ophthalmology and upon that large and growing (!) class of practitioners who are particularly interested in this branch of medicine.

This is perhaps the only instance coming to my notice where ophthalmic authors have been criticized for what they have *not* written. Indeed, the large number of technical articles, especially on refraction and allied subjects, appearing in general journals, has been a cause of remark by brother practitioners who are not specially interested and who will not read such. "Eye-strain" has been harped upon *ad nauseam* in this country and ophthalmologists have something to do besides fitting patients with glasses and writing glowing *post hoc* accounts of their wonderful effects.

However, the ophthalmic division of our profession points with pride to the original work of American authors in the line of refraction and muscular anomalies. The records of even the last year show that distinct advances in other branches of medicine have been reported by authors whose professional work and the most of whose writings are of a special nature.

Ophthalmology is still an example for emulation, particularly as it is represented by the Section on Ophthalmology of the AMERICAN MEDICAL ASSOCIATION. I need but refer to the work done by our members and published in our journal since the time that the balance of the AMERICAN MEDICAL ASSOCIATION followed in the lead of the Section on Ophthalmology, when the Section was so ably reorganized in 1891 by the then chairman, Dr. Leartus Connor, of Detroit, and his associates. The methods of this Section were followed by the others and the pace is still set.

The employment of the columns of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for ill-considered editorials which reflect upon a part of its members and tend to promote discord, is to be sincerely disparaged.

H. V. WÜRDEMANN.

Abdominal Section for Lead Colic.

DAYTON, OHIO, March 18, 1896.

To the Editor: In your January issues which I have just seen, Prof. John B. Murphy reports a case of abdominal section for dynamic intestinal obstruction from lead poisoning and considers it the only one published. I also consider it the only one and am prompted therefore to report the following case of my own: A painter 20 years of age, had had no passage from the bowels for five days, according to one report ten days. Abdomen retracted and soft, but tender on one spot near the umbilicus; considerable pain; vomiting several days, so-called stercoraceous at last. He had had very copious irrigations, oil enemata, moderate salines and six drops of croton oil which probably was vomited. His condition was excellent, pulse slow and regular, temperature 99.6 degrees. Behavior peevish, so that operation was deferred as long as practicable. In the interim a third consultant was called who indepen-

dently advised an operation. Abdominal section showed nothing, but near the umbilicus a sudden narrowing of the small intestine to the size of a lead pencil, which narrowing continued throughout most of the distal portion of the small gut. The narrowing disappeared when the intestinal contents were "stripped" into it and the slightly swollen and bluish bowel above the obstruction now took on a healthier appearance. More stripping was done and the abdomen closed. He never vomited after the operation and became hungry after the first day; considerable flatus through the rectal tube but no tympanites; occasionally slight tormina in flanks; salines end of second day gave several movements. Further convalescence disturbed only by a neural abscess from a bleeding stitch hole.

J. C. REEVE, JR., M.D.

Satisfied, but Sore.

FREDONIA, N. Y., March 19, 1896.

To the Editor:—Yours to hand soliciting my subscription to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Not until the ASSOCIATION rids herself of the charge of bigotry and infallibility, and treats some of her New York members, who happen to think differently from her, with more courtesy and consideration, do I aspire to be a member or propose to subscribe to her JOURNAL. Besides the *Medical Record* and the *Buffalo Medical and Surgical Journal* fill this niche of journalism very nicely. I have, however, for you personally, my dear sir, the highest consideration and esteem.

Very truly yours. NELSON G. RICHMOND.

BOOK NOTICES.

Physicians and Surgeons of America. (Illustrated.) A Collection of Biographical Sketches of the Regular Medical Profession, edited and compiled by IRVING A. WATSON, A.M., M.D., Concord, N. H., Republican Press Association, 1896.

The published works in this country devoted exclusively to medical biography are few, chiefly "American Medical Biography," by James Thacher, 1828; another volume with the same title by Stephen W. Williams, 1845; "Lives of Eminent American Physicians and Surgeons," by S. D. Gross, 1861; "The Physicians and Surgeons of the United States," by Wm. B. Atkinson, 1878; "Biography of Eminent American Physicians and Surgeons," by R. French Stone, 1894, and lastly the work now before us. This is a handsome volume of 843 double column pages containing notices and portraits of 1,218 physicians and surgeons, twenty of whom are women. According to the preface: "All classes of reputable regular practitioners belonging to accredited medical societies have been recognized from the ablest and most eminent to the unassuming country physician, who tirelessly laboring day and night for the alleviation of human suffering, is as worthy of a record as are many who have become more distinguished." We notice, however, the absence of many whom we regard as at the head of the profession in their locality, the explanation of which is no doubt to be found in the absolute refusal of many physicians to have their biography published while living. As a matter of fact an obituary flavor does attach to all these sketches, because we are accustomed to such reading only after the demise of the individual; but the excellent portraits accompanying the text of Dr. Watson's book remove the funereal flavor and recall to us that our many friends here presented are yet among the active laborers in the work of the profession. The fact that the compiler has been for so many years the Secretary of the American Public Health Association explains why the work contains notices of so many of the men who have devoted their attention specially to sanitary subjects. There is no alphabetic or other systematic arrangement of the biographic notices, for among the first portraits

which we personally recognize are those of Surgeon-General Sternberg, Orpheus Everts, A. L. Gihon, L. A. Sayre, N. S. Davis, T. Grange Simons, S. E. Chaillé, etc. There is, however, at the end an alphabetical index for convenience of reference and also an index by States and localities. New York State has the largest representation, 223, of whom 99 belong to New York city and 31 to Brooklyn. Pennsylvania has 87, of whom 30 belong to Philadelphia; Massachusetts 74, 27 of whom are in Boston, and Illinois has 65, nearly half of whom, 31, are in Chicago. Mexico is represented by 5 medical men; Utah, Arizona and Idaho each by 2, and New Mexico and Delaware each by only 1 medical man.

Clinical Lectures of Abdominal Surgery and Other Subjects. By CHARLES T. PARKES, A.M., M.D., late Professor of Surgery, Rush Medical College, Surgeon to the Presbyterian Hospital, Surgeon in Charge of St. Joseph's Hospital, Surgeon in Chief of Augustana Hospital, Consulting Surgeon Hospital for Women and Children, etc. Edited by Dr. A. J. Ochsner. Cl., 8vo, gilt top, pp. 477. Chicago: The W. T. Keener Co. 1896.

The editing of a posthumous book is attended with many disadvantages, one of the most serious of which is the fact that owing to the rapid changes and new discoveries, our pathology is constantly being revised, and a man's remarks when kept five years may be of a character quite out of touch with the current literature. On the other hand, should the editor interpolate, alter or much change, the work then becomes a joint production. Under the circumstances, Dr. Ochsner has chosen, we think wisely, to preserve as much as possible of the language of the author. The many friends of the lamented Parkes will notice with pleasure that his now classic paper on gunshot wounds of the small intestines, read before the AMERICAN MEDICAL ASSOCIATION in May, 1884 (see JOURNAL 1884), is reprinted here for permanent preservation. But the reputation of Professor Parkes as a surgeon, a lecturer and teacher will not depend upon anything incorporated in this volume. It is rather in the hearts of the alumni of the great college in which he taught, that his memory will be cherished and kept green. His stalwart form, his keen yet kindly eye, his manual dexterity, his quickness, his minute knowledge of anatomy and his overrunning good nature are the characteristics by which those who heard him lecture in the clinic amphitheater made famous by Brainerd and Gunn before him, and to whom he was no unworthy successor, will best remember him. He died when he had just reached the goal for which he had striven for so many years, but the steps by which he reached it are demonstrated in the volume under consideration.

Random Thoughts. By JOHN MULLIN BATTEN, B. E., M.D., etc. Cl. pp. 319. Pittsburg: Published for the author 1896.

This book is the revised and enlarged edition of a previously published book entitled "Two Years in the United States Navy" and which now appears under a new title. The author's description of his early childhood, his schoolboy days and his experiences while teaching school is told quaintly, and with such entire candor as to disarm criticism. His account of the stirring scenes of the Civil War, which came under his own observation are extremely interesting. There are essays on various subjects beside the personal narrative. One in particular on "Matrimonial Alliances" deserves to be widely read and its teachings acted upon by the matrimonially inclined.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections in Photo-Lithochromes from models in the Museum of the Saint Louis Hospital, Paris, with explanatory wood-cuts and text, by Ernest Besnier, A. Fournier, Tenneson, Hallopeau, Du Castel, Henri Feulard and Leon Jacquet. Edited and annotated by J. J. PRINGLE, M.B., F.R.C.P. London. To be published in twelve parts. Part 2. Price, \$3 a part. The Rebman Publishing Co. Philadelphia: W. B. Saunders. 1895. Sold by subscription. W. T. Keener, Chicago agent.

We gave our favorable opinion of this great work on the appearance of the first part, and the execution of this second

part is quite equal to the first. Every physician can not go to Paris to inspect the original models with the assistance of a competent guide and instructor, but every one can obtain this representation in colors exactly conforming to the Parisian model and the explanatory text written by those most familiar with the original. This part contains articles and plates illustrating lupus erythematosus of the face, hypertrophic rosacea of the forehead, circinate syphilitic lesions of the skin (confluent and cockade shaped) and xanthoma planum et tuberosum in a glycosuric, icteric and obese subject. These plates are accurately colored, and the models of which they are copies were made by Baretta from life.

Electricity in Electro-Therapeutics. By EDWIN J. HOUSTON, PH.D., and A. E. KENNELLY, Sc.D. Cl., pp. 402. New York: The W. J. Johnston Company. 1896.

This work is written, as we are assured, in response to a growing demand which exists for reliable information respecting the physics of electro-therapeutics. An examination of the book justifies the belief that the authors have not only given some very useful and necessary information, but have made the technicalities of the subject easy to comprehend. The illustrations are numerous and excellent.

Atlas of Traumatic Fractures and Luxations. With a brief treatise by H. HELFERICH, M.D., with one hundred and sixty-six illustrations after original drawings by Dr. Joseph Trupp. Cl. pp. 142. New York: Wm. Wood & Company. 1896.

This atlas and treatise constitute a work of practical utility for students, from the well-known Professor Helferich, of the University of Greifswald, who for many years was Thiersch's assistant. The illustrations are generally good and are mostly from recently prepared specimens. They will repay careful study.

A Manual of Jurisprudence and Toxicology. By HENRY C. CHAPMAN, M.D. Second edition, revised, with 55 illustrations and three colored plates. Cl. pp. 254. Price \$1.50 net. Philadelphia: W. B. Saunders. 1896. [W. T. Keener, Chicago agent].

The first edition of this manual was published late in 1892, and its popularity is attested by its rapid sale. It is divided into two parts: the first, medical jurisprudence containing fourteen chapters and the second, two chapters on toxicology.

It is an excellent manual in which an accurate epitome is given of the existing knowledge on the subject. It is fairly illustrated and well printed on good paper.

Voice Building and Tone Placing. Showing a new method of relieving injured vocal cords by tone exercises. By H. HOLBROOK CURTIS, Ph.B., M.D. Cl. pp. 215. New York: D. Appleton and Company. 1896.

"When music, heavenly maid, was young," we doubt that she wasted many moments in studying the anatomy of the vocal cords or the physiology of articulate language. The modern votaries of music require a knowledge of anatomy of the organs concerned in voice production, their function and the means of maintenance at their highest point of perfection. Those interested in elocution as well as music, will find this volume both instructive and entertaining. The chapter on the eidophone is particularly interesting.

Iron in the Different Organs in Anemia. Stühlen's microchemic study of the amount of iron deposited in the various organs, shows that the chief seat of this deposit is the liver and spleen in pernicious anemia. In cases induced by an excessive loss of blood or any secretion, the amount of iron in the organism is far below normal, and the liver and spleen are here again pre-eminent. In severe and pernicious anemia iron is also deposited in the kidneys. It extended into the urethral canals, but the glomeruli never showed a trace of it. In the liver it extended over the peripheral portions of the lobes, and in the spleen it was found mainly in the pulp. *Centralblatt f. Phys.*, February 22.

PUBLIC HEALTH.

Not to Give Cigarettes to Minors.—A law was passed in New Hampshire in 1895 which provides that if any person other than the minor's parent or guardian shall give or deliver any cigarette, snuff or tobacco in any of its forms to any minor under 18 years of age, he shall be fined not more than fifty dollars for each offense.

Amendment of Missouri Pharmacy Law.—A new section was added to the Missouri pharmacy law in 1895 to be known as Section 4625 *a*, which provides that the board of pharmacy shall, upon application, and at such time and place and in such manner as they may determine, examine every person who shall desire to conduct the business of selling at retail, compounding or dispensing drugs, medicines or chemicals for medicinal use, or to compound and dispense physicians' prescriptions as pharmacists; and if a majority of said board shall be satisfied that said person is competent and fully qualified to conduct said business, they shall enter the name of such person as a registered pharmacist in the book provided for that purpose: Provided, that the board of pharmacy, in conducting examinations under the provisions of this section, shall not be permitted to inquire into the source of information of any applicant, but shall subject all applicants to the same examination, and require of all the same degree of efficiency.

Missouri Embalming Law.—A law was passed in Missouri in 1895 establishing a State board of embalming, to consist of five members to be appointed by the governor. It is to prescribe a standard of proficiency as to the qualifications and fitness of those engaged and who may engage in the practice of embalming and the care and disposition of dead human bodies within that State. Applicants for a license must be of good moral character and, upon due examination, satisfy the board that they are possessed of a knowledge of the venous and arterial systems, the location of heart, lungs, stomach, bladder, womb and other organs in the human body; the location of abdominal, pleural and thoracic cavities; the location of the carotid, brachial, radial, ulnar, femoral and tibial arteries; a knowledge of the science of embalming and the care and disposition of the dead, and have a reasonable knowledge of sanitation and the disinfection of bodies of deceased persons, and the apartment, clothing and bedding, in case of death from infectious or contagious diseases. Licenses are to be registered in the Probate judge's office and displayed in the practitioner's office. Renewal of registration with the secretary of the board must be made annually.

New York Opticians Seek Protective Legislation.—Legislation that is protective of the eyes of the public, and at the same time of the interests of the craft of the opticians, is being agitated in New York State, in the form of a bill introduced by the Public Health Committee of the Assembly. Under this bill, a society, called the "Optical Society" of the State of New York, is to be incorporated, and has for its avowed object the improving and regulating the practice of dispensing and refracting opticians in this State. The bill makes it the duty of the society to nominate on or before the third Tuesday in May of each year six persons, from whom the Board of Regents of the University of the State of New York shall appoint three on or before the first day of July of each year, who shall compose the State Board of Examiners of the Optical Society of the State of New York. It shall be the duty of the Board of Examiners to examine all persons applying for certificates to practice as dispensing or refracting opticians of the State of New York, and to keep a record of certified opticians. It shall be unlawful for any person, on and after the first day of August, 1896, to practice as an optician by executing ophthalmic prescriptions for lenses or adapting glasses to the sight, unless he shall have been granted a certificate.

To Teach how Diseases are Spread.—A law was passed in Michigan in 1895 requiring that there shall be taught in every year in every public school in that State the principal modes by which each of the dangerous communicable diseases are spread, and the best methods for the restriction and prevention of each such disease. The State Board of Health is to annually send to the public school teachers and superintendents throughout the State printed data and statements which shall enable them to comply with this law. School boards are required to direct such superintendents and teachers to give oral and blackboard instruction, using the data and statements supplied by the State Board of Health. Neglect or refusal on the part of any superintendent or teacher to comply with the provisions of this law shall be considered a sufficient cause for dismissal from the school by the school board. Any school board willfully neglecting or refusing to comply with the provisions of this act shall be subject to fine the same as for neglect of any other duty pertaining to their office. This law applies to all public schools in the State, including schools in cities or villages, whether incorporated under special charter or under the general laws.

How Sanity is Determined in Michigan.—Whenever any person, upon application to any probate court in Michigan for his admission into any asylum, home or retreat, for the care of the insane, shall have been adjudged by such court insane, and shall have been released from or shall not have been received into any such asylum, home or retreat, application, it was enacted in that State in 1895, may be made to such court for a finding and order, declaring such person restored to soundness of mind. The court is then to fix a time for the hearing of such application, and in case the application is made by the person adjudged insane shall cause notice to be given to the person who applied for the order of admission, if he be found in that county, and may cause such further notice to be given as it deems proper. If upon the hearing of the application, the court, from the testimony given, shall find the person restored to soundness of mind, an order shall be entered in the journal of the court declaring him sane: provided, however, that the testimony of at least two reputable physicians establishing the sanity of the person shall be required before the finding of the court and entry of such order.

New Jersey Health Laws.—Several important acts were passed in New Jersey in 1895 relative to the preservation of the public health. Boards of health in cities of the first class are authorized to grant and regulate permits incident to health matters and fix fees to be paid therefor. They are also empowered to pass, alter and repeal ordinances relating to the public health of such cities, and fix the amount of fines and penalties for the violation thereof, except in counties where there are established county boards of health and vital statistics the ordinances of neither the city or county board are operative until the respective boards shall agree thereto and by ordinance enact and define their separate and respective jurisdictions within the limits of such city. Without this last restriction, much the same authority is given to boards of health in cities containing a population of over one hundred thousand. Where the board of health of any city has established or shall establish a plant for the production of diphtheria anti-toxin serum, and shall be engaged in the production thereof, it shall have power to sell the surplus to any municipality or person desiring to purchase it. The common council or other legislative body of any city of the second class may, whenever it is by it deemed necessary purchase land in said city and erect a building or buildings thereon to be used for a hospital for contagious diseases, the plans being first approved by the mayor and the local board of health. After the building or buildings shall be completed, the same shall be in charge of and under the direction of the board of health. The State board of health or any offi-

cer acting for it, having reason to believe that any milk has been contaminated by the emanations, exhalations or discharges of any person sick with communicable disease may prohibit the transportation or sale of such milk. The manufacture and sale of adulterated candy is prohibited. Boards of health in cities of the first class may condemn and prohibit the sale or use of impure ice or ice cut from polluted streams. Provision is also made to prevent deception in the sale of cakes and biscuit, in the State.

New York City's "House Boat" for the Homeless begins Operation. Employment, food, a bath and clean clothing all in one breath, so to speak, are provided by the new experiment now on trial at the New York City Floating Lodging-house, also called "The City's House-Boat." The following is an explanation, taken from a New York newspaper, of the first day's plan of operations: "A floating lodging-house does not necessarily mean a lodging-house for floaters, though in political seasons it might take that shape. Such a house has been established at Twenty-sixth street and East river, and it looks as if it would prove to be a success. There are baths and beds for quite a company; the baths are compulsory conditions on the beds. Every man who sleeps there has the use of a gown and a pair of slippers and he has two meals. In return for these advantages he must do three hours' work on the day of the opening, the thing that needed most to be done was the clearing of snow from the streets and walks, and the candidates were set to work on the grounds of Bellevue Hospital. They shoveled and swept thoroughly and with a good spirit. The baths were not accepted so eagerly. Some of them shrunk and tried to dodge, but the keepers were inexorable and bathe they did. A few to their own great astonishment, found that they liked it, and they may have formed a habit that will either kill or improve them in a few years. Those who have made a study of tramps hope it will do one thing or the other.

"The apparent success of this enterprise is a little surprising, for heretofore the usual wanderer has objected to making any return for the favors he receives from lodging-house keepers and other such public agents. Perhaps we must look for the solution of this mystery in the fact that the men are employed together, and are therefore able to enjoy each other's society while they toil. There is an infection of purpose and enthusiasm in numbers. Charity is no longer founded on sentiment. We realize from the reports of experts in crime and pauperism that most of the good deeds done by soft hearted persons have tended only to perpetuate laziness and false pretense, and it is becoming harder and harder for the drunken, vicious, useless vagrant to gain the ear of sympathy. There is, however, a need of places like the floating lodging-house, where the worthy poor can escape from the severities of the weather, allay the gripe in an empty stomach, renew self respect in a bath tub, and possibly secure employment that will put them on their feet again."

New Jersey Pharmacy Law Changes.—The pharmacy law of New Jersey was amended in 1895 and thereby changed in the following important particulars. Meetings of the board of pharmacy of the State are to be held on the third Thursday of January, April, July and October, in the city of Trenton, and at such other places and dates as may be required. The board is to grant certificates of registration to all persons whom it shall judge, on examination, to be properly qualified to practice pharmacy. It is given the additional power to suspend and revoke the registration of any person addicted to chronic and persistent inebriety, or of any person convicted of a crime involving moral turpitude. Applicants for registration must now be not less than 21 years of age, and pay to the secretary of the board a fee of \$10, those failing to pass examination being given the right to try a second time at any time within one year thereafter. It is also now provided that the board of pharmacy shall grant an assistant's certificate to any person not less than

18 years of age, who shall have had three years' practical experience in pharmacies where prescriptions have been usually compounded, and shall have passed a satisfactory examination before said board of pharmacy: which certificate shall entitle such person to all the privileges of a registered pharmacist during the temporary absence of his employer, and shall not entitle such assistant to engage in business on his own account or as manager to conduct a pharmacy. Every person applying for an assistant's certificate shall pay to the secretary of the board of pharmacy a fee of \$5 before examination, and in case of failure to pass a satisfactory examination the applicant shall be granted a second examination without the payment of another fee at any time within one year from his first examination. Every registered pharmacist and every registered assistant who desires to continue the practice of his profession shall once in three years during the time he shall continue such practice, on such date as the board of pharmacy shall prescribe, pay to the secretary of the board a registration renewal fee of fifty cents, in return for which he shall receive a renewal of his registration. A penalty is prescribed for failure to register and for dispensing adulterated drugs, as well as for procuring or attempting to procure registration fraudulently or by false representation. The exception made in favor of the making or vending of patent or proprietary medicines, and of the sale of simple domestic remedies by retail dealers in rural districts, is limited to such as are non-poisonous and it is no longer required that the retail dealer in rural districts be one-half mile or more remote from a registered pharmacist.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Alabama: Mobile, March 12 to 14, 2 cases.
Arkansas: Jacksonport, March 17, 4 cases.
Florida: Pensacola, March 18, 1 case.
Louisiana: New Orleans, March 7 to 14, 116 cases, 10 deaths;
Shreveport, February 26 to March 20, 16 cases, 1 death.
Michigan: Bay City, Detroit, Imlay Township, Ionia,
Marine City, Saginaw, March 7 to 14, smallpox reported.
Tennessee: Memphis, March 21, 2 cases.
Texas: Center, March 13, 1 case; Orange, March 18, 1 case.

SMALLPOX—FOREIGN.

Bombay, February 11 to 18, 27 deaths.
Brussels, February 22 to 29, 1 death.
Cairo, February 5 to 18, 5 deaths.
Cardiff, March 1 to 7, 2 cases.
Constantinople, October 1 to 31, 5 deaths.
Genoa, March 1 to 7, 2 cases.
London, February 22 to March 7, 2 deaths.
Madras, February 8 to 14, 1 death.
Moscow, February 15 to 22, 1 death.
Prague, February 22 to 29, 4 cases.
Tuxpan, February 22 to 29, 1 death.
Warsaw, February 8 to 22, 6 deaths.

CHOLERA—FOREIGN.

Calcutta, February 1 to 8, 66 deaths.

YELLOW FEVER—FOREIGN.

Santiago de Cuba, March 1 to 7, 6 deaths.

ASSOCIATION NEWS.

Provisional Program for the Atlanta Meeting of the Ophthalmological Section of the AMERICAN MEDICAL ASSOCIATION.
LUCIEN HOWE, Chairman, FRANK ALLPORT, Secretary.

Address of Chairman, LUCIEN HOWE.

Report of Special Committee on Detachment of the Retina, its Etiology and Treatment, R. E. RANDOLPH, Chairman.
Histologic Changes in Retinal Detachment.

Papers from F. C. HOTZ, E. E. HOLT, F. E. WEEKS, T. E. MURRELL, subjects unannounced.

JOHN F. FULTON, Operative Treatment of Detached Retina.

L. F. LOVE, Report of a Case of Detached Retina Occurring in Chronic Bright's Disease.

W. T. MONTGOMERY, Electrolysis in the Treatment of Detached Retina.

E. OLIVER BELT, Consanguineous Marriages as a Cause of Retinitis Pigmentosa.

DUDLEY S. REYNOLDS, The Nomenclature of Conjunctivitis.

F. T. SMITH, The Use of Caustics in Epithelioma of the Lids.

A. E. PRINCE, The Treatment of Ectropion of the Lower Lid.

E. J. BERNSTEIN, Sub-conjunctival Injections.

F. C. HOTZ, A Case of Ectropion of the Upper and Lower Eye-lids.

LOUIS J. LAUTENBACH, Gonorrheal Conjunctivitis, its Treatment.

P. D. KAYSER, Grafting in Blepharoplastics.

Report of Special Committee on Optic Nerve Atrophy of Obscure Origin. H. V. WÜRDEMANN, Chairman. Cases of Optic Nerve Atrophy of Obscure Origin occurring in General Diseases.

GEO. E. DE SCHWEINITZ, Obscure Cases of Optic Nerve Atrophy of Toxic Origin.

HARRY FRIEDENWALD, Obscure Cases of Optic Nerve Atrophy of Peripheral Origin.

C. W. KOLLOCK, Obscure Cases of Optic Nerve Atrophy Occurring in Cerebral Diseases.

G. DUNBAR ROY, Obscure Cases of Optic Nerve Atrophy Occurring in Spinal Diseases.

H. BURT ELLIS, Atrophy of Optic Nerve Probably due to Quinin.

B. ALEXANDER RANDALL, The Differential Diagnosis between Simple Glaucoma and Optic Nerve Atrophy.

S. D. RISLEY, Secondary Glaucoma.

LEARTUS CONNOR, Causation and Management of Glaucoma.

GEO. DE SCHWEINITZ, Concerning Central Scotoma, with Particular Relation to the Papillo-macular Bundle and the Cortical Visual Centers.

R. F. LE MOND, The Relationship between Diseases of the Eye and Brain.

O. J. SHORT, Treatment of Optic Nerve Atrophy by Mercurial Inunctions in Conjunction with the Hot Baths of the Hot Springs of Arkansas.

EDWARD JACKSON, The Value of Homatropin in the Diagnosis of Ametropia.

G. C. SAVAGE, Some Interesting Points Pertaining to Refraction.

CASEY A. WOOD, The Field of Fixation in its Relation to Heterophoria.

HENRY WILSON RING, Three Cases of Monocular Vertical Nystagmus.

HERBERT HARLAN, A Contribution to the Question of the Removal of the Lens in High Myopia.

HERBERT HARLAN and HIRAM WOODS, Results of an Examination of the Vision of the Children of the Public Schools of Baltimore.

H. GRADLE, Slight Chorio-retinal Lesions as a Cause of Asthenopia and Reduced Sight.

C. M. HOBBS, The Coördination and Incoördination of the Eye Muscles.

C. P. PINCKARD, An Ophthalmometric Puzzle.

J. ELLIOTT COLBURN, A Case of Intra-sclerotic Cyst, and a Case of Cystic Tumor of the Orbit.

GEO. F. FISKE, Report of Intra-ocular Malignant Tumors.

S. C. AYERS, A Case of Chloroma.

A. R. BAKER, Dermoid Tumors of the Cornea.

ARTHUR G. HOBBS, The Application of the Galvanic current in Pterygium Operations.

C. D. WESCOTT, Keloid of the Cornea.

LYMAN WARE, Report of 100 Cataract Cases with a Special Device for Secondary Cataract.

A. J. ERWIN, A New Needle for Secondary Cataract.

ADELINE E. PORTMAN, Idiopathic Choroiditis.

HIRAM WOODS, Report of Some Cases of Choroiditis in Young Adults.

H. MOULTON, Keratitis Interstitialis Annularis.

H. BURT ELLIS, Bilateral Exophthalmus.

J. HERBERT CLAIBORNE, Experiments upon Rabbits, made with a View to Establishing a Stump for the Better Fitting of Artificial Eyes.

H. B. YOUNG, A Further Clinical Note on the Use of Pyoktanin.

March 15, 1896.

SOCIETY PROCEEDINGS

Chicago Ophthalmological and Otological Society.

Regular Meeting held at the Chicago Athletic Association, Feb. 11, 1896.

DR. GRADLE in the Chair.

There were twenty-two members in attendance. The minutes of the last meeting were read and approved.

The Secretary read the application of Dr. J. B. LORING, which was referred to the Committee on Membership.

DR. GRADLE read a paper entitled

THE EFFICIENCY OF SALICYLATES IN THERAPEUTIC PRACTICE.

The speaker explained that salicylates have been used in ophthalmic practice and recommended in the books for nearly twenty years, but that very few authors state definitely what and how much can be expected of the drug in different diseases. In the mild forms of episcleritis the salicylate of sodium has a prompt effect in checking the disease. In corneal diseases he has found it useless except in one form, keratitis, presumably dependent upon rheumatism or gout. This keratitis is characterized by deep striations or discrete spots of infiltration in the cornea, with a more or less diffuse haze. It has an indefinite course, but yields within a few days to the action of salicylate of sodium. In iritis the speaker has never observed specific effect. In eight instances patients with rheumatic manifestations and iritis were benefited as far as the rheumatism was concerned, but the salicylic acid did not prevent the iritis from taking its usual course. He claims, however, that this drug will often mitigate the pain and in some instances apparently shorten the disease, but that this effect can not be predicted. It requires doses of at least one gram, repeated four or six times a day, in order to obtain the benefit of salicylates, and more if the patient can stand it. In cyclitis the most striking results were seen. It has no effect upon an acute cyclitis, but when the disease has passed the acute stage and then has an indefinite duration, or exacerbations and relapses, a very prompt checking effect was found in the majority of instances. This pertained to cyclitis following retinal detachment, cyclitis of traumatic origin, and in one instance a sympathetic form of disease. Sometimes a marked benefit was found in twenty-four to forty-eight hours. In no other disease of the eye could any decisive results be obtained by the use of salicylate of sodium.

DISCUSSION.

DR. HOLMES had used salicylates only for the relief of pain. For this purpose he had found them of great help, but had not had very satisfactory results from salicylates as a specific.

DR. COLBURN had used salicylates at times, but finds that antipyrin and similar analgesics accomplish the same results, and as they were less irritating to the patient's stomach he considered them better. He used all these drugs for the relief of pain only, and not as specifics.

DR. HOTZ had first used the salicylates systematically in 1878 and reported his results in the *Chicago Medical Journal and Examiner* in 1879, about the time that Chisholm made his report. He disagreed with the former speakers in regard to the value of the salicylates as a specific. In cases of rheumatic iritis the relief from pain and other symptoms was very marked, following the administration of the salicylates in large doses. Referring to the benefits Dr. Gradle had derived from them in cases of cyclitis, but not in iritis, he considered that all severe cases of iritis were complicated with cyclitis, and that Dr. Gradle's experience was only proof of the value of salicylates in iritis. He generally gave the salicylate of sodium in 5 grain doses, repeated at very short intervals, instead of 15 grain doses every two hours or so.

DR. COLEMAN's experience corresponded with Dr. Gradle's as far as iritis is concerned. He had found the drug of but

little value, although he had used 15 grain doses very persistently. He now uses 1-10 grain doses of calomel, repeated every hour until relief is experienced. A recent case of herpes zoster ophthalmicus, which had suffered greatly from severe pain for ten days, was relieved by salicylate of soda, when all other drugs had failed except morphin.

DR. HALE asked if Dr. Gradle had ever used oil of wintergreen instead of salicylates. He had found the oil of wintergreen just as efficacious, and it did not disturb the patient's stomach nearly as much as the salicylate of soda.

DR. PIERCE also spoke of the use of wintergreen in his practice as being very satisfactory. He considered it important to get a reliable preparation of the drug, and he uses Merck's oil of wintergreen entirely.

DR. WÜRDEMANN had but little use for the salicylates. In iritis he had always used mercury with satisfactory results.

DR. HAWLEY used to use salicylate of soda, but found it very irritating. He now prefers salicin and gives very large doses, 20 grains every hour, and sometimes as high as 30 grains every hour. He finds salicin is less irritating, and has never had any unpleasant effects from the use of such large doses.

DR. OAKS uses the salicylic acid prepared from the oil of wintergreen, and not the one used synthetically. He finds the results are better and the preparation less irritating than the synthetic form.

DR. GRADLE (in closing) said that he prefers the salicylate of soda in the solid form: that in the form of 5 grain tablets it was less irritating than in solution. He finds it is absolutely useless to use doses smaller than 15 grains, repeated every two or three hours.

DR. COLBURN reported the case of a boy of 15, who six months before the doctor saw him, noticed a small cyst the size of a pea between the cornea and the inner canthus which rapidly grew larger. When seen by the doctor the cyst had spread until it occupied part of the cornea, and it could be plainly seen that the cyst had invaded the corneal walls, and that both the front and back walls of the cyst were formed by corneal tissue, the cornea still remaining transparent. The tension of the cyst was about that of the eye. Photographs of the cyst were shown. The conjunctiva was opened over the cyst, and it was found the outer wall was composed of sclerotic and corneal tissue. A small puncture made through this wall allowed quite a little thin, transparent fluid to escape, and a larger incision showed the inner wall of the cyst to be also composed of scleral and corneal tissue. Nothing was found in the cyst with the exception of this clear fluid. It healed rapidly and the two walls united with obliteration of the sac.

In looking up the literature Dr. Colburn was unable to find any reference to similar cysts. He finds, however, two cases, in one of which a cysticercus was found in the cyst, and in the other case a piece of steel.

As far as the etiology of this case is concerned, the only previous history was an injury to the eye in childhood from a dog bite, the scar of which is plainly visible.

DR. WÜRDEMANN referred to one case of echinococcus cyst of the sclera, which will be reported in the new System of Ophthalmology of Norris and Oliver.

DR. COLEMAN spoke of the question of finding the axis for weak cylinders, and referred to the method recommended by Price about a year ago of using quite strong cylinders in determining this axis, the cylinder used being too strong to give good vision, but slight deviations from the proper axis making the vision still worse. In this way he had succeeded in finding the axis for the weak cylinder, which he could not do in any other manner.

On motion, the Society adjourned.

C. P. PINCKARD, Secretary.

103 State Street.

SOCIETY NEWS.

American Academy of Medicine. Preliminary "press notice" of the twenty-first annual session at Atlanta, Ga.: The twenty-first annual session of the American Academy of Medicine will be held at the Hotel Aragon, Atlanta, Ga., Saturday, May 2, and Monday, May 4, 1896. The proprietors of the Aragon have made special rates for those who attend the meeting; it is expected that the concession for one and one-third fare for the round trip granted to the AMERICAN MEDICAL ASSOCIATION will be available in time for those who desire to attend the opening session; a pleasant excursion can be arranged to start from Philadelphia and visit Asheville, N. C., the "Land of the Sky," and Chattanooga, *en route* to Atlanta, if a sufficient number club together for that purpose; or special Pullman cars can be chartered for the exclusive use of those who attend the meeting for the direct route to Atlanta from any rendezvous selected. The Secretary invites correspondence on any of these topics, and also from those who desire a copy of the completed program, when it is issued; full information will be promptly given on application.

Provisional Program: The Academy will meet in executive session with closed doors on Saturday, May 2, at 10 A. M. The open session for the reading of papers will begin about 11 A. M. The reunion session and annual dinner will be held on Saturday evening. An executive session will be held on Monday morning, after which the special discussion on "Methods of Medical Education" will be the order of the day. The Association of American Medical Colleges, and the Confederation of the State Boards of Medical Examiners and Licensers, have accepted the invitation of the Council and will participate in this discussion. The time-table for the day and the time for adjournment will be determined by the circumstances.

Papers promised: (Note. No attempt is made to arrange the papers in the order in which they are to be read.) 1. "Laboratories and Hospital work," the President's Address, Henry M. Hurd, Baltimore, Md. 2. "Colonies for Epileptics," Frederick Peterson, New York City. 3. "Insanity in the South," J. T. Searcy, Tuscaloosa, Ala. 4. "Tuberculosis in Public Institutions," J. W. Babcock, Columbia, S. C. 5. "Vivisection," George M. Gould, Philadelphia. 6. Subject not yet given. Woods Hutchinson, Iowa City, Iowa. 7. "The Confusion of Pharmacy Relating to the Theory and Practice of Medicine," Elmer Lee, Chicago. 8. "A National Board to License for the Practice of Medicine," Henry Leffmann, Philadelphia. 9. Report of the Committee to Abstract the Laws Regulating the Practice of Medicine and to Suggest a Model Law, Perry H. Millard, Chairman, St. Paul, Minn. 10. "Homicide," Paul Bartholow, Philadelphia. 11. "The Sociologic and Scientific Attitude of the Medical Profession," W. J. K. Kline, Greensburg, Pa. 12. "A Study of Some of the Distinguishing Features of the Homo Medicus," Charles McIntire, Easton, Pa.

Discussion on "Methods of Medical Teaching": This discussion will be opened by a series of ten-minute papers, and in the discussion to follow, each speaker will be limited to five minutes. The papers are as follows: 13. "The Preparatory Mental Discipline for the Medical Student," F. H. Gerrish, Portland, Me. 14. "The Lecture and its Uses," Charles B. Penrose, Philadelphia. 15. "Text-book Recitation and its Advantages," De Lancey Rochester, Buffalo. 16. "Laboratory Methods," V. C. Vaughan, Ann Arbor, Mich. 17. "Clinical Teaching for Graduates in Diseases of Children," J. Madison Taylor, Philadelphia. 18. "The Seminary Method," Bayard Holmes, Chicago. 19. "Examinations," E. L. Holmes, Chicago. 20. "Students' Medical Societies," Roswell Park, Buffalo. 21. "State Examination," J. McPherson Scott (of the Maryland Board of Examiners), Hagerstown, Md. 22.

"The Best Method to Teach Anatomy." John B. Roberts, Philadelphia. 23. "The Best Method to Teach Physiology." Charles D. Smith, Portland, Me. 24. "The Best Method to Teach Practice." J. C. Wilson, Philadelphia. 25. "The Best Method to Teach Surgery." J. S. Wight, Brooklyn. 26. "The Best Method to Teach Obstetrics." J. C. Edgar, New York City. 27. "The Best Method to Teach State Medicine." George H. Rohé, Catonsville, Md. Correspondence is pending about some additional papers; if any more are promised, the titles will appear in the completed program.

CHARLES MCINTIRE, Secretary.
Easton, Pa.

NECROLOGY.

DORRANCE K. MANDEVILLE, M.D., who was formerly a surgeon in the United States Marine-Hospital Service, died at Brooklyn on the 9th inst., aged 68 years. At the time of his connection with the Marine-Hospital Service he was a resident of Mobile, Ala., whence he removed in 1866 to reside at Clinton, N. Y., he having been a graduate in arts at Hamilton College in 1849. His medical degree was obtained from the College of Physicians and Surgeons, New York. He removed from Clinton to Brooklyn in 1876. He was an ex-interne of Bellevue Hospital.

NELSON FANNING, M.D., died at his home in Catskill, N. Y., February 27. He was one of the oldest physicians in the United States. He was graduated from the now extinct Berkshire Medical College in 1830, having been in active practice until within a few days of his 88th birthday. He had been continuously a medical practitioner for sixty-five years, and was the dean of the faculty of Greene County. In the war of the rebellion he served nearly two years as surgeon of the 134th New York Volunteers.

JOHN S. DANIELS, M.D., a well-known surgeon in New Hampshire, died March 6, at Rochester, N. H. He was born in Barrington, that State, and educated at the Long Island Medical College in the class of 1875.

GEORGE BADGER COGSWELL, M.D., of North Easton, Mass., died March 6, in the sixty-third year of his age. He was a native of Bradford, Mass., educated at Wilmington Academy and Dartmouth College, was A. M. of that institution in 1850, and M.D. of its medical department in 1857.

JOHN HOWARD RIPLEY, M.D., formerly President of the Faculty of the St. Francis Hospital, New York city, was the subject of the following tribute of respect by his fellows of the Medical Board of that institution:

WHEREAS, It becomes our painful duty to announce the death of Dr. John Howard Ripley, attending physician to St. Francis Hospital, and late President of its Medical Board; therefore, be it

Resolved, That the Medical Board desires to place on record its due appreciation of his long and valuable services to this institution, faithfully and cheerfully rendered for nearly a quarter of a century; and be it

Resolved, That from his first connection with this hospital he was an ever-willing servant for its best interests, an ardent promoter of its highest aims and an active participant in all its charitable benefactions; and be it

Resolved, That the remembrance of his manly disposition, his frank manner, his energetic spirit and scholarly attainments will ever serve as a cherished lesson for the well ordered life of a dutiful worker, an indefatigable investigator and a model physician.

THOMAS C. BRADFORD, M.D., died March 13, after an illness of two weeks. Dr. Bradford was born in Cincinnati in 1835 and he graduated from the Bellevue Hospital Medical College, New York, in 1864, since which time he has practiced his profession in Cincinnati.

J. W. IRELAND, M.D., died on the evening of the 15th, at his home in Lewisport, Ky. He was attending to his practice all of the day before his death, which was caused by some heart

lesion. He was born at Eminence fifty-eight years ago. Served as Surgeon in the Confederate army under Col. Yiltner. After the war he moved to Louisville and was Superintendent of the City Hospital for four years, later removing to Lewisport, where he has continued to practice up to the time of his death.

MISCELLANY.

Missouri Law to Prevent Blindness.—A law was passed in Missouri in 1895 providing, under penalty, that should one or both lids of either eye or both eyes of an infant become red or swollen, or should there be any discharge from either eye or from both eyes, at any time within three weeks after its birth, it shall be the duty of the midwife, nurse or other person having charge of said infant, at once, unless for good cause shown, to report the condition of said eyes to a legally qualified practitioner of medicine.

Missouri Cigarette Local Option Law. Any city, town or village in Missouri existing by virtue of the present general law, or by any local or special law, it was enacted by the legislature in 1895, may, by ordinance or act, prohibit the sale, within its corporate limits, of cigarettes or cigarette wrappers to minors any charter provision to the contrary notwithstanding; and such city, town or village may provide punishment or fines for any person, persons or corporation violating any ordinance authorized by this enactment.

Should Name Disease.—Where an action was brought to recover damages for personal injuries caused by the negligence of the party sued in delivering to the plaintiff, to be washed, clothing contaminated with a contagious venereal disease, the latter being ignorant of its condition, the appellate division of the supreme court of New York holds, *Hatterman vs. Siemann*, decided Feb. 7, 1896, that all that was still needed to state a good case for special damages was to give more specifically the name, nature, character, or other description of the disease alleged to have thus been contracted.

Wafers: Light and Red. One good turn, etc. Flossie (who had overheard conversation between her father's groom and the family doctor): "Ain't you goin' to buy our horse?" Doctor: "No, my dear, I want a larger one." Flossie (reproachingly): "We always take any size baby you bring."

The Art of War. Pat: "Phwat does they use grape-shot fur?" Mike: "Sure, its to give the inimy appendicitis."—*Puck*.

The Formation of Spores on Bacteria. Microscopic color tests show that the spores develop out of a material which is discernible by its resistance to the coloring matter, thus showing its resemblance to the mature spore. It first shows as small grains on the bacteria protoplasm, which grow together into a spore. This resistance tends to prove that the spores not only possess some peculiarly tough tissue, but that there is also some chemic constituent that is responsible for it. *Fortschritte der Med.*, 1895, Nos. 20, 21.

Changes in the Portal Vein in Biliary Lithiasis. Galliard reviews in *Méd. Mod.*, 1895, No. 93, the different cases on record of inflammations, thrombosis, compression and fistulas of the portal vein consequent on the formation of biliary calculi. He recommends in acute disorders of the vein, after thorough cleansing of the intestines and bile duct with calomel, salol, salicyl or naphthol, that an operation be attempted which is contraindicated in chronic cases. This makes it all the more important to treat the trouble in time. *Centralblatt f. Chir.*, February 22.

The Thyreo-proteids. Morin suggests that the thyreo-proteids discovered by Hotkin, might be used to advantage in the infective diseases, like tuberculosis. The atrophy of the thyroid glands usually present in phthisis is his ground for this sugges-

tion and he cites cases of enlarged thyroid glands in which the disease remained stationary. He has experimented with it himself in many cases, but not sufficiently to announce an authoritative opinion, and he urges others to continue experimenting with it on animals immune against tuberculosis, goats, horses, etc., and also on persons, after isolating the antitoxin. —*Centralblatt f. Chir.*, February 15.

New Formation of Nerve-cells in the Brain of a Monkey after Extirpation of the Occipital Lobes.—Vitzou announces that he has accidentally found that the assumption that there can be no regeneration of the central nerve fibers or cells, is incorrect. In February, 1893, he removed both of the postero-inferior portions of the hemispheres in a monkey. In four months the first total blindness began to pass away, and two years and two months later, the animal could see enough to avoid obstacles. At this time the brain was opened again, when Vitzou was astonished to find that the space occupied formerly by the extirpated lobes was filled with a newly formed substance, which tests proved to be nerve fibers and cells, although not so compact as in the normal brain. He believes that the improvement in the sight was due to this regeneration of the nerve fibers and cells. —*Compt. Rend.*, Sept. 16, 1895.

Tuberculous Peritonitis.—Mazzoni reported thirty-five cases of this disease treated with laparotomy, followed by recovery in thirty-three. Two cases required a second operation in eight to ten months. He merely opens the abdominal cavity and empties it of fluid. The second operation was of special interest on account of what was found in the abdomen: The tubercles had almost disappeared, around those that were left there was an inflammatory exudation, and inside there was cystic degeneration. This report was made before the Congress of Surgery at Rome, last fall, and led to a lively discussion whether all forms of peritoneal tuberculosis indicated an operation, whether the simple opening of the abdomen is enough, or whether in the peritoneum a certain amount of irritation should be produced. The members agreed to take note of all cases and compare experiences. —*Centralblatt für Chir.*, February 1.

The Relations Between the Cerebrum and the Labyrinth. Ewald and Hyde have been investigating the after-effects of disturbances in the labyrinth in different animals, which tend to change into substituting phenomena, more or less, and the higher the animal in the scale of nature, the greater this tendency. They removed the cerebrum from some frogs whose labyrinths had already been removed, but found this had a very slight influence on the substituting process, which is insignificant in these animals. Experiments on doves showed that the removal of the cerebrum had a decided influence in preventing it. The scientists consider their experiments conclusive that the cerebrum plays a most important part in these phenomena, and expect to prove it beyond question by the experiments on dogs they are now undertaking. —*Centralblatt f. Chir.*, February 8.

Ozena.—Schestakow's article on this subject treats of the pathology and therapeutics of ozena, with observations of twenty-eight cases treated. He believes that it is a disease *sui generis*, and has nothing in common with other nasal affections, not even with diseases of the accessory nasal cavities. The characteristic rudimentary condition of the nasal muscles is the consequence of a defective development of the bony frame. Where there is a tendency to it, measles is most frequently the starting point. A constant and quite important symptom is the absence of adenoid growths and the small size of the tonsils. None of the theories proposed in regard to its etiology are tenable except the idea of a constitutional predisposition, consequently the author states that general treatment is most effective, and local only palliative. —*Centralblatt f. Chir.*, February 15.

The Vermont "Magnetic Healer." A blacksmith named Bradley Newell, of Jacksonville, Vt., has become popularly known in a large section of New England as a magnetic healer. In one day he treated nearly one hundred patients between two and six o'clock, and the patients beginning to gather as early as seven o'clock. He could not be consulted until ten o'clock, and at that time the hotel looked like a hospital. Invalids arrive by every train: some had to be carried into the hotel, while many used crutches. His alleged cures are attracting great attention. He admits that he has not made many immediate cures, but thinks the patients will find relief later. He has treated over three hundred persons in two days, most of them paying two dollars each. Several of the patients have come three hundred miles or more to see him.

Effects of the Cathode Ray upon the Bacillus of Diphtheria. The bacteriologists of the Health Department of New York city have been experimenting as to the effect of X-rays upon the bacilli of diphtheria and tuberculosis. The experiments were made on Friday, March 20, by Dr. Biggs and Dr. Martin. Saturday, however, Dr. Beebe discovered that the results of the experiments were negative. It was expected that as the bacilli of the diseases are readily killed by exposure to intense light that the X-rays might have a similar effect, but beyond the fact that the bacilli thrived in the beef broth in which they were, no other effect was observed. This seems to be in line with the recent experiments of Nicola Tesla, who found that the X-rays had a soothing and even stimulating effect when directed upon the human brain.

A Two-Headed Female Child.—Mr. James Payn, of London, writes thus to the *Independent* regarding a French monstrosity: "It is said that 'two heads are better than one': in that case the French lady who has presented her husband with a female infant thus endowed, but having only one body, is to be congratulated. It will be much less expensive than twins: the priest, I see, has been compelled to perform a double ceremony of baptism, but that is not charged for: the only extra cost will be in caps and bonnets, and hair cutting. If the young lady marries, or if she does not marry, and takes the veil, she will in both cases, however, require two of them. It is curious that the birth of freaks is a thing to be welcomed or deprecated, according to the position of the parents. In many families a girl with two heads would be considered a downright misfortune. Oriana Adela (for she must have two names if she has been christened in duplicate) would be kept out of sight as much as possible, whereas Sarah Jane would be made a public and extremely profitable exhibition."

Proposed Repeal of Laws Requiring Anti-Alcoholic Instruction in the New York Public Schools. The repeal of laws relative to the teaching in the public schools on the effects of alcohol and narcotics is being actively canvassed before the New York Legislature. At a hearing before the Education Committee, the German athletic societies were represented by Prof. Max Grossman, who opposed the existing law and ridiculed the text-books which have been forced upon the public schools as proper modes of teaching the dangers of the use of alcohol and narcotics.

The next speaker was the Rev. Dr. T. Lewis Bannister, of New Hartford, Oneida County, who favored the repeal of the Ainsworth law. He held it to be not only inadequate to prevent the use of tobacco and stimulants by children, but also believed that the books used endangered the health and purity of the home.

Hamaide's Formol Inhaler. This new inhaler consists of two flasks, one holding a liter, and the other 250 c. c. Carbonic acid is generated in the first, by means of bicarbonate of soda and tartaric acid, and passes into the other flask which contains a solution of formol, producing vapors for which it is the vehicle. The 40 per cent. concentrated solution of formol is

used. One hundred grams of hot water are poured into the small flask, to which the formol is added in quantities from 160 to 800 drops. This produces a solution of 2 to 10 per cent., bearing in mind that thirty-two drops of the 40 per cent. solution represent 1 gram of this solution, or 0.40 grams of formol. The vapors of formol have been found very effective in pulmonary tuberculosis, accompanied by bronchial dilatation, or pulmonary gangrene. They subdue the coughing spells and diminish rapidly and notably the quantity and the fetid character of the expectorations. The odor of the formol can be disguised with 40 to 50 drops of Austrian pine. *Bulletin of the Académie de Médecine*, February 11.

Menthol Snuff. *Public Health* states that Messrs. Burroughs, Wellcome & Co., of London, have issued a new preparation which is likely to be most useful. It is called menthol snuff, but contains not only menthol, but ammonium chlorid, camphor, and one-sixth per cent. of cocain, made up with lycopodium. The local anesthetic and antiseptic action of this remedy is marked, and the form in which it is issued renders it convenient and attractive in use.

A Prospective Fortune for Continuous Medical Services.—The Nawabs and Rajahs of India are at times very open-handed in their dealings with their European medical attendants. "Several cases are, indeed, on record where large sums in the form of fees have thus been paid to the latter. But the most phenomenal instance of the kind which has come under our notice is that which is reported in the *Deccan Budget*. The Nawab Fakr-ul-mulk has, we are told, made a will leaving £600,000, or \$3,000,000 to his medical man. This immense sum will come to the latter on the death of his patient."

The Hypnotic Action of Scopolamin in the Insane. The *New York Medical Journal* contains an abstract of an article on this subject which appeared in the *Medical Week*. Two Russian physicians, Drs. Olterogge and Jurman, says the writer, made a series of experiments with the hydrobromid of scopolamin, and found that the drug possessed a true value as a hypnotic in the treatment of the insane. Administered hypodermically, in doses varying from 0.003 to 0.015 of a grain, it induced in the majority of the subjects a sleep which lasted from three to ten hours. On awakening, the patients appeared much calmer than before the administration of the drug. This effect was especially pronounced in maniacs, but it was not so marked in acute hypomania. In chronic insanity its hypnotic action was also manifest. In delirium tremens, however, it tended only to weaken the patient, and had no hypnotic action whatever.

Anatomy and Treatment of Genu Valgum. A 16 year-old patient treated for this trouble died from an attack of diphtheria (in spite of the serum treatment), and the anatomy of the knee was carefully studied. The joint was decalcified and a frontal section made. The main curvature was immediately over the condyli femoris. The structure of the spongiosa was exactly as described by Wolff. The epiphysial cartilage was remarkably broad and very irregularly shaped. The spreading was principally in the center of proliferation, where the cartilage cells were much enlarged and irregularly placed. The periosteum had healed at the point of the operation, fourteen days before, and the faces of the bone were already quite firmly united. Geissler, who writes this to the *Berl. kl. Woch.*, 1895, No. 48, proceeds to describe the supra condylar osteotomy practiced in Bergmann's clinic, as follows: The flesh is opened as usual, the parts of the bone involved are completely exposed; the chisel, which is not too wide, is directed backward, obliquely to the incision so as not to open the joint. A preliminary wedge cut out of the corticalis ensures a firmer hold for the chisel. The exterior corticalis is not cut but pulled apart. The plaster cast is applied as soon as the wound is sewed up. The femur must not be set in the cast if it is twisted, and a club

foot must be corrected. Out of the fifty-six operations made between 1883-92, only six required the tibia operated upon. Thirty-two were reported later as permanently successful; on only had a stiff joint but six still complain of pain after exertion. The advantage of this method is mainly that the limb can be used in five or six weeks after the operation.

Study of Osteomyelitis with Experiments to Immunize.—A detailed report of sixty-three cases of this disease treated in the Moabi Hospital, at Berlin, is published in the *Deut. Ztschr. f. Chir.* vol. XLII, p. 135. It shows again the fact that it seems to be a disease peculiar to youth, as the patients were under 21 years of age. Three cases were accompanied by periostitis aluminosa and numerous staphylococci were found in the exudation after lancing, thus showing that there is really no difference between this form and the suppurative. Nineteen cases followed an accident and one case a severe wetting. Other cases were preceded by angina, typhoid fever, scarlet fever, a suppurating wound, an ulcer cruris and a carious tooth, one of each. The rest of the cases were what is called primary. Most were treated by opening and draining the abscesses, and the few that were scraped required amputation afterward. The pus was examined in twenty-six cases, and streptococci and staphylococci were found together in seven, diplococci in one, but staphylococci were in all except two, so that this disease can be considered a staphylococcus pyemia of the period of development. Experiments on forty young rabbits with injection of staphylococcus bouillon cultures in the auricular veins, produced suppurative inflammations of the marrow and joints, all containing staphylococci. Injections of streptococci also produced typical osteomyelitis, but staphylococci introduced into the stomach were innocuous. Other animals were immunized with serum from patients, and resisted all attempts to produce the disease, although the data are as yet insufficient to accept this as an absolute certainty.

Accidental Death of a Physician.—The *Press and Circular*, January 29, gives an account of an unusual accidental death of a surgeon and general practitioner of good position. The lethal drug was probably aconite. "The death of a medical practitioner, Mr. John Robinson, of Bridlington Quay, Yorkshire, last week, under peculiar circumstances has been largely commented on in the local press. Briefly, the facts are as follows: Mr. Robinson had under his care a young man suffering from some slight ailment for whom he prescribed a bottle of medicine. After one dose, however, owing to the agonizing effects caused, the patient refused to take any more of the mixture. This surprised his medical attendant, but it led to the latter taking the bottle away and promising to send another mixture of less strength than the first. However, the same effects were produced in the patient after a single dose of the second medicine, and again he declined to take any more. This having been brought under the notice of Mr. Robinson, he visited the patient, and stated that the prescription from which the medicine had been prepared was one that he was accustomed to use every day, and that he himself would not object to swallowing the whole contents of the bottle at once. Suiting the action to his word, he called for some water and proceeded to pour out a large dose of the mixture, which he promptly swallowed. Soon afterward he began to feel ill. He accordingly proceeded home at once, and sent for two confrères. Everything that was possible was done for him; but the symptoms of poisoning rapidly developed, and death took place two hours later. His belief, at first, was that the medicine had contained a strong dose of tincture of ginger, but before he died he expressed the opinion that aconite had somehow been dispensed by mistake in the mixture. Mr. Robinson had been forty years in practice in Bridlington, and had reached the age of 64."

Right of Way to Physicians. An ordinance has been passed in

Chicago granting to physicians' and hospital ambulances the right of way across processions, bridges, etc.

Be it enacted by the City Council of the City of Chicago:

SECTION 1. All ambulances and vehicles belonging to the Health Department, and all ambulances or vehicles belonging to incorporated hospitals recognized by the Health Department as being regular hospitals in the City of Chicago, shall have the right of way in the streets of said city, as against all processions, persons, vehicles or animals, when conveying any patient or injured person to any hospital in the city, or when proceeding to the scene of any accident by which any person or persons have been injured: and any person refusing to yield the right of way, where it is possible, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined not exceeding twenty-five (\$25) dollars for each and every such offense. The Superintendent of Police is hereby required to rigidly enforce the provisions of this ordinance. Physicians having a permit, and who shall wear a suitable badge, to be procured from the City Clerk, shall also have a like right of way for themselves and their vehicles in the streets, and shall be allowed, as soon as possible, to cross processions and other public gatherings and bridges, when answering calls for their professional services. The Mayor and City Clerk are hereby authorized to issue, upon written application therefor, a proper permit to any duly registered physician or surgeon, residing or practicing in the City of Chicago, which permit shall not be transferable.

SECTION 2. The Mayor and City Clerk, before issuing any such permit or badge, shall obtain from the State Board of Health a certified copy of all regular practicing physicians, licensed by such Board of Health, and residing or practicing in the City of Chicago, and such permit and badge as above referred to shall only be issued to such physician or surgeon who shall be certified by the State Board of Health as being a regular practicing physician or surgeon.

SECTION 3. This ordinance shall be in force and effect from and after its passage.

Concentrated Foods.—During the past year the agitation in military circles about an emergency ration has extended to the daily press, and from the tenor of many of the articles that have been published it is evident that a misconception of the character of the ration sought for has very generally been entertained. The idea has prevailed that some condensation or concentration of nutritive principles is desired which will enable the soldier to carry in a small bulk enough to support him for a number of days; and the editorial columns of a *medical journal* even have contributed to this misapprehension by discussing the evil effects that would follow the want of the natural distension of the stomach resulting from the continued use of such a concentrated food. Perhaps, also, the advertisements of the meat juices and extracts which are represented to contain in a few teaspoonfuls the nutritive elements of so many pounds of beef have had their influence in fostering the mistaken idea. The ideal emergency ration is really a combination of the proper quantities of the proteids, fats and carbohydrates in a water-free and light weight condition, but capable of again taking up their water during some simple process of cooking which can be done by the soldier on a campaign, with a palatable, easily digested and nutritious diet as a result. The following account of the explosion of "dear little Gustavus Adolphus" by Stephen Leacock in *Truth* may help to explode the unscientific idea of concentrated foods:

The smiling family were gathered round the hospitable board. The table was plentifully laid with a soup plate in front of each beaming child, a bucket of hot water before the faint mother, and at the head of the board the Christmas dinner of the happy home, warmly covered by a thimble and resting on a poker chip. The expectant whispers of the little ones were hushed as the father rising from his chair, lifted the thimble and disclosed a small pill of concentrated nourishment the chip before him. Christmas turkey, cranberry sauce, mince pie—it was all there, all jammed into that little pill, and only waiting to expand. Then the father with deep reverence, and a devout eye alternating between the child and Heaven, lifted his voice in a benediction. At this moment there was an agonized cry from the mother. "Oh, Henry, look: Baby has snatched the pill!" It was too true. Dear little Gustavus Adolphus, the golden-haired baby boy, had

grabbed the whole Christmas dinner off the poker chip and bolted it. Three hundred and fifty pounds of concentrated nourishment passed down the esophagus of the unthinking child. "Clap him on the back," cried the distracted mother. "Give him water!" The idea was fatal. The water striking the pill, caused it to expand. There was a dull rumbling sound, and then, with an awful bang, Gustavus Adolphus exploded into fragments. And when they gathered the little corpse together, the baby lips were parted in a lingering smile that could only be worn by a child who had eaten thirteen Christmas dinners."

Practical Notes.

Effect of Nicotin. Experiments with nicotin injected into a hen's egg (five-tenth milligramme) show that it either kills the embryo or stunts its growth if it survives. *Comptes Rendus Soc. de Biol.* Jan. 12, 1895.

Surgery of the Brain. Postempski described, before the Congress of Surgery at Rome, in October, the results of sixteen craniotomy cases treated last year, and concluded that where there are accidents preceding, with tangible injuries, surgical intervention is a great benefit, even in severe cases, but in cases of diseases without objective lesions, the operation is fruitless. In several cases of epilepsy he scraped the cortex, and wherever there were traces of previous inflammations he secured good results. *Centralblatt f. Chir.*, February 1.

Intubation in Diphtheria. The annual report of the Hanover Linden Hospital, commenting on the 267 cases of diphtheria treated, states that, contrary to the American idea, intubation has not been a benefit in cases of very young children, and is questionable also in many other cases, as it is apt to prevent the coughing up of the false membrane and free expectoration, thus preparing the way for pneumonia. Its many advantages in some cases are acknowledged, but tracheotomy is called the sovereign operation, after all.

Chronic Anemia Cured with Hypodermic Injections of Mercury and Quinin. The *Gazz. degli Osp. e delle Clin.* February 4, contains an account of three severe cases of anemia accompanied by nervous troubles, swollen glands, and in one case chlorosis and convulsions, completely cured with injections of bichlorid of mercury, commencing with 1 millig. a day and increased gradually to $\frac{1}{2}$ centig. Each alternate day $\frac{1}{2}$ gramme bichlorid of quinin was given in its place. During the day $\frac{1}{2}$ gramme of bromid of sodium was taken in water into the stomach. This treatment was continued forty days and then gradually stopped. The cure was absolute in each case.

Formalin in Dentistry. Lepkowski announces in the *Przeglad Lek.*, 1895, Nos. 20 and 22, that he has found formalin very effective in cases of acute pulpitis, when even after the tooth has been filled the pain ceases in a few hours. Also after extraction of the sound pulpa, in cases of incipient periostitis, and where the pulpa is changed into an ichorous mass. He first cleans the tooth as perfectly as possible and then introduces a cotton wad dipped in formalin, which he covers with a staniol plate, on top of which he puts the complete filling. A moderate pain follows for several hours, if the nerve had not been entirely killed. Formaldehyd kills the sound pulpa completely, with no greater pain than accompanies the use of arsenic paste, with this advantage that the tooth can be filled at once, without further cleaning. He hopes that this treatment will be found all that he expects from it at present. *Centralblatt f. Chir.*, February 8.

Nerve Suture and Neurolysis. Wölfler reports seven cases of suture of a divided nerve for paralysis of the peripheral nerves and three cases of neurolysis, with recovery in every case except two, which are still doubtful. One was of the facial nerve after an injury. Five sutures were with direct union, one of them of the radial nerve after complicated fracture, two of the median, one of the facial, and one of the plexus cervicalis V and VI. The two indirect unions were of the radius

in one and of the peroneus in the other. These two are the doubtful ones. One case of neurolysis was in the peroneus after osteotomy, and the others of the radial nerve. Neugebauer is soon to publish a complete work on this subject. *Centralblatt f. Chir.*, February 22.

Argonin. The investigations of Liebrecht, Meyer and Jadasohn have established the fact that argonin, like nitrate of silver, is destructive to bacteria, and especially to the gonococcus, while it does not cauterize or burn the tissues like nitrate of silver. It has been employed with the best results in cases of gonorrhea in both sexes (in a 1 or 2 per cent. solution). It seems to lack astringent properties and therefore must be supplemented by something else in catarrhal cases. It is made by transposing casein sodium with nitrate of silver, which produces a powder soluble in warm water. To dissolve it, wet first with a very small quantity of cold water, until every particle is moistened, and then warm it on a water-bath, until it is all dissolved. Fifteen grams argonin contain as much silver as one gram nitrate of silver. *Ther. Wochensh.*, February 16.

To Determine the Amount of Alkali in the Blood. Limbeck describes his method in the *Wien. med. Blätter*, 1895, p. 295, as follows: "It is based on the effect of free acids and alkalies on the albuminoids: 200 c.c. water is heated to the boiling point when one-tenth HCl is added and 5 c.c. blood serum is dropped in, one drop at a time. To this is added with certain precautions one-tenth solution of soda, until a flaky precipitate is deposited. By subtracting the volume of soda from the volume of acid, a standard is obtained for the amount of affinity between the serum and the acids. The blood is treated in the same way and the albuminoids play no part in the affinity, which is the special advantage of this method. This independence of the amount of albuminoids is shown by further experiments with solutions of sodium carbonate and sodium phosphate, which are substituted for different quantities of albumin. The alkali remains at the same figures, while in litmus tests the amount of alkali shows an increase with increasing albumin. *Centralblatt f. Phys.*, February 22.

Glycerin Extract of Bone Marrow. According to the *Medical News*, March 14, Dr. Allen McL. Hamilton strongly maintains the value of glycerin as a solvent for bone-marrow in the treatment of pernicious anemia, chlorosis and hemophilia, and that the cases in which the treatment has been unsuccessful have not been those treated by the medullary glycerid, as claimed by an editorial writer for that journal. Dr. Hamilton adds: "So far as I can learn, there is but one other writer who takes this view of the case. On the other hand there is a large number of physicians who have had the happiest experiences with the preparation originally advocated by Danforth. Since I first used the glycerin preparation (considerably over a year ago) I have never had any bad results, and nothing worse than an occasional intestinal colic; and I have given it to many anemic and debilitated people with results that have been in every way gratifying. Of course there are poor preparations, for the process of maceration of the bones and extraction of the marrow is a laborious and slow one, and the temptation to manufacture weak products is very great."

Cantharidate of Potassium in the Treatment of Cutaneous Tuberculosis. The *New York Medical Journal* quotes from the *Annales de Dermatologie et de Syphilologie*, a case of cutaneous syphilis in the right hand and wrist. At the time of beginning the treatment with the cantharidate of potassium there was no albumin in urine, and the formula for the injections used in the case by the practitioner, Dr. Gaston Branthomme, was the following: Cantharidate of potassium, 0.0015 of a grain; cocaine hydrochlorid, 1.5 grain; distilled water, 150 grains. Eight injections of a cubic centimeter each were made up to the 14th of June (a period of two weeks), another of two

cubic centimeters was given on the 12th of June. The punctures were rather painful and an abscess formed around one of them. The first two injections were followed by a rise in temperature to 103 degrees and 102.1 degrees F. There was a local reaction which manifested itself by a rather copious exudation. This, however, did not occur at the third injection, and cicatrization took place very rapidly. At no time, says the author when the urine was examined was there any trace of albumin found. At the present time cicatrization is perfect, and the patient is in excellent health.

Diabetes Treated by Pancreas Extract.—The *British Medical Journal* quotes Dr. Bormann, of Vienna, as holding to the view that pancreas may be successfully exhibited in those cases of diabetes that are caused by an atrophic condition of gland. This treatment is a form of therapeutics by substitution. Bormann records a case in which a definite result was obtained by pancreas therapeutics. The patient was a man of 30, who had for many years suffered from general symptoms with cough and furunculosis. Physical examination showed the condition to be one of diabetes mellitus, with chronic bronchitis and visual complications. About 3,600 c.c. of urine having a specific gravity of 1035-1048, and containing 40 grammes of sugar, were passed daily. For twenty-four days he was treated first by dieting alone, then with the addition of apomorphin, salicylate of bismuth and opium. These reduced the quantity and specific gravity somewhat; the amount of sugar fell from 30 to 110 grammes daily, but the patient lost weight. He was then put on one ox's pancreas (roasted); after a week he stated that he could not go on eating it, so the juice was expressed and given daily per rectum. Ten days later 1½ c.c. of pancreas extract subcutaneously was substituted for this. When he left the clinic after five weeks' pancreas treatment the sugar was below 30 grammes daily, the minimum being 14.6. The patient was much better in himself, his bodily strength had considerably increased, he had gained eight and one-half pounds in weight, and the thirst, together with the daily excretion of urine, had greatly diminished.

The Reprehensible Heroism of Freeing a Diphtheritic Obstruction by Suction.—The *British Medical Journal*, February 29, mixes mild blame with reluctant praise in a case of this kind: Dr. Ernest Helby, resident medical officer at the Croydon Fever Hospital, lately saved a child's life by sucking the diphtheritic membrane from its throat after tracheotomy; he caught the disease, suffered some paralysis, and was for a time in danger of death. "We are happy to say," says the *Journal*, "that he has now, under the antitoxin treatment, made good progress toward recovery. It is difficult to say the right thing when one hears another instance of this act of devotion; proverbs and texts fight in one's mind against each other, and it is hard to venture to blame him at all, and hard to praise him without a cautionary reserve: but of one thing we are sure, that he deserves and has won respect and admiration due to a man who is ready to lay down his life for a child. There is a story somewhere in history of a man who saved his country by methods of his own, which did not meet with the approval of the Government. The Government crowned him, honored him and gave him a triumphal procession, and then executed him for breaking the law of the land. We would mix a little reproach with a great deal of praise for Dr. Helby, and tell him that other lives as well as the child's life are bound up with his own, and we hope he tried suction with a syringe before he put his lips to the tube, and did all that was possible to avoid the danger of infection. But it is pleasant to stop our criticism at this point, and to assure him of our most sincere admiration of his absolute devotion of himself to save the life of a child."

Hospital Notes.

EIGHTH ANNUAL REPORT OF THE METHODIST EPISCOPAL HOSPITAL OF BROOKLYN. A well-composed report of 250 pages represents the work of the above named charity for the year

ended Oct. 31, 1895. There has been an increase of the number of beds and amount of work, compared with the previous year; seven more pupil nurses were admitted to the training department, nearly two hundred admissions above 1894, and 1,000 more hospital days. Five of the nine buildings belonging to the original plan have been completed, a sixth will be added in the coming year; leaving one-third to be gradually reduced as the "sinews of peace" become active. Expenses were \$45,000, receipts \$45,500; endowment funds yielded \$9,000; pay of patients \$13,000; gift of city for ambulance and accident cases \$6,000; other sources, largely by appeal to the denomination, \$17,500. Total patients treated, 1,098; remaining at date of report, 76; mortality, 10.46 per cent. The rate of mortality was very nearly identical upon both medical and surgical services, but the number of surgical cases was nearly thrice that of the medical branch. Total hospital days were 25,491; average number of days per patient, 23.21; total number of non-paying days, 19,000, nearly; daily cost for food per person, \$0.24; daily cost of maintenance per person, \$0.66; daily cost per patient, \$1.40. Ambulance service, for which the city makes an appropriation of \$1,200, attended to 1,132 calls, an increase of 139; one-third of the cases received treatment in the hospital. The dispensary department, which had been closed about four years, has been reorganized, having been formally opened in November, 1895. An operative surgical clinic, open to all medical men, has been held every Wednesday. The pathologic department conducted 49 post-mortems, a trifle less than one-half the number of deaths reported. The training school for nurses had a graduating class of eight.

Detroit Notes.

THE WAYNE COUNTY MEDICAL SOCIETY, at its regular meeting, March 19, listened to an interesting paper by Dr. Jay W. Morrison, entitled, "Experiences in the Late Smallpox Outbreak." The Doctor based the opinions formulated in his article upon the experience that he had had as an associate of the health officer, and also that which he had had by being brought in contact with over 200 cases in the last two years. The Doctor did not consider that we had had an epidemic, and wished in several instances to take issue with the authors as to the diagnosis of smallpox and its course. The Doctor said that he did not care about using the word varioloid; he believed that the disease was communicable at any period, in its first stage or any time before the papules had appeared. He also believed and cited cases where patients had died before the papular stage had been ushered in. In his experience he had not had as good results with the hemorrhagic variety as some had reported; but he believed that it was on account of the divisions that some had made. He restricted the term hemorrhagic to that form where there was hemorrhage from the kidneys and from the intestinal tract. The Doctor did not think it was always such an easy matter to make a differential diagnosis between chickenpox and smallpox, and in this connection he mentioned, what is contrary to the leading authorities, that he had seen a number of cases of chickenpox in which the papules were found both upon the palms of the hands and soles of the feet, and the subsequent history of the cases confirmed his diagnosis of chickenpox. One point that was emphasized was that in chickenpox we do not have fever upon the first or second, but it commences upon the third day. In smallpox the fever commences upon the first day and rises to 102, 103 or 104 degrees. In chickenpox it may be nearly as high as this upon the third or fourth day, but not before. The Doctor remarked that we do have chickenpox in adults, although it is an exception. Dr. Morrison does not believe that there is any way by which the pitting of smallpox can be prevented. He had tried all forms and modes recommended and had failed, and thought by inference that the trouble was exaggerated. The course of the fever and the amount of papu-

lar eruptions could be somewhat modified by antiseptic dressings. The Doctor cited cases that had been immune from smallpox for a time without vaccination, and had subsequently contracted the disease. He remarked that he had not seen a smallpox case in the morgue with a vaccine mark; and he also mentioned a number of cases where vaccination had been made some years before and the patient came down with smallpox; that the disease ran a short course, and with these two last truths verified many times in his observation, he was convinced that the only way to stamp out the disease was to have all persons thoroughly vaccinated, and he predicted that when this was done that we would not only be rid of epidemics of smallpox, but isolated cases would be rare. The paper was discussed by Drs. W. J. Brand, D. O. Donovan, F. B. Tibbals, W. T. Cody, T. J. Parker, R. W. Gillman and E. B. Smith.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION at its regular meeting, Monday, March 16, listened to a practical paper, by Dr. A. E. Carrier, entitled, "Use and Abuse of Arsenic in Dermatologic Affections."

AT THE REGULAR MEETING of the Detroit Academy of Medicine, last Tuesday evening, the 17th inst., Dr. Don M. Campbell read a paper entitled, "Can Exophoria be Cured Without Operation?" After taking up historical review of the subject, he explained what exophoria is, and its relation to accommodation. All cases of exophoria, especially when associated with hypermetropia or hypermetropic astigmatism, should receive one of the following treatments: Correction of refractive error; general systemic treatment of a tonic alterative with hygienic care; gymnastic exercises of the internal recti muscles by means of prisms used after the Gould or Savage method, the former being preferable; the surgical treatment. In the majority of cases the exophoria can be cured without resorting to operation. Perhaps 5 per cent. will require tenotomy or advancement.

HEALTH OFFICE REPORT for week ending March 21: Deaths under 5 years, 38, total 96. Births, male 44, female 54, total 98. Contagious diseases: Diphtheria, last report 12, new cases 13, recovered 3, died 8, now sick 14. Scarlet fever: Last report 19, new cases 6, recovered 4, died none, now sick 21. Smallpox: Last report 3, new cases none, recovered 1, died none, now sick 2. Measles: Last report, 3, new cases none, recovered 1, died none, now sick 1.

Washington Notes.

WEEKLY REPORT OF THE HEALTH OFFICER.—The number of deaths during the last week, according to the report of the health officer, exceeded those of the previous week slightly over 7 per cent. A review of the meteorologic conditions shows that the average temperature was at the freezing point, and that a constant range of low barometer prevailed with a high relative humidity. The death list, under these conditions, went up from 112 to 121, and the death rate from 21.2 to 22.8. During the corresponding period of last year it was 19.4.

COMMISSIONER'S REPORT ON THE VIVISECTION BILL. After cutting out all sections that were not approved by the medical fraternity, the Commissioners have favorably reported the House bill 4446, for the further prevention of cruelty to animals in the District of Columbia. They recommend that the title of the bill be known as "A bill to regulate vivisection in the District of Columbia."

MEDICAL SOCIETY.—At the Medical Society meeting held on the 18th inst., Dr. Stone read a paper on the treatment of movable kidneys. Dr. Bowen presented a ruptured tubal pregnancy, an ovarian cyst and hysterectomy for fibroids.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—The 243d meeting of the Society was held on the 20th inst. Dr. Geo. N. Acker reported a case of congestion of the cord with recovery, followed by typhoid fever with some interesting features. Dr. M. F. Cuthbert reported a case of post-partum hemorrhage. Dr. H. L. E. Johnson presented a working model

of the Pitkin operating table in use at the Emergency Hospital. It is constructed entirely of metal and can be absolutely sterilized. It has all the features of the Harvard chair, can be elevated or lowered two feet by a screw crank. The entire top surface is hollow, through which hot water is kept flowing from a twin spigot. The patient is thereby kept warm during prolonged operations. The table was devised and made by the engineer of the Emergency Hospital and has been in constant use during the past eighteen months.

COMMITTEE ON EPIDEMIC DISEASES. The name of the Committee on Epidemic Diseases, U. S. Senate, has been changed to "Committee on Public Health and National Quarantine."

Louisville Notes.

PHARMACY. The annual commencement of the Louisville College of Pharmacy was held on the 17th at Macauley's Theater. The graduating class numbered eighteen, the first honor man, H. F. Bierman, of Little Rock, Ark., received 543 in his final examination out of a possible 570, the highest average ever received at the college.

ACADEMY OF MEDICINE. This Society held an open meeting in their rooms at the College of Pharmacy Building, the occasion being a popular lecture by Prof. E. H. Mark, Superintendent of the Louisville Public Schools, formerly Professor of Physics and Chemistry in the Boys' High School. The subject of the lecture was "The Roentgen Rays," and Professor Mark spoke very entertainingly and instructively upon heat, light, and electricity, gradually leading up to the subject of the X rays. He paid a glowing tribute to the discoverer of the Crookes tubes, and exhibited the tube with which Professor Marple has been able to take the successful picture of the bullet imbedded in the hand of a patient at the University Dispensary, afterward removed by Dr. W. O. Roberts.

SMALLPOX. State Sanitary Inspector Long has been sent to Sulphur, Ky., to investigate a rumor that there is an outbreak of smallpox at that place. Sulphur was the home of the patient who died last week at the Eruptive Hospital. There were several large families exposed to this case before his isolation, but the timely vaccination of everyone in the neighborhood by Dr. White, has limited its spread. Three houses are flagged with the yellow flag, containing eight cases of varioloid. Dr. Long on his return, reported the outbreak at Sulphur, supposed to be smallpox, was varicella.

MEDICO-SURGICAL SOCIETY. This Society was entertained by Dr. S. G. Dabney on the 20th inst., his essay being upon the "Etiology, Prognosis and Treatment of Acute Middle Ear Disease."

THE PUBLIC SERVICES.

Circular No. 1.

WAR DEPARTMENT, SURGEON GENERAL'S OFFICE,
WASHINGTON, March 13, 1896.

To secure uniformity in carrying out the provisions of G. O. No. 9, Adjutant General's Office, March 13, 1896, medical officers will be governed by the following general directions:

The instruction necessary to enable company officers to drill the enlisted men of their companies "in the duties of litter bearers and methods of rendering first aid to the sick and wounded" will be given chiefly by practical demonstrations, made in their presence, of the litter drill and methods of rendering first aid.

The prescribed drills of company bearers and of the detachment of the hospital corps should be utilized for this purpose. Especial attention should be given to the instruction in first aid to the sick and wounded, and the practical demonstrations should include methods of arresting hemorrhage, of applying the dressings contained in the first aid packet, of immobilizing a fractured limb, of resuscitating those apparently drowned, etc.

These practical demonstrations should be accompanied by full explanations of the reason for adopting the methods recommended. The practical instruction should be supplemented by lectures designed to convey all essential information with reference to the anatomy of bones and blood vessels; the causes and treatment of syncope and of heat exhaustion; the differential diagnosis and treatment of sunstroke; the rationale of the various measures of first aid to the sick and wounded, etc.

It is the intention that in time of war every officer and enlisted man shall carry a first aid packet, to be furnished by the medical department. These packets will be obtained by the surgeon of each post, upon special requisition, and will be supplied by them to company commanders for purposes of instruction. The allowance for this purpose will be twenty packets for each company of infantry, battery of artillery or troop of cavalry. The dressings contained in these packets can be used repeatedly for the practical instruction of officers and enlisted men, and after being used for this purpose should be made up into packets of

the original form. These packets are expendible, but great care should be exercised to prevent any unnecessary expenditure, and officers will be held strictly accountable for their proper and economical use for the purpose indicated.

The drill regulations of the hospital corps will be revised, as soon as practicable, to make them conform with authorized changes in the equipment of members of the hospital corps (absence of side arms) and in the litter (detached litter slings).

G. F. M. STERNBERG,
Approved: Surgeon General, U. S. Army.
DANIEL S. LAMONT, Secretary of War.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the three weeks ending March 21, 1896.

Asst. Surgeon J. C. Rosenbleuth, detached from the naval laboratory and ordered to the "Raleigh."
Asst. Surgeon F. M. Shipp, detached from the "Raleigh" and ordered to the "Vermont."

Surgeon P. M. Rixey, ordered to the naval dispensary, Washington.
Asst. Surgeon H. La Motte, detached from the naval hospital, Chelsea, Mass., and ordered to the receiving ship "Franklin."
Surgeon G. E. H. Harmon, detached from the naval dispensary, Washington and ordered to the naval academy.
P. A. Surgeon C. H. T. Lowndes, ordered to the Washington navy yard.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the sixteen days ended March 16, 1896.

Surgeon J. B. Hamilton, granted leave of absence for four days, March 16, 1896.

Surgeon Fairfax Irwin, to inspect Service at Havana, Cuba, and quarantine stations in the South, March 2, 1896.

P. A. Surgeon P. M. Carrington, granted leave of absence for thirty days, March 16, 1896.

Asst. Surgeon J. A. Nydegger, to report at Bureau for instructions, March 6, 1896. To proceed from Washington, D. C., to South Atlantic Quarantine and assume command, March 7, 1896.

Asst. Surgeon Emil Prochazka, granted leave of absence for ten days, March 11, 1896.

BOARD CONVENED.

Board to examine and report on schedule of subsistence for seamen on merchant vessels of the United States, to meet in Washington, D. C., March 16, 1896. Surgeon P. H. Bailhache, chairman; P. A. Surgeons C. E. Banks and J. J. Kinyoun, recorders.

Change of Address.

Ambler, C. P., from Canton, Ohio, to care The Winyah Hotel and Sanitarium Co., Asheville, N. C.

Ash, E. E., from Chicago, Ill., to Goshen, Ind.

Bouton, W. C., from 131 53d St. to 320 E. 57th St., Chicago.

Craig, S. S., from Chicago, Ill., to Alamosa, Colo.

Dickson, W. L., from Rust Point to 208 Edwards St., Shreveport, La.

Houghton, E. F., from Claremont to Rochester, N. H.

Ingals, Ephraim, from 34 Throop St. to 4753 Grand Boul., Chicago, Ill.

Ingals, E. Fletcher, from 509 W. Adams St. to 4757 Grand Boul., Chicago, Ill.

Legge, J. H., from Pittsburg, Pa., to Aurora, Preston Co., W. Va.

Motter, Murray Galt, from Lancaster, Pa., to Head of 30th St., N. W., Washington, D. C.

Paquin, The Paul, Laboratories, from 1635 S. Grand Av. to 3536 Olive St. St. Louis, Mo.

Perkins, Jay, from 416 Broad St. to 78 Broad St., Providence, R. I.

Phillips, Ellis, from 424 Mulberry St., to 711 Madison Av., Seranton, Pa.

Prince, L. H., from 1348 N. Halsted St. to 51 Lincoln Av., Chicago, Ill.

Small, L. M., from St. Louis, Mo., to Decorah, Iowa.

LETTERS RECEIVED.

Alta Pharmacal Co., St. Louis, Mo.; Allport, Frank, Minneapolis, Minn.; American Therapeutic Co., New York, N. Y.

Bell, Frank, Palm Beach, Fla.; Barr, G. Walter, Quincy, Ill.; Birney,

E., Greene, Iowa; Byall, H. M., Montpelier, Ohio; Bishop, S. S., Chicago,

Ill.; Berry, J. T. B., Blandon, Miss.; Breedlove, J. W., Fort Smith, Ark.

Bovée, J. Wesley, Washington, D. C.; Bond, V. M., Auburn, Neb.; Brown,

F. F., New York, N. Y.; Bryant & Douglas Book and Stationery Co.,

Kansas City, Mo.; Busey, S. C. (3), Washington, D. C.

Cochran, Jerome, Montgomery, Ala.; Cochran, R. W., Madison, Ind.;

Cran, F. W., Sheldon, Iowa.

De Lee, J. B., Chicago, Ill.; Doliber, Goodale & Co., Boston, Mass.

Eddy, C. W., Marietta, Ohio; Editor Therapeutic Notes, Detroit, Mich.;

Eve, Paul F., Nashville, Tenn.

Fisher, John C., Warsaw, N. Y.

Gardner, R. W., New York, N. Y.; Gihon, Albert L., New York, N. Y.;

Goss, F. W., Roxbury, Mass.; Grandy, Luther B., Atlanta, Ga.; Greeley,

Jas. T., Nashua, N. H.

Henrotin, F., Chicago, Ill.; Henel, Emil, New York, N. Y.; Hines, W.

Frank, Chestertown, Md.; Hummel, A. L., Advertising Agency (2), New

York, N. Y.

Jackson & Co., Thos., New York, N. Y.

Keiper, Geo. F., Lafayette, Ind.; Kinneman, A. S., Cleveland, Ohio.

Layman, S. J. (2), Tamaroa, Ill.; Legger, Jos., Huronia Beach, Mich.;

Lewis, W. C., Boston, Mass.; Lusk, Z. J., Warsaw, N. Y.

McDonald, J. G., New Lexington, Ohio; McDonald, W. B., Baltimore,

Md.; McKee, A. B., Edwardsville, Ill.; Mills, Harry Brooker, Philadelphia,

Pa.; Moss, T. R., Dyersburg, Tenn.; Munson, E. L., Fort Assiniboine,

Mont.; Myers, H. L., Danville, Va.

Parmele, Chas., Roome, Co., New York, N. Y.; Pantograph Printing

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Pa.; Pettengill & Co., Boston, Mass.

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Charlotte, N. C.; Rochelle, W. F., Jackson, Tenn.

Savage, G. C., Nashville, Tenn.; Scott, N. C., Cleveland, Ohio; Small,

Edw. H. (2), Pittsburg, Pa.; Smith, C. J., Pendleton, Ore.; Smith, Allen

J., Galveston, Texas; Smart, Chas., Washington, D. C.; Strayhorn, J. M.,

Bartlett, Texas; Stillson, C. F., Battle Creek, Mich.; Stockley, Wm. S.,

Millboro Springs, Va.

Thorne, Max, Cincinnati, Ohio; Thompson, J. Walter, Chicago, Ill.;

Thornton, Wm. M., Charlottesville, Va.; Trautwein, C. W., Kinderhook,

Ill.; Tucker, R. D., Pine Creek Mills, Va.

Waggoner, Joseph, Ravenna, Ohio; Whitaker, Alfred E. (2), Boulder,

Colo.; Wilson, J. H., Dover, Del.; Wood, J. W., Long Beach, Cal.; Würde-

mann, H. V., Milwaukee, Wis.

Ziegler, S. L., Philadelphia, Pa.; Zumo Pharmacal Co., St. Louis, Mo.

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ADDRESS.

LIFE AND TIMES OF DOCTOR REUBEN D. MUSSEY.

Public address, by invitation, to the Graduating Class of the Ohio
Medical University, Columbus, Ohio, March 17, 1896.

BY JOHN B. HAMILTON, M.D., LL.D.
CHICAGO.

Mr. President, Ladies and Gentlemen:—I thank you for this gracious reception and your kindly words of introduction. But I do not feel like a stranger in this great State of Ohio. My great-grandfather, a Revolutionary soldier, settled at Point Harmar, subsequently helped defend the Territory against the Indians, and was a member of the Second Legislative Assembly of this State. My mother was born on the beautiful banks of the lower Muskingum, and my grandmother on my father's side was the daughter of Captain Benjamin Brown, one of the earliest settlers of Athens County, and whose numerous descendants still inhabit the Ohio River Valley. Therefore, in speaking in this famous Capitol, to this distinguished audience, I feel that I have a closer personal interest in this people than my friend Dr. Reed was aware of when he asked me to address you on this occasion.

Nothing interests the average man so much as himself, or the affairs of his immediate neighbors, and I have therefore chosen as the subject of my address this evening, the life and times of one of the most learned and distinguished of the sons of the Buckeye State, namely, that of Professor Reuben D. Mussey, of Cincinnati. It is true that he was only an adopted son of Ohio, but he was one of the earlier educators of the medical men who now constitute the glory and pride of its medical profession. His teachings and his example have therefore become a part of the intellectual property of his immediate pupils; their associates and successors.

Biography has ever been considered one of the most fascinating branches of historical study, not only on account of the particular life chosen as the topic, but on account of its ennobling and stimulating effect on those within its influence. We naturally desire to emulate the virtues of our hero, and the record of his achievements stimulate the ambition to the performance of greater deeds, if possible.

The life of a great surgeon is full of scenes of pathos, of memories of triumphs over disease, of critical and anxious moments, of occasions where human life literally depends upon a thread and of times when boldness, courage, skill and gentleness are each in turn called into play. In lauding the science of biography, the elder D'Israeli takes exception to the statement of a periodical critic, that there was "something melancholy in the study of biography, because it is a history of the dead." He designated as "sentimental biography" that variety of biographic writing

which seeks only eulogy, which is usually compiled "by some domestic friend, or by some enthusiast who works with love." It is distinct from a *chronologic* biography, for it searches for the individual's feelings amidst the ascertained facts of his life; so that facts which occurred remotely from each other are at once brought together. This "sentimental" is distinguished from the *autobiography* which being in the hands of an interested, if not a suspected witness, is not always trustworthy history.

To point the moral of the story of such a life as that of Professor Mussey it is not necessary to be either sentimental or unduly eulogistic. The period of his life covers the most interesting period of the history of surgery, and he himself was a factor in the speedy popularization of the greatest discovery in its relations to practical surgery, of any in all antecedent history, namely, that of anesthesia. The famous Professor South, of London, writing a postscript to *Cheilus' Surgery* in 1847, says:

"The year 1846 seems in a fair way to be known as the *annus mirabilis* of surgery. The profession and the public in both hemispheres are in a complete ferment, consequent on the discovery by Morton, an American dentist, of a mode of producing insensibility during which an *operation may be borne without pain*, nay, even rendered so agreeable as to induce a desire for its repetition."

What a change was brought about! Before the days of anesthetics no operation of election was performed without a long course of preparation; spare diet, purging and frequent blood-letting were the means resorted to, to prepare the patient for the ordeal; laudanum or morphia the night before, and large doses of brandy during the operation, and not unfrequently the cries and groans of the patient added much to the terrors of the operation itself. The blood-letting practice had perhaps reached its maximum height in 1832-33, when Mr. Wardrop, a noted London surgeon, in his lectures on surgery published in *The Lancet* gravely proposed that to prevent suffering during an operation a patient should be bled to faintness, and the operation performed during the swoon! Hypnotism, or, as it was then called, mesmerism, was frequently made use of, but South characterized it as "foolery." But starvation diet was then, as now, a favorite hobby, and Sir Astley Cooper told an excellent story of Abernethy, who is said to have prescribed blue pill and ipecac for everything, and "ordered his patients to eat only three ounces a day, and not to drink when they eat. A patient of his said to me, 'I am a proselyte to his doctrines; does he practice what he recommends?' I said, 'I will give you a faithful account of his dinner to-day, for I dined with him at the Free Masons' tavern. I sat next to him. He took turtle and punch, fish, venison, champagne, pastry, cheese and 'now,' said he, 'waiter, give me a glass of brown stout.' 'After this,'" said Sir

Astley, "he took his wine moderately as we all did." The patient on receiving an account of this dinner of Abernethy's, refused any longer to starve himself, and ate and drank to his heart's content ever afterward.

Reuben D. Mussey, M.D., LL.D., was born near Rockingham, N. H., June 23, 1780, and was the son of Dr. John Mussey, who resided in Pelham Township. While yet a child his father removed to Amherst, N. H., and he had the benefit of some instruction in the winter at the district school. His father taught him elementary Latin, and when he was fifteen years old he entered the Aurean Academy at Amherst. In 1801 he entered the junior class in Dartmouth College and was graduated therefrom in August, 1803. He then began the study of medicine as a pupil of Dr. Nathan Smith, the founder of the Medical School of New Hampshire, the father of Nathan R. Smith.



REUBEN D. MUSSEY, M.D., LL.D.

Fourth President of the AMERICAN MEDICAL ASSOCIATION.

Dr. Smith was a man of more than ordinary ability, and one of his biographers states that "no physician either before, during, or since his time has had so wide a sphere of popularity, and he was as well known in our times almost as the resident physicians and clergymen are." His career was characteristic of the times. When he was a youth he enlisted in the Vermont militia and served in the Indian campaign, and by accident having seen a surgical operation, became deeply interested in it and desired to become a surgeon. Consulting Dr. Josiah Goodhue, then considered the most eminent surgeon of the locality he was informed that if he would place himself under the tuition of a person competent to instruct him and obtain as much literary information as would enable him to enter the Freshman class of Harvard College, he would accept him as a student. He followed the ad-

vice, placing himself under the care of the Reverend Mr. Whiting, of Rockingham, Vermont, until qualified to comply with the conditions raised by Dr. Goodhue. After studying three years under his preceptor, he began to practice, but finally suspended it and attended medical lectures in Harvard College. Here he received the degree of Doctor of Medicine, and in the organization of the medical institution in connection with Dartmouth College the appointment of Professor of Medicine was conferred upon him. Several years after, he went to Edinburgh and attended medical lectures under the illustrious Monro and Dr. Black. On returning he continued his instruction and practice at Hanover, N. H., until the autumn of 1813, when he was made Professor of Theory and Practice of Physics and Surgery in the Medical Institution of Yale College, established in that year at New Haven. Dr. Smith also lectured on the same branches at Dartmouth College, the University of Burlington, Vt., and the Medical Institution of Brunswick College in Maine. So active a professor, and one so popular as Dr. Smith, must have impressed his personality upon Dr. Mussey very strongly, and there is no question but the bent of Dr. Mussey toward surgery was in no small degree influenced by association with Dr. Smith.

Dr. Mussey received the degree of Bachelor of Medicine in 1805 from the Medical Institution of Dartmouth, and began the practice of medicine in Essex County, Mass., at Ipswich. After three years he went to Philadelphia and became a private pupil of Prof. Benjamin S. Barton and attended his botanical lectures, as well as the lectures in the medical course proper. In 1809 he was graduated M.D. from the University of Pennsylvania. He heard the lectures of Drs. Benjamin Rush, Physick, Dorsey, Barton, Woodhouse and Chapman. Dr. Mussey being an indefatigable student and a hard worker, was not inclined to accept all the theories that were offered him without more thorough investigation, and among them he had been taught by Dr. Rush that there was no absorption from the skin. Young Mussey immersed himself in a bath in which three pounds of madder were diffused in sufficient water to cover the body and limbs, and he found this coloring matter in the urine. He repeated his experiment and finally wrote his thesis on the subject of "Skin Absorption," which was received with pleasure, but not with entire approval, for Professor Rush, not willing to be caught in error by one of his own pupils, had several experiments made with the result of only partially proving Dr. Mussey's theory. Dr. Mussey then continued for a long time to conduct experiments for the purpose of proving his theory. Among others, on one occasion he immersed himself for three hours in a strong solution of nutgall, and afterward in a strong solution of iron for three hours more. But this experiment was negative, for no ink was found in the excreted urine. He then opened a vein in his arm for the purpose of testing the blood, but could not discover it, although some peculiar appearances were found which indicated that a change had taken place, due to the absorption of the iron; but he had already proved his main proposition.

After his graduation in Philadelphia, Dr. Mussey returned to Massachusetts and practiced in Salem five or six years, and in 1814 was appointed Professor of Theory and Practice of Physics in the Medical School of Dartmouth College, succeeding his preceptor, Dr. Nathan Smith. Here he gave a course of lectures on chemistry for one session, and in 1819 was appointed

¹The Life of Sir Astley Cooper, Bart., by Bransby Blake Cooper, London, 1843.

to the Professorship of Anatomy and Surgery, and in knowing Dr. Mussey one could well understand that at this time he conscientiously began anew the study of anatomy in order to give two daily lectures to the pupils during the term.

In 1829 he visited Europe, spent several weeks in London and attended clinics in Paris. Dr. Mussey also lectured in the Medical School of Maine, and in 1836-7, after the close of the session of the College of New Hampshire, he went to Fairfield, N. Y., to give lectures on surgery in the College of Physicians and Surgeons there. This school was subsequently removed to Geneva and afterward became a famous institution.

In the fall of 1838 Dr. Mussey accepted an invitation to become Professor of Surgery in the Medical College of Ohio, at Cincinnati, founded in 1821, and he, with his family removed to that city. At this time the means of travel was by canal to Pittsburgh and from Pittsburgh to Cincinnati via boat. Climatic reasons alone induced the popular professor to cross the Alleghenies. His health had become delicate and he, somewhat worn by a long, laborious practice in the cold and rigorous climate of New England, looked favorably on the balmy air of the Ohio Valley and looked forward with pleasure to his new field of labor. For fourteen years Professor Mussey practiced, lectured and taught in the Medical College of Ohio, and during this period had charge of the Marine Hospital in Cincinnati, but at the end of that time he resigned. A few months later he was asked to become Professor of Surgery in the Miami Medical College, founded in 1853, which he accepted, and at this time also had charge of the surgical wards of St. John's Hospital.

Dr. Mussey's first remarkable operation was the ligation of the carotids for aneurysmal tumors of the head in which the operation was successful. He repeated the operation 1854.²

This is hardly the place to repeat the brilliant record of Dr. Mussey's important surgical operations. He was one of the early operators for ovarian disease. He removed an hypertrophied tongue in the case of a boy of thirteen, the tongue at the time of operation measuring eight inches in circumference where it issued from the mouth.

Another case of Dr. Mussey was one of osteosarcoma which necessitated the performance of an operation for the removal of the entire shoulder blade and collar bone. This was the second case on record, the first operation having been performed by Dr. Dixie Crosby in 1836. The date of this operation was October, 1837. It was repeated in 1845. He removed the lower jaw without implicating the facial nerve, and it is said by his biographer³ that "while in charge of St. John's Hospital, then having numbered considerably beyond three-score and ten, we saw him ligate the carotids with the same nerve as when in the prime of life."

An ardent temperance lecturer and one much interested in hygiene, there is no question of the value of his influence and example on the young men of his adopted city and State, not only those who attended his own lectures, but as well those to whom the influence of his pupils reached.

He died in Boston in 1866 at the advanced age of 86 years—years full of fruitful labor, of conscientious

work. He was the fourth President of the AMERICAN MEDICAL ASSOCIATION, and always took an active interest in its meetings.

Dr. Mussey was an early advocate of the bilateral operation for stone, and according to the report of the Committee on Surgery in Vol. 1, Transactions of the AMERICAN MEDICAL ASSOCIATION, as early as 1848, he had reported a series of sixteen surgical operations under the use of chloroform,⁴ "without its being followed by a single unpleasant symptom."

Dr. Mussey himself made the report of the Standing Committee on Surgery in 1849, and in that report we find an account of a vaginal hysterectomy performed by Prof. Paul F. Eve on April 16, 1850. This is believed to be the first operation of its kind on record. One of the most elaborate papers of Dr. Mussey was that on "The Effects of Alcoholic Liquors in Health and Disease," which will be found in Vol. 8 of the Transactions for 1855. In this paper there is shown an intimate knowledge of physiologic chemistry as then understood and also of the toxic effect of alcohol, very remarkable for that period. He was the first to demonstrate the possibility of bony union taking place in intracapsular fractures of the humerus. In his trip to Europe, which I have already mentioned, he carried with him a specimen of a femur which had been sawn through showing bony union. He showed the specimen to Sir Astley Cooper among others, who asserted his disbelief that the bone had ever been fractured. His reception by Sir Astley was afterward quoted by Dr. Mussey as showing the intolerance and bigotry of one of the great masters of the profession.

As a writer Professor Mussey was not prolific, but what he did write was characterized by clearness of expression, accuracy and entire truthfulness. He did not find it necessary to go into specious case-writing that might be called Arabian Nights' literature, wherein, judging from the number of cases reported by one author, he must have averaged from ten to fifteen a day for a period of several years, an utter absurdity, but when Mussey reported a case, there was no earthly doubt in the mind of anyone who heard the report that the case actually existed. I need not say to you, young gentlemen, who are now leaving this institution, that next to faith and trust in God, a virtue which most becomes a practitioner of our noble calling is that of *truth*; and we have, I regret to say, arrived at a period in our literature when we must either throw out a large mass of the statistics that are furnished us, or else accept them only from men of known probity in such matters.

As a citizen Dr. Mussey was deeply interested in the political affairs of his time, and as all good citizens should do, took a personal interest in the affairs of his city, his State and his country. I have little respect for the false sentiment that keeps the physician out of touch with the remainder of his fellow citizens on political questions. He need not and ought not to be offensive to his clientele, but he should have a clear view of what the best interests of the country require, and throw his influence in favor of those interests.

I do not know exactly how it came about, but there has been a great change in the feelings of our countrymen since the days of Dr. Joseph Warren and Dr. Benjamin Rush.

In those times, those great men of our profession addressed public meetings on public affairs. One

² See Eve's remarkable cases in surgery, p. 650.

³ Transactions AMERICAN MEDICAL ASSOCIATION, Vol. 18, p. 317.

⁴ Transactions AMERICAN MEDICAL ASSOCIATION, Vol. 1, p. 234.

sealed his devotion to his country with his life's blood at Bunker Hill, and the other gave his time and talents to the organization of the Continental Congress, and signed our immortal Declaration of Independence. Now, I regret to say that our profession, in common with many other of our well to do parlor-patriots, especially in the great cities, do not take the interest they should; as if love of country, and interest in its affairs, were private sins to be kept as a profound secret in the breast of the unfortunate possessor.

No! young gentlemen! Take the stand in regard to public affairs in the community that your education entitles you to take; give your influence freely to that party you deem to be right. When all educated men, the clergy, and the medical profession, join the profession of law, in giving suitable and dignified expression to their views on public matters, all will be well with the Republic.

There is another side to the character of Dr. Mussey which I have only lightly touched upon, and that is his patriotism, his generosity and constant services to the poor, and his secret benefactions. He seemed always to have in view the Hebrews, xiii, 16: "But to do good and to communicate, forget not, for with such sacrifices God is well pleased." Cicero says: "Nothing is greater proof of a narrow and groveling disposition than to be fond of riches; while nothing is more noble and exalted than to despise money if thou hast it not, and if thou hast it, employ it in acts of beneficence and liberality."

Such, ladies and gentlemen, were the characteristics of one of Ohio's great surgeons; one of those who made his mark in the history of medical literature; one who as much as any other helped to develop higher medical education in this Western country. He lived his well-rounded life as an example for the graduating class to look upon with pleasure, to follow with enthusiasm, and to emulate according to the best of their ability. He was one of those virtuous men who, in the annals of Western medical education, made his name immortal.

The distinguished surgeon whose life I have outlined died just before the opening of that vista upon the new field of bacteriology which has perhaps surpassed anesthesia in the wonderful changes it has wrought in the practice of surgery; and with anesthesia and bacteriology to its credit this nineteenth century will go down into history as leading all other centuries in the record of glorious achievements for the benefit of the human race and the relief of human suffering.

LECTURE.

RETROVERSIO UTERI AND PERIUTERINE INFLAMMATION.

Clinical lecture delivered at the Jefferson Hospital, Feb. 18, 1896.

BY E. E. MONTGOMERY, M.D.

PROFESSOR OF CLINICAL GYNECOLOGY IN THE JEFFERSON MEDICAL COLLEGE; GYNECOLOGIST TO JEFFERSON AND ST. JOSEPH'S HOSPITALS; PRESIDENT PHILADELPHIA OBSTETRICAL SOCIETY.
PHILADELPHIA, PA.

Gentlemen: This patient is 22 years of age, puberty occurred at 16, menses were regular, periods lasted four days and were without pain. She has been married four years and three years since had one child. The labor was normal. She had one abortion near the third month of gestation, two years ago. This abortion, owing to retention of the fetal envelope, was followed by pelvic inflammation. Since then she has

complained of dull, aching pain in the back and left side, aggravated at the menstrual periods. Micturition is normal. She has had no leucorrhea, appetite is fair, and the bowels are regular. On examination the uterus was found retroflexed, the body of the organ large, a certain amount of fixation upon the left side, and more or less tenderness. In this patient we have a history of suffering from puerperal inflammation of the uterus, and the inflammation has extended from that organ to the surrounding parts, particularly to the left ovary and tube. I have not been able, by superficial examination, to determine the relation of the ovary and tube, but the thickening and fixation leaves me in no doubt of their involvement. You will remember that we have said to you, inflammation may extend from the uterus in three ways: By continuity through the mucous membrane, thus reaching the peritoneal cavity; by the lymphatics, and by the blood vessels. The most frequent form, it is true, is that through the mucous membrane. These inflammations are always microbic in origin. The inflammation through the uterus, reaching the tube, gives rise to a salpingitis which may be simple in character, but if the infection be virulent, results in extensive inflammation and the formation of pus. Simple inflammation may lead to thickening of the mucous membrane, to desquamation of its ciliated columnar epithelium and to more or less obstruction of the canal of the oviduct. In such cases the passage of the fecundated ovum is arrested, and we have occurring what is known as an ectopic gestation. You can readily understand that where menstruation takes place every month, a Graafian follicle is ruptured, the ovum is thrown off, and hemorrhage takes place into the rupture, forming what is known as a corpus luteum. This corpus luteum in cases in which the individual becomes pregnant, is larger and is much slower in undergoing organization and contraction. Such a corpus luteum may afford a vulnerable point for the entrance of infection from the tube and lead to the development of an abscess in the ovary. Indeed, the corpus luteum may frequently afford an explanation of the occurrence of ovarian infection. I saw a patient a few years ago, in whom the ovary had become infected through the tube without any disease of the latter, and an ovarian abscess resulted which very seriously threatened the life of the patient. The muscular structure of the tube is arranged in longitudinal and circular fibers. Inflammation affects the action of these fibers, interference with the peristalsis, or obstruction of the caliber of the tube, increasing the predisposition to ectopic gestation. Some of you have recently seen a patient operated upon in this house, in whom rupture took place at the end of eight weeks, a large quantity of blood escaped into the peritoneal cavity and the life of the individual was thereby endangered. When we came to operate we found between one and two quarts of blood in the peritoneal cavity, which produced so marked an exsanguination of the patient that her life was despaired of. When the inflammation is limited to mucous membrane, it may be known as salpingitis or endosalpingitis. It is rarely, however, that we find it confined to the mucous membrane. The subjacent tissues, the muscular, and even the peritoneal tissue, become involved, producing perisalpingitis. These fine distinctions, however, have no special reference to the diagnosis or treatment, for we do not have one for a length of time without association of the other. The result of inflammation is to pro-

duce increased secretion and with decreased peristaltic action this secretion accumulates in the tube. This secretion may make its exit through the abdominal end of the tube into the peritoneal cavity, producing a sufficient amount of irritation to cause a localized inflammation. In some cases the patient has a slight peritoneal inflammation at each menstrual period as a result of this leakage. Where the fluid is particularly irritating, peritonitis is set up sufficient to occlude the end of the tube. The fimbriae become folded in and the peritoneal adhesions take place over the extremity of the tube, thus shutting it off and forming a sac. If the fimbriae are not entirely folded in, but project to a slight degree, opportunity is afforded for leakage and the occurrence of recurring attacks of peritoneal inflammation. With the closure of the abdominal end of the tube, the fluid is no longer able to escape into the peritoneal cavity and the thickening of the mucous membrane prevents its drainage into the uterus, consequently the tube becomes distended, forming a tumor. These tumors are designated hydrosalpinx when the fluid is serous, hematosalpinx when bloody, and pyosalpinx when purulent. The hydrosalpinx may arise from inflammation which is not so severe as to result in suppuration, or as sometimes is claimed, it results from changes which take place in an old pus sac. Hematosalpinx results from the rupture of blood vessels into the tube, and not unfrequently is the remnant of a tubal gestation. A patient who is suffering from an inflammation sufficient to engender tubal trouble, in which the entire mucous membrane is irritated, may have a simple inflammation transferred to a virulent through traumatism resulting from examination; thus, the introduction of the sound into an inflamed uterus without antiseptic precautions may produce a pyosalpinx. It is more likely, however, to occur as a result of septic infection following abortion, parturition, and not unfrequently as a result of infection from the gonococcus. We can not have an inflammation of the tube to any marked degree without the surrounding tissues become involved. Thus, a localized peritonitis results, in which the uterus, ovaries, tubes, and coils of intestine, are bound together, so that when the pelvis is opened we are at a loss to determine the relation of the organs, and how to proceed to separate them. Not unfrequently we find tubes and ovaries incapsulated, closely adherent to the rectum or other coil of the intestines. In tubal disease we have the ordinary symptoms of inflammation of the uterus which usually accompany it. The patient suffers from more or less nervous phenomena, pain at the menstrual period or during menstruation may result from disease of the pelvic organs. In tubal disease, however, the pain is situated in one or the other inguinal region. When this occurs prior to the menstruation we attribute it to a diseased condition of the ovaries. When it follows menstruation, it is undoubtedly due to disease of the tubes. Inflamed ovaries cause pain for a week or ten days prior to menstruation, due to the increased congestion of the organ as a result of the maturing Graafian follicle. That which occurs during the flow is usually uterine in character, but the tubal, as we have said, occurs after the cessation of the organ as a result of the menstruation and is probably due to the peristaltic efforts of the tube to empty itself of its contents. The symptoms will depend somewhat upon the extent of the disease. In those cases in which inflammation occurs and the ends of the tubes remain open,

the patient may suffer at each menstrual period or immediately following it, with a slight attack of pelvic peritonitis or pelvic irritation as indicated by increased pain in the region, tenderness over the abdomen and frequent evacuation of the urine. Where the tubes are closed an inflammation is more extensive, there is an accumulation of fluid, either blood, serum or pus, the symptoms become more marked, and here the pressure symptoms are especially determined. The adhesions become extensive, the abdomen is distended, the patient suffers from flatus. With inflammation which results in pus formation, there is variation in the temperature, elevation, sometimes depression. The temperature may be subnormal, but there is a variation between morning and evening temperature. In patients suffering from acute forms of disease, peritonitis is marked, causes tenderness over the abdomen, the limbs are drawn up, there is a frequent desire to evacuate the urine, evacuation of the bowels is painful and the patient suffers to such a degree as to demand immediate relief. After the more acute symptoms subside, she suffers from chronic symptoms. In internal suppuration we will have variation of temperature. In some cases there may be an increased discharge take place from the uterus; this may be periodical in character. The patient at times will be free from discharge; all at once there will be a gush of purulent or serous liquid which is simply due to drainage into the uterus through the uterine end of the tube. Where there is a mere watery accumulation the condition is known as hydrops tubae profluens, and indicates drainage of the sac through the uterus.

In such a case you may find a patient at one time presenting a mass of considerable size in one or the other broad ligament. At a later examination the same patient will disclose no sign of a tumor. The swelling has entirely disappeared. We may be at a loss to decide what has been the difficulty and may be led to suppose that you have formed an incorrect diagnosis. Upon inquiry you will find the patient has had a profuse watery discharge since her last examination. You recognize from this statement that you have had to deal with hydrops tubae profluens, and that later another accumulation will result. While we may infer the existence of pelvic inflammation from the symptoms the patient may make known to us, we are only able to arrive at a definite diagnosis by the physical signs. In an ordinary metritis which may cause pain and discharge, with irregular menstruation, the uterus and cervix are generally enlarged and situated at a lower level in the pelvis. In the cases in which inflammation involves the cellular tissue about the uterus, we recognize hardness or induration in the lateral fornices of the vagina and have to conclude as to the manner of treatment. Where the tubes are involved, becoming distended with secretion, increased in size and heavier than normal, they drop into the Douglas pouch, the lowest part of the pelvis, and upon examination of such a patient we find a club-shaped mass on either side of the uterus which decreases in size as we approach the uterus. This condition we recognize to be disease of the tube. Where the mass is movable, fluctuation is distinct and the history of the onset of the trouble has been gradual and without a distinctly marked history of inflammation, we may conclude we have to deal with hydrosalpinx. If the pelvic floor presents a hard, indurated condition, almost board-like in sensation, the patient has had an attack of pelvic peritonitis. Where the

inflammation has involved more particularly the ovary and tube, you are able to outline and definitely determine the masses situated on either side or posterior to the uterus, in which fluctuation may be distinctly determined. In cases which have gone on to suppuration, we generally find extensive adhesions to the surrounding viscera and pelvic tissues. The parts may be so matted together as to render us unable to accomplish the absolute extent of involvement, but we may be able to determine points of fluctuation in which there is more elasticity, showing the presence of fluid. You will ask how we are able to determine ovarian cyst from hydrosalpinx. The latter is generally more closely connected with the uterus; the former is spherical or globular in shape, while in hydrosalpinx the tumor is more club-shaped, irregular in outline and increases in size as you extend from the uterus. The smallest portion of the tube is near the uterus. In favorable cases we may be able to trace the tube and the mass to the uterus. The healthy Fallopian tube we are not generally able to recognize by palpation. In very thin abdominal walls we may be able to recognize a small cord in the upper part of the broad ligament, but whether it is the tube or round ligament may be sometimes difficult to determine. The treatment of salpingitis is exceedingly important. A few years ago every case of tubal disease would have been subjected to the knife. The mere fact that an individual has an inflammation of the tubes or ovaries was enough to indicate she must have her ovaries sacrificed, and if she had inflammation in one ovary or tube, the other must go also. Fortunately, however, for the human race, and for women generally, we do not feel it necessary simply because a woman is the victim of an inflammation which has extended through the uterus to the pelvis, that she should be at once subjected to operation. There are other procedures to which we should resort for the restoration of such cases. The important treatment in every case is prophylactic; treat the disease before inflammation has extended through the tubes and ovaries. When we recognize the danger in a case of inflammation of the uterus and pelvic organs, we endeavor to treat the patient in such a way as to limit the inflammation to the organ first affected. In cases of salpingitis we attempt to correct the disease or prevent its further extension and overcome the trouble by increasing or improving the uterine drainage. This we do by first dilating and curetting the organ, irrigating its cavity and packing it with iodoform gauze. The gauze through its capillary action acts as a drain and serves also to deplete the mucous membrane of the tube. Where the inflammation is more extensive, the condition may be a perisalpingitis. Here there is more or less binding down of the the organs, even though we may not be able to determine the presence of pus.

If the existence of suppuration can be eliminated, we may resort to pelvic massage, supplemented by hot douches, counter irritants and vaginal tampons of gauze and cotton saturated with some alterant in glycerin. In such a patient you would prohibit sexual relations, placing the patient sexually at rest, giving remedies that would promote her general nutrition and favor the more rapid absorption of exudation. Where the disease has gone on to suppuration and this can be determined through examination of the pelvis, is it necessary to resort to a sacrificial operation? Fortunately not; even in such cases, if we can determine accumulation of pus in the pelvis by making

examination through the vagina, we carefully cleanse the vaginal canal, make incision into the pus tract, irrigate it and pack the cavity with iodoform gauze. By such means we secure the obliteration of the sac which may involve either one or the other tube. The evacuation of the pus, irrigation of the cavity, packing with gauze, fills up with granulations and the focus of inflammation may thus be destroyed. After the removal of the pus, we have in such cases more or less fixation of the tubes, ovaries and pelvic organs. This may be corrected by massage treatment and the other measures suggested. Supposing however, we have a patient suffering from an acute attack of exudation about the uterus, in which a mass is felt to one side, but in which as yet suppuration has not occurred, for instance, a patient having an attack of inflammation following an abortion, a miscarriage or labor, or one who has had inflammation resulting from traumatism or following gonorrhea, the question confronts us as to what we shall do. If left, it may probably suppurate or become organized and form a hard, dense mass in the broad ligament, which will remain for a long period, interfering with the circulation. Formerly we would place such a patient in bed, keep her perfectly quiet, evacuate the bowels with salines, thus depleting the intestines, decreasing the amount of blood sent into the pelvic organs, and use aconite or veratrum viride, to limit the activity of the inflammation. This is good treatment, as far as it goes, but if the exudation is permitted to remain until it causes more or less contractions of the parts and formation of adhesions, it will be a long time before it is absorbed. If suppuration results there is extensive destruction of tissue so it will be possibly necessary to resort to sacrificial operation. In such cases the proper procedure would be to make an incision into the broad ligament, breaking up and affording a vent to the accumulation, packing it with iodoform gauze to secure drainage. The serous accumulation is thus evacuated and we may be able to accomplish in a week what would otherwise require years to obviate. So in such cases we would not only content ourselves with curettement and cleansing the uterine cavity, but would also open the tissue of the broad ligament on one or both sides if necessary, evacuate the inflammatory accumulation and drain. This may also be done in those cases in which we have extensive chronic inflammation, with large accumulation of pus thus enabling us to cure the patient without a sacrificial operation. Where pus exists on both sides of the abdomen, of such a character as to render it improbable we will be able to improve the health of the patient by its evacuation, it may be evacuated through the vagina, and after the patient has recovered from the more acute symptoms, a radical operation may be done. Where both sides are so involved that it will be necessary to sacrifice both ovaries, it is a question as to which shall be the direction by which the disease shall be attacked. Shall it be done through the abdomen or the vagina? This must depend somewhat upon the extent of the inflammation and whether, as we have have said, one or both organs is involved. If we definitely determine by examination that both organs are so involved the patient can only be relieved through their removal, the uterus is no longer an organ of value. Indeed, where the disease has extended from the uterus to the deeper structures, it is preferable that the former organ should be sacrificed as well as the ovaries and tubes, for if it is per-

mitted to remain, it becomes a source of trouble to the patient. The organ having been infected, inflammatory trouble having arisen in its walls, the resulting increase of the connective tissue subsequently contracting imprisons the nerves within its meshes, and causes pain and distress and increase of nervous phenomena from which the patient suffers. If we remove the uterus, ovaries and tubes, the operation can be done almost as readily through the vagina as through the abdomen, and this operation is preferable to the abdominal, owing to the sequelæ which may result from the latter. The probability of infection of the peritoneal cavity is decreased through evacuation of the pus through the vagina preliminary to opening the peritoneum. The adhesions of the intestines are less disturbed. These adhesions have been of such a character as not to interfere with the evacuation of the bowels. If they are broken up, the new adhesions forming may not be so favorable. The drainage is from the most dependent portion of the pelvis and affords an excellent outlet. We obviate the abdominal incision and the danger of subsequent ventral hernia. The convalescence is shorter, is free from the retention within the pelvis of sutures or ligatures which may become infected and be the cause of a sinus which will remain until they are discharged. In cases, however, in which the pus tube is situated upon one side, in which we hope by the sacrifice of one tube and ovary to save the other, the preferable procedure should be through the abdomen. It is true that we may do what is known as an anterior colpotomy, making an incision through the anterior vaginal wall between the uterus and bladder. The fundus of the uterus is tilted forward and brought out, following it with the tube and ovary on either side. The diseased mass may be removed, the uterus then fastened against the bladder and anterior vaginal wall. In some cases where the mass is situated so it can be readily reached, it may be evacuated and drained through the vagina without the necessity of a sacrificial operation.

ORIGINAL ARTICLES.

NAPOLEON'S ALLEGED EPILEPSY.

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In the JOURNAL of Dec. 22, 1895, I gave an account of Napoleon's diseases, including his rumored epilepsy. Since writing that article I have received from Europe some additional facts and statements, largely through the courtesy of Dr. Robert Harvey, of Chicago, temporarily residing in Vienna, who collected for me whatever could be found in that city bearing on the disputed question of Bonaparte's epilepsy. I am also under obligations to Dr. A. Lagorio, of Chicago, for assistance in examining Italian literature. The main facts and statements brought forward to prove the epileptic attacks are as follows, taking them in chronological order:

M. de Norwins, in his *Histoire de Napoleon*, Paris, 1838, Vol. I, p. 11, says that when the young Napoleon was in the military school, a mere boy, he broke the rules and was subjected to a very humiliating punishment. The effect was to bring on a violent nervous disturbance, so alarming that the punishment was discontinued by his superior officer. This vague description is totally insufficient to establish a diagnosis of epilepsy, and may be dismissed.

After attaining imperial power we find, as early as 1804, a rumor, credited even by some members of his court, that he was subject to epilepsy. In that year a court lady, whose name is concealed, possibly Madame de Remusat, kept a diary of the emperor's journey to Magonza. She states that on September 10 Napoleon "suffered from his nervous complaint or epilepsy, to which he was subject." She adds that Josephine called assistance, and that "after many hours of suffering the attack was calmed." This extract from the anonymous diary is inserted in the *Memoirs of Napoleon* by Constant, the chief valet de chambre. Constant appears to have been a faithful and honest writer. Whether the authoress of the diary was so we do not know. She rather vaguely calls the attack "his nervous complaint, or epilepsy," but the statement that it was calmed "after many hours of suffering" does not correctly describe a true epilepsy. The emperor forbade Josephine to speak of it.

On another occasion the chief valet, Constant, says he heard distressing sounds and complaints coming from the imperial chamber. Going in he found Napoleon lying on his bed with his mouth wide open, from which issued inarticulate sounds, while one hand was clasped upon his stomach. Constant with some difficulty aroused him, and the emperor asked, "What is the matter?" He then related a terrible dream in which he thought a bear was sitting on his chest and trying to eat out his heart. Epileptics do not lie with the mouth open. The description of Constant indicates a severe attack of nightmare, or incubus.

Baron de Talleyrand, the emperor's minister of foreign affairs, asserts that he and Count de Remusat, the chief chamberlain, witnessed together one of his attacks. The Baron states that he accompanied his majesty on a journey to Strassburg. That on one occasion Napoleon entered Josephine's chamber, but came hastily out again, seized Talleyrand by the arm, drew him into an adjacent room and confusedly ordered the door to be shut. He then fell like a dead body and had contortions which Talleyrand describes as follows: "He groaned, frothed at the mouth (*il gémissait et bavait*), he rolled and rubbed, and had some sort of convulsions, which ceased in about a quarter of an hour. A little afterward he began to speak, and came to himself. He ordered us to be silent, and in half an hour was on the road to Carlsruhe."

This is as good a description of true epilepsy as a non-professional man could be expected to make, except the phrase "he rolled," a motion which seldom occurs in epilepsy. This, however, might be the inadvertent error of an excited observer. On the whole, if Talleyrand did not misrepresent, it was a true epileptic seizure. On the other hand, we must remember that the emperor and Talleyrand came gradually to hate each other with the greatest intensity, though the pressure of political necessity and the possession of too many state and Napoleonic secrets between them compelled the two men to continue to act in concert.

Talleyrand, like most of the diplomats of Europe at that time, was a colossal fabricator of incorrect statements, and his keen enmity toward the emperor may have led him in his later years to take a hint from the current rumors of epilepsy, and give them the support of a definite but fictitious story.

In 1810 an Englishman named Goldsmith published

a book filled with all sorts of stories against Bonaparte. Among them he related that a Parisian actress claimed that she had been called to spend the night with Napoleon at the palace of St. Cloud, and that while there he had a violent attack of convulsions. She was so frightened that she screamed aloud and roused the attendants, etc.

This might possibly be true, but prostitutes are constantly making false statements about their adventures with great men. Their testimony is usually a lie and is worth nothing as proof of any alleged fact.

The above accounts comprise about all the contemporary testimony in support of the idea that Napoleon was an epileptic. None of them are decisive, yet taken together they give some weight to the supposition.

The proofs on the opposite side of the question are the following:

1. Of the numerous medical men who at various times had attended the emperor and his family there were six who, by direct or indirect permission, felt at liberty to publish what they observed of his diseases. Four of these were intimate with him at St. Helena. The six were Warder, O'Meara, Antommarchi, Arnott, Héreau and Carvisart. These men left in their writings not a word on the subject of the epilepsy. Héreau alone, who examined the writings of all the others, and drew up a report for the information of the emperor's son, appends a remark which seems indirectly to be intended for a reply to the public rumors. He assures the young Napoleon that his father had no disease which tended in the least to obscure the splendor of his intellectual powers.

2. M. Constant, chief valet de chambre, lived in the closest intimacy with the emperor for the greater part of his public life. After his master's death he published copious memoirs, drawn up with the utmost truth and faithfulness. He mentions some of the stories about epilepsy, but says positively, "The emperor was never a subject of epileptic attacks." Professor Teobaldi, of the University of Padua, in a recent treatise on Napoleon, after quoting Constant's assertion adds, as the result of his studies: "Nobody ever saw him fall from his horse, or interrupt a conversation, or suffer any convulsive attack in public. He was not found epileptic by his physicians."

3. "Napoleon's private secretary, De Bourrienne, after the emperor's death published copious memoirs. He says, in Vol. I, p. 278, English edition, as follows: 'It has been said over and over again that he (Napoleon) was subject to repeated attacks of epilepsy, but during the eleven years that I was almost constantly with him, I never observed any symptom which in the least degree denoted that malady.' De Bourrienne was dismissed from the imperial service in disgrace under charges of peculation, and forced to refund one million francs to the treasury. He is said to have cherished great animosity to the emperor ever after, so that he would not be likely to deny the story of epilepsy, if there had been any truth in it."

On the whole, I conclude that the witnesses denying the epilepsy are more credible than those asserting it, but the emperor had an ungovernable temper and a very excitable nervous system, which in some cases carried him into semi-hysterical manifestations, but not into true classical epilepsy. Professor Teobaldi, of Padua, after examining the evidence, comes to nearly the same conclusion.

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FRACTURE OF THE FOREARM COMPLICATED WITH DISLOCATION.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

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The mechanism of the human hand, with its great variety of movements and its marvelous adaptability to the purposes for which it is intended, furnishes a strong evidence against the doctrine of those who have doubt as to the origin of man. The best productions of artificial hands, by the highest development of human art yet made, have fallen far short of the natural member, in a mechanical sense, and it is only in that sense that any artificial approximation can be made. The vital principle, emanating from the brain and spine is necessary to the perfection of this organ, and as much as the man, the mechanic or the artist resembles his Creator, he is still unable to control that vital principle, as against natural physiologic activities, and these activities are maintained by the forearm, which may be said to be the dynamo of the hand, and whenever from any cause this organ is injured so that the normal action of its muscles is impaired the movements of the hands are more or less curtailed. The skeletal structure of the forearm, consisting of the radius and ulna, is so constructed that it has a wide range of motion, not the least important of which is its rotation, which extends beyond a semicircle. When the hand is fully supinated these bones lie nearly parallel with each other, when pronated the radius lies in an oblique direction, across the shaft of the ulna with its articular carpal end on the inner side instead of on the outer side of the ulna, as it is in supination. The radius attached to the outer condyle of the humerus above, by a slightly concave surface, and to the outer surface of the olecranon process of the ulna by the coronary ligament, which gives it free rotary motion, is chiefly concerned in these acts of supination and pronation. The head of the radius constitutes but a small portion of the bulk of the large joint, of which it forms a part, but if measured by its functions we must admit that it is of considerable importance. At its carpal end we find it articulates with the three principal bones of the first row of the carpus, namely, the scaphoid, semilunar and cuneiform, and practically forms the whole of the wrist joint. The ulna performs only a minor part, and does not enter into the formation of the joint. This bone, with its little head and big base, controls for the most part the actions of the hand, while the brachialis in front reinforces the power of the biceps flexor cubiti, which is attached to the tubercle of the radius and flexes the forearm. The large size and complicated form of the ulna at the elbow joint, with its greater sigmoid fossa fitted to the inner condyle of the humerus, its lesser sigmoid fossa fitted to the head of the radius, its coronoid process which forms the inferior boundary of the greater fossa, and its muscular attachments and powerful ligamentous involucrum, all combine to place it in strong contrast, both in structure and function, to its carpal end. Of the twenty muscles of these two bones, five are attached to the inner condyle of the humerus, and act as flexors and pronators of the fingers, wrist and hand. Three of the deep layer, lying beneath these, originate from these two bones below the condyles. Of these, two, the flexor longus pollicis and the flexor profundus

digitorum, as their names imply, are flexors, pure and simple, and one, the pronator quadratus, is purely a rotator. In the radial region or border, we have three muscles all arising from the external condyle and the external condyloid ridge of the humerus. One of these is attached to the styloid process of the radius and therefore acts as a supinator, the other two acting as extensors of the hand. There are nine muscles on the back or dorsal aspect of the forearm. These, the muscles of the radial and posterior brachial regions, comprise all the extensor and supinator muscles and act on the forearm, hand and wrist. They are the direct antagonists of the pronators and flexors. The anconeus assists the triceps in extending the forearm. The supinator longus and brevis are the supinators of the forearm and hand, and the former acts as a flexor if its action is continued after supination is complete. The extensor carpi radialis longior and brevior and the extensor carpi ulnaris muscles are the extensors of the wrist, and continuing their action, serve to extend the forearm upon the arm. They are the direct antagonists of the flexor carpi radialis and ulnaris. The bones of the forearm, when extended and fully pronated are nearly in line with the long axis of the humerus, but when fully supinated the forearm represents a divergence of about 10 degrees outward. Neither the elbow nor the wrist joints are at right angles with the long axis of the humerus or the bones of the forearm. That at the elbow slanting toward the inner condyle, bringing the trochlea for the great scaphoid fossa of the olecranon at a lower level than the articular surface for the radial head, while the styloid process of the radius extends lower in supination than that of the ulna. These data have some importance when attempting to make a differential diagnoses as between fractures and dislocations. The blood and nerve supply of the forearm and hand are ample in the normal state, but lesions of these vessels and nerves in cases of fracture, especially so in crushed fractures, have much to do with the results of treatment; for large destruction of muscles may be present without serious functional impairment if the blood vessels and nerves are but slightly injured, or not injured at all. As regards the nerve supply, if we know the distribution and the degree of injury the nerves have sustained, we may judge pretty well as to the probability of paresis or paralysis supervening. The distribution of the median, ulnar and musculospiral, the latter mainly by its radial branch, while not exactly uniform in all subjects, is sufficiently so for all practical surgical purposes. These incomplete anatomic data of the forearm may be helpful in the diagnosis of its fractures and dislocations. Fractures of the forearm are of frequent occurrence, especially those involving the lower end of the radius. Sometimes they only involve a portion of the articular surface of the radius, sometimes the articular surface is badly fissured and the fracture extends some distance up the shaft. There is an occasional separation of the apophyses in young subjects, and impactions are not infrequent. The deformities caused by most of these fractures, especially in Colles fractures, is no doubt largely due to the force which produces them. This is usually a fall on the palm of the hand, the weight of the body acting through the limb with sledge-hammer force so that the fractured lower end of the radius is driven upward beneath the supinator and extensor tendons and is pretty firmly held there, not so much probably by the contraction of these muscles

as by the binding power of their tendons. If the force of the fall has been very great, so as to cause considerable displacement, the ulna is almost certain to be either dislocated or fractured. If a Moore's dislocation is the result, this may greatly add to the difficulties of the treatment. The intervention of blood clots or other tissues and agencies sometimes render complete coaptation difficult if not impracticable and when it is successfully attained the spasmodic action of the muscles often render it impossible to maintain it. Dr. E. M. Moore's demonstrations of the dislocation and occasional fracture of the head of the ulna as an accompaniment of fractures of the lower end of the radius seem to have attracted less attention than they deserve. Several cases of this kind have fallen under my observation and a still larger number in which there appeared to be a partial dislocation of the head of the ulna. Dr. Moore met with several cases in which there was dislocation of the head of the ulna accompanying fracture of the carpal end of the radius, and in which the ulna was driven into, or partly under the annular ligament. This malposition rendered coaptation of the fragments of the radius impossible until the imprisoned head of the ulna had been liberated. If the fracture of the radius is not completely reduced and a shortening results the obliquity of the radio-carpal articulation is increased, the radius shortened and the head of the ulna rendered more prominent, causing a conspicuous deformity. This deformity may also happen, but generally in a less degree, if the radius is fractured higher up, and reduction and coaptation have not been perfect during the period of bony union. Separation of the apophysis may cause a good deal of deformity and be easily mistaken for a dislocation, but occurring as it always does in young subjects in whom muscular rigidity is generally inconsiderable, reduction is generally easy and the crepitus is differential. Gunshot fractures of the carpal end of the radius sometimes happen without much displacement. The cancellous structure of this end of the bone with its thinned outer layer of hard tissue makes it quite possible for a small solid shot to perforate it without causing much splitting, splintering or bone displacement. It is, of course, quite different when the radius is shattered by a charge of finer shot. The ordinary causes of fractures of the lower end of the radius are liable to be in operation in railroad and machinery accidents, but in these latter accidents we are more likely to find the soft parts crushed and so badly injured as to be devitalized. Fractures of the shaft of the ulna, unless caused by direct force, are not infrequently complicated with dislocation of the head of the radius. This is more apt to be the case if the fracture has been produced by falling on the partially extended palm of the hand as in most cases of fracture of the lower end of the radius. The shaft of the radius being in these accidents too strong to yield, and the force being great, the ligaments of the head of the radius give way and it is forced upward on the anterior surface of the external condyle of the humerus.

Fracture of the coronoid process of the ulna is very rare, except as a complication of dislocation of the ulna backward. The tendency to muscular displacement, in this little fracture, is inconsiderable as the only muscle attached to it is the brachialis anticus, and its fibers are so spread out on and over the ulna below, that very little traction on the fragment can occur unless these fibers are torn by the injury. This process is so small that it is not always easy to determine

when it is fractured, especially when the swelling has become considerable before examination. It may, however, occasionally be felt as a small movable body under the skin of the part by careful manipulation. Fracture of the head or neck of the radius is more frequently met with in connection with dislocation of the olecranon accompanied by fracture of the coronoid process than otherwise. This too is sometimes of difficult diagnosis, but when there is not too much swelling the lesion can generally be distinguished by the pain or tenderness, or sometimes by the crepitus and pain on supination and by the evident want of motion of the head when rotating, or by attempting extension or shortening of the shaft of the radius. If there be fracture of the external condyle with the fracture of the head or neck of the radius the latter may easily be overlooked. A fracture of the radius between the insertion of the biceps and the pronator radii teres is liable to result in a bad cure unless the situation of the fracture and its anatomic relations are appreciated and the action of the biceps on the upper fragment, and the pronator quadratus on the lower are antagonized. This biceps being attached to the back part of the bicipital tuberosity rotates the upper fragment outward and produces more or less complete supination, while the pronator quadratus pulls the lower fragment in the opposite direction toward the ulna and produces pronation. Now, if these displacements be real, it is easy to see that even if the ends of the bone are brought into line and osseous union effected, the limb will be sadly defective, unless the supination of the upper fragment and pronation of the lower can be corrected. Consolidation would, in this condition of the parts, result in almost complete loss of pronation and supination, but relaxation of the tendon of the biceps by a rectangular position of the forearm together with manipulation of the two fragments, would rotate, the one outward and the other inward and bring their normal transverse axes to correspond with each other. This fracture should then be dressed with a rectangular splint.

It begins to appear that my subject is too large to admit of full and specialized consideration in detail within time limits, and so, after giving a short history of a private case and then some statistic facts, with a few comments on shot fractures of the forearm my time will have been fully occupied.

John L. Allen, a fair-haired, light complexioned boy, aged 15, accidentally discharged a heavy load of shot into the ulnar side of the right arm in June, 1883. The ulna was broken from about the junction of its middle and lower thirds to near the coronoid process and the muscular structures largely carried away. The flexor and pronators and portions of the extensors were nearly destroyed, close up to the joint, a considerable portion of the interosseous, together with the ulnar artery and nerve were also destroyed. He nearly bled to death before he got assistance. The artery was tied at both ends, the ulna cut off smooth at both ends, and the loose fragments removed leaving a hiatus of four inches in its continuity. The arm was dressed with lint and put on a pillow covered with oil silk and a syphon supplied with cold water made to play on it day and night continually. There was no inflammation or suppuration. It granulated and closed in a few weeks without incident. He obtained a business education and is a book-keeper. The little finger and the ring finger are flexed in a state of permanent contracture. The other fingers and

the thumb have a large range of motion, and he says the arm is strong. The median and radial nerves were not much injured. The usefulness of this arm furnishes a striking contrast with the conditions of most of those who suffered similar or even less mutilation in military practice. The following statistics are from the Surgical History of our Civil War, Vol. 11, beginning at page 921.

There were thirty-two cases of injuries to the bones of the forearm classified as partial fractures. They were not cases of solution of continuity but were chipped or grooved by the passage of balls across their surface. They involved the ulna in twelve cases, the radius in fifteen, both bones in one, and four were not specified. Twenty-eight of these cases were treated conservatively and of these two died. The other four were amputated in the upper arm and two of these died. So that the mortality of these thirty-two cases of partial fracture was 12.5 per cent., a larger percentage than followed in the treatment of cases of complicated fractures of these bones. In military practice the larger share of fractures of the bones of the forearm are in the ulna, the radius being next in number and both bones third. There is a complete record of 5,194 cases of shot fracture of the bones of the forearm. About three-fifths of these cases were treated without operative interference with a mortality of 6.4 per cent. The radius and ulna were both fractured in 1,291 cases or a little less than one-third of the whole number of cases in which the seat of the fracture was specified. This group as might be expected contains a larger number of cases requiring operative interference than the others in which a single bone only was involved; 323 of these 1,291 cases were treated conservatively and there were 299 recoveries, 103 of whom returned to modified duty and 196 were discharged. These recoveries were left with more or less disabled limbs, very few of them having much rotation left. Pseudoarthrosis occurred in two cases. The death rate was 7.4 per cent.

Fractures of the Ulna treated Conservatively.—The results here in 1,044 cases, all but 5 of which were determined, were recoveries 980, deaths 59, a mortality 5.6 per cent. Of these 980 recoveries, 490 returned to modified duty and 490 were discharged. Eighteen of these recoveries had secondary hemorrhages. In three, ligature of the brachial, in five, ligature of the ulnar and in four, ligature of the radial was practiced. The other six recovered under the use of styptics and compression without ligature.

Of the 59 deaths out of the 1,039 determined cases of shot fracture of the ulna the greater number were caused by pyemia and gangrene. Of 999 shot fractures of the radius treated during the war the proportion of deaths is rather less than resulted from fracture of the ulna, but the degree of disability is greater. Of the 949 of these cases that recovered 445 returned to modified duty and 504 were discharged—a considerably larger proportion than was discharged among those recovered from fractures of the ulna. Quite a number of the recovered cases had secondary hemorrhage requiring the ligature, a few had hospital gangrene, a few erysipelas, and many had osteitis, necrosis and exfoliation of bone. In some instances long cylindrical sequestra were removed. There were 147 cases among the recoveries in which considerable sequestra were removed. Of the fifty fatal cases in this series five died of pyemia, in six secondary hemorrhage caused death, two died of tetanus, one from gangrene

and two of erysipelatous complications, but the majority of the deaths were reported from exhaustion and from the various affections arising during their hospital residence. Hospitalism was then an important factor in results. In aggregation out of the 5,194 cases of shot fractures of the forearm 2,970 were treated conservatively. The graver complications among these were comparatively infrequent. There were, however, twenty-seven deaths from pyemia, four from tetanus, thirteen from secondary hemorrhage. There were fifty-seven cases of severe secondary hemorrhages treated out of this large series requiring in different cases ligation of the brachial, radial, ulnar and interosseous arteries.

Excisions in the continuity of the bones of the forearm were practiced in 986 out of the 5,194 cases of shot injuries of the forearm, with a mortality of 11.2 per cent.; 496 of these excisions were of the ulna, 413 of the radius and 59 of portions of the shafts of both bones; 18 cases were not specified as to the bone or part of it that was excised. Excisions were classified as primary when done before swelling or inflammation occurred, or in general within thirty-six to forty-eight hours from date of injury; intermediate when done later, or within twenty to thirty days, and secondary when done after thirty days. Primary excision of one or both bones was done in 665 of the cases with a mortality of 71,—10.6 per cent. Five of the cases were undetermined. The excision involved the ulna in 321 cases, the radius in 291, both bones in 40 and in 13 the seat of the excision was not specified. Forty-four of these cases were Confederate soldiers.

Of the forty excisions of both bones, thirty-four were successful as regards the saving of life, but eighteen of them afterward required amputation, and among the twenty-two who retained their arms not a single good result was obtained. In fact the recovered cases who retained their limbs were worse off than if amputation had been done as the limbs were useless appendages and a hindrance. Excision of the shaft of the ulna shows 290 recoveries. The length of the shaft removed varied from one to six inches, in one case the entire diaphysis was removed. In one of this series excision was made in the radius of the right arm and the ulna of the left. This man died in 1872 and a short time before his death pension examiner, O. M. Stockwell, of Port Huron, Mich., reported his "disability is almost equivalent to the loss of both hands" and in general the ulterior pension reports in these cases show a disappointment in regard to the expected usefulness of the limbs. Of 413 primary excisions of the shaft of the radius 256 recovered.

Table 126 gives 589 cases of recovery after primary excisions of the bones of the forearm for shot wounds (36 were Confederate) of which 147 were returned to modified duty and 406 discharged from the service.

Intermediary Excisions of the Bones of the Forearm.—Of these 149 cases with a mortality of 19.4 per cent., or 29 deaths are reported; 9 cases involving both bones, 64 the ulna and 47 the radius. Among the 120 cases of recovery after intermediary excision of the forearm were eleven of secondary hemorrhage, three consecutive amputations in the forearm and six in the upper arm. Of the twenty-nine deaths of this series the greater number were from pyemia and pyemic complications. None of these were done on both arms, eighteen were of the ulna and eleven of the radius. Unsuccessful consecutive amputations were

done in the upper arm in five cases. The fatal issue in one of them was thought to be due to the concomitant fracture of the spinous process of one of the dorsal vertebrae. There were forty secondary excisions made after thirty days from date of injury. Seven of these involved the shaft of both bones, twenty-one of the ulna only, and eleven of the radius and one not specified. There were four fatal cases of these secondary operations. Beside the different series of cases above shown in which a classification as to date of operation was given, there were 132 cases of excision of the forearm not classified, in which the small mortality rate of 4.3 per cent. was reported.

RECAPITULATION IN AGGREGATE.

This large number of excisions, 2,251, of the bones of the forearm compares unfavorably in results with the larger number, 2,943 treated on conservative principles, both as regards mortality and subsequent usefulness of the limbs. Could aseptic, or even antiseptic surgery be made available in future wars, the results would no doubt be improved, and resection and amputation would be found unnecessary in a large portion of cases in which they were practiced in preantiseptic times.

The mortality 2,943 cases of shot fracture of the forearm treated by conservatism was 6.4 per cent. and of the 965 treated by excision 11.2 per cent. and of 1,256 treated by amputation primarily or consecutively performed, the death rate was 16.3.

In studying these statistical results we note with interest if not surprise the great difference in the mortality of cases treated conservatively and those treated by excision or amputation. The fact, however, is not to be overlooked that the milder cases were as a rule treated conservatively and the more severe by excision or primary or conservative amputation. Unless antiseptic surgery can improve the results of excision of the bones of the forearm the operation ought to be abandoned in military practice and the same remark may apply equally to railroad surgery.

AN UNUSUAL CASE OF FRACTURE OF THE SKULL.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY F. H. PECK, M.D.

SURGEON, N. Y., O. & W. RY., UTICA, N. Y.

I have to beg the indulgence of the Academy for bringing up in a very new and crude way a history of a case which has always been extremely interesting to me, and I will explain how it is that I am unable to give more complete data of the case. It is a case of fracture of the skull which occurred during my service at the State Emigrant Hospital, New York, when that institution was located upon Ward's Island and under the government of the New York commissioners of immigration. Some three or four years following my service the department was taken out of the hands of the New York State commissioners of immigration and put into the hands of a single-headed commission which was under the general government, and the hospital was removed from Ward's Island to Ellis Island in the harbor so that my data in regard to the case are rendered inaccessible. It is a case I should have reported at the time it occurred, excepting that I was very young in the profession and thought that it would be rather presumptuous for one who was but a recent graduate to rush into print. My

only apology for now presenting it is that the case is interesting to show the amount of injury which the skull and its contents will occasionally tolerate, not on account of good treatment, but perhaps in spite of the treatment, and the fact that the case has never been presented before.

In the summer of 1882 an Italian, about thirty years of age, belonging to a construction gang on the West Shore Railway, then being built, was admitted to my service in the state Emigrant Hospital, New York, with a compound fracture of the bones of the skull, and with the following history, partly obtained from the Chambers Street Hospital, and partly from the patient after his restoration to complete consciousness: Three days prior to coming under my care, while at work in a rock-cutting, he was instructed to dig out a blast which had failed to explode, with the result that the heavy charge exploded in his face. He was taken across the river to Chambers Street Hospital, and on the third day transferred to the State Emigrant Hospital, on account of the development of erysipelas in the margins of the wound, as no septic cases were allowed to remain in the Chambers Street wards.

Physical signs on admission were as follows: A compound fracture of the frontal bone extending transversely across the forehead just above the frontal eminences and below the hairy margin of the scalp. The wound through the soft tissues was about five and one half inches in length and gaping to about one and one half inches at its widest part; extending from a point about two inches superior to the right external angular process to a point about equally distant above the middle of the left superciliary ridge, and communicating freely with the cranial cavity and brain through the subjacent fracture and an equally large laceration through the meninges. The cutaneous surface surrounding the wound for a distance of about an inch from its margins was swollen and reddened with an angry erysipelatous blush. The bottom of the wound was filled with detritus composed of necrosed brain tissue, small fragments of rock and some loose bony fragments. The fracture could be traced beyond the limit of the open wound to the left external angular process; thence it extended through the roof of the left orbit, emerging in the nasal bones which it traversed obliquely downward, through the right malar bone, and thence outward and upward to its point of origin near the superior extremity of the right temporal ridge of the frontal bone. It extended across the base of the anterior portion of the skull from the left external angular process through the left orbital plate of the frontal bone, and posterior to and including the right orbit, or the greater part of it, to a point on the external aspect of the right great wing of the sphenoid, including in the parts fractured from the rest of the cranium nearly all of the frontal and ethmoid, and portions of the sphenoid, nasal and right malar bones. This was proven by the mobility of the portion fractured off, which was so mobile as to move back and forth with every cardiac impulse transmitted through the cranial pulsations, and by the fact that the upper right portion of the face, including the right orbit and globe of the eye, was advanced anterior to the plane of the upper left portion of the face and left eye. This obliquity of the frontal structures and eyes remained after the wound was healed, the right eye being about five eighths of an inch anterior to the plane of its fellow, and the facial deformity was well shown in a tin-type which he brought me, but

which I unfortunately left at the hospital at the end of my term of service.

The patient was in a condition of mild stuporous delirium, answering questions when aroused, but irrationally and *mal à propos*. Through loss of notes I am unable to give clinical record of pulse and temperature.

Confronted with the above conditions I considered his injuries necessarily fatal, and believing I could do no harm in contributing to the fatal issue, I was extremely bold in exploring and cleaning out the wound in the cranial cavity, introducing all the fingers of my hand into the cranium so that in the manipulation the anterior portion of the right anterior lobe of the brain rested in my hand on the palmar surface of the fingers. In this manner, and assisted by irrigation I removed the detritus, including, I should think, as much as half an ounce of softened and detached brain substance. The selection of dressing next perplexed me. You will remember this was in 1882 in the early days of antiseptis, and the only agents then in use to modify septic conditions were carbolic acid and iodoform, neither of which I wished to apply to a wound communicating so freely with the brain on account of their irritant properties. I contented myself with applying compresses kept constantly saturated with cold water, and to my surprise the patient immediately and steadily improved; the erysipelatous redness, fever and delirium disappeared within a week or ten days; the wound granulated and cicatrized from the edges, and he progressed to an uneventful recovery, and was discharged cured about two months after his admission to the hospital. After his delirium subsided he showed no impairment of mental powers nor loss of function save the sense of smell, which was completely lost through rupture of the olfactory filaments.

On his discharge I asked him to report after the lapse of two or three months that I might further examine as to his cerebral functions, and at the end of two months he presented himself again bringing a picture showing his facial deformity as stated above, and showing no mental deterioration.

DISCUSSION.

DR. DALBY—The paper just read and case cited by Dr. Peck—skull fractures and to what extent these fractures may go and still the patient recover—simply adds another to the already long list. We have seen compound fractures in such aggravated shapes that seemed as though recovery would simply be impossible. As he stated in the paper, in this case he got well in spite of any medical attention; I think a great many of them do. In cases of fractured skull as they come under the railway surgeon's attention, beyond cleansing the wound and making it as aseptic as possible, relieving the pressure, is about as much as we can do. The case he cites is certainly an interesting one, but, as I stated, only another of a long list of these horrible fractures where patients recover in spite of all we may do and may not do. As I have stated, there is very little in such cases that can be done anyhow, even in the surgical field. After we have made the wound aseptic and relieved the pressure we have performed about all the surgeon can do.

Valerianate of Antipyrin. A writer in the *Boston Medical and Surgical Journal* recommends that the following formula be used to prepare this salt. It has been used in cases of nervous prostration with recurrent hysterical symptoms: Antipyrin, grs. xxviii; aq. destillat. q. s. ad ft. sol.; ft. sol. et adde acidi valerianici, gtt. xv. Mince. Shake well, and stand aside to allow the salt to crystallize.

THE USE OF GOLD FOIL IN FRACTURES OF THE CRANIUM AND RESULTING HERNIA CEREBRI.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY W. L. ESTES, M.D.

CHIEF SURGEON, L. V. RY., SO. BETHLEHEM, PA.

The three cases related in this paper are offered as illustrations of a slight advance in hetero-plastic attempts, and are unique in that they were done on the contents of the cranium, and not on the cranial walls themselves. The nearest approach I have found to the attempts I have made were by Weir, of New York, and to his pioneer work in using gold foil to prevent adhesion of the dura to the cranial bones after serious fractures and removal of pieces of bone from the cranium, I have extended the use of the foil in one case to plug up the cavity in the cerebrum itself, and in two other cases to replace destroyed dura—not with the idea or indication of preventing adhesion but of replacing the obturator function of the lost membrane, and so prevent a further escape of cerebral tissue and subsequent development of a hernia cerebri.

The number of cases is too small to serve as an authoritative guide for future routine practice; these cases indicate, however, beyond the shadow of doubt the extreme tolerance of the brain and cranial contents to foreign bodies and may encourage further attempts in even more radical directions. For instance, it happened once to me in operating on the cerebrum to open the lateral ventricle, and I found no ordinary plug nor suturing nor compression would prevent the constant escape of cerebro-spinal fluid, which finally caused the death of the patient. Having the experience of these cases in mind I should not now hesitate to form a new roof for the lateral ventricle by gold, or if need be plug its cavity with a cup of gold. The gold foil might also be useful in controlling the escape of cerebral tissue or help fill the cavity left after removal of tumors from the brain, and so on. It must be understood that this kind of hetero-plasty demands the strictest aseptic technique and most careful attention to details.

A most valuable adjunct to the specific use of the gold foil inside the cranium, is the inhibitory action it exerts against the growth and development of the microorganisms. This most beneficent quality was discovered at Johns Hopkins Hospital by Drs. Welsh and Halstead. It is true also of silver foil and metal plates and sutures generally which will resist the corroding actions of the animal tissue and fluids. This inhibitory action against microorganisms may explain the removable aseptic course of the second and third cases, after the use of gold foil when the conditions previous to the operation were particularly favorable to subsequent suppuration.

The gold foil I have used has been next to the thickest foil ordinarily used in dentistry, I sterilized it by a prolonged immersion in a 5 per cent. solution of carbolic acid and just before using it washed it thoroughly in a sterilized normal saline solution. During the operation a warm sterilized saline solution was used for all purposes of douching or washing about the wound or within the cranium. I invariably prefer to remove by gentle douching any detached cerebral matter, clots, or debris from the cranial cavity, rather than by swabbing with any sort of gauze or

sponge. I have found capillary drainage quite sufficient in these cases. I have used stout catgut, or a narrow piece of sterilized iodoformized gauze as drains.

The arguments specially in favor of these hetero-plastic attempts, rather than autoplasty, are two-fold. 1. After a stock of gold foil has been obtained it is always ready and is easily employed, whereas autoplasty, after complete destruction of an area of dura or cerebrum, is extremely difficult and usually indeed impracticable. 2. Hetero-plasty introduces a substance which if it prove an irritant does so simply by its presence as a mechanical result, so to speak, and it acts as an efficient inhibitor of microgenesis, whereas autoplasty may, and commonly does, result in necrobiosis and infection of the already badly injured tissues. The former may be removed *in toto* without much disturbance and with relief to the symptoms, whereas in the latter case the result of the death of the organic graft is usually irreparable and far reaching.

The cases are as follows (The first case was published a few months ago in the *Medical News*. The other two cases are given here for the first time):

Case 1. Cornelius B., a negro, 28 years of age, was brought to the hospital in an unconscious condition on the night of April 4, 1893. The ambulance surgeon was told that while the patient with a companion was out driving, Cornelius, by what means or agency could not be discovered, was thrown to the ground and kicked by the horse, becoming immediately unconscious. He was forthwith taken in charge by his companion and sent by railroad a distance of some twenty-odd miles, and finally was received at the hospital, still unconscious, three or four hours after the injury. No dressing or covering of any sort had been placed over the wound. Examination showed no injury anywhere, not even an apparent bruise, except on the right side of his head, where there was a *punched-out* sort of wound through the scalp and bone and deep into the cranial cavity. The location of this wound was 6.5 centimeters above the external auditory meatus and 2 centimeters in front of a line perpendicular to the external auditory meatus: it was 5.5 centimeters behind and 3.5 centimeters above the external angle of the frontal bone. The wound in the scalp was round, but a laceration extended backward about 3 centimeters. The surrounding scalp was not lacerated or contused. Hemorrhage had entirely ceased and had not been profuse. The man's general condition was good. Although he was unconscious, enough reflex remained to cause him to move about when the wound was manipulated. After shaving and carefully cleansing and disinfecting his head he was chloroformed, the external or scalp wound was enlarged and the bone freely exposed. It was found that the depressed fracture of the bone involved an area of a little less than 2 centimeters and that all of this bone was driven down at almost a right angle to the cranium into the cerebrum, so that there was a sharply-defined rim of bone, with some radiating linear fractures, and about 3 centimeters beneath, from the inner table of the cranium, the comminuted fragments lay imbedded in the cerebrum. Outside of this bone the scalp had also been punched out and the fragment was lost. The opening in the bone was enlarged and by careful manipulation the fragments were lifted out of the cerebrum with a pair of narrow forceps. A few spiculae were so small and sharp and deeply imbedded that much care was required to locate and remove them. When the fragments were finally removed free hemorrhage took place from the cerebrum, but was checked by plugging the cavity with iodoformized gauze. Something like 15 cubic centimeters of lacerated cerebral tissue were washed away with a gentle stream of warm sterilized saline solution. The dura was lacerated to shreds and it was quite impossible to close the gap in the membrane. I concluded to pack the whole cavity with iodoformized gauze, and, by careful asepsis, endeavor to obtain healing by granulation. Accordingly, a careful dressing with an outside pressure bandage was applied and the patient put to bed. He stood the operation very well, reacted quickly, and under morphin passed a quiet night. The next day he was quite conscious, answered questions readily and had no paralysis. There had been considerable oozing and the dressings were saturated with blood. I changed the dressing. In spite of the greatest care there was an escape of more cerebral tissue, and as there was

no membrane or scalp to help retain it I saw I should have trouble to prevent the escape of brain tissue whenever I dressed the wound, and every prospect of a final hernia cerebri. I replugged and redressed the wound as before and concluded to wait a day or two. I recollected, in thinking over the matter, that Weir had recently used gold foil to prevent adhesions between the dura and cranium and scalp, and had found it non-irritating, and that rapid and permanent healing occurred in his cases. I had to control the oozing of the cerebral tissue into a cavity and prevent its detachment and escape on account of a complete loss of all its envelopes. I concluded to try a sterilized cup made of heavy gold foil fitted down into the cavity of the cerebrum.

On April 7, two days after the injury, I again had the patient chloroformed, and getting the dimensions of the hole in the cranium I fashioned a cup from the gold foil (which had been sterilized by immersion in a 5 per cent. solution of carbolic acid and then washed off in a warm sterilized saline solution, 0.5 per cent. solution of sodium chlorid) into the shape of a hollow cone, with the base just big enough to fit closely to the inner rim of the inner table of the cranial wound and with a depth of about 2 centimeters. The plugs were removed from the cerebral cavity, with again considerable escape of brain matter, which was washed out by a gentle stream of the warm sterilized saline solution, and the cup immediately introduced, apex downward. I fastened it in place by pressing the foil into the indentations and irregularities of the rim of the inner table and packed loosely into the cup some iodoformized gauze. I incised and loosened the scalp on either side of the wound so that I could slide it over and cover in the opening, sutured it, except a small space in the center through which an end of the bit of iodoformized gauze was allowed to project, and dressed it as before.

On April 14 the wound was redressed, the sutures removed, and also the packing of gauze from the cavity of the gold cup. The wound was perfectly aseptic, the cup firmly fixed and in place, and there was no bulging and absolutely no escape of brain matter. A small bit of gauze was again introduced into the cup to give it solidity, and the dressings were reapplied.

On April 27 the wound was again inspected. There had been no suppuration, and the wound was entirely closed except where the bit of gauze projected from the cup. This was removed and the external wound was allowed to come together. In a few days this was entirely and solidly united. The patient was allowed to be up and about. His faculties were all good, locomotion was good, and in short he showed no indication in any way of having lost any function; nor were there any signs of irritation from the cup. I kept him about two weeks employed most of the time about the wards, doing the work of an orderly, that I might observe him and examine the seat of wound. There was absolutely no indication of any trouble or disturbance. He was discharged quite well May 20. The wound was firmly united and there was no pulsation perceptible through the opening in the cranium.

Case 2. George S., a Hungarian, age 27 years, was brought to the hospital by the ambulance on June 21, 1894. He had been engaged in an altercation with some of his fellow workmen the day before and was struck by a stone thrown by one of them. He was felled to the ground, bled profusely, presumably was unconscious, though this point we could not find out, as we had no interpreter. A local physician was called in who found a comminuted depressed fracture and trephined; possibly he raised some depressed fragments of bone. The scalp wound was sutured and dressed and the patient as soon as practicable sent to the hospital. When admitted the man was not only conscious, but could and did insist upon walking into the receiving room. He was a short, healthy looking fellow. Upon investigation there was found an irregular lacerated wound and a more regular oval wound situated in the right temporo-parietal region. The oval wound was sutured. The sutures were removed and after careful cleansing and disinfection a further exploration showed an extensive comminuted depressed fracture involving the anterior portion of the temporo-parietal region in the right side and the fracture extending downward and forward involving nearly the whole of the temporal fossa. A trephine wound about a centimeter in diameter through the anterior inferior portion of the parietal bone marked the upper limit of the fracture; below, the bone was in a number of irregular fragments and depressed. The patient was chloroformed, the external wound extended down into the temporal region and after careful retraction of soft tissues, during which hemorrhage was rather free, it was found that two large fragments of the temporal bone were depressed and that under the upper edges of these were a number of sharp small fragments which had been driven through the membranes and imbedded in the cerebrum. After raising the temporal

fragments the small fragments were carefully taken out. Considerable hemorrhage followed this and escape of not a little cerebral tissue. It was now seen, after the hemorrhage had been controlled by pressure of iodoformized gauze, that the dura and other membranes had been entirely destroyed at the lower part of the wound near the inferior temporo-parietal junction and that there was a persisting oozing of brain matter. It was quite impossible to bring the dura together throughout the whole area, the fragments of bones were irreparably comminuted and soiled. It was determined, therefore, to supply the place of the dura with gold foil. Accordingly a rectangular piece having been sterilized in carbolic solution (5 per cent.) and washed off in warm sterilized saline solution, the brain matter was washed off with a gentle stream of hot saline solution, together with blood and detritus, and an area of 2 c. by 1 c. which was entirely destitute of any membranous covering was covered in by the gold foil, placed under the border of the surrounding dura, and held down by the pressure of the dura and the large fragments of the bones below. The scalp was immediately sutured, stout catgut drain was introduced at the more depressed part of the wound, and the ordinary iodoformized dressing applied. The wound healed with one change of dressings and the man was discharged quite well and apparently in first rate condition in every respect, July 7, sixteen days after the operation.

Case 3. George E., 20 years of age, Pennsylvanian by birth, was run down by a train of coal cars on the evening of Feb. 19, 1895. He was picked up and brought to the hospital about one hour and a half after the accident. The young man was in a wretchedly low condition when he arrived. He was unconscious, had scarcely any perceptible pulse, extremely pale and relaxed, and covered with dirt, soot and coal dust. Examination showed a complete crush of the left leg up to just below the knee joint, the right foot also comminuted and the tissues involved up to the lower third of the leg. There was also a wound on the left side of the head about 3 centimeters above the supra-orbital ridge, back of the edge of the hair at the forehead, and about 6 centimeters from the middle line; this was a fairly clean cut wound, running in a slightly curved line backward in a general way parallel with the middle line. The left parietal bone was fractured so that the fracture was almost linear. Running backward, it corresponded almost with the area of the external wound. The fracture was about 6 centimeters in length. There was considerable oozing of blood and cerebral tissue. The patient's condition seemed hopeless. The ambulance surgeon had already applied an Esmarch's tourniquet to either limb as near the crushed tissue as possible. The limbs and head were now carefully washed, shaved and disinfected and an aseptic dressing applied. He was hurried to bed and surrounded with hot water bags, and stimulated actively by strychnia and digitalis hypodermatically. He was very restless and required large doses of morphia to quiet him. The next morning (February 20) he was conscious, but dull; his general condition had so far improved that he was etherized and both his lower extremities were amputated. The left one through the condyles of the femur and the right through the lower third of the leg. The depressed parietal bone was also elevated, the cerebral tissue and blood carefully washed away and the scalp sutured. The patient stood these three major operations remarkably well. He began at once to improve, the wounds all did well, the head wound especially. He was very drowsy for several days, but could be aroused and could answer questions. His mental state improved daily and aside from some drowsiness and occasional periods of irritability and restlessness there seemed no cerebral manifestation of evil, until March 3, twelve days after the operation. During the night of March 3 he had a violent convulsion epileptiform in character. The wound of his head was entirely healed at this time and there had been no suppuration. There seemed to be no depression at the seat of fracture and there was no abnormal tenderness. He had no further disturbance until the night of the 7th when he again had a convulsion. On the 8th he had frequent convulsions: toward evening and during the night the convulsive attacks became almost continuous and the patient fell into a very weak comatose condition. Careful observation showed that the convulsion began by turning the face to the right, then twitching of the muscles of the face followed by movements of the right hand and fingers, it then became general. His condition on March 9 was very low, but I determined that there was something remaining at the seat of the fracture which was still an irritant. Under chloroform the scalp was incised along the cicatrix, the flaps turned back and a $1\frac{1}{2}$ centimeter trephine applied at the posterior extremity of the fracture in the parietal bone. After the button was removed by a chisel and a sling steel elevator the

fractured bones (which were seemingly not depressed) were elevated and held up by an assistant. There was pretty free hemorrhage which required hot saline solution and pressure with sterilized gauze to control. The seat of operation was so near the longitudinal sinus I was constantly afraid I should wound it. Luckily this did not happen however. When hemorrhage had been controlled it was seen at once that a detached fragment of the inner table had been driven down into the frontal lobe of the cerebrum and lay imbedded in the softened brain tissue. The dura was entirely destroyed for a space of about 2x3 centimeters, and there was a pretty large escape of brain matter. After all the softened tissue, shreds, etc., had been removed and the offending piece of bone taken out, a pretty large cavity was left in the anterior lobe of the cerebrum near the middle line. Indeed the process of the dura which separates the two hemispheres in the longitudinal fissure was laid bare from its cerebral side on the left. This cavity seemed about 2 c. deep, about 1.5 c. wide and about the same length; The whole of this superficial area could not be covered by the dura. A piece of gold foil cut large enough to come in this space, and prepared as in Case 2, was laid over this cavity and the dura mater sutured and drawn about the foil as much as possible to hold it in place. The large fragment of bone was replaced, but the trephine button was left out, scalp sutured, catgut drain introduced and wound dressed as usual. The patient was pretty low after the operation (the 9th). He had a slight convulsion during the evening. After this there was no further trouble. He had no other convulsion, the wound healed rapidly. There was no paralysis except perhaps a slight facial paralysis which soon disappeared. The mental state was very dull for about a week. He would answer questions intelligently, but slowly and was drowsy. His pupils were dilated more than a week. After this he steadily improved, his usual mental state returned, and he was discharged March 28 quite well.

This case, besides illustrating the usefulness of gold foil, shows to a marked degree the amazing vitality of a human being and the tolerance of multiple synchronous major operations if great care be used to prevent loss of blood.

DISCUSSION.

DR. WM. T. DALBY—The paper of Dr. Estes, read by the Secretary, is an exceedingly interesting one. It opens up a new field in brain surgery, particularly in that character of cases where there is great destruction of bone tissue. Since the author of the paper is not here to defend any points that might be brought out in the discussion, I will say nothing further.

DR. HENRY W. COE—I am sorry the author of the paper is not here because I would like to ask him some questions. The subject is extremely interesting to us. I have seen an operation done for epilepsy in this city (Chicago) in which a plate of platinum was used. The old trephine wound opened up in which there were extensive adhesions, and the cavity was filled with fibrinous material, intimately adherent to the dura. The operator, Dr. Morehead, dissected out the new tissue and put in a piece of platinum. The patient was poor or he might have inserted a piece of gold. The operation was extradural, although he went through the dura mater. I am reminded in this connection that Keen in his work on diseases of the nervous system, which has just been published, refers to the fact, which is contrary to the generally accepted idea, that under present methods the opening of the dura is not a serious undertaking and is not accompanied with very much danger. I telephoned since luncheon to find out how this case was getting along and ran across another in which the operator had used a piece of gutta percha. This operation was also extradural. It was done about twelve days ago. I do not remember the name of the operator. In both of the cases the wounds healed readily and up to date there has been no evidence of the presence of a foreign body. I do not know exactly how thick the piece of platinum was, but it was probably one line in thickness. In the cases which Dr. Estes reports, I understand the gold foil is inside the dura mater, and I for one will watch the history of them with a good deal of interest. In these cases we have a foreign body pressing on the brain, and it will be interesting to know the outcome of them.

DR. H. HATCH—I regret that I was not present to hear the whole of the paper that has been read. Are we to understand that Dr. Estes maintains that by introducing gold foil inside the dura mater it will prevent adhesions and consequently the after effects in the way of epilepsy?

DR. KELLY—I believe that is the idea.

DR. HATCH—A professional friend of mine had a case of epileptic convulsions following an injury upon which he operated. The adhesions in this case were dense and firm. He dissected away the adhesions and proceeded in the manner laid down by Dr. Estes, not applying gold foil. The convulsions did not recur for two or three months, but when they came on again they were as bad as before the operation. It is well to report the unfavorable as well as the favorable cases.

STRUMA GELATINOSA—STRUMA COLLOIDES.

Read before the Chicago Pathological Society, Feb. 10, 1896.

BY M. L. HARRIS, M.D.

PROFESSOR OF SURGERY CHICAGO POLICLINIC.
CHICAGO.

Of the various pathologic changes which may occur in the thyroid gland, that of colloid formation is the most frequent. In order, however, that this colloid formation may receive the title of struma colloides it is not sufficient that a little colloid material be found in the vesicles or follicles throughout the gland as this is often a physiologic condition, especially in later life, but the colloid formation must occur in a circumscribed area or areas, sharply defined from the normal gland tissue and independently of it.

Furthermore, as Wölfler states, there is in these cases an atypical new tissue formation, a budding of the gland tubules, so that what we really have is an adenoma, in the tubules of which the colloid material accumulates, leading to their distension; hence the name applied by Wölfler of adenoma gelatinosum. These new growths may be single or multiple, and when multiple may be scattered throughout a single lobe or both lobes of the gland. The colloid material may liquify, thus forming little cysts, which, owing to pressure atrophy of intervening walls, may coalesce, producing large cysts. As illustrating these different varieties, I will briefly mention the following cases, operated on during the past year:

Case 1. Large single Colloid Adenoma.—E. K., age 21, German; single. Mass size of a goose egg occupying left lobe of thyroid of about one year's standing.

Operation: Enucleation; suture without drainage; primary union; recovery.

Case 2. Multiple Colloid Adenomata of one lobe with cystic degeneration.—Mrs. W., age 44. German, married. Multiple nodules involving right lobe of thyroid, extending from upper part of thyroid cartilage to below the upper end of sternum; of several years' standing; lately increasing in size; considerable dyspnea, voice affected.

Operation: Enucleation of all the tumors, two of which were cysts containing thin, dark, bloody-looking fluid. One of the cysts, size of small hen's egg, extending behind the upper end of sternum, enucleated with some difficulty on account of location. Wound closed without drainage. On second day quite profuse hemorrhage occurred from place where cyst had been enucleated, which was easily controlled by removing a stitch and packing with iodoform gauze. Primary union and recovery without further incident.

Case 3. Large Multiple Colloid Adenomata; both lobes.—Mrs. K., age 44. American; married. Has had large neck for seventeen years. Since last child-birth, three years ago, tumor has grown quite rapidly. Considerable dyspnea, particularly on lying down. Both lobes of thyroid involved.

Operation: Enucleation. Kocher's transverse incision; wound sutured without drainage. Primary union. Recovery.

The tumors removed from Cases 1 and 3, some twenty in number and varying in size from a pea to a goose egg, are presented. That there is an increased growth of gland tissue in these masses is very evident. The new growth starts in the primitive vesicle or follicle of the gland. The connective tissue envelope of the follicle is pushed aside, and being increased in thickness by the irritation produced by the new growth, forms an investing connective tissue layer or capsule to it. It is the presence of this connective tissue capsule that enables one to enucleate these growths from the surrounding gland tissue.

A microscopic examination of sections of these masses shows very beautifully the gland follicles lined with epithelial cells and greatly distended with the colloid material. In the section here presented, which was taken from one of the small and presumably younger growths, are seen toward the periphery, many tubules or follicles which contain as yet no colloid material. The rapid proliferation of the epithelial cells seen in these tubules leading to the formation of double and even multiple layers of cells shows clearly the active part taken by the gland elements in these cases, and substantiates the statement of Wölfler that these growths are all primarily adenomatous, the colloid formation being a secondary degeneration.

Other follicles are seen containing large masses of detached epithelial cells, many of which take the nuclear stain very poorly, while in others the contained mass takes the diffuse eosin stain, in which, however, can be distinguished very faint circular and broken circular outlines of nuclei, showing that here the detached cells have undergone colloid degeneration en masse. In some tubules the amount of colloid material is very small and seems to be produced by the layer of cells lining the follicles, while others are distended enormously and contain in addition to the colloid mass many detached cells about the periphery. The capsule inclosing these masses is not simply the connective tissue septa pushed aside, but there is here also an hyperplasia as the increased number of connective tissue nuclei in the section clearly show.

In the removal of benign growths of this character complete thyroidectomy is no longer permissible, no matter how extensively the gland may be involved. These growths, being encapsulated, can always be enucleated after the method of Socin, except where inflammation or calcareous or other degenerative changes have occurred. The best incision is the transverse cut of Kocher. It affords easy access to the entire gland and furnishes the best scar. This latter point is one of considerable importance and has been particularly studied by Sultzer. He examined the scars in 100 cases following operations by various incisions. Of sixty-two scars following oblique or longitudinal incisions, in only one could the scar be considered faultless; the others either contracted so as to interfere with the freedom or range of motion of the neck or were wide, shining and disfiguring; while of thirty-eight scars following transverse incisions thirty-two answered all the demands of a linear faultless scar. The incision should be free enough to allow easy access to all parts of the gland. The sterno-hyoid, sterno-thyroid and occasionally the omohyoid muscles should be divided and turned aside. In incising the gland tissue down to the capsule of the tumor, proceed where the tissue is thinnest, in other words, at the point where the tumor approaches

nearest the surface, due regard being had for the large thyroid vessels, which are readily recognized breaking up on the surface of the gland. Do not begin the enucleation until certain of being within the right layer of the capsule, as tearing in the gland substance leads to very profuse and troublesome hemorrhage. After the enucleation considerable oozing is frequently encountered, to check which packing with iodoform gauze is commonly employed, the packing being removed on the second day and the wound closed. I have usually been able to dispense with this packing by firmly approximating the walls of the cavity by a few mattress sutures of catgut. The posterior surface of the gland must be avoided in passing these sutures on account of the proximity of the recurrent laryngeal nerve. The mortality of enucleation in these cases is practically nil, being less than 1 per cent.¹ The last point to be considered is the question of recurrence after enucleation. Sultzer was able to follow out sixty-three cases of enucleation. Of these, forty-four remained free of recurrence, while in nineteen, other nodules developed: eight times in the same lobe operated upon and eleven times in the opposite intact lobe.

DISCUSSION.

DR. F. C. SCHAEFER—There came under my care recently a case which might be appropriately reported in this connection. I removed a parenchymatous goitre for exophthalmos four weeks ago from a girl aged 18 years. You will notice that it is similar in appearance, excepting the shape, to the specimens exhibited by Dr. Harris. On looking at it from a distance you might think it was an enlarged kidney. At the time of its removal (four weeks ago) it was six inches long, two and a half inches wide and two inches thick at the central part. At one point above its middle portion it presented a hook-like projection, an "accessory" lobe which extended under the trachea, and as the trachea was already flattened by pressure from the body of the goitre, this accessory portion added materially to the embarrassment of respiration. I succeeded in enucleating one-half of the growth, the remainder had to be excised. The gland is very dense and hard. Microscopically the follicles can be seen packed to distention with epithelial cells, irregular in outline, with an occasional spot of colloid. Undoubtedly the disease began in the follicles and the cells of the parenchyma were stimulated into activity by the cell proliferation in the former. A special point in the case is the exophthalmos. The girl presented all the symptoms of Basedow's disease, excepting the bronzed skin. She had marked tachycardia, pulse rate 145; difficult breathing; husky voice; slight protrusion of the eyeballs; tremors of the muscles of the entire body, more especially of the chest muscles. The patient was excessively nervous, could not sit quietly in a chair, and had extremely restless nights: would toss about in her sleep and was frequently obliged to get up two or three times during the night to breathe. I felt, under the circumstances, that the goitre should be removed. The eyes on ophthalmoscopic examination by Dr. H. M. Starkey and myself showed spots of hemorrhage and anemia in the fundus, also congested veins. Sight very much diminished. R. E. V. 20-200, L. E. V. 10-70. In operating I followed the same incision as Dr. Harris (Kocher's) extending across the neck. On the left side I took out only a small portion of the growth, to avoid the sequela of myxedema. The young lady is improving every day, her respirations are improved, pulse rate 105 and she claims that her sight is already much better. I hope ere long to be able to present the patient.

¹ Kocher.

LEPROSY IN THE ARGENTINE REPUBLIC.

BY ALBERT S. ASHMEAD, M.D.

NEW YORK.

(LEGATION OF THE UNITED STATES,
BUENOS AYRES, Aug. 9, 1895.

A. S. Ashmead, M.D., Dear Sir:—After many days' search and interviews and the incidents therewith connected, I am enabled to send you something in the line which you wish. I inclose copy of two letters from the Director of the Asistencia Publica and Sanitary Administrator of the Government. I also send under another cover copies of works as per memoranda herewith attached. Very truly yours, WILLIAM I. BUCHANAN.

LIST OF INCLOSURES.

1. Two copies of letters from Asistencia Publica.
2. Memorandum: *Lepra Tuberculosa*, tesis para optar al grado de doctor en Medicina, por Gregorio Hunt. Consideraciones sobre un caso de lepra anestésica, tesis para el doctorado, por Jacobo Z. Berra. *Climatologie Médicale de la République Argentine et des principales villes de l'Amérique*.

Letter No. 1, translation:

BUENOS AYRES, July 27, 1895.

To the Minister Plenipotentiary of the United States of America. Mr. Minister:—The Director General of the Public Assistance of Buenos Ayres has the honor of answering the question which Your Excellency has condescended to address to him as to the frequency of leprosy in the Argentine Republic; and gives expression to the information which he has gathered in the pages inclosed. With this object, I greet Your Excellency most respectfully,

I. B. SENORANS.

Letter No. 2, translation:

Notes as to the frequency of leprosy in the Argentine Republic.—The Director of the House of Isolation¹ says in his personal report that the cases of leprosy have been known accidentally in this hospital in the years preceding 1892; it is in this year that figure the first entries with this diagnosis, and statistics show an evident tendency of augmentation in this disease. In 1892 there entered into this establishment five lepers, who remained in attendance until 1893, at which time twelve more lepers were received: the sum total was then seventeen, of whom nine left and eight remained sick. In 1894 fifteen lepers were admitted, which, added to the eight who were under treatment, made twenty-three. Of these twenty-three, six left and two died; so that there remained fifteen, who passed to the year 1895. Now, July, 1895, there are only twelve in attendance. The ordinary form is the tuberculous, however there are some anesthetic cases.

Of the patients attended on, in the hospital of isolation, we have not been able to obtain the nationality: but they are very probably mostly Europeans. Dr. Gache, in his medical climatology, points out to the sanitary authorities the frequency of leprosy in the Argentine Republic, especially in the last year. The Province of Entre-Rios offers an immense number of lepers, and in that region the disease has been observed many years before this. Dr. Moyano, in one year of practice, on 309 patients with skin disease, has met with three lepers, one coming from Brazil, another from the Argentine (Province of Corrientes), and a third, also coming from Argentine, was the son of French people, the father being a leper. This patient comes from Pergamino (Province of Buenos Ayres); his father and four uncles had this same disease developing itself there, but they came healthy from Europe.

Dr. Sommer says that the Province of Corrientes is that which has the largest number of lepers: after it come the Provinces Entre-Rios, Cordoba and Buenos Ayres. In the City of Tucuman, at the time when its population amounted to 30,000, there were seventeen lepers.

In his opinion the tubercular and nervous forms exist in equal proportions. The largest part of the cases presented general symptoms, of which the more constant were cephalalgia and fever; others were characterized mostly by erythematous or pigmented spots, with alterations of sensibility. The same physician believes that leprosy is contagious, and his opinion is based on observation. He thinks that the bombilla (an instrument with which is imbibed an infusion of *yerba mate*) of the *mate*² is the vehicle of contagion.

As to the treatment, the oil of chaulmougra at the dose of 200 drops a day, has been found the best specific.

Dr. Canevaro, a physician of Corrientes, says numerous cases of leprosy come under the observation of the physician, not only among the poor, but also among the rich. He has seen many instances of it in Goya, and other places of that Province. The natives of that region consider contagiousness as principal cause of the disease: this is proved by numerous families in which the disease has broken out. Much influence is also attributed to abuse of alcoholic drinks, and of the meat of "Carpincho," and of pork, of which the poor people consume a great quantity, especially of the first. It is also believed that the atmospheric vicissitudes exercise a great influence upon the development of the disease, especially in the case of people who are compelled by their business to be constantly exposed to the humidity of the soil, and of the atmosphere with insufficient alimentation: for instance, the people who have to travel in the bushes.

Dr. Canton, in the Province of Salta, has found leprosy to exist. The Director General of Public Assistance of Buenos Ayres, intending to prevent the diffusion of leprosy, has advised the respective authorities to adopt means tending to this end.

As a bibliographic remark, I observe here that Dr. Emilio R. Coni, in 1879, published his doctorate thesis on this same disease. Dr. Jacobo Z. Berra, in the same year, and Dr. Gregorio Hunt, in 1886, made their doctorate dissertations on the same theme.

The Minister may give to whosoever wants them the data given above: I add these last two works and the work of Dr. Gache, entitled *Climatologie Médicale*. J. B. SENORANS.

ANESTHETIC LEPROSY.

Considerations on a case of *lepra anesthetica* by Dr. Jacob Z. Berra, Buenos Ayres, 1878.

Manuel Rios, native of Paraguay, is a man of about 46 years of age, a railroad foreman, with a deteriorated constitution, of nervous, lymphatic temperament; good antecedents. Had paralysis of right arm and deviation of the mouth, when about 9 years old; he attributed it to a cold which he caught while perspiring in bed. It disappeared after three months. At 12 or 13 years, he got two buboes, appearing spontaneously. Had never had sexual contact. This terminated after a few days by suppuration. Attack of general articular rheumatism after a few days. At puberty he suffered of a blennorrhagia (non-venereal) after eight days' horseback riding; urinated blood. In 1865 he went as a soldier in Paraguay to Rio Grande, and suffered in the passage through the frontier of Corrientes of a dysentery, which was epidemic in the army. As a prisoner he was sent to Buenos Ayres, where he became a peon on the railway of the east: had perfect health here, until summer of 1870, when he was caught in a great rain while perspiring; he did not change his clothes till night: had chills and fever for five hours. He felt formations after a few days in feet and hands, which lasted a year, more or less: the said extremities remained in such a condition of debility that he could not take with his hands the smallest object: loss of sensibility accompanied it; tears constantly fill his eyes. After months the index finger showed a phlyctena, which burst of itself, letting escape a clear, transparent liquid. An ulcer appeared in its place, of offensive smell; out of this came pus and fragments of bone. Anti-syphilitic treatment tried in the hospital without success. Other fingers became implicated: left hand; then the feet. While these phenomena manifested themselves the sensibility and the motility of the regions affected experienced also profound perturbations, etc.

The differential diagnosis with the mal perforans, does not present great difficulties, if we remember: 1, that the disease occupies principally the level of the points in which the callosities are formed and those which touch the soil: for instances, the big toe, the

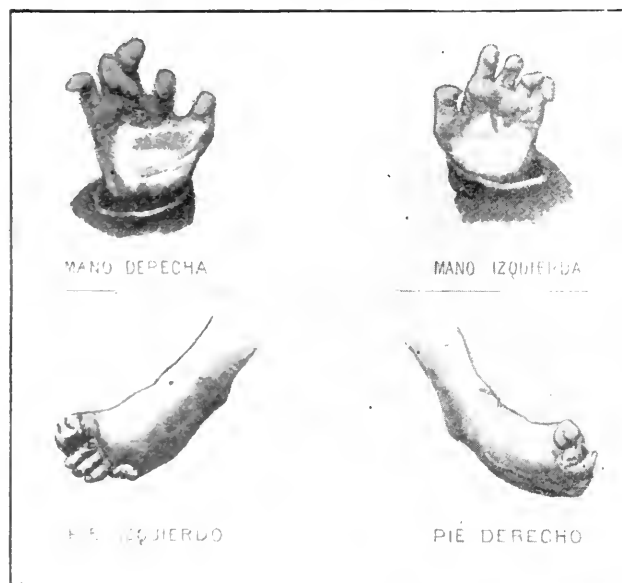
¹ Hospital of contagious diseases with 400 beds.

² "Le Mate est l'aliment indispensable à la campagne; il constitue le déjeuner obligatoire du paysan qui ne sort jamais sans l'avoir pris. Dans les villes, il n'est presque plus admis; toutefois dans quelques régions de l'intérieur son usage est tellement exagéré qu'on lui attribue de nombreuses dyspepsies."—*Climatologie Médicale* par le Dr. Samuel Gache.

fifth metatarsian, the inferior face of the calcaneum, and sometimes the dorsal face of the fingers; 2. that it begins by a swelling of the epidermis, which in a short time detaches itself on account of a sero-sanguinolent and purulent secretion falling in an extent of one to two centimeters, when there appears under it a dermis, red and papillous; 3. that the epidermis thickens around the ulcer and forms a very characteristic wheal, which becomes smaller gradually, by the approximation of its borders; 4. that there is not as in lepra formation of phlyctenæ; 5. that it localizes itself in the feet, and shows no tendency to generalization through the other parts of the organism; 6. that sometimes there is anesthesia and when this is the case the anesthesia is limited to the ulcerated point.

Such are the essential characters of a mal perforans; they have nothing in common with anesthetic lepra.

Let us see if we can confuse with any of these three kinds of spontaneous gangrene: 1. that which is caused by an arteritis; 2. that which is the production of an embolism; and 3. the local asphyxia and symmetric gangrene of the extremities.



LEPRA ANESTHETICA. BERRA'S CASE.

In order to exclude the first two it is sufficient to bear in mind, that in our patient there have not existed, and do not exist any alterations of any kind, either in the heart or in the remainder of the circulatory apparatus, which could cause the development of an arteritis, or the formation of embolism, capable of producing the disturbances which are before us. Besides, the slow march and the long duration in our case exclude affections of this kind.

As to the third kind, we know that the local asphyxia which precedes the symmetrical gangrene of the extremities, shows a course and development entirely different.

According to Raynaud, who has given the best description of it, this affection is a variety of dry gangrene, which is distinguished by two notable characters: 1. the absence of any anatomic alteration appreciable of the vascular system, and 2. invariable symmetry of its manifestations.

The local asphyxia begins almost always by a finger, forming an affection rather common, known by the name of *dead finger*. The skin assumes a tint of

faded white, sometimes yellowish; it looks exsanguinous, and the sensibility seems to be exhausted. This state is of short duration; after a few minutes, sometimes of an hour or two, the parts return to their normal state, the reaction being in certain cases accompanied with a rather sharp pain. When this state instead of being limited to one or two fingers, extends itself to a whole section of a member, an enfeeblement of the arterial circulation is observed. In cases a little grave, the skin takes a bluish-white hue, violaceous, slatey; venous livid stains appear in distinct places; the cutaneous sensibility is abolished; sometimes the patients complain of a very sharp pain; presently the reaction is produced, the stains lose their livid color, the skin, little by little, resumes its normal coloration, and everything is again in order.

In cases where the accidents of gangrene are to be manifested things come to pass in the following manner: Sometimes the extremities become pallid and exsanguinous, or they take a lilac color; the patients complain of formication and itching; later on, the skin and the nails assume a violaceous color, and those parts are icy cold. Sometimes the skin is violet from the beginning, the patient feels itching; he thinks he has chilblains, but this itching is presently replaced by a pain, which sometimes is very acute. Quickly, livid stains show themselves along the fingers and ascend sometimes to a great height in the corresponding member, the dark tint increases, and the fingers become completely black and anesthetic; small phlyctenæ appear at the extremity of the last phalanx; they burst and leave the dermis uncovered. These small ulcerations persist for some days; in other cases the phlyctenæ is dried subsequently, but the gangrene does not extend itself; the wound, on the contrary, cicatrices leaving a small conical tubercle, more or less salient. The same series of phenomena presents itself, in the same finger or in the next fingers. When this process has taken place frequently, in the same finger, the latter is remarkable by the tapering form of its extremity by the hardness of its tissue, and by its faded appearance. In some individuals, the finger takes from the beginning, that parchment-like form; the skin is lion-like yellow, and after sometime pelli- cles thick and very hard, detach themselves by tatters.

In other cases the gangrene presents from the beginning all its intensity: the nail is completely black, the little phalanx takes a hue more or less dark, there is a real mortification; but the alteration is not deep. After a few days, a work of elimination begins and very soon scales of one or two millimeters in thickness detach themselves, leaving uncovered the papillæ on which fleshy buttons develop themselves; the cicatrization comes soon. Very frequently this mortification shows itself in a parallel direction in the corresponding fingers; sometimes it has been observed in the four members, and hence the name of symmetrical gangrene, which Mr. Raynaud has given to it. It happens not rarely, that these stains present themselves symmetrically in the heels of the two extremities. In some individuals these different states may manifest themselves at the same time. This mortification is sometimes observed in the nose, and the pavilion of the ear.

Beside the symptoms which are revealed by this description of the disease there are differential characters as follows:

1, the invasion of anesthetic lepra is slow and increases gradually, while that of the symmetrical

gangrene of the extremities in its chronic form, is very brusque as a rule, and reaches very rapidly a certain intensity. 2, the prognosis of leprosy is always grave; that of symmetrical gangrene is, as a rule, benign. 3, anesthetic leprosy is fatal, gangrene of the extremities never causes death by itself.

There exists an affection known in Guinea by the name of Yaws, which produces deep alterations in the skin, and in the subcutaneous cellular tissue: in order to distinguish it better from anesthetic leprosy, we shall describe it in a few words.

It attacks specially the badly fed negroes, and it is eminently contagious. It begins by white stains, looking like the pricks of fleas, or like small papule, which occupy especially the forehead. After a few days they convert themselves into broad pustules covered with irregular crusts, and of little adherence, beneath which are found ulcers, of a deep red in well constituted subjects, and are white and depressed in feeble and sickly people. As a rule there are various successive eruptions, and there is also, as in the pian of America a pustule larger and more elevated. The duration of the disease is six to ten months; the fungosities finally are quite depressed and leave only slight cicatrices. This disease was considered by many authors as a peculiar form of syphilis, which was to be combatted by sudorifics and mercury. To-day we know that it is a cutaneous affection in which the last remedy is harmful.

In order to differentiate it from pachyderma or elephantiasis of the Arabs, we have only to remember the gross and formless aspect which this disease gives to all the parts it affects: that it is produced by repeated inflammation of the skin, and by frequent and constant obstruction of the veins, and lymphatic vessels which distribute themselves through the same, occasioning sometimes an enormous increase of volume of the dermic conjunctive tissue, of the subcutaneous and intermuscular tissue, and also of the periosteum; that it keeps as its preferred seat the leg, which acquires a volume double or treble of the normal; it presents itself with less frequency in the superior members, the scrotum, the penis, and labia majora. We must finally bear in mind, that in this disease, there is no anesthesia.

TUBERCULAR LEPROSY.

Dr. Gregory Hunt (*Lepra tuberculosa*. Tesis para optar al grado de Doctor en Medicina, por Gregorio Hunt, ex-practicante interno del Hospital Nacional de Clinicas, Miembro del Circulo Médico Argentino y de su Comision Directiva, Buenos Aires, 1886) says:

Genesis and Etiology.—For some, exclusive use of fish and especially of salt or rotten fish is bad; for others, the meat of pork daily eaten, either salted or not, is in the same conditions.

We shall try to prove that an exclusive diet can not be a sufficient cause to produce leprosy in the places where it is endemic.

Leloir has observed that the fishermen of Norway, who live almost exclusively on fish, which is moreover often a state of putrefaction, suffer nothing but chronic gastritis. What would be sufficient to prove, that this deplorable diet is not the cause, says the same author, is that the fishermen and peasants of the southern and north sides of that land, although their diet is as bad as that of the west coast, are yet not attacked like the others.

What has mostly called the attention is the water which they drink, and the manner of preserving it.

That water is not drinkable, and is kept in small wells, in the middle of immundities and mires of salt water which are found by the sides of the houses in which these people live. Is not that perhaps the origin of this disease?

As to the pork, there is nothing that justifies in saying that it is the only cause of this affection: for although in certain localities where the latter is endemic, we see some of the inhabitants eat much of it, there are other places where it is not eaten at all, where nevertheless the disease exists. We see finally that the inhabitants of the Riviera (Italy) where it is also endemic, people live on vegetables, fruits, potatoes, etc. So that certain alimentations condemned by some physicians as being the cause of the development of leprosy, do not exist there.

Neither can insufficient alimentation be its cause. The Siberian peasants, the inhabitants of Terra del Fuego, the poor families of the great centers of population like Paris, London, even Buenos Ayres in which there are so many wretches, whose nutrition is not sufficient, are, in spite of that, rarely affected.

On the contrary there are persons well fed, and whose life is hygienic enough, who become the victims of this disease. These are a minority, indubitably, but let us not forget that there are more poor people than rich. On the other hand, the former are more exposed to disease than the latter.

Organisms debilitated either by bad diet, alcoholism, excesses, etc., are more exposed to sufferings, than strong ones; these repel very often the morbid germ, because they are not in a condition of morbid opportunity. Thus it becomes clear that all things being equal, the same organism resists, for instance, in one case the action of the cold while the same organism changing somewhat in power of resistance in consequence of bad alimentation, drinking, etc., when it is again exposed to this action, is affected, for instance, with pneumonia.

After all these considerations which we have enumerated in a summary manner, we can not accept the distinct causes which we have named, as being the exclusive producers of leprosy, although they may work, as predisposing agents, preparing the soil. . .

He believes in inherited predisposition, but that the disease itself is not inherited. . . . The physicians of Rio Janeiro believe that this cause (heredity) is indubitably in the disease of which we speak but that only it skips generations as is observed with tuberculosis. It is an open question whether many of the cases which are supposed to be hereditary are not cases of contagion from father to son. An author who has observed the life of the lepers of Norway, and their manners, says that the way of living of the people and of many families, explains to us how, even in the absence of any heredity, a disease very little contagious, can develop and extend itself. The peasants of Norway are very dirty according to Leloir; most of them never took a bath. They wash sometimes (once a week) their face and their hands, the feet once a year, but the rest of the body remains untouched by water, from their birth to their deathbed.

Their clothes, which they never take off, even when they go to bed, are generally of wool. They are never washed, the filth is allowed to accumulate and these same clothes, when they are not rotten, are transmitted from generation to generation (Leloir). Now is it

not possible that these immundities carry the contagion to the healthy subjects? We believe that this may be one of the means of propagation of leprosy in Norway, and that many cases which are considered as hereditary result from contagion. . . . As to contagion, he says: No, it is not possible that in face of the great feats of modern pathology, contagion can be denied and isolation declined! . . .

Parasitic Origin of Leprosy.—To sum up, we believe that the experiments which have been practiced up to this time, both in man as well as in some animals, are not sufficient to declare that this disease is inoculable.

Diagnosis.—The diagnosis of tubercular leprosy is very difficult when the disease is in the period of invasion, and this difficulty decreases only when there appears the eruption of maculae and especially tubercles. The latter are characteristic, and he who has once examined a leper can never mix up this disease with any other disease. We have seen that the symptoms which are observed in the period of invasion are like those presented by other infectious diseases. At this period the diagnosis is very difficult, and we can only have presumptions more or less founded, when we find together many of the symptoms characteristic of the disease, and hereditary antecedents, which show that lepers have existed in the family, and the patients coming from an infected land. Only in that manner we can think of a diagnosis; but we can not affirm yet in an absolute fashion that we have before us a case of leprosy.

In the period of eruption of maculae we meet also with some difficulties in making the diagnosis. The most experienced physicians have made blunders; but if we make a long study of the history and symptoms which present themselves, we can succeed in establishing the diagnosis.

One of the affections with which confusion would be most easy, is roseola syphilitica; but the maculae of leprosy have their seats of predilection, and are also larger, since they can reach the dimensions of the palm of the hand, and be accompanied by phenomena of anesthesia and dysesthesia; and, finally, it will be distinguished by the antecedents and the specific treatment of syphilis. There may be found some difficulties in some other affections of the skin, like the dry eczema, erythema, and papulous marginate purpura. The spots of the disease of which we occupy ourselves do not present desquamation, and if they exist they are very rare; the same thing does not happen with most of the morbid conditions of the skin. Anesthesia or dysesthesia, alteration of the sebaceous glands, and the falling of the eyebrows, the beard, as well as the antecedents of the patient, and the situation of the maculae will serve as a basis to establish our diagnosis. The pigmented maculae, which are almost always accompanied by dysesthetic phenomena at their level, and if their center becomes achromatous, by an absolute anesthesia, can not be confounded with certain normal pigmentations of the skin, and much less with vitiligo.

Morphea and scleroderma in patches are differentiated from leprosy, according to Leloir, by the absence of anesthesia or only a very small diminution of sensibility, and by the violaceous little ring which surrounds the patch of the morphea, flat and wide.

The leprous pemphigo is distinguished without much difficulty, if we take into account the antecedents of the patient, the number of bullae (they are

rare in leprosy), the cicatrices "nacaradas," the anesthesia at this level, the concomitant nervous phenomena, hyperesthesia and anesthesia of the extremities. Such are the skin diseases which having some points of resemblance with leprosy, might induce us into errors of diagnosis. . . .

Prognosis.—Leloir refers to two cases of cure observed by Dr. Kaurin.

We see, therefore, that if in the annals of science there are found cases of cure those cases are very rare. The rule of the termination of leprosy is death, cure is the exception. In presence of all the antecedents, we do not hesitate to say that the prognosis of this disease is very grave. . . .

Treatment.—Hygienic treatment has given the best results. Transplantation (removal to another country) is recommended. Temperate climates are preferable, also altitudes; nutritious diet, not too seasoned. Exclusive diet is generally harmful; it ought to be animal and vegetable. Milk, meat, fresh and well cooked vegetables, boiled eggs, etc., is the best alimentation for lepers; pork, salads, crustaceans, alcoholics, tea and coffee are to be prohibited; cleanliness.

Isolation of the lepers is a means sufficiently efficacious to prevent the propagation of the disease, and statistics prove the fact. . . .

The natives of America did not know any such disease; it is a pathologic inheritance bequeathed to us by Europe. Among the natives of the New World, who have not as yet mixed with civilized races, there is no leprosy.

Dr. Hunt, in referring to the alleged cure by Unna, of a case of leprosy, says that Dr. Unna's conclusion is unscientific, since he ought to have taken into account all the considerations "which we have mentioned," in order not to expose himself unpreparedly to criticism.

He says that in the first period of the disease it happens readily that it offers improvements which look like cure and which may endure for years without there being any cure. He refuses to accept Dr. Unna's statement that leprosy is curable.

CASE OF RUPTURED TUBAL PREGNANCY, WITH REMARKS.

BY J. WESLEY BOVEE, M.D.

WASHINGTON, D. C.

The history of this case is as follows: Cora M., colored, 22 years of age, was admitted to my service in Columbia Hospital for Women, March 2, 1896. She was married and had one child three years ago after a normal labor. Her menstrual flow began at the age of fifteen, generally lasted three days, was regular, profuse and on the first day was usually very painful. It appeared Dec. 12, 1895 and lasted five days. Up to this time she enjoyed good health. Vague pelvic pains and indigestion ensued and continued to the time of her first severe attack. This occurred Jan. 20, 1896, when the pelvic pain became intense and she passed from the vagina a large blood clot. She had missed a menstrual period and thought this was an abortion. From this she soon recovered and was out of bed in two days. The pain and flow continued, however, and February 17 she applied for relief at the outdoor service of Columbia Hospital. There an examination was made and a fluctuating mass was found behind the uterus. She was advised to enter the hospital at once but returned home and

resumed her household duties. On February 27, she was attacked with sudden, severe pain in the lower part of the abdomen, followed by frequent attacks of syncope. She remained in bed, attended by Dr. C. Marshall until her coming to the hospital March 2. The flow has continued since the abortion. The bowels have not moved since February 28, and she complains of severe pains through the abdomen. She was very feeble; unable to walk, the extremities were cold and she seemed nearly exsanguinated. There was slight edema of the legs and the abdomen was distended by fluid and gas. The mucous membranes of the lips, tongue, conjunctivæ, and vagina were very pale. No glandular enlargements were noted. The urine had a specific gravity of 1.024 and contained albumin and pus; the pulse was very feeble and the temperature subnormal.

A diagnosis of probable ruptured tubal pregnancy was made. When the abdomen was opened March 5, 1896, we were not at all surprised by the pouring out of a large quantity of black, semi-solid blood as soon as the peritoneum was incised. By passing my fingers downward, the top of the slightly enlarged uterus was felt and recognized and the right appendage, other than a few adhesions of the ovary, was found to be normal and not removed. The ovary contained a corpus luteum. The left Fallopian tube was much lengthened and in its first two or three inches was apparently normal. It, however, continued around backward, much as does the round ligament in front, and ended in a sac attached to the rectum, the uterus being free from the sac. This sac had ruptured and, lying partly in and partly out of it, were the fetal membranes, the fetus and a large mass of blood clots. The ovary of this side was apparently normal and contained no corpus luteum. The fetus was of about six weeks gestation. The appendage was removed and the abdomen flushed with hot water, large clots being washed out of it, even from behind the liver and near the spleen. No drainage was used and the wound was closed with kangaroo tendon, buried both subperitoneally and subcutaneously; 1500 c.c. of normal salt solution was thrown under the skin and she made a complete recovery.

Tubal pregnancy has been found to be far more common than was formerly supposed. Rupture has occurred before the attention of the physician is called to it nearly always. That it has become more common is, no doubt, due to the more frequent resort to abdominal section as a means for dealing with the various pelvis troubles and that the condition is seldom found before rupture, is due to the fact that it usually gives very little annoyance previous to that accident. Many times operations for other conditions are planned and when the seat of disease is reached, a ruptured tubal pregnancy is found. Wide and prolonged discussion of the advisability of operating on ruptured tubal pregnancy, after the danger from hemorrhage has passed, has led to the almost universal opinion that it should not be treated on the expectant plan, but that nothing short of surgical interference will entirely remove all danger. It has been seen that dangers nearly as great to the woman as the loss of blood may ensue, and that surgery is necessary to restore these unfortunate women to health. Infection of the blood clots, or of the sac, with the possibility of septic peritonitis, sometimes fatal, is by no means an infrequent feature in those cases that were considered very mild, *i. e.*, those in

which the blood loss has been slight, especially when it was inside the broad ligament and consequently limited in amount. If not peritonitis, then septicemia tries to do the injury to life and health. Cases have been frequently reported in which temporizing operations were done for the removal of pus when death was not far away and the lives of the patients saved, and this in the very mild cases even, perhaps, undiagnosed. The very bad cases either die promptly or are operated on as a *dernier ressort*. The milder cases, therefore, are comparatively safe ones for operation and should not be allowed to proceed into the dangerous channel above mentioned. They, as well as the severe ones, should be, as a rule, operated as promptly as the existing conditions will permit, though often the operation may be postponed a few days to the advantage of the patient. It should be thorough, if possibly admitted by the condition of the patient, during the operation. If we find she does not stand the anesthetic well, or that the organs most easily affected by ether or chloroform are at all pathological, or that shock seems at all marked, the operation should be as rapid as possible and confined as much as possible to the removal of the ruptured tube, blood clots, membranes, etc., and a rapid closure of the abdominal wound, with or without drainage. If time and conditions permit, the abdominal and pelvic cavities should be thoroughly irrigated and all clots washed out. When the irrigating fluid returns clear it is quite certain the peritoneal cavity is well rid of them. If the case be a recent one and the hemorrhage considerable, it may be wise to pour into the abdomen a few liters of normal salt solution, just before the closure of the peritoneum is finished. The absorptive system will take up as much of it as is necessary to restore the usual blood pressure of the individual and the surplus, if any, will be carried off as waste. The same solution by hypodermoclysis is extremely beneficial in these cases, it being a fairly rapid way of putting it into the circulation and not being liable to over-distend the circulatory system as sometimes does occur as a result of infusion directly into the veins.

On March 23, 1895, I operated for ruptured tubal pregnancy in which septic infection was already present as a result of an attempted criminal abortion by means of the insertion of a catheter into the uterus and retaining it there a very long time, the patient taking quite a long railroad journey in the interim. This case was published in *The American Journal of Obstetrics*, N. Y., 1895, xxxii, No. 3, 387. The following September 27, I did another operation for ruptured tubal pregnancy at seven weeks. The case was reported in *The Virginia Medical Monthly*, Richmond, 1895, xxii, 957. In those two cases, as well as in this one, the injured tube was the left one, which tends to confirm the statement of Lawson Tait, "That the left tube is nearly always the one pregnant in tubal pregnancy." In one of these two cases the corpus luteum was found in the ovary on the side opposite to the pregnancy, as was the condition in the case here reported. The relations of the appendages in this case are not devoid of interest. The right ovary was down in Douglas' pouch and firmly adhered there. The pregnant tube was also fastened down in close proximity to it. Whether the ovule was expelled by the ovary into the peritoneal cavity and accidentally found its way into the Fallopian tube, or whether the tube embraced the ovary of the opposite side can not be stated; nor can we be confident that the

pregnant tube was pervious at the time of the impregnation. It is just possible the spermatozoa passed through the right tube into the peritoneal cavity, then into the outer end of the left one and there impregnated. This, however, seems too far-fetched to receive much earnest consideration.

I have reported this case to show how frequently cases are found in which tubal pregnancy has ruptured a few days or even weeks before and in which the danger from hemorrhage has been practically passed, but in which repeated losses ensue and in which other dangers confront the patient and stand ready to prevent a recovery, and to also show the advisability of attempting to relieve this class of cases by operation or, very often, to save their lives. I believe I have done about seventy-five abdominal sections during the time in which these three cases of ruptured tubal pregnancy have occurred. At that rate it would seem that 4 per cent. of abdominal sections are for this grave condition. This statement, I am inclined to think, will be borne out by the experience of men who have had a much greater amount of this kind of work than I have had.

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TYPHOID FEVER.

BY F. M. GREENE, M.D.

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Until recently typhoid fever has been regarded as a self-limiting disease, always ending in lysis and occupying a period of three or four weeks' duration. It is observed of varying degrees of intensity, from a mild attack, in which there may be only slight elevation of temperature, and the patient does not take to his bed, to the severest type, in which from the beginning there is great prostration, and the patient rapidly succumbs to the intensity of the poison.

Complications and sequelæ are to be dreaded alike in the mild and severe forms, and not infrequently in the midst of a mild attack, or after convalescence has apparently been established, we may have ulcerations of the ileum, resulting in grave hemorrhages, or perforation of intestine, with peritonitis and speedy death.

Under the old régime, there were observed four distinct periods to the disease, and a schematic representation of each was characteristic and typical. During the first there was a gradual increase of pyrexia with evening exacerbations reaching sometimes 105 to 106 degrees. The second period was one of continued fever, with only slight remissions. In the third the disease was remittent, with exacerbations less and remissions greater. The fourth was one of intermittence and there was a gradual return to normal temperature. In fevers of inflammatory type the pyrexia is never continuous for any great length of time, since in all are observed more or less remissions during twenty-four hours.

It is usually during the second period that grave complications begin to appear. The patient becomes apathetic and drowsy, takes less interest in his surroundings, with muscular movements feeble and uncertain. Wandering in mind, he appears confused and forgets to withdraw his tongue when asked to protrude it. Already red at tip and edges, the latter now becomes dry, cracked and fissured, sordes upon teeth, gums and lips, with altered blood issuing from the nostrils. Subsultus tendinum, picking at imaginary objects, and with hallucinations, he attempts to leave his bed, or wildly asks to be taken home.

These symptoms now deepen into coma; the urine and feces are passed involuntarily. During this period or later we have the serious complications mentioned above and resulting from ulcerations of the ileum.

If the patient survive, he now enters upon a slow and tedious convalescence, which may be extended indefinitely. The brain or nervous system may suffer permanent injury, or the patient fall a prey to septicæmia, pyæmia or tuberculosis. We have drawn the above picture in order to contrast the disease as treated formerly with that under the modern disinfectant and antiseptic treatment. The pathology of typhoid fever has long been known; its etiology has only been recently established.

The typhoid bacillus enters the system through food or water, and finds its habitat primarily in the glands of the ileum. In his pathologic anatomy and pathogenesis Ziegler says: "The marked changes in typhoid fever appear chiefly in the lower part of the ileum, and upper part of the colon. They are seldom met with much higher or much lower in the intestine." The old and stereotyped idea that typhoid fever will run a prescribed course, uninfluenced by remedies, still prevails to a great extent in the profession, and an expectant plan of treatment is usually adopted. Brandt, of Stettin, a few years ago, introduced the hydriatic or bath system of treatment in typhoid fever, and with a reduction of mortality heretofore unknown in the history of the disease. This in a great measure superseded the use of all other antipyretics.

The application of cold water by effusion or submersion is followed by reduction of temperature and amelioration of symptoms generally. The tongue becomes moist, delirium disappears and the patient is disposed to take nourishment. The bath plan furnished the safest and most effective antipyretic known at the time of its adoption. Serious complications and sequelæ, however, followed even this treatment, and it does not in all cases prevent hemorrhage or perforation. The *modus operandi* of the Brandt treatment has not been fully explained, but experiments have shown that it is an effective means of promoting leucocytosis or increase of the white corpuscles.

Mestchnikoff's theory of phagocytosis explains the manner in which a cure is effected by the natural powers of the system. The leucocytes show a positive attractive force (chemiotaxis) toward the proteids constituting the body of the vegetable parasites known as bacilli, and on coming in contact with, digest, destroy or remove them from the system. Applying this theory to the disease under discussion, the conflict is between the leucocytes and typhoid bacilli which, having first entered the glands of the ileum, multiply rapidly and enormously in the warm blood plasma. The leucocytes are doubtless overcome and poisoned *en masse* by the overwhelming numbers of bacilli; a toxin results, which proves rapidly destructive of the tissues and blood itself. The eminent author on fevers, Graves, desired to be inscribed upon his tomb the motto, "*I feed fevers*," but did not know that in doing so, he was only reinforcing battalions of leucocytes engaged in deadly conflict with pathogenic germs.

If our knowledge of its etiology be correct as that of its pathology, it follows that there must be two principal indications in its treatment, first to destroy the germs at their point of entrance (*locus læsionis*), and secondly, to counteract the toxin resulting from

their presence in the blood. Several years ago Dr. John Eliot Woodbridge claimed that he had succeeded in aborting the disease by the use of certain remedies in its earlier stages. In a paper read before the AMERICAN MEDICAL ASSOCIATION in San Francisco, and again at its meeting in Baltimore recently, he fully explained the treatment, claiming that it was abortive and rapidly curative. In the discussions which followed the reading of papers upon the treatment of "Typhoid Fever in Children," much time was consumed in discussing the Brandt method, which was highly extolled, and only slight allusions were made to the Woodbridge method, and in terms not altogether complimentary. Having treated a number of cases of the disease during the past summer and autumn, and succeeded in aborting it, we have no hesitancy in adding our testimony to its superiority over all other methods.

Under the antiseptic and disinfectant method we have really but two periods to this formidable disease—first, a period of rapid reduction of temperature, and secondly, the period of convalescence. By destroying the germs early in the attack, and before the development of toxins, we at once abruptly interrupt its course and prevent complications so frequent when the disease has existed for any great length of time. Tympanites, when present, disappears, dry tongue and delirium are prevented, diarrhea ceases, pyrexia ceases by the tenth or twelfth day, and the patient at once enters upon a favorable convalescence. With mind clear and muscular strength preserved, he is enabled to leave his bed by the end of the second week, and solid food may be allowed him much earlier than under the old régime, because there are no ulcerations of the ileum to contraindicate its use.

We believe that these results are brought about by both intravascular and intestinal disinfection. It has long been known by physicians that intestinal disinfection is an important indication in the disease, and the difficulty heretofore has been to find a remedy or remedies to accomplish this, and at the same time prove harmless to the system.

Of the combination of remedies recommended in the Woodbridge treatment, it may be difficult to determine the precise rôle played by each. Purgatives were thought to be contraindicated in the disease formerly and in the new treatment they are indicated. Both the podophyllum and calomel fulfill important indications, the latter as a disinfectant and purgative, and the former aids in clearing out the alimentary canal, especially the colon, which is now regarded as the sewer of the system.

Bintz claims, that in its passage through the alimentary canal, the protochlorid of mercury is changed into the bichlorid, and the latter is now regarded as one of the most efficient disinfectants and germicides known to the profession. It is now believed that most, if not all, intestinal affections are caused by specific germs, and we may thus understand how calomel gained such reputation in their treatment. From simple catarrh to the more grave affections of cholera and dysentery, it is regarded as superior perhaps to all other remedies.

The danger from hypercatharsis is not regarded, since the diarrhea will cease and the system immediately rally after destruction of the germs. We believe the carbonate of guaiacol to be the active agent in the destruction of the typhoid bacillus both in the intestinal canal and in the blood and tissues of the body.

It belongs to the phenol group and is the active principle of creosote. Chemically pure, guaiacol is of offensive odor and burning taste, and an irritant. It is insoluble in the stomach. Combined with carbonic acid, it is innocuous and non-irritant, and it has been found to allay irritability of the stomach and prevent abnormal fermentation. Von Heyden found that after leaving the stomach, it was decomposed into carbonic acid and pure guaiacol in the intestines, and it is here that it exerts its proper medicinal effects.

We have observed under its use that the characteristic typhoid stools become more consistent and lose their offensive odor. The odor of creosote is detected now in both the urine and feces. The menthol, thymol and eucalyptol act as intravascular disinfectants, doubtless, as their odor is detected in the perspiration. Large draughts of sterilized cool water promote both diaphoresis and diuresis, by which poisons are eliminated from the blood. It is proper to speak of cases in which these remedies are sometimes not well tolerated, when given in their regular routine. An irritable stomach will sometimes reject formulas 1 and 2.

By the use of sinapisms, and the substitution of guaiacol carbonate, alone, in 5 to 10 grain doses every three to four hours, for from twenty-four to thirty-six hours, we have been enabled to control the irritability and return to the above formulas. Ptyalism will sometimes supervene upon the use of the mercury and we will be obliged to withdraw it. The guaiacol is now to be given, and the simpler aperients, as Hunyadi water as recommended by the author. We may not be able to abort the disease as early with these complications, but its course is still very much shortened and sequelæ prevented. It is superior to the Brandt treatment, because the latter will not abort the disease or prevent serious complications.

RESEARCHES ON RAPID PHOTOGRAPHY BY MEANS OF EDISON'S KINETOGRAPH AND THE ANIMATED REPRODUCTION WITH THE KINETOSCOPE.

SHOWING ALSO BY THIS METHOD THE PRESENT AND
FUTURE POSSIBILITIES OF TAKING AND RE-PRODUC-
ING CERTAIN ANIMATED PHYSIOLOGIC MOVE-
MENTS AS THE LARYNX, HEART, INTES-
TINES, ETC., AND CERTAIN DISEASES
HAVING VISIBLE SYMPTOMS, ETC.
WITH A HISTORIC REVIEW
OF FIFTY YEARS OF
PHOTOGRAPHY.

Read before the French Academy of Medicine, Paris, February, 1895, and
in the Section on Physiology and Dietetics, at the Forty-sixth
Annual Meeting of the American Medical Association,
at Baltimore, Md., May 7-10, 1895.

BY J. MOUNT BLEYER, M.D., F.R.A.M.S.

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NEW YORK.

This preliminary paper which I have the honor to present to you, gives mine and other experimental work with the kinetograph, kinetoscope and phonograph. Here, I wish to show the practicability of rapid photography by means of the kinetograph and the rapid reproduction of these photographs after their preparation herein described for the kinetoscope, by this means giving life to each and every possible mo-

tion. This mechanical aid gives us the power to photograph and reproduce every possible physiologic phase capable of visible movements, and in certain pathologic conditions showing their special visible symptoms. Not only can the utility of this instrument be applied in our science, but also to all others. It is my hope in submitting this communication to your critical judgment that what follows herein will give a satisfactory proof of the possibilities for further development and use in this field of study; also that it prove as useful to others, as it has done in these researches made up to this date.

1. GENERAL REVIEW OF FIFTY YEARS OF PHOTOGRAPHY.

Taking a survey backward of fifty years of photography and contrast this with the possibilities of to-day, when in the darkest of the dark caves or cellars, or on the blackest of nights, the tyro photographer, armed with his little camera, and pistol loaded with magnesium cartridge, can obtain a picture full of vigor and marvelous in detail. This chasm has been bridged over in the fifty years since Daguerre gave before the French Academy of Sciences the secret of his wonderful process. The journey down the photographic history of those fifty years is full of wonderful struggles of mind over matter, strange hopes awakened, magical discoveries set aside, fascinating theories exploded, practical inventions pushing to the front, large areas covered, and more and more individuals of both sexes benefited by this discovery of the progressive scene painter, until to-day hundreds of thousands contribute to our knowledge and happiness in the practice of photography whilst gaining their daily bread.

The story of Daguerre's struggles and victory may well be told at this time, after a lapse of little over fifty years since his grand discovery. It was on the 19th of August 1839, that Arago, the noted French astronomer, before crowded halls and courts, gave the practical details of the process for fixing upon a prepared plate the images of the camera-obscura, and France, by giving an annual stipend to Daguerre and his associate, M. Isidore Niepce, provided that all their compatriots should be free to practice the new art. Arago's speech is even now most entertaining reading and should be familiar to all votaries of the art of photography, but we must content ourselves with little more than a review of some of the points which may indicate the appreciation in which the discovery was held at the time, and the prophetic insight that saw how full of value to science as well as art this great invention would prove to be. M. Arago dealt with the scientific problems of optics and chemistry involved in the search, showing the length of time after the knowledge that nitrate of silver blackened in the light before any successful experiments were made to fix the images of the camera by its use. He paid a tribute to the memory of M. Joseph Nicéphore Niepce, describing the process by which, after three days exposure, he had succeeded in forming an image which could be retained on the plate. Such a process could of course only serve for copying engravings or drawings, and was impracticable for landscape, architecture or portraiture.

By an accident a meeting was brought about between Daguerre and Niepce, and a partnership formed, which ended only with the death of Niepce in 1833, after which time his son Isidore continued the researches. Here it may be well to say, though it is not

a part of M. Arago's speech, that Daguerre's processes proved to be so much more rapid and perfect than those Niepce was using that in the latter part of 1837 an agreement was signed between the two partners permitting the name Daguerre to be associated with the discovery, and it was many years before the small "d" headed the word daguerreotype.

Up to the time of Arago's explanation public curiosity had for a year or more been awakened by accounts of the wonderful pictures, and some of the pictures have been shown. Baron von Humboldt, Biot, Arago and other savants were mentioned as having been made familiar with the work, and offering their testimony to the value they placed upon the discovery. One story was afloat that the Emperor of Russia stood ready to give Daguerre 500,000 francs for the secret, and English papers of the day expressed themselves as surprised that so magnificent a reward should have been declined. The sum finally paid was 10,000 francs annually to both of the inventors—6,000 to Daguerre and 4,000 to Niepce, Daguerre receiving the larger sum as he also divulged his secret for making his very popular dioramas. It would be proper here to describe this process of Daguerre but other and more pressing matter crowds upon us. It is now practically obsolete, and though very beautiful, more delicate even than any processes by which it has been set aside, it still has shortcomings which soon condemned it. Other methods of picture-making admitting a practically endless multiplication, became in time more popular and have held their own to the present time. The daguerreotype was a positive process; that of Mr. Fox Talbot, of England, to which late improvements can be traced, was a negative process. In 1839 before Daguerre's methods were explained, we find Mr. Talbot writing to the French Academy claiming priority of invention, which certainly, in the light of what we know of Niepce's success, could not be awarded him. Mr. Talbot's process differed so entirely both in means and result from the daguerreotype that it was useless to compare the results, so greatly superior was that of the Frenchman to the Englishman's. The one employed highly polished silver-covered plates of copper; the other, sensitized paper with a grain which deprived the resulting print of much delicacy. Daguerre did not with his invention succeed in portraiture, and the honor of first making a likeness has been always awarded to our own Dr. J. W. Draper.

Without the camera it would have been impossible at picture making. That invention we owe to the brilliant experimentalists John Baptiste and John Vincent Porta, those two twin spirits, the Castor and Pollux of the natural philosophy of the 16th century, and whose scenical museum delighted and awed, by its optical illusions and treasures of curiosities and its natural magic, all learned natives and foreigners. It is a long jump from the so-called beginning of the art of drawing by the tracing of the pretty girl's shadow on the white wall to the chemie discoveries which made it possible to fix permanently that shadow.

Miniature painting, which was a popular mode of portraiture when photography was first discovered, was little by little driven from the field by its less expensive and generally more faithful rival. It is true the daguerreotype was a costly process at first, and efforts were constantly being made to cheapen it. It held its sway until 1851, but soon after that time was set aside by the albumin and the collodion process,

this latter soon having the field all to itself. We can not permit ourselves to enter into the respective merits of processes, yet there are four great divisions, or perhaps we may say three great divisions and one small one, which it is well to bear in mind in reviewing the last fifty years. These would be the daguerreotype from 1839 to 1851; the albumin process on glass plates made practically in 1849, but soon, in 1851, set aside by the collodion process, and fourth, the great popularizer of photography, the gelatin bromid dry plate in 1871.

Previously to all this history of fifty years review there is to be found the published record of a discovery by Fabricius in 1536 when seeking the elixir which was to restore youth. He threw some sea salt into nitrate of silver, and noted that the chlorid of silver precipitated, though of a white color, became black as ink by exposure to sunlight. But this knowledge does not seem to have been utilized until Scheele in 1777 rediscovered the fact, and a few years afterward Professor Charles, the inventor of the hydrogen gas balloon, spread the chlorid of silver on paper, and placing the head of one of his pupils in a beam of sunlight, saw that the shaded portion remained clear, while the rest of the paper rapidly darkened. Still there was no chemic substance known that would retain the image, so, unless the sheet were put away in a dark place, the whole of it would soon blacken. It might be looked at from time to time in a subdued light or by artificial, or the silhouette thus formed could immediately be cut out and the perfect profile thus saved. The long sought compound by hyposulphite of soda, was invented in 1799, but it was not until twenty years later that Herschel found its power of dissolving haloid salt of silver. Three other chemicals, chlorin, iodine and bromine, were discovered respectively in 1774, 1811 and 1826, so that we find the materials ready only a little while before the final discovery of their marvelous powers. One of the first of illustrated works in which photography was employed was Mr. Fox Talbot's "The Pencil of Nature," though in 1840, among holiday books advertised as suitable for presents is one in beautiful binding, "Excursions Daguerriennes." Only a few years past over from that period and a need for orthochromatic photography was felt, especially in the use of medicine, etc., and researches were made to that end which have now born fruit, though the new plates are still far from perfect. All through those years we note the patient search for the power not only to translate the image into black and white, but to retain the gradation of color so beautifully pictured on the ground glass in the camera.

A binocular camera was invented by Sir David Brewster for taking pictures for use in Professor Wheatstone's new stereoscope. Lenses of similar power were placed side by side, distanced by the average measurement between the eyes. This was in 1849. We must remember that up to that year paper and the silvered metal were the grounds sensitized for use in the camera. Then came the use of albumin spread upon glass so that it would hold the material used to sensitize the paper in the calotype process. This avoided the grain of the paper and gave a more perfect picture.

In the United States it was estimated that there were ten thousand daguerreotypists by 1850, and some five thousand workmen who were engaged in the manufacture and sale of plates, cases, chemicals and apparatus, or in other ways receiving their support from

indirect connection with the art. But the story is too long to tell how and when photo-lithography, photographing on blocks of wood for engravers, and the various uses to which photography is now put, were first employed. Little by little it has traveled the world over, educating and delighting everywhere. When we try to note the spread of this art, we are astonished at the uses to which it is now put. How active the human brain is still in invention the thick octavo volume published each year by the Patent Office containing only patents bearing upon photography, improvements in cameras, shutters, tripods, etc., testifies. Many hundreds of books have been written upon the history of photography and its practice in every direction. Last year's Annual gives the titles of forty-four added to the list. There are over sixty periodicals, appearing in different countries, some weekly, others monthly, a few semi-monthly. Of societies the list gives in America 54, and in foreign countries 107. Even in Japan there is a periodical devoted entirely to photographic matters, called *Sashin Shimpa*. It is a monthly and sells for 15 sen, or about 12 cents.

The facility with which the prepared plates can be manipulated, the ease with which hundreds of the new celluloid films can be carried about, the quality they possess of retaining their sensitiveness for months, the fact that exposures may be made in Central Africa or in the neighborhood of the north pole, and the image not developed until the traveler returns to his comfortable laboratory at home, are all magical advances in the fifty years since Daguerre told his secret. What the next half-century will do with the subtle powers of the sensitive plate remains to be seen. To artists familiar with the study of color any hope that the gradations of hues shall be retained by a negative image and communicated to a positive print seems absurd. Constant progress is being made toward the bettering of the interpretation of color values. The mysteries of chemistry are being tested; chlorophyll, eosin, erythrosin and other new compounds are being employed. Bright, thoughtful, intelligent men are reaching into the unknown world of light and chemistry, experimenting and recording with scientific accuracy the story of their researches. The difficulty consists in obtaining gradations of black and white corresponding to the luminosity of the colors of nature. In copying paintings this is especially desirable, and already a great advance has been made. Even the amateur finds in the market prepared plates with which he can produce results in which equivalent gradations of tones stand for the various tints of color. These plates are called orthochromatic (right color). Experiments in this direction will continue until the full beauty of the image of the camera will be kept in so far that our reds will no longer be coal-black, our blues not faded or white, and our bright yellows dull and gloomy. Experiment in photographing an orange by the ordinary and by the orthochromatic plate will show the advantage of using the latter.

Bearing upon this point comes the latest news, that the modern theory of color sensation due to the excitement of the three sets of nerve fibrils is put to service by Mr. F. E. Ives. He, the account says, "produces simultaneously three negatives from three differently prepared plates by light passed through three screens of various colors, his object being to produce negatives each representing the intensity with

which light affects one of the set of nerve fibrils in the eye. Lantern pictures are made from these negatives, and projected on a screen by a triple lantern. One picture passed through a red that affects only the fibrils excited by red, one through a similar green, and one through a suitable violet, the result being a representation of the landscape or object photographed in its true colors." Mr. Ives has published a book dealing with this subject, which he calls "A New Principle in Helichromy."

Against the clumsy apparatus of the first daguerreotypists we can set an array of cameras of most perfect mechanical construction, each fitted with some special contrivance endearing it to its inventor, and possibly to others. We find the colossal structures in use in certain galleries, and the popular so-called "detectives," the inconspicuous vest camera, or still smaller ingeniously contrived boxes for photographic purposes. To the advance in the construction of lenses, and to improvements in the shapes and principles of cameras, is due, as well to improved chemic processes, the quality of late photographic work. It is interesting to learn why the lenses in existence at the time of the invention of the daguerreotype could not do the work they were called upon to perform. The lenses constructed for use in the telescope and microscope embraced too small a field, including only at most a few degrees, while that for the camera frequently now embraces ninety degrees when employed for landscape work. The portrait lens needed a much smaller field, twenty or thirty degrees being enough, but required to be so large as to let plenty of light through it, and thus reduce the time of sitting. Many were the defects in the early time due to badly constructed lenses. The fifty years have brought improvements of inestimable advantage, and the variety and quality of the lenses now in the market show the progress of the optician's art.

One of the latest improvements, for which the tourist must be very grateful, is the use which has been made of celluloid, on which, instead of glass is spread the sensitive film. One firm called these plates "ivory films." Where once the traveler burdened himself with boxes of heavy glass, he may carry to-day twelve dozen "films" for each box of one dozen glass plates. Stripping films or gelatin and the sensitive emulsion on rolls of paper are admirable for the traveler. It is needless to dwell on the value photography has in corroborating the statement of the tourist who returns from a strange and little-known country. M. Le Plongeon told me of the incredulity with which his friends regarded the drawings which he brought back from his first visit to Central America. Any artist of an inventive turn could have made such pencilings. Not so with the photographs taken during his second visit. The statements of the camera were accepted, their authenticity undoubted. However untrained in drawing, the author may now gather material for illustrating his writings as he journeys up and down the land, for from the lightning express even he may make his "snap shot," feeling quite certain he has a valuable record, which the trained artist can "work up" for him.

The uses to which photography is being put this year can hardly be told. Its value in illustration is well known to all. Here it has helped to popularize artistic work, and cheapen the cost of its production to a surprising extent. Now but a few hours need pass before the thought of the artist is made the

joy of the reader, drawing, photographic copy, relief plate, and printing following one another with nineteenth century speed. From the coarse outline of the newspaper "cut" to the wonderful reproduction of paintings by the photogravure process we mount on stepping stones of victorious achievements in photography, made to serve with reliable accuracy the common and the elevated, the political cartoon and the *édition de luxe*. The reproductions in color of the works of aquarellists are imitatively deceptive, and their educational influence of incalculable value.

We must not pass over the scientific value of Mr. Maybridge's publications on the action of man and the lower animals, or "The Horse in Motion." Upon these records, however absurd and laughable some may be, we must base our knowledge, intelligently using it for artistic purposes. It is well known that the camera can tell us what it sees when the plate is exposed but one two-thousandth part of a second, whilst the human eye can open and shut in about the one-tenth part of a second. We can not, then, say that photography is true for us when it pictures the rapidly revolving wheel as if it were motionless. If an artist paints the spokes, the wheel does not appear to go round; if he paints the blurred effect of the whirling wheel, we accept it as a representation of speed. There are photographic and optical as there are microscopic and optical truths. We do not paint a drop of blood as it looks through the microscope, but as it appears to our eyes. From the unquestioned statement of fact as concerning the action of animals we must train our eyes to see better the combination of position of body and action of limbs, and determine how far old methods are good, though false, and how far the new scientific truths must force us to change the ordinarily accepted and conventionalized forms.

The uses to which science has put photography are very numerous, from records of the infinitely little to the infinitely great: from microscopy, which deals with the invisible, to the vastness of astronomic wonders. The latest contributions to our knowledge of the sun, moon and stars, made by photographs taken by the aid of the powerful telescope at the Lick Observatory, strongly contrast with the researches into the invisible world of nature revealed through the microscope. Dr. Draper made the first daguerreotype of the moon in 1840; Foucault, of Paris, first succeeded in making a picture of the sun in 1845; and it was 1850 before Professor Bond, of Harvard College, made the first daguerreotype of a star. In 1851 Dr. Busch, of Königsberg, photographed a solar eclipse. Two scientists, Professor Schuster and Mr. Lockyer, in 1862 obtained a photograph of the spectrum of the eclipsed sun. In 1881 Dr. Henry Draper had successfully photographed a nebula, and later the spectrum of a star. Even the aurora borealis has been photographed in 1889.

In connection with the study of spectrum analysis, photography has played a most important part, for it has recorded lines not visible to the naked eye—lines revealed only by the photograph in that part of the spectrum in the violet and lavender regions, and even beyond, where all is dark to us. In the study of stars by this procedure we learn how some are like our sun, others glowing masses of matter just beginning to burn, and still others nearly burnt out, like Arcturus and Aldebaran. We marvel, when we think how feeble seems the light of the stars, to learn that only as much

light as can come through a slit one three-hundred and fiftieth of an inch is permitted to affect the sensitive plate. Again, the movements of the earth would in the two hours required to form an image soon carry the light off the plate were there not ingenious mechanical apparatus by which the image is always kept at the same place on the plate. And now photography is not only used for mapping out the known heavens, but the camera reveals to us the presence of stars which the human eye has not seen. For many years Miss Maria Mitchell and her assistants have photographed the ever-changing sun spots. Astronomers from all over the world have met in Paris and arranged a plan for using photography to obtain a picture of the entire heavens. Cameras will be set up in numbers of observatories in many countries, and many negatives made of the entire contents of the universe. It is proposed to catalogue two millions of the brightest stars and note their position with great precision, as until such maps exist many other astronomic problems can not be solved. We know, for instance, that our sun with its planetary system is voyaging through space. These charts will help determine the route and circumstances of the journey.

Dr. Galton's composite photography has been too well described to claim more than a word in recognition of an attempt to put photography to a scientific use. In this country Professor Stoddard, of Smith College, has made many interesting studies and published several articles upon the subject, and Dr. Noyes, in two pictures of the insane, gives composite types showing expressions that perpetuate themselves in individuals during mental disease.

Photography enables publishers to duplicate in little valuable works and store away small negatives of large folios or manuscripts during the process of publication. Trade uses photography to picture its new furniture, gas fixtures, china, etc., reproducing thus objects too bulky for the "drummer" to carry about with him. Instead of the slow process of copying by hand the geometric designs furnished by the kaleidoscope, numberless changes can be readily photographed in a short time, and furnish suggestive material from which to work. The wall-paper manufacturer uses photography to reduce or enlarge patterns; the delicate figures on watch faces can now be made by its use. These watch dials have been painted by hand at a cost of a dollar each. Now, it is said, a photographic process has been purchased by a watch company by which these dials can be made at the slight expense of ten cents each, electric light serving as well as daylight for their manufacture. Even the quality of steel has been tested by photographic examination. The microscope shows steel to be composed of an agglomeration of crystals, by the difference in which its quality may be determined. The piece of steel to be examined at a certain foundry was heated until it was white, when it was photographed, and the resulting negative examined by the microscope. Those little toy pictures in watch charms have to be made by the aid of the microscope; it is said that only one man in New York can do such work. Even fraud can be proved by the use of the camera. A Berlin merchant was detected in crooked ways, and illegitimate after-entries of a number of his accounts were shown by photography. Blue inks appear much lighter than brown. A chemic test destroys the original, but the faithful plate leaves it intact whilst telling the story of the fraud.

In war photography has been used since the English made pictures in the Crimea. Balloon photography has become quite an art. Balloons are said to be perfectly safe from rifle or artillery fire if 700 yards above the ground. Electricity is made to play its part in exposing the plate in the camera attached to the balloon. During the Franco-Prussian war and the siege of Paris small photographic copies of valuable documents and daily papers were made and rolled into quills, which were fastened to carrier pigeons, and thus taken to their destination without the lines. The Eiffel Tower in Paris has been offered Professor Marey to enable him to make studies in photography of birds in flight, and very instructive results are anticipated. Many will remember the picture of the experiment at Willett's Point when the donkey's head was blown off by the use of dynamite, but the picture was taken before the body fell.

The late Mr. Baden Pritchard, whose work in the Woolwich laboratory made him famous, conceived the very valuable as well as feasible idea of reducing the map of a country on little gelatin films so small that fifty or more could easily lie in the top of a field case. They could readily be employed and clearly read by the aid of a magnifier. To render them very serviceable they were tanned so as to be waterproof. In the English army a photographic wagon is used which is fitted up with two cameras and several lenses, so as to make plates of different sizes or for varied purposes. One of the outfits is so contrived as to be readily packed on a mule. Bromid paper and material for making platinotypes are also carried. Both in our army and navy photographic outfits are furnished and some of our officers have become very expert. Photography may be applied to surveying, as Lieutenant Reed, of the United States Army, has described. It may also serve for studies in meteorology. Photographing rifle bullets and cannon-balls in motion has become an everyday matter, but a novel experiment is said to have been made not long since in Berlin by Professor Treason, who arranged within a cannon-ball a sort of camera which recorded the character of its flight. A tiny pin-hole admitted light, and a sensitive plate within the ball recorded the twists and turns of the projectile in its passage through the air. The gun was fired point-blank at the sun, which sent a beam upon the plate, recording itself as a point, but as the ball swerved more away from the sun a spiral line was formed and marked upon the plate.

In Germany there are many photographic schools, and in one establishment in the midst of very beautiful scenery in the Bavarian Alps more than one hundred pupils have been educated. Last year there was a summer school of photography at Chautauqua and lectures are given each winter at Columbia College. The result of such systematic study ought eventually to advance the art, though at present the students deal principally with practical and scientific problems. At the Cooper Institute and Young Women's Christian Association, in New York, students are trained to skilfully retouch negatives, and thus photography helps a large class in obtaining a livelihood.

There is a side of the practice of photography which humanitarians will welcome. It has been suggested that the camera be used as a substitute for the gun, and pictures rather than corpses be bagged. In all seriousness the suggestion is well worthy of consideration, for the health-giving tramp and the difficulty of the sport are equal in both cases. There

would be a test of the veracity of the sportsman that would doubtless advance the morals of the hunting fraternity. To the fisherman the camera might be valuable to chronicle the marvelous size or number of the day's catch, even if it could not quite take the place of Ik Walton's favorite sport. The naturalist might gain much information of the habits of wild birds and game from the sportsman's album at the end of a season.

There is one service to which photography has been profitably applied which demands consideration, and as it is practiced most effectively in France, it may be well to make a few notes of the photographic establishment at the Prefecture of Police in Paris. Here there is a system of picturing criminals which in connection with another system of measurement, makes it easily possible to identify them. Head, ear, index finger, waist, foot, and the height of the whole figure, as well as the breadth of the extended arms are carefully measured and recorded, as are also any distinctive birth marks, moles, scars, etc. Then the prisoner is taken to well-lighted galleries in the upper story of the building, where pictures of the face in front view and profile, of half and full figure, are made. Since the late improvements in rapid plates it is possible to obtain these pictures even when the subject is refractory. By the use of artificial light 20,000 pictures the size of postage stamps can be made in a single night, and sent broadcast over the country to the police force. There are said to be over 100,000 photographs of different criminals, 40,000 of this number being of women and children. These pictures are now, by the assistance of the classified measurements, so arranged that it is an affair of but little time to determine whether the new comer has ever been in the clutches of the law or not; and if he has, to fix upon him his past crimes and punishments. Modern police the world over have found photography of great assistance, but the systematic care shown by the French might profitably be employed everywhere. The law recognizes the authoritative testimony of photography and often employs it. Photography for the purpose of identification is not necessarily confined to the criminal class. It was employed in 1876 on the season tickets of exhibitors at the Centennial Exhibition at Philadelphia. Another way in which it is serviceable is in reproducing in small size, so that they can be mailed unmounted, the newly finished oil paintings of artists, who may thus reach patrons and show the subject of the new work. Art dealers in America are constantly receiving such photographic notes from European correspondents, and familiar with the general character of workmanship, they can readily determine whether they wish to order or not. Sometimes notes of color accompany the photograph.

Artificial light in the practice of photography has long been found serviceable. The burning of magnesium wire and the electric light furnished sufficient illumination under full control. Within the past two years various compounds have been put upon the market which have popularized the taking of pictures by night, either using fulminating compositions or employing the alcohol lamp and the dry powdered magnesium.

Early in the history of photography its service to architecture was discovered. To-day it brings to every student authentic records of the past, the story of every age, from the lintel architecture of far-away Egypt to the primitive log hut of the Western settler.

In the quiet of one's study one may consult details of Moorish intricacy of design, the stately temples of Greece, or the strange gargoyles of a Gothic cathedral. Reproductive processes have cheapened the cost without lessening the value of these pictures, so that the student may store away treasures in their portfolios. Even in more practical ways the blue print is made to duplicate the design of the architect, and enable him by a little outlay of time and money to give his patrons a copy of his own elaborate work. So, too, may the architect keep informed of the progress of buildings being constructed in distant places away from his office, from plans he has made. Careful photographs taken frequently will show every stage of the work, and avoid many journeys which would otherwise be necessary. By this means our government is able to control from the central office the payments for work done in foreign lands. Engineers also employ photography for a similar purpose.

Philip Gilbert Hamerton may be quoted as an appreciator of photography when he writes in one of his thoughtful essays on landscape: "Instantaneous photography is not so valuable for stormy seas in sunshine as in dull weather, because it confounds foam and glitter, but the fidelity with which it renders minor waves is quite beyond all human rivalry. The excellent photographs of yachts in motion which are now so common, contain endless and most authentic information about all kinds of minor waves and ripples. A collection of them is even better than nature itself, so far as form only is concerned, for no memory can retain the natural form with any approach to photographic accuracy. Painters make constant use of these invaluable memoranda, and by their help, and the education they give to the eye in preparing it to see nature itself, a greatly increased veracity in the drawing of water has penetrated even our current newspaper illustrations."

One can not close even so incomplete a review as this of the first half-century of photography without a reference to the position it holds with regard to art. Though it would require a long essay to deal with the subject as it merits treatment, it is important to make certain confessions of blighted hopes, and at the same time to look with tempered enthusiasm into the future. As an aid to science, as a recorder, as a duplicator, photography has helped advance civilization. Of itself it has failed to occupy the place it may yet hold as a means for expressing original thought of a fine order. With its recognized qualities and in the hands of a thoroughly trained worker perfectly familiar with the laws of chemistry and optics, and with artistic feeling and training, it may be placed on a plane where its beauties will force from all acknowledgment that it has powers which rank it as one of the finest of the graphic arts.

II.—THE EXPERIMENTAL RESEARCHES ON RAPID PHOTOGRAPHY BY MEANS OF THE KINETOGRAPH AND KINETOSCOPE, ETC.

To our Edison, in the year 1887, the notion presented itself that it was possible to devise an instrument which should do for the eye what the inimitable phonograph does for the ear, and that by a combination of the two, all motion and sound could be recorded and reproduced simultaneously. This idea, the germ of which came from the little toy called the zoetrope, and the former combined work of Maybridge, Marie and others has now been accomplished, so that

every change of facial expression and any other visible movement can be recorded and reproduced life size. The kinetoscope and kinetograph of to-day's construction is only a small model illustrating the future possibilities and its present stage of progress. With each succeeding month new changes are brought into view. It can already be forecasted from what has been done, that in a very short time these works of Edison, Dickson, Maybridge, Marie and others who will enter in this field of investigation will be crowned with successes heretofore unknown. These already explored fields bring us to recognize the known and future contingencies of being able to reproduce the many thousands of varieties of motions and expressions known to us in medicine, either as physiologic or as symptomologic in a variety of diseases. Its usefulness does not stop here by any means. The arts in all their branches claim its services also.

The synchronous attachment of rapid photography with the phonograph was one of the early thoughts of this inventor, in order to record and give back impressions to the eye as well as to the ear. The comprehensive term for this invention is the kinetophonograph. The dual talking machine is the phono-kinetograph and the reproducing-machine the phono-kinetoscope, in contra-distinction to the kinetograph and the kinetoscope, which relate respectively to the taking and reproducing of movable but soundless objects. The initial experiments took the form of microscopic pin-point photographs, placed on a cylindrical shell corresponding in size to the ordinary phonograph cylinder. These two cylinders were then placed side by side on a shaft, and the sound record was taken as near as possible synchronously with the photographic image impressed on the sensitive surface of the shell. The photographic portion of the undertaking was seriously hampered by the defects of the materials at hand, which, however excellent in themselves, offered no substance sufficiently sensitive. How to secure clear-cut outlines, or indeed any outlines at all, together with phenomenal speed, was the problem before him which puzzled. The Daguerre, albumin and kindred processes met the first requirements, but failed when subjected to the test of speed. These methods were therefore regretfully abandoned, a certain precipitate of knowledge being retained, and a bold leap was made to the Maddox gelatin bromid of silver emulsion, with which the cylinders were coated. This process gave rise to a new and serious difficulty. The bromid of silver haloids, held in suspension with the emulsion, showed themselves in an exaggerated coarseness when it became a question of enlarging the pin-point photographs to the dignity of one-eighth of an inch, projecting them upon a screen, or viewing them through a binocular microscope. Each accession of size augmented the difficulty, and it was resolved to abandon that line of experiment and to revolutionize the whole nature of the proceedings by discarding these small photographs, and substituting a series of very much larger impressions affixed to the outer edge of a swiftly rotating wheel, or disk, and supplied with a number of pins, so arranged as to project under the center of each picture. On the rear of the disk, upon a stand, was placed a Geissler tube, connected with an induction coil, the primary wire of which, operated by the pins, produced a rupture of the primary current, which in its turn, through the medium of the secondary cur-

rent, lighted up the Geissler tube at the precise moment when a picture crossed its range of view. This electric discharge was performed in such an inappreciable fraction of time, the succession of pictures was so rapid, and the whole mechanism so nearly perfect, that the goal of the inventor seemed almost reached.

(To be continued.)

MEDICAL PRACTICE ACTS.

PRACTICE OF MEDICINE IN RHODE ISLAND.

A law was passed in Rhode Island in 1895 making it the duty of each town and city clerk to keep a "Medical Register," one full page thereof to be set apart for the registration of each physician in his town or city. When any physician shall die or remove from the city or town, the clerk is to make a note of same at the bottom of the page. On the first day of January in each year he is to transmit to the State board of health a duly certified list of the registered physicians. His fee for registration is fifty cents. Following this, it is made unlawful for any person to practice medicine or surgery in any of its branches, within the limits of the State, who has not exhibited and registered in the city or town clerk's office of the city or town in which he or she resides, his or her authority for so practicing medicine, as prescribed, together with his or her age, address, place of birth and the school or system of medicine to which he or she proposes to belong; and the person so registering shall subscribe and verify by oath, before such clerk, an affidavit containing such facts, which if willfully false, shall subject the affiant to conviction and punishment for perjury. Authority to practice medicine under this law shall be a certificate from the State board of health. The board is, upon application, to issue a certificate to any reputable physician practicing or who desires to begin the practice of medicine or surgery in the State, who possesses any of the following qualifications: 1. A diploma from a reputable and legally chartered medical college, endorsed as such by the State board of health; 2. Satisfactory evidence from the person claiming the same that such person was reputably and honorably engaged in the practice of medicine or surgery in the State prior to January 1, 1892. Any person not qualified as so provided, before practicing shall present himself before the State board of health and submit himself to such examination as the board may require. The board shall examine any person presenting himself and if the examination is satisfactory shall issue its certificate. Fee for examination is \$10. Applicants may present their credentials by mail or by proxy. Not more than \$2 shall be charged for any certificate. Nothing in this law shall be so construed as to authorize any itinerant doctor to register or to practice medicine in any part of the State. The board may also refuse to issue its certificate to any individual guilty of grossly unprofessional conduct of a character likely to deceive or defraud the public, and it may after due notice and hearing revoke certificates for like cause, appeal in such cases being given to the supreme court. Nothing in this law shall be so construed as to discriminate against any particular school or system of medicine, or to prohibit women from practicing midwifery, or to prohibit gratuitous services in case of emergency; nor shall it apply to commissioned

surgeons of the United States army, navy or marine hospital service, or to legally qualified physicians of another State, called to see a particular case, but who do not open an office or appoint any place in the State where they may meet patients or receive calls. Any person living in the State, or any person coming into the State who shall practice or attempt to practice medicine or surgery in any of its branches, or who shall perform or attempt to perform any surgical operation for or upon any person within the limits of the State for reward or compensation, in violation of this law, shall, upon conviction thereof, be fined \$50 and upon each and every subsequent conviction shall be fined \$100 and imprisoned thirty days, or either or both; and in no case, where any provision of this law has been violated, shall the person violating it be entitled to receive compensation for services rendered. To open an office for such purpose, or to announce to the public in any other way a readiness to practice medicine or surgery in the State, shall be to engage in the practice of medicine within the meaning of this law.

DENTAL LAW OF NEVADA.

An act to insure the better education of practitioners of dental surgery, and to regulate the practice of dentistry in the State of Nevada, was passed in 1895. It creates a board of examiners, to consist of five practicing dentists, to be appointed by the governor from a list of candidates furnished by the Nevada State Dental Society. Regular term of office is four years. After making special provision for persons already engaged in the practice of dentistry in the State, it is enacted that any and all persons who shall so desire may appear before said board, at any of its regular meetings, and be examined with reference to their knowledge and skill in dental surgery, and if the examination of any such person or persons shall prove satisfactory to said board, it shall issue to them a certificate to that effect. The board shall also indorse as satisfactory, diplomas from any reputable dental college, when satisfied of the character of such institution, upon the holder of such diploma furnishing evidence satisfactory to the board of his or her right to the same. All certificates issued by the board shall be signed by its officers, and such certificates shall be prima facie evidence of the right of the holder to practice dentistry in the State of Nevada. The fee for examination is \$10. Any person who shall violate any of the provisions of this act shall, upon conviction, be fined not less than \$50, nor more than \$200, or be confined six months in the county jail. All fines or penalties recovered accrue to the common school fund of the county. Any person who shall knowingly and falsely claim or pretend to have or hold a certificate of license, diploma or degree, granted by any society, or who shall falsely, and with intent to deceive the public, claim or pretend to be a graduate from any incorporated dental college, not being such graduate, shall also be liable to the above penalty. Any person receiving a certificate of qualification from the board must have it registered with the county clerk of any county or counties in which he may desire to engage in the practice of dentistry. Failure, neglect or refusal to have a certificate so registered, for period of six months, works a forfeiture of the certificate, and no certificate, when once forfeited, shall be restored, except upon the payment to the board of examiners of \$25 as a penalty.

MAINE MEDICAL ACT.

A law was passed in Maine in 1895 to regulate the practice of medicine and surgery within that State. It provides that the governor, with the advice and consent of the council, shall appoint six persons, residents of the State, who shall be graduates of a legally chartered medical college or university having the power to confer degrees in medicine, and who shall have been actively employed in the practice of their profession for a period of five years, who shall constitute a board of registration of medicine. Six years is the full term of office. Regular meetings are to be held in March, July and November of each year. On and after January 1, 1896, the board shall examine all applicants for registration as licensed physicians or surgeons. Each applicant must give satisfactory proof of being twenty-one years of age and of having good moral character, and possessing a reasonable amount of average knowledge in the branches of science he desires to practice in. Examinations shall be, in whole or in part, in writing and shall be of an elementary and practical character. They shall embrace the general subjects of anatomy, physiology, pathology, materia medica, therapeutics, surgery, the principles and practice of medicine, obstetrics, or such branches applicant to possess. On and after the above date, thereof as the board may deem necessary for the it shall be illegal for any person not duly registered by this board to practice medicine or surgery, or any branch thereof for gain or hire within the state. Whoever not being registered as required shall so practice or shall advertise or hold himself out to the public as a physician or surgeon in the state, who appends to his name the letters "M.D.," or who uses the title of a doctor or physician meaning thereby a doctor of medicine, shall be punished by a fine of not less than \$100 nor more than \$500 for each offense, or by imprisonment in jail for three months or both. This act shall not apply to the commissioned officers of the United States army, navy or marine hospital service, or to a physician or surgeon who is called from another State to treat a particular case and who does not otherwise practice in Maine, nor to prohibit gratuitous service or the rendering of assistance in emergency cases, nor to medical students who prescribe or operate under the direction of some registered physician or physicians, nor to midwives who lay no claim to the title of physician or doctor. Neither shall this act apply to persons practicing hypnotism, magnetic healing, mind cure, massage, Christian science, or any other method of healing if no poisonous or dangerous drugs are employed nor surgical operations performed; provided, such persons do not violate any of the provisions of this act in relation to the use of "M.D.," or the title of doctor or physician. The board after a conviction before a proper court, for crime in the course of professional business, and after hearing, may by unanimous vote, revoke any certificate issued by them and cancel the registration of the person to whom it was issued. It has also power to suspend or revoke any certificate by unanimous vote, in any case where same certificate has been wrongfully obtained or any fraud connected with the registration. It shall be the duty of the board, its members or agents to investigate all complaints regarding non-compliance with or violation of the provisions of this act and to bring all such cases to the notice of the proper prosecuting officers.

TO REPORT BIRTHS IN RHODE ISLAND.

A law passed in Rhode Island in 1895 requiring physicians and midwives, on or before the fifth day of each month, to report to the clerk of each city or town a correct list of all children born therein during the month next preceding, at whose birth they were present, stating the date and place of each birth, the name of the child (if it has any), the sex and color of the child, the name, place of birth and residence of the parents, and the occupation of the father. A fee of twenty-five cents for each birth so reported is to be paid by the city or town in which the report is made.

PRACTICE OF MEDICINE IN DELAWARE.

Realizing that "the safety of the public may be endangered by incompetent physicians and surgeons, and due regard for public health and the preservation of human life demands that none but competent and properly qualified physicians and surgeons shall be allowed to practice their profession," a new law was passed in Delaware in 1895, regulating the practice of medicine and surgery in that State. It provides that there shall be established a Medical Council of Delaware, consisting of the Chief Justice of the State and of the Presidents of the two State Boards of Medical Examiners provided for in the act. This council shall issue certificates for license to practice medicine and surgery to such applicants as have presented such diplomas and successfully passed such examinations as are required. The two boards of medical examiners are to be separate, one representing "The President and Fellows of the Medical Society of Delaware," and the other "The Homeopathic Medical Society of Delaware State and Peninsula." Each board shall consist of five members, whose regular term of office is two years, their appointment to be made by the governor from the members of said societies. Each board, not less than one week prior to each examination, shall submit to the Medical Council questions for thorough examinations in anatomy, physiology, hygiene, chemistry, surgery, obstetrics, diagnosis, therapeutics, practice of medicine and materia medica. The Medical Council shall select the questions for such examinations from the lists of questions submitted by the Board of Medical Examiners of the candidate's election; and should there be candidates for examination of any other school than the two designated in this act, they shall be examined by the council and some reputable practitioner in the State of such school, by the council to be selected, upon questions to be selected from standard text books on the above subjects as taught by the school selected by the candidate. The examinations are to be conducted in writing. They may be conducted by a committee duly authorized by said boards. The applicant must pay a fee of \$10 and furnish satisfactory proof that he is more than 21 years of age, is of good moral character, has obtained a competent common school education and has received a diploma conferring the degree of medicine from some legally incorporated medical college. Applicants who have received their degree after the passage of this act must have pursued the study of medicine for at least four years, including three regular courses of lectures in different years, in some legally incorporated medical college or colleges prior to the granting of said diploma. Such proof, if required, shall be made upon affidavit. The clerk of the peace of any of the counties of the State shall issue a license signed by the governor and coun-

tersigned by the secretary of State and sealed with the seal of his office, certifying that such person is authorized to practice medicine and surgery in the State, conformable to the laws thereof, to any person who shall present to him a certificate of the Medical Council. It was also provided that such a license should be issued to any person who had been qualified in one of the counties of the State prior to the passage of this act. Moreover, its provisions are not to apply to physicians who are practitioners of any other State coming into Delaware in consultation with any lawful practitioner of medicine and surgery in the latter State. Nor does the act in any way apply to dentists or dental surgery. And nothing in it is in any way to interfere with the operation of Chapter 117, Volume 13, Laws of Delaware, relating to revenue—otherwise all prior laws on this subject are repealed.

SOCIETY PROCEEDINGS.

Chicago Pathological Society.

Regular Meeting, Feb. 10, 1895.

The President, DR. WELLER VAN HOOK in the Chair.

DR. M. L. HARRIS read a paper on Colloid Goitre, and exhibited specimens of same. (See p. 663.)

DR. D. N. EISENDRATH read an abstract of a paper entitled
SPONTANEOUS DISLOCATIONS OF THE HIP-JOINT OCCURRING
IN THE COURSE OF ACUTE INFECTIOUS DISEASES.

Traumatic dislocations of the hip are of such relative frequency that they interest the surgeon but little more than dislocations of the other joints. Not so with spontaneous luxation of the hip. But few cases of this kind have been reported. They were first observed, in 1853, by Lorinser, who reported a dislocation of the hip occurring spontaneously during typhoid fever. Roser, in 1857, called attention to the fact that this condition was known to Hippocrates, who ascribed it to hydrops of the joint. Numerous post-mortems made during the present century confirmed this theory. Parise attempted to reproduce it by injecting fluid into the joint, and found that the head moved away from the acetabulum. The capsule in order to stretch was obliged to assume a spherical shape, pulling the head with it. The only modern writer who disagrees with this theory is Verneuil, who believes that it is produced through muscular action. He claims that there is a paralysis of some of the muscles about the hip-joint and that their antagonists pull the head out of the acetabulum. This theory has no other supporters. Güterbock reported four cases, in 1874, occurring during the course of typhoid fever. These took place suddenly without any trauma, the only symptom of a joint affection having been pain in both hips. Verneuil, in 1883, reported six cases occurring during acute articular rheumatism. Delens added two to the list of spontaneous luxation of the hip, these occurring during typhoid. Sainton also reported a number of cases in 1892, and Champenois recently collected and published ten cases, all taking place during convalescence from typhoid fever. The right hip was most frequently affected. Kirmisson reduced a dislocation which occurred during acute articular rheumatism on the twelfth day in a girl 18 years of age, and also published a case in which the dislocation occurred during scarlatina. Phocas, in 1894, reported a typical case in which a dislocation of the hip occurred during convalescence from typhoid. The writer, in addition to the case reported, saw a double dislocation of the hip which had taken place spontaneously during scarlatina, at the clinic of Professor Lorenz in Vienna. The case observed was one of a girl 12 years old, who was admitted to the service of Dr. Sick in the Hamburg Hospital. During an attack of influenza a spontaneous backward dislocation had occurred. Six months after this happened

she was operated upon by Dr. Sick, who found the acetabulum filled by inflammatory tissue, the head of the femur and the acetabulum exactly corresponding in size. The capsule was almost completely destroyed. There was no osseous focus. The head was replaced after the acetabulum had been curetted to remove the inflammatory tissue which filled it. Recovery took place very slowly, the wound having suppurated. The occurrence of such a spontaneous dislocation during an attack of influenza would seem possible, since during this disease exudation into joints takes place, as Franke has recently reported. This is the first case in which such a dislocation has been observed during influenza, the other diseases in which it has occurred being scarlatina, typhoid and acute articular rheumatism.

DISCUSSION.

DR. M. L. HARRIS The question to be raised in most of these cases is whether we have to deal with an arthritis, or with a case of osteomyelitis. In the first place, these cases almost invariably occur during the developmental period, before complete growth is reached. The tendency of micro-organisms to localize themselves and develop in growing bone is well known. These cases of dislocation of the hip-joint occur more frequently in certain infectious diseases than in others. For instance, typhoid fever is a disease in which dislocation of this joint is apt to occur, and we know the typhoid bacillus in this disease can always be found in bony tissue. Other organisms are not so liable to locate themselves in bone, and in the diseases produced by them we do not have dislocations so often. In scarlet fever we frequently have effusion into the joint, but dislocation of it is comparative rare. Effusion into joints occurs in other infectious diseases, as in measles, mumps, dysentery and variola, but dislocations in those diseases, however, are very rare, showing that there must be something besides a synovitis to produce the dislocation. Crepitus has been observed, as in the case mentioned by Dr. Eisendrath, and when the joint was opened there was found erosion of the acetabulum, showing that there was osteomyelitis present. The great frequency with which the hip-joint is affected is another point in favor of osteomyelitis. As is well-known, the femur is the most common bone to be affected by osteomyelitis. In ordinary osteomyelitis from pyogenic infection the upper end of the femur and pelvic bone or hip-joint are affected many times to once of any other joint. To give an illustration, in twenty-two cases, by Müller, the hip-joint alone was affected sixteen times, the remaining six cases being distributed, showing the great frequency with which the hip is involved. Here it was found that the acetabulum was the part primarily affected in 25 per cent. of the cases. Another thing which points to the fact that these cases are probably osteomyelitis is the failure to reduce the dislocations and keep them so. In dislocations which follow typhoid fever reduction and retention have been very seldom accomplished. If we have a dislocation of an intact bone there is no reason why the reduced dislocation should not be retained. Ankylosis occurs quickly after these dislocations, much quicker than it does after traumatic dislocations, showing again disease of the osseous tissue. So I think the majority of these cases are not, strictly speaking, cases of synovitis but of the osteomyelitis, the infection extending secondarily to the synovial membrane.

DR. EISENDRATH (closing): I believe in a certain proportion of cases that the dislocation is due to a primary osteomyelitis rather than a primary synovitis. I do not know whether the cause of suppuration in this case was an infection from without, or from some osteomyelitic focus in the head of the bone, or whether it was due to the scarlatina through which the patient had passed four weeks previously. But there is one case recorded in which an abscess appeared at the popliteal space, that might possibly have been construed as an abscess which had come from a primary osteomyelitic focus. There are

undoubtedly cases where dislocation occurs as in articular rheumatism and scarlatina, where we have associated with it a primary synovitis and not osteomyelitis. In the case in which it occurred after influenza we could find no foci at the time. The true acetabulum was covered with inflammatory tissue; but the cartilage itself was eroded in a few places. There were no osseous lesions to be found.

EXHIBITION OF SPECIMENS.

DR. E. J. SENN exhibited specimens of *Pyosalpinx*, which were of particular interest because of their size and marked contortions. The specimen was from a woman 29 years of age, who had been married ten years, and had not given birth to any children. The trouble had existed for six years. The symptoms were those ordinarily present in such cases, with marked pains in the lumbar region of a decidedly intermittent character. There was a constant discharge of pus from the cervix uteri.

DR. WILLIAM HESSERT asked if the paroxysmal pains were followed by purulent discharge from the uterus.

DR. SENN—No; the discharge was constant.

DR. EMIL RIES called attention to the value of the specimens as examples of the contortions of the tubes as described by Freund, which he thought to be due to the rudimentary development of the tubes, the embryonal or infantile characteristics being preserved.

DR. JAMES B. HERRICK presented specimens from a case of

TYPHOID FEVER WITH FATAL INTESTINAL HEMORRHAGE
COMPLICATED BY ECTOPIC GESTATION.

The specimens were obtained from the body of a woman who had come to the County Hospital, Jan. 25, 1896, dying ten days later of acute anemia following intestinal hemorrhage. The anatomical diagnosis (Drs. L. Hektoen and F. Tice) was as follows:

1. Accidental Findings: Adherent pleuritis; healed pulmonary tuberculosis; adherent pericarditis; chronic endarteritis and valvular endocarditis; chronic nephritis; ureteral anomaly.

2. Typhoid fever: Splenic tumor, enlarged mesenteric glands, ulcers in ileum and colon, blood in cavity of intestines, typhoid bacilli in heart's blood, in spleen and kidney.

3. Ectopic Gestation: Uterus slightly enlarged, left tube normal, right tube to be traced for one-half its length; in median line of uterus and firmly united by adhesive bands to the uterus and to the neighboring intestinal coils, a gestational sac the size of a large cocoon and containing a mummified fetus, placental tissue and an old blood clot. Attention was called to two facts of interest in connection with the case:

1. The rarity of the combination of typhoid fever and ectopic pregnancy. A somewhat extended, though not yet completed, search through the medical indices had failed to show a previously recorded case of this kind. The case seemed to be unique. 2. The difficulty presented in diagnosis. The woman had given a history of an abortion at three months induced by the ingestion of drugs. Following the supposed abortion she had flowed for quite a number of days. Then there had developed a chill, headache, malaise, anorexia, fever. We were in the midst of an epidemic of typhoid. The question naturally arose whether the case was one of typhoid fever or of puerperal septicemia, the globular mass easily felt above the symphysis being taken for an enlarged uterus perhaps containing a dead fetus or undischarged secundines. The absence of local tenderness, of uterine discharge and of fetor, and the resemblance of the general symptoms to those of typhoid, lead to a policy of expectancy. This was rewarded in a few days by the appearance of rose spots, enlarged spleen and a fatal intestinal hemorrhage, making clear the diagnosis of typhoid fever. Even had the existence of extra-uterine pregnancy been made out during life, the question of infection through the uterus, or the infection

of the contents of the sac, would have arisen and would have rendered an early diagnosis a matter of extreme difficulty. A closer scrutiny of the history of the case in the light of the post-mortem findings, lead one to think that there had been a right tubal pregnancy with rupture about seven weeks prior to the patient's entrance into the hospital. For there is a somewhat indefinite account of abdominal pain at that time with some collapse or syncope.

DR. F. C. SCHAEFER presented a *Uterus with large Fibroid Tumor*, which had been removed by abdominal hysterectomy. The tumor was lobulated, weighing eight pounds. One lobe had filled the cul-de-sac of Douglas. The uterine canal was three inches deep. Patient did nicely after the operation.

DR. EMIL RIES exhibited a *Vermiform Appendix with a Fecal Stone* in its lumen, which had been removed by operation. The symptoms were peculiar in that inability to urinate was present from the onset. The diagnosis was made by the detection of swelling about the appendix by rectal examination.

DR. WELLER VAN HOOK referred to a similar case in which diagnosis of lead colic and renal calculus were successively made. The rectal examination finally cleared up the diagnosis.

SELECTIONS.

Glaucomatous Atrophy of Optic Discs in Syphilitic Patients Simulating Tabes.—Dr. Galezowski has addressed the Academy of Medicine of Paris on the above subject, as is reported in *Annales d'Oculistique*. Certain varieties of glaucomatous atrophy of the discs are frequently confused with ataxic atrophies. The following signs may help to avoid this error. If the affection is glaucomatous, then: 1. The disc is white, more especially on the external side. 2. The central veins of the optic nerve are diminished in size at their point of emergence, but after crossing with the central arteries, most frequently near the edge of the disc, they become larger. 3. Sub-cutaneous pulsation of the central artery is seen. 4. The pupil contracts to light, but it is enlarged and irregular. 5. The visual field is narrowed in the internal of supero-internal portion, while it remains normal at least for a long time in the external and inferior portion. 6. Dyschromatopsia does not exist at the beginning of the disease, and is hardly appreciable later when the opaque zone of the internal visual field has reached the central point of vision. 7. The patella reflexes are preserved and there are no shooting pains. The disease is of gouty, arthritic, or syphilitic origin. Repeated anterior sclerotomy and general treatment appropriate to the diathesis (gout, syphilis) considerably improve the atrophy of the disc and sometimes even arrest it, as I have found in five out of seven cases which have come under my observation.

Missed Labor.—The *British Medical Journal* quotes from an article by Stahl, in *Der Frauenarzt*, the history of a case in which he feels sure that labor was missed, and where he afterward induced a kind of secondary "premature labor," as he terms it, or, in more usual terms, he delivered a fetus which the uterus refused to expel. The patient was intelligent. Her pelvis was contracted by prominence of the sacrum. Three labors had been normal, and only lasted some two hours each: a fourth had been more lingering, and a very big child was delivered at term. Labor pains, very distinct, set in at term at the fifth pregnancy. For three hours the uterine contractions were strong and regular; then the intervals grew longer and the pains weaker until they ceased. When 302 days had elapsed after the last period, Stahl found the patient inconvenienced by the great size of the abdomen, so he turned and delivered a very well-developed fetus, which was alive at the beginning of the delivery. The prominent sacrum gave great trouble; the perineum was badly torn, owing to the great size of the fetal head; ossification of the cranial bones had ad-

vanced very far, and made the parts incompressible. The fetus weighed twelve pounds eight ounces, the placenta and membranes two pounds. The measurements of the head were: Circumference, 16 inches: occipito-frontal diameter, 5.8 inches; biparietal, 5.2 inches: bitemporal, 4.6 inches. The perineum and the rent, nearly an inch long, in the rectum were sewn up at once, and the mother made a good recovery. No uterine disease or rectal trouble ensued.

Morphologic Transformations in the White Corpuscles in the Blood Vessels.—Marquevitch has been studying the leucocytes in the active circulation during a series of interesting experiments. He prepared the animals (dogs) by the Pawlow method: Closing the long circuit by compressing the carotid and art. subclaviae (artificial respiration, on account of the interruption of the cerebral circulation) and also compression of the rising part of the aorta, with a direct communication between the right auricle and the left ventricle, by means of a glass tube between the art. subclavia dextra and the vena subclavia or jugularis sinistra. Ligature of the left vena subclavia below the entrance of the ductus thoracicus, with occasional ligature of vena cava inferior. In this way the blood practically made the short circuit only, and samples taken out of it at intervals of five, fifteen and thirty minutes, and one and two hours, were examined. The lymphocytes, small and large, were all counted with the polynuclear leucocytes. Marquevitch considers them all, with Ouskow, merely different forms of the same corpuscle: The "young," the "mature" and the "old." Counting showed that the young ones decreased in number, the mature ones increased slightly, although a part of them were changing simultaneously into polynuclear cells. The effect of artificial respiration with pure oxygen, and also of injections of tuberculin was to hasten the transformation of the mature cells into polynuclear ones, but warming the animal produced no appreciable effect. Chloroform arrested the transformation and diminished the number of leucocytes found, which Marquevitch ascribes to the accumulation of them in the capillaries of the lungs in consequence of the positive "chemo-tactic" effect of the chloroform.—*Centralblatt f. Phys.*, February 22.

Primary Sarcoma of the Pleura. It is a serious matter to announce the diagnosis of this disease, and yet absolute certainty is difficult to acquire. Guinea pigs inoculated with the fluid withdrawn from the pleura will determine whether it is a case of tuberculous pleurisy, which is often terminated by recovery. Another point of assistance in diagnosis is the absence of febrile conditions: sometimes there is hypothermia. The almost immediate reproduction of the effusion after the puncture is another characteristic symptom, as also the compression and the absence of marked modifications after puncture. As a consequence of the pressure in the thorax, some cases present a turgescence of the veins in the neck, arm and face, or an edematous appearance of that half of the thorax. Others experience a difficulty in swallowing, and others show a dilatation of the pupil on that side. The pain is also characteristic, diffused throughout the thorax, with increase on local pressure, and extending into the shoulder and arm. It is besides, more or less continuous. Palpation is also a most important guide in diagnosing, as several cases on record presented marked protuberances in the thoracic walls. The fluid withdrawn varies so much in different cases that it is not so much of an assistance as might be expected. The above points are culled from a long and analytic treatise on this subject in the *Progrès Médical*, January 4 and 18.

Latent Contagiousness in Certain Strictures of the Urethra. There are some physicians even now who still query whether gleet, or military gout as the French call it, is contagious. They should read an able article on this subject in the *Revue clin. d'And. et de Gyn.*, November, 1895, by Hamonic, and be convinced. He not only proves that a defined case is contagious,

but that many an unsuspected case is also. When an old case comes to consult us as to whether he can marry, a superficial examination is not enough: the urethra should be examined again and again, especially on waking in the morning, to discover the slightest trace of purulence, and a careful search should be made for any evidence of a stricture which may contain the pathologic germ latent in some form, and it should be scrupulously removed. By these precautions we will prevent the sad consequences to the young wife which occur again and again in practice, and which we are too apt to ascribe to the "changed conditions," fatigue, etc., instead of seeking their source in the latent poison in the husband. Hamonic describes a couple of most convincing cases in which the husband believed himself cured, but after a year the wife presents a typical purulent endometritis and secondary ovaro-salpingitis, and examination of the husband discloses a series of urethral strictures, with the presence of gonococci, which are also found in the lesions of the wife. In these cases the husband had been free from disease to all appearance for five years preceding his marriage, which demonstrates the necessity of the most rigid investigation before the physician approves of matrimony in such a case.

The Bicycle in Therapeutics.—Physicians are complaining that it is with the bicycle now as in the early days of electro-therapeutics, they are unable to order it with any degree of certainty, as there are as yet no terms of scientific measurement of speed, effort, resistance of the wind, etc. Moderation is the warning sounded by every physician who mentions the bicycle, and Villaret states that he would never venture to recommend it to an elderly person, who did not know how to ride it, on account of the danger from falls. A stationary bicycle for home exercise is now on the market. Heart troubles contraindicate the use of the machine and walking is much to be preferred in cases of fatty degeneration. But all agree that for a sound person the wheel is a fine recreation and exercise. Some firms supply their employés with wheels. The word "bike" can be considered a part of our language now, as the Queen has conferred the title of "sergeant bikeman" on the officer who has charge of the royal bicycles, and as the *Youth's Companion* remarks: "If Her Majesty is not an authority for the Queen's English, who is?" In Vienna no one is allowed on the public streets without a license, to obtain which he must pass an examination, riding between boards laid on the floor, without touching their edges, and dismounting at a word either right, left or backward.

Indications for Curettement of the Uterus, and Method of Procedure.

Where the placenta is retained, the first thing to be done is to arrest the hemorrhage and prevent infection. Sublimate in 1-1000 solution for the general irrigation, is the best for ordinary use, and if the hemorrhage persists, a 1-4000 solution can be used for an intrauterine injection, very hot, followed by the insertion of a dossil, first boiled in a solution of carbonate of soda. The inconveniences of this are counterbalanced by its effect, as its removal next day is often followed by expulsion of the placenta. Where these means are unsuccessful, curettement is indicated, although some, like Pinard, prefer continuous intrauterine irrigation. But this is almost impossible except in the hospital, or home of wealth. The placenta might be removed with the fingers, but it is often more difficult to insert the finger than the curette, which is more thorough in its work. Simple retention requires merely antiseptic precautionary treatment, but in retention with hemorrhage after abortion, and in cases where the fetus has putrefied, and portions are still left, and in all cases of septicemia with fever, chill and pains the curette is urgently called for, if the symptoms persist twenty four hours in spite of the intrauterine injections. There must be on hand a Sims' speculum, one or two bullet and other forceps, an intrauterine catheter, a sound

for the bladder, and curettes of several sizes, styles and scoops, Volkmann's and Recamier's preferred, scissors, razor, and everything carefully sterilized. As the operation is neither long nor painful, it is not necessary to resort to an anesthetic although ether can be given. The patient in the obstetric position, at right angles to the edge of the bed, her limbs held by assistants, the pelvis elevated, the vulva is shaved, washed and scrubbed with soap suds, the bladder is emptied and a vaginal injection made with an antiseptic solution. The neck is held with bullet forceps, and if not sufficiently dilated, this is completed with a Hegar bougie. The curette is then introduced and the entire inner surface of the uterus scraped, first the anterior wall, and then withdrawn to remove the detritus, after which it is reintroduced and the posterior wall scraped in the same way. A smaller curette is then taken and the whole surface gone over, until nothing but clots can be found anywhere in the uterus. The neck is then treated in the same way, after which an intrauterine injection is made. Then with long-bladed forceps a wad of cotton dipped in a 5 per cent. solution of phenic acid or 10 per cent. of chlorid of zinc, is used to wipe out the whole inner surface of the uterus. The uterus is closed with a tampon of iodoform gauze, with a drain; another antiseptic tampon is inserted in the vagina; the vulva is covered with a pad of cotton, and the patient replaced in bed. —*Gaz. Méd. de Liège*, March 12.

The Health of the German Army.—In the Budget Committee of the Reichstag, Staff-Surgeon-General Werner a few days ago laid before the members some very interesting statistics concerning the decline of disease in the German army. From these it appears that since the year 1868—counting up to 1894—the number of cases of all descriptions has gone down from 1,496 per 1,000 to 867 per 1,000, which means a reduction of 42 per cent. The death rate in the army was 6.9 per 1,000 in 1868; by 1894-95 it had gone down to 2.4 per 1,000, a reduction of 65 per cent., which means that about 2,200 more men are preserved to life every year. In the thirties of this century the death rate in the Prussian army was higher than the death rate of the male population between 20 and 30 years old (the numbers were respectively about 14 per 1,000 for the army and about 10 per 1,000 for the general population). The case is now reversed, for in 1893 the death rate of the male population of from 20 to 30 years old in Prussia was 6.38 per 1,000, and the death rate in the German army in the year 1892-93 was 3.0 per 1,000. This remarkable advance is due to modern hygiene, and the statistics show that above all it is the epidemics that have lost ground. Smallpox is now exceedingly rare, and has caused only two deaths since 1873. Dysentery has been reduced from 6.8 per 1,000 in 1873-74 to 0.39 per 1,000 in 1893-94; that is a reduction of 94 per cent. As for typhoid, the prevalence of which is considered to a certain extent the measure of the healthy condition of an army, in 1868 the number of cases was 33.8 per 1,000, and in 1893-94 only 2.4 per 1,000; the death rate from typhoid was 2.2 per 1,000 in 1868, and in 1893-94 it had gone down to 0.21 per 1,000, a reduction of about 90 per cent. Malaria showed 27.6 cases per 1,000 in 1868, and in 1893 even 54.5 per 1,000; in 1893-94 only 0.81 per 1,000. Contagious eye inflammation has gone down from 7.0 per 1,000 to 1.5 per 1,000 in a similar period of time. The campaign of 1870-71 was the first exception to the time-honored rule that more fighters are carried off by disease than by the enemy. Of the German army 26,562 men (33.7 per 1,000 of the total number) fell in battle, and only 14,618 (18.6 per 1,000) by disease. The Germans were not without typhoid and dysentery epidemics, but the most devastating war epidemic, smallpox, scarcely affected them. There were not 300 deaths from smallpox on the German side during the war, while in the French lines there were 23,400 deaths from smallpox. There can be no doubt that the immunity of the Germans was due to the vaccination so strictly enforced in the German armies during thirty previous years of peace. Dr. Werner further stated during the war the French prisoners of war brought smallpox into Germany, and that the epidemic spread and carried off a greater number than the campaign itself. Some disease statistics from the Russo-Turkish war of 1877-78 were also given showing that in this campaign the old rule held good, as the number of deaths caused by disease was far greater than the number of deaths caused by the enemy. —*British Medical Journal*, February 29.

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SATURDAY, APRIL 4, 1896.

THE POWER AND FORCE OF A UNITED
PROFESSION.

Every intelligent and reflecting physician must recognize the power and force of the medical profession of this country when united in an effort to accomplish such legislation as may be deemed conducive to public welfare and to the advancement of scientific medicine. This has been so often demonstrated that it must be accepted as a settled conviction. But conviction of such a fact does not carry with it the accomplishment of a result without united and concerted effort. Therein lies the failure of attempts to secure favorable legislation in many instances. Even worse, the lack of interest and united effort has quite frequently permitted adverse legislation that has trammelled the progress and limited the beneficence of a life-saving science.

There are now pending in Congress two bills, which if enacted into laws will be limited in their operation to the territorial area of the District of Columbia, with a population of two hundred and seventy thousand people, but the significance of such legislation by the congress of the United States, the highest tribunal of legislation in the country, will be far reaching.

The passage of the bill relating to the testimony of physicians in the courts of law will establish the principle of privileged communications to physicians, and add such force to it that every State in the union will probably accept by statute law the justice and wisdom of such protection of its citizens from the compulsory disclosure in open court of such confidential communication to physicians. The enactment of the pending bill by Congress would seem then to be the key-note of success in those States and Territories in

which the liberty of privileged communications to physicians has not been extended to their citizens.

The other bill has for its object the prohibition of vivisection, and will, if passed, close the laboratories of the Surgeon General's Department of the Army; the Marine Hospital Service and the Bureau of Animal Industry of the Department of Agriculture, and all medical college physiologic laboratories in the District. Such will be its immediate effects, but its significance is so wide-spread in disastrous suggestion that the Humane Societies in every State, city and town throughout the land will seize it as the expression of popular judgment, and upon that basis will appeal to the State legislatures for similar statutory prohibition. Will the profession wait until the crisis comes? Will it rest supinely in fancied security until defeat and disaster are impending, or will it assert the prerogatives of scientific medicine, and by united effort enforce them in the interest of, and for the welfare of mankind, in that governors, legislative bodies, town councils and all others in authority may come to know that in preventive and remedial medicine truth and science must dominate fanaticism, whim, caprice, charlatany and mercenary adventure.

IMPROVED SANITARY AND SOCIAL CONDITIONS OF
THE SEMINOLES OF FLORIDA.

JACOB E. BRECHT, M.D., of Fort Myers, Florida, is superintendent of the Indians of that State, and is now engaged in securing by purchase lands for the individual ownership of his charges. An appropriation of \$3,000 per annum given by the Federal Government for the Seminoles is applied to this purpose. Heretofore, these Indians have been homeless, so far as the ownership of land has been concerned. These Indians are a cleanly, healthful and thoroughly peaceful people. They are a truth-loving class, and in fact claim that before the white man came, they did not know how to lie, but since they taught them how, he once in a great while resorts to deception, though liars among them are held in utter contempt. Their women are the purest of the pure. A whole realm can not change them from the path of virtue. Lewdness is an unknown sin. They seldom commit crime, and their only punishment for it is ostracism. They are compelled upon pain of death to leave the village and must stay away a period of years. They usually hang around other villages, and if they once succeed in getting into the "green corn dance" their social position becomes reestablished. Murder and wife-beating are the worst of the crimes. Wife-beating is not tolerated.

The Indians are becoming more prosperous every year. Some of them have a few thousand dollars saved up, and a few have houses of two stories. These houses are picturesque. Their roofs are of palmetto thatch. The house is of boards, usually supplied by

the Government saw mill. This mill is run in connection with an industrial school. The school is not largely attended, because of the prejudice among them against the Government. They are not increasing in population very rapidly, which fact is referable to physiologic and social causes. There has, however, been an appreciable increase. In 1859 there were but 112; now they are something over 500. The chief social reason for their slow propagation is the custom of countenancing no marriage of persons who have a drop of the same blood in their veins. This is sometimes hard on the girls. One leader has two beautiful daughters who can not get married because the eligible young men are almost all akin to them. Very often the custom causes strange alliances, and there has been a number of instances where young bucks of twenty have squaws of sixty. The reason for a lack of increase is the dearth of knowledge on the part of men and women of physiology and hygiene. The mothers, although intensely fond of their offspring, will allow them to stuff themselves with food and indigestible substances in the shape of sand, charcoal and clay. Many deaths occur during the first three years. "If a child lives to be five, you can't kill him with a lightwood knot." If the parents knew more of diet the race would rapidly increase, for a stronger, sounder people are not to be found on the earth.

Of the adjustment of their marital relations, DR. BRECHT says. "The wife is proud of the husband, and the husband considerate of the wife. He hoes in the field and hunts and fishes, while she attends to the household duties and tans the hides and cures the bird skins and plumes. The braves are splendid hunters. They know the habits of every fowl and animal, and can mimic their notes with absolute accuracy. They are not long shots, preferring to make sure of their game by creeping upon it. They can advance to within a few feet of deer. There are now three settlements of Indians: One at Miami, under Tommy Tiger Tail; another at Cow Creek, under Tallahassee, or Old Tony; and the third in the Big Cypress, under Dr. Tommy. Dr. Tommy is leader-in-chief of the tribe, and the others are sub-leaders. None of the three is a chief. In recent years, or since they have taken to peaceful vocations, there have been no chiefs.

They have a religion. They say that the white man's God is the same as their God. The Father they call "Fanshockohomachey," and the Son "Chockatomassee." They believe that there is a future state, but call death "the big sleep." They think that Christ's coming took place in Georgia, and that a great assemblage came to a mountain to hear Him. The mountain split in twain, and one people slid northward and the other southward. They do not pray, but, as they express it, think with God.

THE CASE OF MEDICAL INSPECTOR KERSHNER OF THE NAVY.

On March 19 this *cause célèbre* of the navy was brought to a close, so far as Executive action is concerned, by the promulgation of the fact that the President had approved the sentence of the court-martial in this officer's case.

As ten months have elapsed since the adjournment of the court (May, 1895), a brief reference to the circumstances may be necessary to acquaint the profession with the main facts of a trial that will take its place in the annals of naval jurisprudence as one of its most memorable occurrences. It is stated by the Washington correspondents of the public journals that the long delay in approving the sentence of the court was due to the desire of the President to thoroughly acquaint himself with the evidence and his reluctance to carry into effect so severe a penalty. The long service of Medical Inspector KERSHNER, who entered the navy in 1861 from the State of Maryland, his high professional standing, his distinguished war record and his nearly twenty years of duty afloat, made the charges almost incredible, and his friends and professional associates are still loath to believe that his offense was other than a technical violation of regulations and a subsequent unintentional error of judgment. DR. KERSHNER has always been a stanch outspoken upholder of the rights and dignities of the medical corps and his friends believe that his insistence on his prerogatives as the senior medical officer of the vessel to which he was attached, incurred for him the hostility of the line officers as far back as January, 1894, when he urged that the hospital on board the *New York* should be shifted from the objectionable site in the extreme bow of the vessel to a commodious, well ventilated location on the gun-deck as on board foreign men-of-war of the same type. Subsequent disagreements as to the proper care and transportation of patients, control of subordinates in the medical department, potability of water supplies, etc., are alleged to have intensified an antagonism, which culminated in DR. KERSHNER's objection to sending an assistant-surgeon on board a British merchant vessel anchored near the flag-ship on the ground of the possible hazard from unnecessary exposure of the crew of the latter during the prevalence of yellow fever and the further fact that medical assistance from shore was readily obtainable. With many other American naval medical officers, DR. KERSHNER had had frequent experiences of the demands by British merchant captains for such service from the medical officers of neighboring American men-of-war, which whenever possible have been rendered gratuitously, although there is good reason to believe they appeared as substantial charges against the owners. Notwithstanding the fleet-surgeon's objection, a medical officer was ordered to make

the visit with the discovery that the case was trivial. The admiral thereupon reported the matter to the Navy Department with a very harsh arraignment of DR. KERSHNER as incompetent and the expression of his desire that another medical officer might be detailed in his stead. For these intemperate expressions he is said to have been sharply rebuked by the Department, and this would probably have been the end of the matter, had not a detailed statement of the affair appeared in a New York daily paper, upon which the Admiral instituted a court of inquiry to discover who had divulged the information on which the publication was based in violation of a regulation of the department forbidding such disclosures by officers of the navy. It was charged that DR. KERSHNER had at first emphatically denied having made such a disclosure to any one, but subsequently corrected his statement to the effect that he had not sent verbatim copies of the papers in the case to any one, but admitted that he had sent abstracts to the Surgeon-General of the Navy as head of his corps and to his old friend, Medical Director DELAVAN BLOODGOOD on the retired list; whereupon he was brought before a general court-martial for having, first, violated a regulation of the navy forbidding such unauthorized communications by officers, and, second, for having committed perjury in having sworn, in the first instance, to tell the truth, "the whole truth and nothing but the truth," which his subsequent correction, it was alleged, was evidence he had not done. It is significant, in this connection, to note that ADMIRAL MEADE himself was credited, not long after, with having committed a similar breach of regulations in a published interview with a newspaper attaché, which he declined to affirm or deny. Had DR. KERSHNER been equally prudent and reticent, he would probably have escaped with a reprimand for the violation of regulation with which he was charged. That DR. KERSHNER willfully committed perjury, his associates during his thirty-five years' service in the navy, both of the line and staff, are not disposed to admit. He is a prominent member of the New York Commandery of the Military Order of the Loyal Legion of the United States, and one of the oldest members of the Union League Club of New York, where undiminished confidence in his integrity is entertained, a feeling shared by his fellow professors in the Post-graduate School of New York. In view of DR. KERSHNER's long and faithful service, it is a matter of regret that the President was not able to see his way clear, as he would doubtless have been very glad to do, to a mitigation of the severe penalty for the violation of a regulation, committed under the sting of the contumelious comments of ADMIRAL MEADE, and the misapprehension which led to the apparent evasion before the court of inquiry.

This incident shows the necessity for such an absolute definition of the military status and office of the

navy medical officer, as governs the army medical officer, that an earnest, enthusiastic and sensitive officer, as DR. KERSHNER is represented to be by his friends and associates, keenly zealous for the care of the sick and well for whom he is responsible, shall not be led, in the conscientious performance of his duties as physician and sanitary officer, to incur the undisguised hostility of the officers of another corps.

POPULAR LUNACY.

In one of EDGAR A. POE's stories there is given an account of a visit to a lunatic asylum, where the patients had turned the tables on their keepers and were running the establishment according to their own mentally vagarious notions. One of them, an exceedingly conscientious young female, had gotten the idea that the wearing of clothing was highly immodest and immoral and proposed therefore to return to her birthday costume or that originally the fashion in Eden. It was, however, considered even by her fellow lunatics an evidence of insanity and she was restrained from imitating too closely her mother Eve, in her state of primal innocence.

A case that has recently created quite a stir in Great Britain suggests POE's story in one or two of its details. A young woman, highly educated and of good social position, and of good prior reputation, suddenly asserted her conviction that marriage is immoral and her intention to at once go and live in concubinage with a workingman. She was declared insane by an eminent authority, but from here on, the case differs from the story: the public was not as discerning or as decent as the lunatics; the socialists, MR. JOHN BURNS at their head, took up her defense, and the Commissioners in Lunacy, presumably at their instance, examined her and discharged her from custody, it is said, as not presenting any definite type of insanity. The examination was brief, only one hour is said to have been consumed, and the suspicion that it was imperfect and the resulting action stimulated by the clamor of the lady's socialist supporters is rather justified than otherwise.

Whatever may have been the actual condition of the woman the moral of the decision is this: Insanity must be of a definite type, no new forms are to be discovered, our knowledge of it is exhaustive. This is an opinion that, however satisfactory it may be to the legal mind, can have no medical standing whatever, its mere statement is a *reductio ad absurdum* in itself. Again it is a claim that two officials can in an hour obtain a better insight into a case than an expert and a family physician with full knowledge and continuous observation. The only alternative to these suppositions is the assumption that the commissioners acted under the influence of a popular prejudice and were guilty of releasing a probable lunatic to disgrace herself and her family without complete and full

investigation or examination. The case at best leads to rather unsatisfactory conclusions as to the absolute perfection of the English lunacy methods.

There is still another point which it strongly emphasizes, namely, that no matter how absurd or outrageous an individual may act, the popular prejudice against the restriction of his or her liberty on the ground of insanity can be made effective on almost any pretext. The public *en masse* is not a rational being under such circumstances and mob law and its equivalents are as ready to release inconvenient lunatics at some times as they are to hang them at others. There is no other subject in regard to which public opinion and the lay press takes more opposed and irrational views, than that of insanity, and there is hardly another subject on which the judge-made law is more inconsistent. Whether there will ever be any perfect popular enlightenment on this subject is perhaps a question, it is too much to expect even if individuals are well informed, that acting collectively they will ever be altogether rational in their behavior, and insanity is certainly one of the subjects upon which the *vox populi* becomes too often the *vox diaboli* more than anything else.

It is especially unfortunate when individuals or bodies acting in a judicial capacity are influenced by such misguided public clamor or find it necessary or expedient to give way to it, as it can only cause infinite distress to innocent persons and tends to no public good.

NEW YORK OFFICERS AT VARIANCE OVER THE CLOTHING OF INSANE PATIENTS.

A disagreement has arisen between the New York State Commission in Lunacy and the Charity Commissioners of New York City regarding the clothing of the insane to be taken charge of by the former board in the Manhattan State Hospital. The latter board is litigating the question of providing new suits of clothes for the lunatics transferred by it to that hospital. Dr. C. F. Macdonald, of the State Commission, defends the exaction of new clothing as follows:

1. To reduce, as far as practicable, the danger of introducing contagious or infectious diseases into the institutions which were then sheltering about 13,000 patients, coming from all the walks of life and in widely different conditions of physical and mental debility, beside some 2,000 employes and over 100 officers, while the yearly admissions of new cases exceeded 2,000.

2. To put a stop to a then prevalent practice among county authorities of sending to State hospitals patients clad in filthy, ragged and worn out clothing, which had to be discarded and often destroyed altogether, before the patient could be safely received in the wards.

It is notorious that the germs of such diseases have been introduced in this way into hospitals, and have there caused serious and in some cases fatal results. This danger is especially present and potential in the case of vagrants or tramps, or the outcasts of cities, who become insane. In order to guard against epidemics and protect the health and lives of these thousands

of peculiarly susceptible persons, it was felt to be indispensable that the clothing should be new and not merely clean, but it was not insisted that it should be of a high grade. From a wide range of inquiries it was found that the average cost of sufficient clothing suited to the different seasons of the year need not exceed \$10 per capita. Had the rule prescribed clothing, not new but simply "comfortable," it would have opened the way for continual bickering over the question of what in any case could be accepted as "comfortable."

If the decision of the Supreme Court, which will be appealed, be sustained, its effects will be most lamentable, since it will largely impair, if not render useless, an important safeguard erected in defense of health and safety for the insane inmates of State hospitals, now exceeding 19,000, beside several thousands of officers, attendants, nurses and other employes. An appeal will be taken, and a stay of judgment be sought, since the effect of the order is not confined to the one locality of New York city, but extends over the entire State. Meanwhile the Commission's order will be maintained until the question is finally settled by the court of appeals.

Aside from the harmful effect of the action of the charities commissioners in its bearing upon the patients of the Manhattan State Hospital, and upon those in other State hospitals, it is not conducive to the financial interest of the city of New York, since the yearly cost of new clothing if provided by the city for each of its insane when sent to the hospital, would not at a liberal estimate exceed \$20,000, while if the State has to provide clothing in advance and pay for it out of the State treasury, the city's share of such cost, being based on its assessed valuation, would reach close upon \$25,000.

THE JOURNAL SPECIAL TRAIN

Will leave the Central Station at Twelfth street and Park Row, Chicago, via the Big Four Route, at 12 o'clock Sunday, May 3, arriving Indianapolis 6:10 P.M., there to be joined by parties from Peoria, St. Louis and the west; arriving Cincinnati 9:05 P.M., Chattanooga 9:30 A.M. May 4, and Atlanta 3:10 P.M. the same day. Sleeping car accommodations will be provided at the following rates: Lower berths, Chicago to Atlanta, \$4.50; full section, \$9. Detailed information may be obtained from this office.

CORRESPONDENCE.

American Ophthalmologists Not Ashamed of Their Work.

DENVER, COLO., March 25, 1896.

To the Editor: The JOURNAL for the 21st inst., under the heading, "Ashamed of What They Should be Proudest of," contains an indictment of American ophthalmologists that must not pass unnoticed. The allegation that the American ophthalmologist obsequiously suppresses his own best work, on refraction and muscle balance, to court the favor of the "foreign distributor of distinction," is not sustained by the facts.

To require in medical literature that the number of papers upon each subject should be proportioned to the number of cases of the kind met with in everyday practice, would be to make it a dreary waste of profitless repetition and unsuggestive detail about minor ailments. But even by this standard the Transactions of the American Ophthalmological Society for 1895, which furnished the occasion for the attack, have been misrepresented. The Transactions contain the following papers relating to refraction and the ocular muscles: Report on Six Hundred

and Twelve Cases of Convergent Squint, with Final Results of Operation; Amblyopia ex Anopsia; Recurrent Oculo-motor Palsy; Variations in the Power and in the Astigmatism of Thin Lenses in Oblique Central Refraction; Four Thousand Cases of Ocular Headache and the Different States of Refraction Connected Therewith; The Use of Strychnin in Insufficiency of the Interni; and a Note Concerning the Lens in the Eyes of Rodents. And these papers with the discussions upon them occupy 84 of the 214 pages of the transactions in question.

In the recent volume of the Transactions of the Section on Ophthalmology of the AMERICAN MEDICAL ASSOCIATION papers and discussions on similar subjects occupy 150 out of 350 pages, almost exactly the same proportion. But perhaps this charge of a lack on the part of American ophthalmologists of a proper respect for this part of their work, or of fear to avow it before European critics, is most completely met by the Transactions of the last International Ophthalmological Congress, held in Edinburgh. Of the ten papers of American authorship therein contained five are concerned with anomalies of refraction and muscle balance, and in the discussions on such subjects the small number of Americans present furnished two-thirds of the speakers.

The attack in question is equally uncalled for and unjustified whether it be regarded as against American ophthalmologists, or as against the American Ophthalmological Society, the only important rival of the Section on Ophthalmology of the AMERICAN MEDICAL ASSOCIATION. One who has read the papers mentioned, and who can understand them, will recognize such expressions as "travesty of medical progress," or "caricature of conservatism," as inapplicable and absurd.

Of course it is impossible for one editor to prepare all the editorial columns of our great medical weekly, and I feel sure that you will not knowingly allow the use of those columns for the expression of private spleen or personal disappointment.

Cordially yours,

EDWARD JACKSON.

Reply to the Article on Treatment of Aural Catarrh in the London Central Throat, Nose and Ear Hospital.

To the Editor:—In No. 9, p. 411, of this JOURNAL there is an article on "The Treatment of Aural Catarrh in the London Central Throat, Nose and Ear Hospital," that is liable to do harm, since it fortifies the position of the routinist, by allowing him to creep behind the walls of a large hospital. This article being typical of the standpoint of a great many physicians it would be treachery to let it pass without criticism.

Its author says: "I shall now proceed to make clear the method used for the cure of those varieties of ear disease, usually termed catarrh, and divided into acute non-suppurative, acute suppurative, chronic non-suppurative and chronic suppurative." Here the doctor undoubtedly speaks of the greatest number of those diseases that have their seat behind the drum, that is, in the middle and inner ear, and calls them "catarrh." What does that word catarrh mean? Where is the line clinically? Would it not be better to talk first about an accurate diagnosis? The writer speaks about the methods of "curing" them. When there is necrosis of the ossicles, or of the walls of the tympanic cavity, which I know from other men of this school are classed under the head of chronic suppurative catarrh, or when there are adhesions of the ossicles to those walls, which very often exist in those cases that they call chronic non-suppurative catarrh, did ever anybody see cures from the methods indicated? Cure means restoring, at least partly, normal and anatomical conditions and functions. It is not the purpose of these lines to show another way to reach that aim. For this there are text-books and papers, but I wish only to state that the way the article indicates will mislead.

The article correctly classes together acute suppurative and non-suppurative forms, but not because the one is a more severe form of the other. The reason for classing them together is that they are alike, the only difference being a perforation of the drum in one case, where this membrane is not so thick and offers less resistance. Pus is present in all ears afflicted with acute otitis media, as Bezold, Gradenigo and Knapp proved long ago.

The statement about adenoids is a matter of course, but I am thankful to the writer for giving this disease the place that is due to it. The subject of adenoids is not a fad of the specialists that will disappear again; but its high influence on the general condition, as well as on the special condition, of the surrounding organs, especially the ear, can not be overestimated. Because their removal is a nice and easy operation is not a reason why we should neglect it.

The paragraphs on chronic suppurative and non-suppurative catarrh have again the marks of routine treatment. I do not understand why, if such routine is adequate, those practical Englishmen should take doctors for such cures instead of nurses or intelligent waiters.

I think that the London Throat, Nose and Ear Hospital does not any longer occupy that standpoint. The days of the routinist in medicine are past: let them be past in otology, too. Let us start the reformation, however, in our own neighborhood. Let us instead study the conditions of each single case, then give it proper attention, and thus deserve the name of doctors and not treatment manufacturers.

DR. J. HOLINGER,

Lecturer Post-Graduate Medical School; late Assistant Illinois Eye and Ear Infirmary.

Death from Antitoxin.

WHEELERSBURG, OHIO, March 27, 1896.

To the Editor: A most unfortunate and distressing accident occurred in the practice of Dr. S. S. Halderman, of Portsmouth, Ohio, on March 22, in connection with the use of antitoxin. A mild form of diphtheria was prevailing in the family of Mr. George Krickler, cashier of the Central Savings Bank, and the doctor administered the usual dose of antitoxin, as a prophylactic, to a little boy, 5 years old, in whom the disease had not yet appeared. The child, which had seemed to be in perfect health up to this time, was asleep when the injection was given, and in five minutes was a corpse. The doctor had withdrawn to another room to refill his syringe for use on another child, when the mother noticed the boy's lips puffing up and called to him that something was wrong with Willie. By the time the doctor reached the child, breathing had ceased. The killing fluid which thus acted with far more rapidity than a fatal dose of morphia, arsenic or strychnia given per mouth would have done, seems to have caused death by paralyzing the heart. At least that is the cause assigned in the death certificate. The serum was Behring's, fresh, injected beneath the scapula and in the usual way. The doctor, one of the first to introduce antitoxin into medical practice in Portsmouth, was an enthusiastic advocate of serum therapy, and presumably used all the precautions which skill and experience can suggest. This terrible accident, therefore, can have but one meaning. It furnishes absolute proof of the inherent danger of antitoxin as a therapeutic agent.

Cautious scientific observers have insisted from the outset that a substance capable of acting on the economy with the alleged effects of antitoxin must necessarily be a powerful agent. Hence many conservative physicians have hesitated to employ the new remedy. The older men remember aside from the new fads which have been constantly coming up—how it was with chloroform forty years ago. The highest medical authorities then insisted that it was perfectly safe when

administered with proper precautions. It was reported to have been used in 25,000 cases in the Crimean war and in 9,000 cases in St. Bartholomew's Hospital, without a single accident. Standard medical works sanctioned these reports. And no one will ever know how many deaths resulted from the recklessness engendered in the medical profession by this false attitude of the enthusiastic believers in chloroform.

So with antitoxin. Whatever may be the final verdict of the profession as to its merits as a remedy in diphtheria, the fact should not be lost sight of that it is a most powerful agent, that the contraindications to its use are not yet well ascertained, and that it can be an active instrument of great evil as well as possible good. It is not often that the evidence of the ill effects of an alleged remedy is as clear as it is in this case. Given as a prophylactic to a healthy child, disease can not be credited with any share of the result. No one can doubt that antitoxin kills, and that, too, right speedily.

JAMES L. TAYLOR, M.D.

The A. M. A. Badge.

WILMORE, PA., March 25, 1896.

To the Editor: In a late number of the JOURNAL my attention was called to an article written by Dr. Stewart, of Detroit, Mich., as regards a permanent badge for the AMERICAN MEDICAL ASSOCIATION. The article comes in a good time and I have often wondered that as yet nothing has been done through the JOURNAL, or at the yearly meetings of the Society, in the matter of choosing a badge for the Society, and am glad to see that Dr. Stewart has at last placed the matter so clearly before us as a Society. We surely know that the AMERICAN MEDICAL ASSOCIATION has been founded nearly a half century and can venture on a badge when every order or society, great or small, from the Masons down, are well known and readily distinguished by a badge. And it appears to me there would be no better time to decide on this matter than at the meeting at Atlanta, placing the matter in the hands of a committee with instructions that the badge shall be ready to issue at the fiftieth meeting of the ASSOCIATION, which will occur in 1897; and by the way, has there been any movement as yet to decide whether or not the Society shall hold its fiftieth meeting at Philadelphia, the place of its birth? It would be appropriate to do so in many ways, and would be the means of bringing a large number of members to the city and no doubt at the same time adding a large number of new members. Let us hear from other members on this matter of badges.

IRVING C. BLAISDELL, M.D.

Medical and Surgical History of the War.

To the Editor: Has there been a law passed for printing a new revision on the Medical and Surgical History of the War of the Rebellion which are to be distributed among the profession through the Congressmen in their districts? The Indiana State Board of Health moved for this bill for a new edition at their last meeting.

H. G. GRAHAM.

ANSWER: The work has not been republished.

BOOK NOTICES.

Treatise on the Diseases of Infancy and Childhood. By J. LEWIS SMITH, M.D., Clinical Professor of Diseases of Children in the Bellevue Hospital Medical College, New York. New (8th) edition, thoroughly revised and rewritten and much enlarged. Handsome octavo of 983 pages, with 273 illustrations and 4 full page plates. Cloth, \$4.50; leather, \$5.50. Lea Brothers & Co., New York and Philadelphia. 1896.

For more than a quarter of a century Smith's diseases of children has been a standard book of reference, and a textbook. In advanced age, and with ripened judgment, the distinguished author has revised the book, and this eighth edition

the reader will find quite up to date. Dr. Smith has always been a safe counselor and a conservative one. This characteristic is as apparent now as in the early editions. In regard to the Roux antitoxin treatment of diphtheria, after mentioning the established remedies, he says: "The remedies which we have mentioned are in my opinion the most efficacious and safest of those which pharmacy has heretofore furnished, but a new remedy, known as 'antitoxin,' has been so highly extolled by many eminent physicians as a remedy for diphtheria, that this new remedy demands attention if not employment, wherever this fatal malady occurs." The author then quotes at length from Roux's paper at the Buda-Pesth Congress, and gives his statistics. He quotes, p. 378, the favoring statistics of Saw, Turner, Widehofer and Caille, and *per contra* says: "We can not write so favorably of the use of antitoxin serum in the New York Foundling Asylum. Since a reliable preparation was obtained from the Health Board, 31 cases were inoculated with the serum. The number of units employed varied from 500 to 2,200. The antitoxin was inserted under the skin on the first day in 12 cases, on the second or third day in 17 cases, and on the fourth or fifth day in 2 cases. Nineteen received the antitoxin once, 9 received it twice and 3 three times. Microscopic examinations revealed the Klebs-Löffler bacillus in all the cases, and the streptococcus in nearly all the cases, so that in all or nearly all the infection was a mixed one. The physicians who observed these cases and witnessed the necropsies and microscopic investigations could not resist the conviction that the broncho-pneumonia of which so many died was due to the streptococcus which was abundant in the lobules, and upon which microbe the antitoxin has little or no effect. Results: Recovered 14, died 17 (14 from broncho-pneumonia and croup). In four or five of the cases the benefit was very marked after the use of the antitoxin. It is seen that statistics thus far are favorable for the antitoxin treatment, but it must be recollected that the type of the microbe disease frequently changes, so that the experience of several years is often necessary to determine the full value of a remedy."

In regard to the treatment of typhoid fever the author holds that it can not be abridged or its course materially changed, and naturally the antiseptic treatment receives little notice. It is curious to see the term "scrofula" still retained in a chapter entirely separated from tuberculosis, but we suppose some vestiges of the past must be retained.

The surgical diseases of children are treated of by Prof. Stephen Smith with the well-known ability of that author, and brought up to date.

A Text-Book upon the Pathogenic Bacteria, for Students of Medicine and Physicians. By JOSEPH MCFARLAND, M.D., Demonstrator of Pathological Histology, Lecturer on Bacteriology in the Medical Department of the University of Pennsylvania, etc. With 113 illustrations. Cloth, 8vo, pp. 359. Price \$2.50. Philadelphia: W. B. Saunders & Co. Chicago: W. T. Keener, Agent. 1896.

This book, which is well illustrated and carefully printed, is an excellent one; indeed, we can not too strongly commend it. The description of the methods of study of the pathogenic bacteria are set forth with such clearness that even the beginner may feel less reluctance to commence the study of a branch of medical science which has hitherto been considered as a bugbear on account of the difficult technique. There is a vast amount of information, and yet the work is not bulky and there is no mere padding. We might criticise some of the inaccuracies in the historical introductory, but they are not material, as the work is in itself so useful and generally worthy of commendation. In the first place Redi's books, "Generatorem Insectorum," "De Ave Diomedea," "Experimenta circa varias Res Naturales," were published in one 18mo volume, Amsterdam, in 1686. The "experimenta naturalia" were made in 1662. In the frontispiece to the "De Insectis," a female

figure is seen seated at a table with her left hand resting on an open book, a scroll open before her, while with the right hand she is *adjusting the ocular of a microscope*, which is mounted on a tripod. In the frontispiece to the "Experimenta Naturalia," there is also a female figure, with a microscope, and an African presenting her with an egg, presumably that of a serpent. The name is "Franciscus" not "Francesco." We must take exception to the statement quoted from Agnew, that John Colbach, 1704, was the first to whom the "seminal thought of antiseptic surgery" may be traced. Theodorico of Bologna, about 1260 (d. 1298), distinctly taught that suppuration in wounds was a *pathologic* condition, due to prolonged exposure to the air, and he treated wounds with hot wine fomentations (dilute alcohol), in which he was followed by Henri de Mondeville, who, according to Nicaise, was a pronounced adherent of Theodorico's doctrine, and so taught in 1306. De Mondeville placed the lips of the wound in contact, after suppressing hemorrhage, and applied an antiseptic plaster, in which turpentine, resin and wax were the chief ingredients (for the avowed purpose of keeping out the air), over that he applied the hot wine-soaked dressings after the manner of Theodorico.

But we would not have our reader infer that Dr. McFarland's book is at all singular in its statements about the origin of the crusade against suppuration in wounds, and we have only adverted to it, in order to assist in setting right some prevailing errors in medical history.

Infantile Mortality during Child-Birth and Its Prevention. By A. BROTHERS, B.S., M.D. Visiting Gynecologist to Beth Israel Hospital, New York, etc. William Furness Jenks Prize Essay of the College of Physicians of Philadelphia. Cloth, 8vo, pp. 176, price \$1.50. Philadelphia: P. Blackiston, Son & Co. Chicago: The W. T. Keener Co., Agents. 1896.

No one can read this monograph without coming to the conviction that the prize was worthily bestowed. The work, while mainly a compilation, shows such judicious and thorough gleaning in the field of medical literature, that nearly everything of value on the subject will be found. There are thirty-eight chapters in which the various causes of infantile mortality are fully discussed. The arrangement is logical, and it will be a very welcome addition to the library of the general practitioner, the obstetrician and the student.

ASSOCIATION NEWS.

Excursion Rates to Atlanta.—All railroads except those west of the Mississippi River have now granted the excursion rate of one fare and one-third. All who wish to avail themselves of the reduced rates must pay full fare to Atlanta. When starting, take the certificate of the agent at the place. This certificate, when signed at Atlanta, enables the owner to buy a return ticket at one-third fare.

PUBLIC HEALTH.

Treatment for Venereal Diseases Provided.—A law was passed in Massachusetts in 1895 requiring that every city in that State shall provide for the treatment, either in a hospital or as outpatients, of indigent persons suffering from contagious or infectious venereal diseases.

Trichophytosis.—The report of the Bordeaux *Clinic* for dermatology, mentions several cases of genito-crural trichophytosis infected from cats, and refers to an epidemic of this disease in a large institution there, where several hundred students were affected at once, the infection probably being communicated by the riding suits worn in turn by the lads.

Must not Feed Garbage.—Whoever knowingly feeds or has in his possession with intent to feed to any food animal, except

swine, any garbage, refuse or offal collected by any city of more than thirty thousand inhabitants, by contract or otherwise, it was enacted in Massachusetts in 1895, shall be punished by imprisonment in the jail or house of correction not exceeding thirty days, or by fine not exceeding fifty dollars.

Maine's Candy Law.—A law was passed in Maine in 1895 forbidding the manufacture for sale, or knowingly selling or offering to sell, any candy adulterated by the admixture of terra alba, barytes, talc, or any other mineral or metallic substance, or by poisonous colors or flavors, or containing brandy, whisky, rum, wine or any alcoholic liquor in liquid form or other ingredients deleterious or detrimental to health. Nor shall any person by himself, his servant, or agent of any other person or corporation offer for sale any candy under the name of brandy, whisky, rum or wine drops.

Tuberculosis in France and England.—It is something of a surprise to read in the *Progrès Médical* of February 19, that the deaths from this disease are three times as many in Paris as in Great Britain. It quotes Tratham's statistics that in 1870, the mortality from this cause in England and Wales was 2,410 for each million inhabitants, but since consumptives have been treated in special hospitals, this number has fallen to 1,468 in 1893. In Paris there were 4,158 deaths from tuberculosis during 1894, or almost three times as many as across the Channel.

Typhoid Fever in Duluth. It is reported that the fever prevalence at Duluth has reached the amount of about 1,000 cases with thirty deaths, caused, it is believed, by the infection of the water. An inquiry disclosed the fact that the intake of the water company in the adjoining great lake was only 359 feet from the shore, was in a filthy condition, and was situated about 800 feet from the mouth of a large sewer. It appears that the superintendent himself has for a year or two procured water for his family from a spring several miles from Duluth. The city now compels the company to supply spring water to consumers without additional cost. The supply is said to be abundant and the quality of the water pure and excellent.

Commitment of New Hampshire Insane.—A supplemental act was passed in New Hampshire in 1895 which provides that when application is made to the judge of probate, or the supreme court or any justice thereof, for the committal of any person to the asylum for the insane, said court or judge may appoint two reputable physicians to examine such person, with or without notice to him or her from said court or judge. The physicians shall immediately report the result to said court or judge, who may, upon such report and such evidence as can be produced, order such person to be committed to the asylum when there is sufficient reason for making such order. And the supreme court or any justice thereof shall at any time, with or without notice, upon application and due cause shown, investigate the question whether there is sufficient reason for the detention in said asylum of any person who has been committed thereto, and shall order his or her discharge when such order ought to be made, without the formality of a writ.

To Secure Better Public Instruction. Two amendatory acts were passed by the New Hampshire legislature in 1895, one requiring the superintendent of public instruction to investigate the condition and efficiency of the system of popular education in the State, especially in relation to the amount and character of the instruction given to the study of physiology and hygiene, having special reference to the effects of alcoholic stimulants upon the human system and requiring him to recommend to school boards what he considers the best text-books upon those subjects and to suggest to them the best mode of teaching them; and the other requiring school boards to see that these studies are thoroughly taught in all mixed and in all graded schools above primary, and that well approved text-books upon these subjects are furnished to teachers and scholars.

To Prevent Blindness in Michigan.—Should one or both eyes of an infant become inflamed or swollen, or reddened, or should any pus or secretion form in the eyes or upon the edge of the lids, at any time within two weeks after birth, it shall be the duty, under penalty, according to a law passed in Michigan in 1895, of any midwife, nurse or other person having charge of such infant, to report it in writing, within six hours after discovery thereof, to the local health officer or some legally qualified practitioner of medicine in that city, town or district.

Sanitation in the Sixteenth Century.—We read in the *Annales de la Soc. Méd.-Chir. de Liège*, February, 1896, that the city of Lyons, France, possessed a Bureau of Health three hundred years ago, which was a model in many respects to the most advanced products of our own century. Its regulations provided for the declaration of contagious diseases, disinfection of residence, clothing, and bedding, and it is curious to note that the disinfecting materials employed comprised some of our best modern antiseptics, sublimate, arsenic, camphor and various essences. Our health officers will envy those of that day when they know that they were so supported by the authorities that they could enforce their regulations with penalties amounting to torture and even death in times of epidemics. "And glory to our sovereign liege, King Henry of Navarre" for his royal endorsement of such measures!

Infection of Feces in Tuberculous Cattle.—The *Bulletin Médical*, March 8, reports a series of experiments undertaken to determine whether the Koch bacilli are eliminated in the excreta of cattle and thus become a source of infection. A one-year old bull was fed, June 3, 4, 5 and 6, a meal of a certain quantity of bread and a quarter of a tuberculous lung abounding in microbes. His fecal matters were collected from June 6 to 10 and 200 grams diluted in 100 c.c. of water. Two c.c. of the liquid thus obtained, filtered, was injected into the veins of the ear of two rabbits, during the following twelve hours. Fifteen rabbits were thus inoculated. Two died of septicemia, one of intoxication, and the rest became tuberculous, with the usual bacilli and symptoms. Besides these experiments a microscopic examination was made each day, disclosing invariably the Koch bacilli. The experiments proved beyond question that the feces of cattle are just as infectious as the sputa of persons.

Diseases to be Reported in Maine.—Cases of cerebro-spinal meningitis, of measles, of so-called membranous croup, of whooping cough, and of pulmonary tuberculosis, or consumption as it is commonly termed, it was enacted in Maine in 1895, shall be reported promptly to the local board of health of the town in which cases of this disease occur; and it shall be the duty of any household who knows or has reason to believe that any person in his family or household has any of these diseases, and it shall be the duty of any physician who knows or has reason to believe that any person whom he attends or is called to visit, is affected with any of these diseases, to report the same to the local board of health. It shall be the duty of each local board of health to notify the State board of health of cases within its jurisdiction, of typhoid fever and of the diseases above named, and such notification shall be in accordance with the requirements of the blanks furnished by the State board.

Mortality in London in 1895. The deaths of persons belonging to London registered during the year 1895, were 85,138, equal to an annual rate of 19.4 per 1,000 of the population, against 20.3, 20.9 and 17.4 in the three preceding years. The rate in 1895 was 0.4 per 1,000 below the mean rate in the ten preceding years 1885-1894, although it exceeded by 2.0 per 1,000 the very low rate recorded in 1891. During the year under notice 11,166 deaths resulted from the principal zymotic diseases in London; of these, 3,574 were referred to diarrhoea, 2,628 to measles, 2,289 to diphtheria, 1,180 to whooping cough, 829 to scarlet fever, 611 to different forms of "fever" (including 5

to typhus, 596 to enteric fever, and 10 to simple and ill-defined forms of fever), and 55 to smallpox. These 11,466 deaths were equal to an annual rate of 2.6 per 1,000, against 2.8, 3.0, and 2.6 in the three preceding years. Infant mortality in London during 1895, measured by the proportion of deaths under 1 year of age to registered births, was equal to 165 per 1,000, and exceeded by 16 per 1,000 the average in the 10 preceding years.

Wisconsin State Board of Health. July, 1894, the State Board of Health of Wisconsin, adopted rules providing that no child should attend any public, private or parochial school without first presenting to the principal or teacher of the school, a certificate of a reputable physician that he had been successfully vaccinated. It adopted these rules under the provisions of law, which had been interpreted by the best legal advice that could be obtained in the State, to the effect that it was the duty of the State Board of Health to adopt such rules as in its judgment seemed necessary for the protection of the public health. In the winter of 1893, certain Christian scientists in the city of Beloit, objected to the enforcement of these rules, and obtained from Judge Bennett, a judge of the circuit court in that district, a mandamus which allowed their children to attend school, without being vaccinated, until such time as a hearing should be had before him. It is stated that this was brought about by the School Board at Beloit in attempting to enforce the rules of the State Board of Health. On June 7, 1895, the case was tried in Janesville before Judge Bennett, at which hearing the President, Dr. Marks and Dr. Wingate and another member, were present and gave evidence. The matter has been delayed ever since until a few weeks ago, when it was argued, excuses having been made by the court from time to time, of various kinds. It was then argued at great length on both sides, and the Judge took it under advisement, and has just rendered his decision, to the effect that the rules of the State Board of Health, requiring a certificate of vaccination as a condition precedent to attending the public schools, are illegal and void. He thinks that the statutes, R. S. 1407, 1408, 1409, b, c, d, do not attempt to give the State Board of Health power to make such rules, and that if the legislature attempted to do so, such legislation would be invalid as unconstitutional. He also thinks the rules are contrary to the provisions of chapter 187, relative to compulsory education. The case is to be appealed at once to the supreme court for a final decision, and it is expected to be placed on the calendar for August next.

To Ward off Malaria. Professor Maurel's article on the "Prophylaxis of Paludism," reported in this JOURNAL, March 7, p. 493, was followed at the two last meetings of the Académie de Médecine, by an address by Laborde, on the "medical" means to abort malarial troubles. The fact that an animal can be rendered immune to a disease is so thoroughly established now, that it is no longer questioned. Since the day when hereditary epilepsy was warded off by administering bromid of potassium to the morbid generator or to the mother, the proof of medical immunity was established. Laborde stated that a medicine that will cure, will also prevent a disease if taken in time, and corroborated this statement with further facts in regard to the treatment of epilepsy with bromid of potassium, as a typical mineral preventive medicine. He also described the preventive action of colchicin in cases of gout where the disease was actually held at bay for years by small preventive doses taken at the first premonitory symptoms (Dose: three or four milligram pills in twenty-four hours, of the crystallized colchicin), as a typical vegetable preventive medicine. He dwelt at length on the possibilities of this preventive medication which is not yet appreciated as it should be, and exhibited some frogs and the effect of ouarari, mentioning by the way, that he had succeeded in discovering the original plant from which it was derived and locating the essential principle of the drug, hitherto a secret process of certain tribes of the Orinoco

and Amazon valleys. To one frog he administered a fifth of a milligram of his preparation of ourari, and then gave this frog and another a tetanizing dose of strychnin. The ourarized frog showed no signs of tetanus, while the other presented a typical case of it. He insisted upon the fact that the study of bacteriologic processes is now essentially a study of the toxic products of the bacteria, and is thus analogous to the study of the effects of toxic medicines upon the body. All this was preliminary to the real subject of his address, the preventive of quinin in paludism.

He quoted numerous instances of persons exposed to the worst forms of malarial poison, who secured comparative immunity by small preventive doses of quinin. But this comparative immunity is only a proof of the grand results to be attained when it is recognized that the preventive dose must be a large one. His account of the experiences of American, English, French and Dutch ships and troops in ultra-malarial regions, was a most interesting record of what has already been accomplished in this line. He mentions Colin, Laveran, Kelsch and Kiener as the chief authorities on the subject, at present, and says that where we used to speak of the "miasm," we now say the "paludic hematozoa." We must wait another week for the continuation of this address.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, March 14 to 21, 41 cases, 36 deaths.
Ohio: Dayton, March 19 to 26, 4 cases.
Michigan: Bay City, Detroit, Inlay Township, Ionia, Marine City, Saginaw, March 14 to 21, smallpox reported.

SMALLPOX—FOREIGN.

Dublin, March 7 to 14, 2 cases.
Acapulco, March 6 to 13, 3 cases.
Bombay, February 18 to 25, 21 deaths.
Calcutta, February 8 to 15, 2 deaths.
Corunna, February 22 to March 14, 3 deaths.
Madrid, March 3 to 10, 8 deaths.
Montevideo, February 1 to 8, 7 cases.
Naples, March 2 to 9, 5 cases, 2 deaths.
Odessa, March 1 to 7, 5 cases, 3 deaths.
Paris, March 1 to 7, 2 cases.
Prague, March 1 to 7, 6 cases.
St. Petersburg, February 22 to 29, 27 cases, 7 deaths.
Swansea, March 1 to 7, 2 cases.
Tuxpam, March 1 to 7, 2 deaths.
Warsaw, February 22 to 29, 3 deaths.

CHOLERA—FOREIGN.

Bombay, February 18 to 25, 1 death.
Calcutta, February 8 to 15, 63 deaths.
St. Petersburg, February 22 to March 7, 2 deaths.
Fukuoka Ken (Japan) February 26, 1 case.

MISCELLANY.

French Congress of Medicine.—The next National Congress of Medicine in France will open at Nancy August 6. The subjects announced for discussion are: Prognosis of albuminuria; intravascular sanguine coagulations; serum treatment of diseases.

Honor for Professor Roentgen.—The Prince Regent of Bavaria has conferred upon Professor Roentgen, of Würzburg, the Knight's Cross, one of the Bavarian orders. This decoration carries with it the right to the particle "von."—*Berlin corr. British Medical Journal*, March 21, 1896.

Sale of Liquors in Indiana Drug Stores.—By the Indiana law of 1895 it is made unlawful for any spirituous, vinous or malt liquors to be sold or given away in any drug store in any quantity less than a quart at a time, except upon the written prescription of a reputable practicing physician.

Medical Supervision of Prisoners.—A law was passed in Massachusetts in 1895 that the commissioners of prisons shall make rules from time to time for the several jails and houses of cor-

rection, which shall secure such medical examination of and medical authority over prisoners confined in solitary cells for punishment as shall, as far as practicable, prevent injury to the health of such prisoners by such confinement.

Physicians in Germany.—Statistics show that our profession is increasing in Germany at the rate of 5,433 members, or 22 per cent. during the last seven years. They average 4.07 to 100 square kilometers, but some localities are specially blessed, like Tübingen, which has 3.2 per 100 inhabitants. The general average is 4.5 per 10,000 inhabitants.

Medical Register of Great Britain for 1896.—The Medical Register for 1896, which had just appeared, contains 33,601 names. The number of qualified men added during the past year was 1,416, a number slightly below the average for the last five years. There were 538 names removed during the year on account of death. Only one name was struck off the register under the penal powers possessed by the General Medical Council.

Exported American Foods of Good Quality.—A cablegram from London states that before a certain official committee on adulterations, appeared the Secretary of the Board of Agriculture of Great Britain, and that he testified that among the samples of food examined by the government fifty-one came from the United States and thirty-nine from Canada, not one of which was adulterated. Germany, he added, made the worst showing, adulteration having been found in thirty-seven out of one hundred and twenty-four samples examined.

Prescriptions of Liquor in New Hampshire. In New Hampshire a law was passed in 1895 to the effect that no physician shall give a prescription to any person for spirituous or malt liquor, wine or fermented cider, or upon which any such liquors are to be obtained, except upon reasonable evidence that it is actually needed by them as a medicine; and all prescriptions so given shall contain the full name of the party for whose use it is given, and it shall be taken up by the agent who fills it, and kept on file by him in his office and open to inspection by any person at any time. Any physician violating the foregoing provisions shall forfeit or be fined \$50.

Periostitis Accompanying Typhoid Fever.—Whether this is caused by the typhoid bacillus, the staphylococcus aureus or others, is still undecided. A couple of cases reported in a Russian journal, disclosed in one the presence of a single bacillus resembling the Klebs' bacillus, in the course of repeated examinations extending over four years; the lower third of the left arm was affected, the inflammation appearing to come and go at intervals. Another case with a purulent inflammation in the bone of the left arm, presented constantly the same microbe in the pus and urine, which resembled the anthrax bacillus, only it had rounded ends. In both cases a slight traumatism preceded the infection, and the writer concludes that this periostitis can be considered an accidental complication of typhoid.—*Annals of Liège Med.-Surg. Soc.*, February.

Infectious Diseases of Wild Animals. A disease resembling distemper is said to be killing the foxes in Gloucester County, Va. Large numbers of the foxes have been found sick or dead. A dozen foxes or more, when found by the hounds, made no run or fight at all and were killed, apparently being helpless and unable to put up a fight for life. Some years ago in West Virginia there had been deer plenty, but suddenly the deer were stricken with "black throat," or "black tongue," and died, being found all through the woods. Various other animals have been carried away in this manner, and there are steps afoot to kill off the Australian rabbits by the introduction of a bacterial disease. The nature of these epidemic diseases of wild animals should be made the subject of pathologic investigation by some of the medical fraternity on the outposts of civilization and specimens sent to the nearest laboratory.

"Medical Island" Sanitarium.—The New York *World* announces

a new substitute for the gold cure, namely, the establishment of an isolation sanitarium in the Pacific ocean. "Medical Island" is the name which has been given by a syndicate of physicians from New York, Paris, London and Berlin to a tropical island of volcanic origin, eleven days' sail from San Francisco. Here is to be elaborated a model sanitarium for the cure of the drink and opium habits. There will be no hotels or boarding houses, but in their stead there will be three handsome club houses without bars. Patients must consent to remain away from the continent for one year, and pay all expenses for that time in advance. The island is under the jurisdiction of Great Britain, from whom the syndicate will secure its needed concession. The scheme is a feasible one and will be adopted by some one, if not by this alleged and unnamed syndicate.

The Effect on the Taste-Buds of Severing the Glosso-Pharyngeal Nerve.—Baginsky has recently denied the assertions of Vintschgau and Hönigschmied that the cutting of this nerve causes the necrosis of the taste-buds. In order to settle the question Sandmeyer severed this nerve on one or both sides, in seventeen young and full-grown rabbits, on a level with the large cornu of the hyoid bone. The rabbits were killed four to forty-one days after the operation, and degenerative conditions were found in every case, from the slight indications of it in those killed in four days, to the entire disappearance of the taste-buds, after twenty-seven days.—*Centralblatt f. Phys.*, February 22.

The Prizes to be Awarded by the Paris Academy of Medicine.—Thirty-one prizes are offered annually by the Académie de Médecine for the best article on certain subjects. This year they are as follows: Prevention, treatment and cure of tuberculosis, insanity, cancer, etc., morphinism, epilepsy, melancholia, diseases of the ear, dysentery, diphtheria and malaria. Others are offered for the finest contribution to hygiene, medical science, medical history, therapeutics, medical statistics, surgery, internal pathology, heredity and the application of physics or chemistry to medicine, and others for any work on any medical subject that advances the progress of humanity, therapeutic surgery, and practical medical therapeutics. Others are for the best work on the study of the lymphatic system, and the relations between the thermogenesis and the respiratory processes. One prize is to endow a special scientific mission. Many articles have been received to compete for the prizes from many sources, but we do not notice any American names among them.

Febrile Albumosuria. Krehl and Matthes conclude from various experiments that there is a certain albumose in febrile urine, or deuto-albumose, caused by bacteria, which disappears with the febrile conditions, but which will produce fever if introduced into another organism. They found the presence of albumose in the urine almost always coincident with febrile conditions, but in cases of ulcer and carcinoma ventriculi, there was albumose but no fever, and in a few cases of malaria and phthisis the fever was unaccompanied by albumose. The albumosuria disappeared simultaneously with the fever in the cases of scarlatina, diphtheria, influenza and parotitis infectiosa observed. Various tests showed that it was a deuto-albumose, and in cases of acute peritonitis, croupous pneumonia, erysipelas and scarlatina it was accompanied by an albuminoid precipitated by free ammonia, forming with baryta an almost insoluble combination, perhaps analogous with "Kossel's hyston."—*Centralblatt f. Phys.*, February 22.

Study of the Distribution of the White Blood Corpuscles. Semakine announces that contrary to the statements of Rieder and Schultz, the white blood corpuscles are distributed evenly throughout the blood vessels. Analysis of the peripheral vessels is therefore a correct means of determining the number of leucocytes in the central arteries and veins. Hypo- and hyper-

leucocytosis are therefore not only the expression of altered conditions, but also of an actual decrease or increase in the number of leucocytes. He warns investigators against the use of rabbits in these experiments, as they react to the slightest disturbance, such as fastening them to the board, or a slap on the head, with an alteration in the number of their leucocytes. The number of leucocytes in rabbits is also very much influenced by the opening of the abdominal cavity, exposing the abdominal organs to the air. It affects them similarly to a cooling off of the animal in general, which always diminishes the number of leucocytes. To this fact is due the decreased number of leucocytes found in the abdomen by Rieder and Schultz. If the abdomen is protected against cooling by the air, there is no difference between the number of them found here or elsewhere. Another cause of their error is that they operated on dying or dead rabbits, and death produces many changes in the distribution of the leucocytes.—*Centralblatt f. Phys.*, February 22.

Burdette's Rhymes on the Adulteration of Food.—All lecturers on physiology will be glad to have the following lines printed where they will be within their reach. The poet began his weird repast with some kind of bread that is raised with a plaster-of-paris baking powder, and so on:

A VICTIM OF DELUSION.

Placid I am, content, serene,
I take my slab of gypsum bread,
And chunks of oleomargarine
Upon its tasteless sides I spread.

The egg I eat was never laid
By any cackling, feathered hen;
But from the Lord knows what 'tis made
In Newark by unfeathered men.

I wash my simple breakfast down
With fragrant chicory so cheap;
Or with the best black tea in town—
Dried willow leaves—I calmly sleep.

But if from man's vile arts I flee
And drink pure water from the pump,
I gulp down infusoriae,
And hideous rotatoriae,
And wriggling polygastricae,
And slimy diatomaceae,
And hard-shelled orphryocercinae,
And double-barreled kolpodæ,
Non-loricated ambroëile,
And various animalcule,
Of middle, high and low degree;
For nature just beats all creation
In multiplied adulteration.

An Unusual Case of Bone Grafting. Before the Medical Society of London, Mr. Waterhouse reported upon a case where it "was necessary to scoop out the body of the os calcis for the removal of tuberculous disease: a foot was left, in which this important bone was represented only by a yawning cavity, bounded by a thin shell of compact bone. The outer wall of the cavity was wanting and the floor was badly damaged. This resourceful surgeon," says the *Medical Press and Circular*, February 12, "thereupon requisitioned the collar bone of a lamb (part of a shoulder of lamb which had been served for the dinner of the resident medical officers of the hospital). He decalcified the bone by steeping it in hydrochloric acid, freed it from fat by washing it in ether, and then sterilized it by immersion in a solution of carbolic acid of suitable strength. The bone having been converted into chips was made into a paste with iodoform and packed carefully and tightly into the gaping cavity, over which the skin was securely sutured and the foot was then put up in an antiseptic dressing. It was not dressed again for a fortnight or so, and by that time healing was complete and has remained so ever since. We gather that this is the seventh or eighth case in which Mr. Waterhouse has employed this procedure with the same measure of success,

and on this ground the method commends itself for general adoption in this class of cases. We have seen a finger grafted on or into a nose, and a chicken bone used to patch up this or that small bone, but the utilization of a lamb's collar bone to build up an absent heel is as interesting, and even as extraordinary, as either."

A Charge of Plagiarism Turned to Good Account.—The *Medical News* adverts to an anonymous foreign charge of plagiarism against a certain American system of surgery. The sting of the condemnation is slyly extracted and converted into a balm of commendation. And this is the way it is done: "Scant attention need be paid to an anonymous paragraph that has appeared in an English periodical, charging plagiarism against the new System of Surgery by American authors, the concluding volume of which will shortly appear. The charge is devoid of details and the name of the accuser is withheld, so that more than a general and absolute denial of the truth of the statement is alone possible. American surgeons have neither need nor desire to borrow ideas or language from their English *confrères*. The derivation of illustrations from various sources is customary on both sides of the Atlantic, and is a practice common to nearly all medical works, without regard to country. The essence of the charge seems to lurk in the fear that the American System of Surgery would prove too successful a rival to native works, and hence the attempt on the part of English publishers to protect their market against competition. What higher compliment could be paid to the excellence of this latest production of American surgeons—the confession of fear to submit to rivalry?" But we understand that the work has been excluded from sale in Great Britain.

Asbestos in Boots and Shoes.—The *Medical Press*, February 26, states that a company has been formed to make boot soles out of asbestos, or rather to make asbestos a part of the sole. This material has the properties essential to a hygienic and comfortable footgear, being light and a non-conductor, and with "the mineral replacing leather or felt, as an inner sole, the boot may be worn on the hot flags of a city street on a summer day, or on slush or snow in winter, without the wearer being made uncomfortable by either. During the eighteenth century asbestos was much more used for wearing apparel than at present, even two centuries earlier the spinning of asbestos was a recognized industry in Venice. Signor Castaquatta carried the art to such perfection that his woven asbestos was soft and tractable, resembling dressed lambskin. He could thicken or thin the product at pleasure, and thus either make it a very white skin or a very white paper. Signor Ciampini describes the method of weaving asbestos thus: The stone is laid to soak in warm water, then opened and divided by the hands, that the earthy matter may be washed out. The washing being several times repeated, the flax-like filaments are collected and dried: and they are most conveniently spun with an addition of flax. Two or three filaments of the asbestos are easily twisted along with the flaxen thread, if the operator's fingers are kept well oiled. The cloth also when woven is best preserved by oil from breaking or wasting. On exposure to the fire the flax and oil burn out, and the cloth remains pure and white, a light, durable, non-conducting fabric."

Purulent Pleurisy with Dead Streptococci.—Sterile pus has been found in various abscesses, hepatic and cutaneous, in pyosalpinx, etc., that did not disclose any microbes in the most rigid tests, or showed traces of them with the microscope, although cultures and inoculations remained negative. These differences are due merely to the stage at which the experiments are made. The *Archives Clin. de Bordeaux* for February contains an account of a similar occurrence in a case of purulent pleurisy accompanying pulmonary tuberculosis. An operation for empyema resulted in the withdrawal of 1,800 grams of fetid pus, followed by marked improvement in the condition of the

patient. Numerous tests and cultures of all kinds with the inoculation of a couple of rabbits all remained negative, as far as the development of the streptococci, which were present in large numbers, was concerned. They must have been dead, killed by the toxins of which they were the original cause. This refutes the theory of some that the disappearance of the microbes in abscesses of the liver is due to a special secretion of that organ, as we see that it occurs in other parts of the body. In the above case the tubercle bacilli were not at all virulent, and could not have been the cause of the suppuration. One rabbit inoculated showed no trace of the Koch bacilli, and in the other, the only result was a white swelling (tuberculous) in two joints. No other microbes were found in them after they were killed.

Meta-pneumonic Purulent Pleurisy.—By this is meant that form of pleurisy which accompanies or follows pneumonia and persists as a separate disease. It is often mistaken for conditions left by the pneumonia, and treated incorrectly, so that it is important to study carefully its indications. In pneumonia proper the pneumococci die in the products of their own secretions, but sometimes they survive in the pleura, and cause the phenomena we call meta-pneumonic pleurisy. The patient is recovering from the pneumonia: all is going well, and medical attendance often discontinued. But in a few days the improvement ceases: the patient feels worse again, with slight fever in the latter part of the day. All causes are ascribed except the right one. The diet is changed, bowels loosened, chest blistered, perhaps, weakening the patient and hindering correct diagnosis. If the signs of pleurisy are not very marked, and they seldom are, incipient tuberculosis is assumed, and supposed to be the cause of the emaciation, cough, fever and night sweats. This goes on until some other physician sees the case and examines it without prejudice, and discovers the indications of a purulent effusion, or until the effusion is absorbed or finds its way to the surface, to the surprise of all. An exploratory puncture should always be made in such a case, and sometimes it will have to be repeated two or more times before certainty is attained. The above is from an article by Professor Desplats in the *Jour. des Sci. Méd. de Lille*, February 15, including observations of several cases in his own practice. He adds that of the five ways in which this disease terminates: Absorption, vomiting, empyema, formation of a cyst and extension of the infection, almost all require surgical assistance, and vomiting of the pus should be forestalled, as it is apt to persist a long while and end in death.

Advice to Medical Writers. The editor of the New York *Poly-clinic* offers a semi-decalogue to those of its friends who send to it carelessly written articles. As those friends will not have time to look at the hints, we will print them for our own use and for that of our friends—the readers of papers. The *Poly-clinic's* five cardinal points for authors are: 1. "In your writing be, above all things, *purposeful*; afterward, concise, relevant, definite. 2. The subject selected should contain but one definite line of thought: should not be trite: should be one in which you are personally interested; if argumentative, one in which you have convictions. It should be suited to your abilities and to your opportunities for forming a correct judgment and should be no broader than the essay itself. 3. Make an outline of your subject: it will enable you to read up accurately and profitably; it will afford mental discipline. 4. Be careful to pay attention to the elegance of your language; to such little things as correct paragraphing and punctuation. 5. Above all, remember that the analytical writer is the strong writer." In the body of the article the editor presents five considerations, minor, to him, apparently: but some of them of prime importance to audiences that need to sit and not get weary over *details and details and details*. These five other points, in our own language, may be condensed as follows: 1. Your audi-

ence should not be expected to do all the analyzing of your cases. 2. You need not go back to Galen and Avicenna and Sigault in every essay. 3. Where a similar line of therapeutics has been employed for a series of cases, the intelligence of your audience may be assumed to be sufficient to supply some of the gaps, as you pass with lighter hand over the later cases. 4. Make your preface short. "I will grant you," says the editor, "that there is a sort of hereditary precedent for scientific men, as a rule, to wander afield in their discussions, and to indulge in more or less verbosity of speech; but the writer, who, after an intelligent discussion of the subject, brings all the evidence to bear upon a definite conclusion, is bound to be the most respected while he who deals largely in words, sometimes utterly lacking in definiteness, will become more and more a bore, as medicine continues to make rapid progress toward becoming a science rather than an art." 5. Take down your long unused works on rhetoric and logic, if you feel that you have fallen into careless ways of composition or of argument. The above admonitions may be summed up in a brief commandment: Put yourself in the place of your audience as you pass along from point to point in your dissertation; be at once objective and subjective. Moreover, some of our ever-welcome medical writers find it not beneath their position to enliven their production with a dash of color of humor or personal narrative. But this is not always possible, the subject not warranting it, and with some it is impossible, the mental build of the author forbidding it.

Practical Notes.

The Treatment of Hydrophobia at the Institut Pasteur during 1895.—Pottevin (*Annales de l'Institut Pasteur*, February, 1896), reports the following concerning the inoculation against hydrophobia at the Institut Pasteur during 1895: Number treated 1,520, dead 2, mortality 0.13. This is the smallest death rate since the beginning of Pasteur's treatment. Of the persons who were inoculated 257 were foreigners and 1,263 French.

Method of Introducing a Sound in Cases of Apparently Impassable Stricture of the Urethra.—Gigli, of Florence, accomplishes this with an irrigation of the urethra with a hot solution of salicylic acid, introduced through a rubber tube from a reservoir above. The edges of the opening are to be compressed with the fingers so that the liquid will not run out. It dilates the urethra so that in a few minutes the catheter can be introduced under the glass canula in which the tube terminates. —*Semaine Médicale*, March 11.

Treatment of Purulent Gastritis by Bismuth. The fasting stomach is first washed out in the morning with a soda bicarbonate solution, and then a solution of 10 to 15 grams of subnitrate of bismuth in 500 grams of filtered water is introduced after it has been thoroughly shaken. The bismuth forms a precipitate on the walls of the stomach in about ten minutes, when the water is to be withdrawn, a delicate operation, as the bismuth is not to be disturbed. —*Revue Internat. de Méd. et de Chir.*, March 10.

Local Temperature in Disorders of the Urethra and Prostate Gland. Barrucco announces in the *Gazz. degli Osped. e delle Clin.* of March 7, that he has found the local temperature of the greatest service in diagnosing diseased conditions of these organs. His sound is fitted with a thermometer inside, and promptly discloses any local pyrexia. The rectal sound also is provided with a thermometer. This article is from a large work on this subject which he is soon to publish, "Modern Instruments for the Cure of Disorders of the Prostate Gland and Bladder."

Otitis in Typhoid Fever. The hearing is often affected in this disease. Botkin states as the results of observation in twenty six cases, that he found in all but five an acute and bilateral inflammation of the outer ear. The inflammations that invade the ears in the course of scarlet fever and measles, are sufficiently familiar; but there are comparatively few

observations recorded of these affections in typhoid, croupous pneumonia, etc. He concludes by recommending that the ears be examined as often and with as much care as the mouth and throat.—*Annales de la Soc. Méd.-Chir. de Liège*, from the *Medicinskoe Obosreujie*.

Rapid Method of Estimating the Quantity of Sugar in Urine.—It is often important for the physician to know at once the amount of sugar in the urine in a case of diabetes, and yet the ordinary methods are too complicated to use at the bedside. To meet this want a writer in the *Bull. Méd. Par.*, November, 1895, announces the following formula as a rapid and accurate method: Count out into a test-tube 20 drops of Fehling's solution, heat this to the boiling, add the urine until the color test is sufficient, and divide the invariable number 100 by the number of drops taken; the result will be the proportion of sugar to the liter in grams and centigrams.—*Nouveaux Remèdes*, February 24.

A New Anastomotic Button.—Boari, of Ferrare, has applied the idea of the Murphy button to another organ and uses a similar contrivance in establishing an ureter-intestinal graft. He has never applied it yet to a human being, but it has worked finely in his experiments on dogs. Whether this operation is to be recommended at all, is another question. Some think it leads to a secondary nephritis caused by ascending infection, and have consequently abandoned it. It seems preferable to imitate, as much as possible, the natural processes, and therefore the operation of replanting the ureter in the bladder, as Basy performs it, is the one preferred by most.—*Gaz. Méd. de Liège*, March 12.

Anthelmintic Remedies.—The following recipes are republished from the last numbers of the *Allgem. med. Cent. Ztg.* in the *Annales de la Soc. Méd.-Chir. de Liège*, February, 1896.

R Chloroform. 4 grams.
Croton oil. 1 gt.
Glycerin. 30 grams.

Misce. Sig. Take at one time.

R Pure iodine. 0.75
Potassium iodid. 2.25
Distilled water 30.00

Misce. Sig. Ten drops three times a day.

R Croton chloral. 4.05
Gum tragacanth. 0.01
Gum arabic. 0.25
Simple syrup. xxv gtt.

Misce. Sig. Fiant xxiv Pilule. Take four at night and four next morning, fasting. After a light breakfast take 100 grams of an infusion of senna to which has been added xv drops of alcohol containing 10 per cent. of chloroform.

Leucoplasia Buccalis.—Jullien presented a typical case of this disease at the February meeting of the Society of Dermatology at Paris, which had resisted every kind of treatment. The dorsum of his tongue showed the characteristic silvery patch, four centimeters long and one and a half wide. It is not painful and does not trouble him except slightly in speaking. He is a dyspeptic and has had syphilis, and was a great smoker at one time. The urine contained traces of albumin and sugar, with hemaphcin, urohematin, uroerythrin, indican and bile. All the mineral constituents and the urea are present in enormous quantities. There is also hepatic insufficiency and excessive intestinal fermentation. Bacteriology has nothing to say in these cases. There are traces of hyperkeratosis, and Stansiale has shown that in leucoplasia there are elements similar to those found in degeneration of the epithelium. Other members present advised immediate recourse to thermo- or galvano-cauterization. —*Revue Int. de Méd. et de Chir.*, March 10.

Movable Kidney. Guyon describes several cases of wandering kidney that have come under his observation, in the *Indépendance Médicale*, Dec. 3, 1895. He states that most frequently the kidney does not cause pain or very little. And when it

does, the pain is not in proportion to the amount of displacement. There are two methods of examining for a movable kidney, Guyon's bimanual exploration assisted by the special manipulation producing the sensation of "ballotement" as practiced in pregnancy, and Glenard's. To determine the lateral and transverse displacement the subject should be examined in the decubitus lateral on the opposite side. Beside the disorders due to displacement, it must not be forgotten that the ureter is liable to be obstructed, which may produce the symptoms of an intermittent hydronephrosis.

Comparative Merits of Potassium Iodid and Sodium Iodid.—The relative merits of these drugs is still an open question with many. Laborde and Sée deny any merit to sodium iodid, while others assert that the dangers of potassium iodid are such that the former should be given the preference in every case. Briquet has been making a careful comparative therapeutic study of them lately, and reports that the effect of potassium iodid is more marked in most cases than the other, equal to it in heart troubles, very much superior to it in disorders of the respiratory organs and in cases of dyspnea, as well as in certain rheumatic troubles. He concludes that the use of potassium iodid is to be preferred and that the toxic effects attributed to it have been much exaggerated.

Treatment of Prostatitis with Hot Water and Potassium Permanganate.—Abeille, of Nantes, has been very successful with an original treatment of gonorrheal prostatitis, which he describes as follows in the *Revue clin. d'And. et de Gyn.* After securing anesthesia of the urethra with cocain, he introduces a Nélaton sound No. 12, and connects it with a reservoir containing potassium permanganate at 1 per 4000 or 1 per 2000 according to the ability of the urethra to support it, at a temperature of 35 to 38 degrees C. The liquid passes through the sound up to the sphincter and flows out between it and the walls of the canal. When the penile portion is thus well irrigated the sound is inserted through the sphincter, without interrupting the flow of the liquid, and the bladder receives the same cleansing. If there is a strong desire to urinate the urine can pass out through the sound. With this treatment Abeille has aborted many a case of prostatitis which would have suppurated if left to itself. —*Revue Internat. de Méd. et de Chir.*, March 10.

Novel Variety of Incontinence of Urine.—Albarran describes an unusual form of incontinence of urine, in the *Annales des Maladies des Org. Gen. ur.*, December, 1895. The subject was a degenerate, nervous girl who for nine years had been unable to control the flow of urine except when lying down. Investigation disclosed that the bladder and uterus were united with an abnormal adherence which caused the vesico-urethral sphincter to gape when standing or sitting, but in a reclining position, the weight of the uterus caused it to fall back, thus closing the sphincter. The organs were slightly malformed, but nothing serious. She was entirely cured of the incontinence by an operation in which an incision was made into the anterior wall of the vagina, extending from the neck of the uterus to the neighborhood of the urethra; the uterus was detached from the bladder with the fingers and scissors, and the space thus left stuffed with iodoform gauze. Fifteen days later the neck was treated with faradization three times. Fifteen months have passed since the operation with no symptoms of a relapse.

Formol in Ophthalmology.—Strzeminski has been making a study of this drug in the treatment of diseases of the conjunctiva, the cornea and blepharitis. He announces that it is ineffective in the latter, and only moderately successful in suppurative and gonorrheal conjunctivitis, in connection with nitrate of silver, which is the best medicine for them yet announced. It has no effect on trachoma in acute cases, but assists recovery in chronic cases, employed at intervals. But an ulcer of the cornea formol cures in seven to ten days. The hypopyon in one case disappeared in four days. In torpid cases of ulcerations,

abscesses, etc., formol is not superior to the usual drugs employed. The explanation of these results is probably that formol is destructive to the staphylococcus, but is harmless as far as the streptococcus and the gonococcus are concerned, which confirms the observations of others who have tried it in the treatment of gonorrhea in the female. In conclusion the author warns against the use of antiseptics in cleansing the conjunctiva; sterilized water alone should be used. —*Nouveau Remède*, February 24.

To Remove Hardened Wax from the Auditory Canal.—Laurens writes to the *Indépendance Méd.* to warn against the use of instruments of any kind, as it is liable to be followed by the most serious consequences. He recommends the syringe alone, well sterilized and filled with boiled tepid water. It should be introduced along the upper wall of the canal so that the water will sweep the plug out with it, and five times full is enough for one day. The greatest care should be taken to work gently, and stop at the first trace of pain or vertigo. The plug can be softened with the solution of carbonate of soda, 1 gram in 20 grams of glycerin and water. Ten drops of this are to be warmed and poured into the ear three times a day; the head should be held so as to keep it in the ear for a while and then a tampon can be inserted. The injection should be repeated in forty-eight hours. In case the plug of wax adheres to the meatus it should be seized with the pincers and held, while the injection is repeated until the plug comes out, when the canal should be wiped carefully with the finger wrapped in a sterilized rag, and a cotton plug inserted for a few days. —*Gaz. Méd. de Liège*, March 12.

Danger in Purgatives in Certain Cases.—A case of acute diffuse peritonitis with alarming symptoms was treated by laparotomy, when the small intestine was found twisted around the vermiform appendix in which there was a small perforation. The occlusion was complete, but fecal fluids escaping through the hole in the appendix, had produced a serious condition. Winiwarter describes his treatment of the case, with the removal of the appendix and an incision in the intestine to remove the accumulated gases. The abdomen was sutured without drainage, and the patient made a complete recovery. He remarks that in such cases there is scarcely any means of determining the presence of a perforation, yet if a purgative were administered, instead of the opiates he ordered, the increased peristaltic movement of the bowels would have forced fecal matter through the hole and a putrid, fatal infection would have been the result in all probability. —*Annales de la Soc. Méd.-Chir.*, de Liège.

Management of Placenta Previa.—This is one of the most serious incidents that can occur in parturition, and the physician will do well to be familiar with every method of handling it. Nijöhoff describes in the *Nederl. Tijdsch. v. Verlosk. en Gyn.*, 1895, No. 11, a case of this kind, showing how he treats it. He endeavored to turn; was unable to perforate the amniotic membrane with his finger, but by pulling it here and there, he succeeded in detaching it from the inner surface of the placenta. This caused that part of the amnion opposite the cervical mouth to protrude into the vagina, with such a pressure from the fluid, that it held the hemorrhage in check, especially when a tampon was inserted into the vagina, until the child was spontaneously delivered, only slightly asphyxiated. This method is no worse for the mother, while it gives the child a better chance than others, like Braxton-Hicks' for instance. The mortality from placenta previa, direct or secondary, has been much reduced in late years, but it is still higher than it should be.

Surgical Treatment of a Paralytic Twisted Foot.—Where the deformity consists in a functional defect in the peroneal muscles, Winkelmann suggests the grafting of the tendon of the muscles in the outer side of the leg, near the gastrocne-

mius. An incision along the outer edge of the gastrocnemius, extending to the upper part of the malleolus, exposes these muscles. Then with a transverse incision from the outer half of the gastrocnemius to the point where it joins the soleus, separate this half with an ascending incision, loosening the flap, and cut the tendon of the peroneus longus at the same level. If the parts have become dry, moisten the tendon of the peroneus brevis, and suture it to the central part of the peroneus longus. Beside this method Winkelmann suggests also the following: Complete transverse section of the gastrocnemius and division of the muscle into two halves, an inner and an outer: the first to the tendon of the peroneus longus, the second to the tendon of the extensor muscle of the toes. By this means the antagonists to the soleus, help dorsal flexion and also help to bring the inner side of the foot down to its normal position.—*Archivio di Ortopedia*, No. 1, 1896.

Effect of Chlorhydrate of Phenocol on Whooping Cough. Vargas reports in the *Ther. Woch.*, 1896, No. 1, that after trying every remedy recommended for this disease, he found chlorhydrate of phenocol the one specific, in doses according to the age of the child and the severity of the attack. He disguised the unpleasant taste with syrup and in forty-two cases treated, he did not encounter a single evil result, no diarrhea, vomiting or erythema. It was rapidly eliminated in the urine; Hertel's test showed that it passed out of the body in twenty minutes after it was administered, continuing to be eliminated through the following fifteen to twenty hours. It subdued the paroxysms of coughing, reducing the number and intensity in from six to twelve hours. It should have been kept up for two or three weeks. He queries what can be the cause of this relief, and assumes that it has nothing to do with bacteria, as it is administered by the mouth, and thus does not come in contact with the membranous surfaces of the nose, throat or larynx. He ascribes it to the soothing effect of the drug on the trigeminal and laryngeal nerves, as evidenced by the first effect noticed, which is the diminishing convulsiveness of the spasms of coughing. Reviewed in *Nouveau Remèdes*, February 24.

Chinosol, the New Antiseptic.—The advantages of this new antiseptic over sublimate and phenic acid, are that it is so slightly toxic that the solution used could be drunk with impunity. Three grams of it can be injected subcutaneously into a rabbit without danger, and yet it arrests the development of bacteria. A solution of 1 to 10,000 will arrest the development of the staphylococcus pyogenes aureus. While it is as powerful an antiseptic as sublimate, it does not injure the hands even in a 1 to 500 solution. It is sold in tablets readily soluble in water, so that the quantity can be accurately graduated. It is a neutral compound of oxy-chinolin, with no pronounced nor disagreeable odor. Kossmann recommends it in high terms, and mentions its only disadvantage, that it leaves a yellow stain on the hands and linen, which is easily washed off in clear water. He has used it extensively in his practice, with never a trace of subsequent intoxication or eczema. It has no caustic effect when used as a powder on wounds and ulcerations with profuse secretions, but it is in confinement cases that it is especially serviceable, for the general use of the nurse, as sublimate is too dangerous to be thus used indiscriminately, and phenic acid is too corroding in a 5 per cent. solution to wash the hands freely, while a weaker solution has no aseptic effect.

Nouveau Remèdes, February 24.

Pott's Fracture Treated by Early Strapping. The London letter of the *American Practitioner* recounts the case of a self-treated Pott's fracture in the person of a prominent London surgeon. Mr. Noble Smith, F.R.C.S., recently fell and received a Pott's fracture, the fragments being separated by more than an inch. He determined to try early strapping, early movement, and massage; this treatment was attended with the hap-

piest result. Within half an hour of the accident the foot and ankle were strapped before any appreciable swelling had taken place, and the ordinary back splint, supporting the foot, leg and thigh, with side pieces, was applied. The strapping was lightly applied, with no attempt to apply pressure, and was daily adjusted according to the tension. The strapping was discontinued on the seventh day. On the fourteenth day plaster of paris splints were put on. From the first, very gentle movement of the ankle joint was submitted to. Avoiding disturbance of the fractured bones, massage was begun slightly during the first week and increased by degrees. On the twenty-first day Mr. Smith could bear the weight of the body on the injured leg. On the twenty-third day he walked with caution. On the thirty-second day he could flex and extend the foot nearly as well as the sound one, and on the thirty-fourth day he gave up crutches, using instead two sticks. On the forty-second day he walked two miles with sticks.

Treatment of Purulent Ophthalmia By Copious Irrigation.—Dr. Kalt reports that the number of cases of ophthalmia treated by him and his hospital colleagues by copious irrigations of potash as he has advised, is now 200, 31 adults and 169 newborn. He prefers permanganate of potash to permanganate of lime, as it is less irritating. For both, the proportion should be 1 gram to 3 liters of water at 25 degrees C. Permanganate of lime or potash 20 grams, distilled water 300 grams, a teaspoonful to a liter of water. Each eye should receive 1.5 liter of this fluid at a time. The first two days four irrigations should be made, three only with permanganate of potash; then three for two or three days; finally, two until the end. They should not be arrested until all secretion has disappeared for two days. If the affection lasts more than fifteen or eighteen days, recourse should be had to permanganate of potassium. The same journal from which the above is taken, the *Annales d'Oculistique*, contains a cautionary article by Dr. Van den Burgh, entitled "The Danger of Sublimate Lotions and Applications of Nitrate of Silver as a Prophylactic Method with Premature Children, as a Cause of Fibrinous Conjunctivitis." In it, the writer reports a case in which 1 per 1,000 lotions of sublimate during delivery, and afterward the application of Credé's method, that is, the introduction of a 2 per cent. solution of nitrate of silver into the conjunctival cul-de-sac, were followed by the development of severe fibrinous conjunctivitis which nearly caused the loss of both corneae. He concludes that in the prophylaxis of ophthalmia of the newborn caustic substances, such as nitrate of silver, or those which are not well tolerated by the conjunctivae of children, such as lotions of sublimate, should be proscribed. This rule should be absolute in children who are weak and sickly and those who are qualified as premature. As a prophylactic agent he prefers iodoform.

Washington Notes.

HEALTH OFFICE WEEKLY REPORT. The report of the Health Officer for the week ending March 21 is as follows: Number of deaths (still-births not included), 130; death rate per 1,000 per annum, 24.5; death rate per 1,000 per annum for the corresponding week last year, 24.2. The rise in the death rate week before last was followed by an additional rise last week. The deaths reported to the health department numbered 130 as against 121 in the preceding week. Correspondingly the death rate advanced to 24.5 from 22.8 per thousand inhabitants. The principal diseases causing this mortality were those of the lungs, brain, heart and kidneys.

FOR THE CHILDREN'S HOSPITAL.—A matinee performance will be given at the National Theater during the present week for the benefit of the Children's Hospital.

TO PURCHASE A QUARANTINE STATION.—Speaker Reed's bill H. B. 7471, providing for the purchase of the buildings and contents comprising the quarantine establishment of the city

of Portland, Me., located on House Island, in Portland Harbor, has been referred to the Committee on Military Affairs.

THE SUNDRY CIVIL APPROPRIATION BILL.—The Sundry Civil Appropriation Bill was reported to the House on March 2. The committee omitted from the bill the provision of \$19,000 in the last bill for Providence Hospital, \$19,000 for Garfield Hospital and \$34,500 for Howard University. As a substitute for the above omitted appropriation the following is introduced: "For the support and medical treatment of medical and surgical patients who are destitute in the District of Columbia, under contract or contracts to be made with responsible and competent persons or institutions by the Surgeon General of the Army, \$38,000, or so much thereof as may be necessary. Provided that no payment shall be made under any such contract except for service actually rendered, for which specific compensation shall be provided under such contract."

MEDICAL SOCIETY.—At the meeting of the society held on the 25th inst. Dr. Clayton reported a case of uremia with high temperature complicated by opium poisoning. Dr. Burnett read a paper on formalin in ophthalmic practice, and Dr. J. T. Johnson reported a case of hysterectomy.

Cincinnati Notes.

THE ACADEMY OF MEDICINE has decided to assume the management of the present directory for nurses. An office will be established in the central part of the city and arrangements will be perfected whereby nurses can be had at a moment's notice either day or night. A committee consisting of Dr. N. P. Dundridge, Dr. R. W. Stewart, Dr. G. M. Allen, and Dr. Wolfstein was appointed to perfect the arrangements.

DR. CHAS. A. L. REED read a paper before the Academy of Medicine entitled "Appendicitis." He dwelt more particularly upon the histology, etiology and varieties.

THE ACADEMY OF MEDICINE LIBRARY is to be located in a special division of the Cincinnati Hospital Library.

DR. DAVID DE BECK recently presented to the Academy a case of sub-conjunctival cyst. The patient was a young colored woman in good health. There were three cysts in the right eye averaging about ten millimeters long and four millimeters in depth. One of the cysts was removed without rupture.

SURGEON FRANK W. HENDLEY, of the First Regiment of O. N. G., of this city, has recently completed a medical and surgical chest designed for both field and camp service. It is the same size as the old style army pannier and contains not only the necessary medicines but the instruments as well.

THE DREAD of an epidemic of smallpox at Dayton seems to be increasing. The workhouse cases are now four female inmates. One case has been reported in close proximity to the most aristocratic portion of the city.

AN EFFORT is being made to have the legislature pass a law increasing the strength of the Hospital Corps of the National Guard to twenty-four men and four hospital stewards to each regiment, instead of one steward and eighteen men as at present.

DR. JAMES T. WHITTAKER delivered an address, March 25, before the Unity Club on the subject of "Medicine and Surgery of the Queen City." [To be printed in this JOURNAL next week.]

THE ANNUAL APPROPRIATIONS from the legislature are presented as follows: Board of Health \$6,250; Dairy and Food Commission \$14,600; Athens' State Hospital \$102,938; Cleveland State Hospital \$99,945; Columbus State Hospital \$165,501; Dayton State Hospital \$100,125; Toledo State Hospital \$144,260; Longview Asylum Hospital \$116,000; Massillon State Hospital \$100,000; Education of the Deaf \$75,123; Institution for Feeble Minded Youth \$120,411; Ohio Hospital for Epileptics \$181,925; Institution for the Blind \$41,561.

THE FOLLOWING are the appointments, announced by Governor Bushnell, to constitute the Board of Medical Examiners in accordance with the provisions of the Kimmel Bill, which

was recently passed in Ohio, and which provides for the examining and licensing of all persons who desire to practice medicine in the State of Ohio: Dr. N. R. Coleman (R.), Columbus, 7 years; Dr. H. E. Beeby (H.), Sydney, 6 years; Dr. Chas. A. L. Reed, Cincinnati, 5 years; Dr. David Williams (E.), Columbus, 4 years; Dr. S. B. McGavran (R.), Cadiz, 3 years; Dr. Cady Markley (Ph.-med.), Toledo, 2 years; Dr. J. K. Scudder (E.), Cincinnati, 1 year.

Louisville Notes.

DR. C. T. POPE, physician to the Eruptive Hospital, has resigned his position owing to an order sent him by the Board of Public Safety, requiring him to spend all of his time at the hospital so long as there is any likelihood of smallpox developing in the exposed neighborhood.

LEGISLATIVE ACTS.—The following bills were favorably reported and passed by the Senate but owing to the political fight for United States Senator failed to pass the House: A bill to authorize coroners in counties with a certain population to employ coroners; a bill to establish the office of physician to the jail in counties containing a population of 150,000 or more; a bill to make the pharmacy law apply to all cities and towns in the State.

HOUSE OF REFORM.—The full text of the bill creating a House of Reform, for boys and girls, has just been published. This bill passed both houses and has been approved by Governor Bradley. There are to be two separate institutions, one for boys and a similar one for girls, the sum of \$100,000 being appropriated for their establishment. The government of these institutions is to be vested in a board of trustees consisting of six persons, three women and three men, appointed by the Governor and approved by the Senate. Vacancies in the board, other than by limitation, are filled by nomination by the board, with the approval of the Governor. The trustees may be reappointed. Suitable sites are to be purchased, to consist of not less than one hundred acres, near some city or town, but not less than three miles of the corporate limits thereof. In the arrangement of the buildings, etc., all cells and bars are to be omitted so far as possible, and what is known as the "Cottage Family Plan," adopted. Each family house is to be occupied by from eighteen to twenty-five boys or girls, with matron, teacher and housekeeper, making it as far as practicable a well-ordered home. The objects of the institutions are described as not merely a place of detention, but of reformation of those who by reason of vicious conduct or moral depravity have rendered themselves a burden to their relations and society. Kindness, firmness and competency are to be required of those in charge. The board can bind those who are suitable for apprentices to parties until they are 21 years of age, the Trustees retaining supervision over them. Power is given the board to arrest any inmate who has escaped from the institution. The course of instruction mapped out is very comprehensive and complete. All youthful prisoners now in the penitentiaries or workhouses of the State, under 18 years of age, are to be removed to the Reform Houses as soon as they are established.

LOUISVILLE MEDICAL COLLEGE. The Louisville Medical College held its annual commencement at Macaulay's Theater on the 25th ult. There were sixty-two graduates. The following received the honors: First honor, gold medal and appointment on the Resident Staff of the Louisville City Hospital, G. E. Gavin, Alabama; second honor, gold medal, to W. B. Dickens, of Mississippi; third honor, two gold medals, to James Hess, of Virginia, and Rufus C. Pennywitt, Ohio. The salutorian was Dr. J. C. Laurens, of Virginia, and the valedictorian Dr. E. B. Hardin, of Kentucky.

CHILDREN'S FREE HOSPITAL.—The "Hospital Circle" held its annual reception on the 27th ult. at the hospital building, it being the sixth anniversary of the cyclone, the Children's Hospital growing out of the necessities arising after that visi-

tation. The hospital was incorporated Oct. 16, 1890, and received its first patient Jan. 23, 1892. During the past year 120 children were treated in the hospital, with 5 deaths. Many times the capacity of the institution was tested to its utmost. The financial report shows that from various sources \$4,664.52 were received during the past year. The expenditures were \$4,489.86, leaving a balance of \$174.66. At present there are eleven endowed beds, \$2,000 endowing a bed; and there are eight supported beds, \$120 yearly maintaining a bed for that length of time.

KELLY.—Dr. Harris Kelly, son of Dr. Clinton Kelly, Dean of the Louisville Medical College, has been appointed physician to the Eruptive Hospital, vice Dr. C. T. Pope, resigned.

THE PUBLIC SERVICES.

CIRCULAR OF INFORMATION

For Persons desirous of enlisting in the Hospital Corps, United States Army.

The Hospital Corps consists of hospital stewards, acting hospital stewards and privates.

This Corps offers good pay and at the same time gives a training which will be of great usefulness in civil life. If promotion is in view, it opens the way to one of the best positions attainable by an enlisted man in the United States Army.

All enlistments are for the grade of private, but provision is made for the promotion of those who show themselves to be intelligent, capable, and trustworthy.

Original enlistments are confined to persons who are citizens of the United States, or who have made legal declaration of their intention to become citizens thereof. The term of service is three years.

Applicants must be between the ages of twenty-one and thirty years, unmarried, of good character and habits, able-bodied, free from disease, not less than five feet four inches tall, and able to speak, read and write the English language. Minor defects of vision that can be corrected by glasses are not regarded as a bar to enlistment.

They must defray their own expenses to the place of enlistment, satisfy the Recruiting Officer regarding age and character and be prepared to furnish evidence thereof. Their fitness for the military service can only be ascertained by examination at a recruiting station or at a military post.

Under the act of June 16, 1890, and existing rules prescribed by the President in accordance therewith, a man in his first enlistment, having served one year, may be accorded the privilege of purchasing his discharge at any time for several months thereafter, upon payment of a stipulated sum, the maximum purchase price being \$120.

The following is the rate of pay as now established:

GRADE.	FIRST ENLISTMENT.		
	Pay per month.	Pay per year.	Pay for three years.
Hospital Steward.....	\$15 00	\$540.00	\$1,620.00
Acting Hospital Steward.....	25.00	300.00	900.00
Private.....	18.00	216.00	648.00

In addition to the rates enumerated above, one dollar per month is added during the third year of first enlistment.

Members of the Hospital Corps reenlisting within three months from date of discharge receive a further increase of pay for the fourth and fifth years of service, and a still further increase for each five years of continuous service. They also receive from the Government (in addition to their pay) rations, clothing, bedding, medicines, and medical attendance. They can deposit their savings in sums not less than \$5 with any Army Paymaster, and for sums so deposited for six months or longer, interest at the rate of 4 per cent, per annum will be paid on final discharge. The deposits are non-forfeitable except for desertion.

For those who have become invalid during twenty years' service, or who have been discharged for wounds received or sickness brought on in service, a comfortable home is maintained in the city of Washington. The sum of 12½ cents per month is deducted from each soldier's pay, to be applied toward the support of the home. After thirty years' service enlisted men are entitled to be retired, and upon retirement to receive monthly three-fourths of the pay allowed to them by law in the grade they held when retired, with an allowance for clothing and subsistence.

Furlongs to deserving men are granted during the term of enlistment when their services can be spared from their post of duty.

When a man is honorably discharged at the expiration of his enlistment, or on account of sickness, his travel pay is ample to carry him to the place of enlistment. By care and economy he can save from his clothing allowances a considerable sum payable to him on his discharge.

The accepted candidate for enlistment is usually sent at first to a Hospital Corps School. He is there given the instruction that is needed to enable him to do his duty intelligently, and to appreciate what are the requirements for promotion in the corps. When properly qualified he is sent to some military station for duty.

Privates who have served one year or more and who have displayed particular merit may be recommended to the Surgeon General for examination with a view to detail as acting hospital steward. If a graduate in pharmacy, they may not be required to serve the full year of probation.

Under existing law promotion to a stewardship is not authorized until the candidate has demonstrated his fitness for the position by one year of service as an acting hospital steward. His application must be approved by the surgeon of his post and by the post commander, and

must bear satisfactory certification as to character, conduct, general fitness and habits, particularly in regard to the use of stimulants and narcotics. Successful candidates examined at or about the same time take precedence for appointment, so far as practicable, in the order of relative merit as shown by the results of their examination.

Applications for enlistment, accompanied by testimonials as to character, physical soundness and special knowledge (as of pharmacy, cookery, mechanics, etc.), should be addressed to "The Surgeon General, U. S. Army, Washington, D. C." (Who authorizes enlistments); or candidates may apply in person to any recruiting officer of the Army, or preferably to the medical officer of any military post or station.

GEO. M. STERNBERG, Surgeon General, U. S. Army.

WAR DEPARTMENT, SURGEON GENERAL'S OFFICE,
WASHINGTON, D. C., March 23, 1896.

Emergency Ration Board.—The Secretary of War has appointed a board of officers, consisting of Major Charles Smart, surgeon; Major Charles A. Woodruff, commissary of subsistence; Major Ernest A. Garlington, inspector general; Captain Louis A. Craig, Sixth Cavalry, and Lieutenant William C. Brown, First Cavalry, to meet in the City of Washington, D. C., March 31, 1896. The duty of this board is to examine the reports of the boards which were convened in the several military departments to consider the subject of an emergency ration, together with such views and suggestions as the Major General commanding the Army and the Commissary General of Subsistence may lay before it. The board is called upon to make recommendations on the subject and to report upon the minimum amount of articles of food necessary to sustain a soldier in health and activity for a limited period while in active service in the field.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 21 to 27, 1896.

Capt. Charles F. Mason, Asst. Surgeon (U. S. Military Academy, West Point, N. Y.), is granted leave of absence for two months and fifteen days, with permission to go beyond sea.

Major Curtis E. Price, Surgeon (Ft. Sill, Indian Ter.), is granted leave of absence for two months, with permission to apply for an extension of two months.

First Lieut. William F. Lippitt, Jr., Asst. Surgeon, will report in person to Major Henry S. Turrill, Surgeon, president of the examining board appointed to meet at Ft. Riley, Kan., on Tuesday, April 14, 1896, at 10 o'clock A. M., at such time as he may be required by the board, for examination as to his fitness for promotion.

The following named officers will report in person to Lieut.-Col. Charles R. Greenleaf, Deputy Surgeon-General, president of the examining board appointed to meet at San Francisco, Cal., on Tuesday, April 14, 1896, at 10 o'clock A. M., for examination as to fitness for promotion: First Lieut. Merritte W. Ireland, Asst. Surgeon; First Lieut. Benjamin Brooke, Asst. Surgeon; First Lieut. George M. Wells, Asst. Surgeon.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending March 28, 1896.

P. A. Surgeon B. R. Ward, detached from coast survey steamer "Blake" and ordered to the "San Francisco," holding survey on Chaplain J. J. Kane in London, en route.

Surgeon J. C. Wise, ordered to examination for promotion March 27.

Change of Address.

Butler, T. J., from 375 W. Monroe St., to 34 Throop St., Chicago, Ill.
Ferguson, H. Milton, from 291 43d St., to 40th St. and Cottage Grove Ave., Chicago, Ill.

Kaull, Wm. M., from Chicago to Princeton, Ill.
Nixon, J. W., from St. Louis, Mo., to Soldier, Kan.
Richstein, J. J., from St. Louis, Mo., to Evansville, Ind.
Ragsdale, E. W., from St. Louis to Lone Jack, Mo.
Ragsdale, J. E., from St. Louis to Chapel Hill, Mo.
Snyder, H. L., from Macungie to Old Zionsville, Pa.
Schurtz, Perry, from 110 Monroe St., to Pythian Temple, Grand Rapids, Mich.

LETTERS RECEIVED.

Alta Pharmaceutical Co., St. Louis, Mo.; Allport, Frank, Minneapolis, Minn.; Atkinson, W. B., Philadelphia, Pa.
Bloomfield, E. M., Peru, Ind.; Barnes, W. N., Baltimore, Md.; Bernd, Henry & Co., St. Louis, Mo.; Battle, Lewis J., Washington, D. C.; Berger, S. C., Philadelphia, Pa.

Coakley, Jas. B., Buffalo, N. Y.; Collins, J. S., Carlinsville, Ill.; Castle, Wilnot & Co., Rochester, N. Y.; Casselberry, W. E., Chicago, Ill.; Chase, Arthur H., Concord, N. H.; Clark, L. Pierce, Sonyea, N. Y.; Cleaves, Margaret A., New York, N. Y.

Durand, Herbert, Hot Springs, Ark.
Elliott, A. R., New York, N. Y.; (2); Eccles, R. G., Brooklyn, N. Y.; Emmet, Bache, New York, N. Y.; Eastman, Jos., Indianapolis, Ind.

Fell, Geo. E., Buffalo, N. Y.; Franklin, C. P., Philadelphia, Pa.; Foltz, T. H., Lima, Ohio; Fassett, Chas. Wood, St. Joseph, Mo.

Howorth Adv. Agency, The, St. Louis, Mo.; Hummel, A. L., Adv. Agency, New York, N. Y.; (2); Hersey, Geo. D., Providence, R. I.; Huldstein, I., New York, N. Y.; Harrison, W. K., Chicago, Ill.

Imperial Ball-Bearing Axle Co., Chicago, Ill.; Ingals, E. Fletcher, Chicago, Ill.

Jarrett, H., Camden, N. J.; Jonas, A. F., Omaha, Neb.; Jelks, J. T., Hot Springs, Ark.

Klug F. R., Anita, Iowa; Kellogg, W. H., East Oakland, Cal.

Limmer, Geo. L., Peoria, Ill.; Lehn & Fink, New York, N. Y.; Lindley, Walter, Los Angeles, Cal.; Lentz, Chas. & Sons, Philadelphia, Pa.

Moody, M. M., Chatham, Ohio; Moody, G. H., New Orleans, La.; Montgomery, John, Ardoh, N. D.; McGinn, Thos., Wells, N. Y.

Nance, W. O., Chicago, Ill.; North, L. G., Tecumseh, Mich.

Orient Electric Co., The, Youngstown, Ohio; Oxford Retreat, Oxford, Ohio.

Paglin, Paul, Laboratories, The, St. Louis, Mo.; Penton, A. B., Detroit, Mich.; Parke, Davis & Co., Detroit, Mich.; Poehler, F. T., Minneapolis, Minn.

Rogers, D. W., Chicago, Ill.; Ryman, H. M., New York, N. Y.

Steele, W. A., Marine, Ill.; Scherling & Glatz, New York, N. Y.; Sherk, H. H., Cramer Hill, N. J.; Schottler, G. J., Chicago, Ill.; Stallman & Pulton, New York, N. Y.; Smith, A. J., Galveston, Texas; Springer, W. D., Boise, Idaho; Seaman-Yates Dept., New York, N. Y.

Thompson, J. A., Charleston, Mass.

Wile, W. C., New York, N. Y.

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ADDRESS.

MEDICINE AND SURGERY OF THE QUEEN CITY.

Address delivered at the Unity Club, March 25, 1896.

BY JAMES T. WHITTAKER, M.D.

CINCINNATI, OHIO.

Cincinnati has always had an honored name. We have furnished our quota of statesmen, of soldiers, of artists and skilled artisans. We have had able editors, eminent jurists, eloquent divines. Ascending in the scale of genius, we had one astronomer and two real poets. If we have fallen short it has been in the trades and commercial life, for it is said that some of the railroads have put us on a side track, and one or two of the younger cities about us have left us behind.

But no city in this country has ever surpassed us in medicine. Perhaps there may have been times when a better sermon could be heard, or a higher legal opinion obtained in New York, or some other Eastern city, but there never was a time when a diagnosis of a disease could be better made or an operation be better done elsewhere than here.

DANIEL DRAKE.

Cincinnati had in the very beginning a good start in medicine. We have had some great men and women in Cincinnati. There were the Beechers, father, brother and sister; the Cary sisters, General Lytle, General Mitchell, Buchanan Reed. I asked a young attorney one day who was the strongest lawyer Cincinnati ever had. He said, Stanley Matthews. Though he was not exactly of us, Beecher was certainly the strongest preacher Cincinnati ever sent out. But the memory of neither of these men will live as long as that of Daniel Drake. His works are consulted now, to-day, and must be always by the medical historian and geographer as much as when they were written. The decisions of the just judge, broad as they may be, the appeals of the eminent divine, most penetrating and far-reaching when made in behalf of his country and in denunciation of slavery, are nevertheless forgotten in time with the occasions which gave them birth. But the facts which have been accumulated and compiled by the historian remain in perpetuity. Besides, Daniel Drake was a lover of this city and did more for it than any other single man. You should read what he says in his "Pictures of Cincinnati," published first in 1810 and afterward in 1815, when the town had a population at first of 2,500 and afterward of 6,000 souls. "Our Atlantic brethren will behold with astonishment," he says, "in the green and untutored States of the West, an equipoise for their own. Debarred, by their locality, from an inordinate participation in foreign luxuries, and consequently secured from the greatest corruption introduced by commerce, secluded

from foreign intercourse, and thereby rendered patriotic, compelled to engage in manufactures which must render them independent, secure from conquest, or even invasion, and therefore without the apprehensions which prevent the expenditure of money in solid improvements, possessed of a greater proportion of freehold estates than any people on earth, and of course made industrious, independent and proud, the inhabitants of this region are obviously destined to an unrivaled excellence in agriculture, manufactures and internal commerce, in literature and the arts, in public virtue and in national strength."

Drake had the light and airy temperament of the poet and like him was a true lover of nature. He could indulge in persiflage at times and strike true the chords which vibrate in every breast. You should read his panegyric upon the buckeye in a post-prandial speech, or hear him concerning our Indian summer.

"In the autumn of every year we have the period to which this term is affixed. It generally succeeds to rain or snow and severe frost; beginning in October or November and continuing for two or three weeks, with an occasional storm. But the atmosphere is, for the most part, dry, serene and smoky, through which the sun and moon exhibit in the morning and evening a face of darkened crimson. The verdure of the forest fades away, or passes into the countless varieties of brown, yellow and red, which give to the surrounding scenery a somber aspect. The occurrence of rain, with a northwest wind, at length suddenly dispels the gloom, strips the wood of its remaining foliage, and introduces winter with a transparent and cheering atmosphere."

There was difficulty with the water question then as now. "But a large proportion of all that is used is drawn up in barrels from the river. This is often impure and requires time to settle; but for most domestic purposes it is preferred to well water. The proprietors of the steam mill contemplate distributing water over the whole town; a plan so interesting that its execution will constitute an important era in our public improvements."

Whether the steam mill ever supplied the town or not the history does not state. But we know how deplorable is our lot to-day. Our Board of Administration has at last acted upon the recommendation of the physicians to make the attempt to get us pure water to drink. The physicians of this city have for decades of years labored to this end. Every human being in the city knows the necessity. We have been thrice threatened with water famine, and if we have got used to the mud, our visitors have not. Many of them will not even wash in it.

But the danger is not dirt but disease. In our long recent drought the ground absorbed all the sewage and we could drink the water with impunity; but when the first rains fell the surface impurities were washed

into the river, and in two weeks our hospitals and homes were filled with typhoid fever. Our deaths from typhoid fever alone gives us an unenviable notoriety over all other cities of our size. We find ourselves reduced to the necessity of buying a filter and paying to a foreign country the preposterous price of a dollar a tube for a piece of clay that is worth ten cents. And our poor people, the mass of the people, can not afford to own them. Fortunately they can protect themselves better by boiling the water. But they should be spared the necessity of such work. Beside, boiling kills only living poisons.

Our bad water represents our bad politics. The refusal to grant permission to construct new water works hitherto is the expression of a fear of exposing innocent men to temptation. I heard a man say the other day that it would be better to let the authorities steal a million or two than poison a whole community with typhoid fever and other such diseases. But this is not true. It is never better to compromise with that kind of evil. It is better to starve than to steal, and it is better to die of disease engendered by drinking excrement than to countenance bribery in any form. Physical is never so bad as moral corruption. All history shows that though a plague may desolate, it is immorality alone that can destroy a nation. Rome fell, not on account of the plagues, and not on account of the Goths and Vandals, but "because of the failure in the crop of Roman children."

Of course it is easier to condemn than to construct. Some one may ask me to suggest a plan that would be acceptable to the people. Well, I should say that a committee might be appointed in this way: As the first question is that of health, I would have one member a physician; to take care of the legal complication, I would have one member an attorney, and to look out for the business part of it, I would have one member a business man. I would have these members appointed respectively by the Academy of Medicine, the Bar Association and the Chamber of Commerce, and I would give them power to employ engineers, bacteriologists and other subordinates. As the politicians have made a failure of this business for twenty-five years, I would drop them out altogether. Therefore, my plan will find no advocates and will not prevail. Meanwhile, we will continue to drink each other's excrement diluted and die of typhoid fever, while our merchants and manufacturers will hold their annual reunions, and make speeches and congratulate each other on the proud position we occupy among the great cities of the earth!

Daniel Drake was before my time, but he was a great writer and writers are of all times. How well he depicts the chief source of satisfaction to an author, not in the approbation of the public, but in its effect upon himself when he says: "If this work prove a failure as respects public favor, the author will not be without his reward; for he has found enjoyment in the labor of producing it; and having confidence in its general accuracy, knows that it must stand as a great collection of facts, with which future and more gifted medical historians may work."

What modesty he shows in his apology for his work. To those, he says, who are experimentally acquainted with the difficulties attending the acquisition of elementary knowledge in chemistry, geology, botany, and the other physical sciences, without apparatus, with but few books, and no arranged collections, the author need make no apology. "But still it is the

sacred duty of every writer to improve rather than corrupt his language. The author performs, therefore, merely an act of justice to himself, when he declares that the imperfections in his style have arisen neither from indolence, nor contempt of public opinion, but from causes which lie beyond the sphere of his control; and, at the same time, it is equally due to the reputation of his fellow townsmen, that he should protest against the reception of this performance as a fair specimen of their literature."

Think of a man of the genius of Drake pleading that his work may not be taken as representative of the work of his fellow citizens in a town of 6,000 people, when he was himself head and shoulders above any other author of his day.

The distinguishing characteristics of great men are said to be, first, sensitiveness; second, imagination; third, industry. You may see how sensitive Drake was in apologizing for the character of his work. His industry is shown not only in the book he wrote about Cincinnati, but in the vast tomes he contributed to medicine. He was at various times connected with ten medical schools in different parts of the United States and actually founded two, one of them, his favorite, in this city. You may get a better idea of the range of his imagination in some of his predictions.

Dr. Drake was among the first adherents to the germ theory of disease. In the year 1832 he published in the *Western Medical and Physical Journal*, of which he was editor, a series of papers on Epidemic Cholera, which were afterward collected and enlarged into a small volume. In this volume he advocates the germ theory and adds that the "brief investigation given to the subject re-inspired my respect for an opinion long before expressed, that autumnal (malarial) fever and many other forms of disease might be of animalcular (germ) origin. . . . But I have had," he laments, "neither time nor means for experimental or bibliographical inquiry." One should read the ingenious views which he expressed in support of this hypothesis, which has since his day become established as a fact.

Drake had a parental fondness for the city of Cincinnati, and especially for the institution which he helped to form. Wherever he was, he says his thoughts went back to the city where, in the twelfth year of its settlement, he began the study of medicine, and in which, twenty years afterward, he had labored to found a medical college. In the pursuit of his studies concerning the diseases of the Mississippi Valley, it was necessary to make personal inquiry on the very sites of disease. "In journeyings by day, and journeyings by night, on the water and on the land, while struggling through the matted rushes where the Mississippi mingles with the Gulf, or camping with Indians and Canadian boatmen, under the pines and birches of Lake Superior, the image (of the city and the college) was still my faithful companion, whispering sweet words of encouragement and hope."

Thus Cincinnati has had in medicine a heritage to maintain. We are fortunate in having commenced right. Our medical history begins with a man singularly endowed with faculties of the highest order. He had no superior in the country then and we have not had his equal since. Our good forefathers did indeed entertain an angel unawares.

Yandell said once of Drake that his ashes in the cemetery of our city adorned it more than the palaces of our merchant princes. How true this is, and yet

how little it is known! But as in the days of old, when the gladiators entered the arena they had first to make salutation to Cæsar, so any medical man who thinks of Cincinnati thinks first of Daniel Drake, and the writer who would discuss the diseases of the Mississippi Valley must first pay tribute to the work of Daniel Drake.

GEORGE C. BLACKMAN.

I pass by now a procession of physicians, beginning with Goforth, Drake's own teacher, who had, Drake says, "the most winning manners of any physician he ever knew, and the most of them;" by Moorhead, an Irish gentleman of old stock, who died a baronet on his estate; by Reuben Mussey, who came to us from the East and who made a number of capital operations for the first time; by a number of lesser lights along which the eye glances, to be arrested suddenly by a large figure which looms up in the foreground in the person of George C. Blackman.

Blackman, as I knew him, was a man of magnificent build. He was a big, square, heavy-set, substantial man, with a solid tread. He must have weighed 200 pounds or more. His complexion was dark colored, his forehead broad and low. He had a heavy suit of coal-black hair which he would toss back from his face in a moment of impatience like a lion with a shake of his mane. His face was massive and square, his chin was heavy-set and firm, his eyes were large, dark and lustrous, his expression was singularly animated. He had a deep voice, a rich vocabulary and serious mien, which he could change to the light and playful when it threatened to become solemn. He had a singularly fine surgical hand; which expression is a tautology, as the surgeon is the *chirurgien* from *cheir*, the hand. I well remember with what peculiar admiration, almost veneration, we, his first-course students, used to regard that hand. His touch was firm and delicate. He could dissect a bone tumor from a blood vessel and graze but not cut the walls of the vessel. He could amputate a limb in a few seconds. As the boys used to say of another surgeon, "you must be careful not to wink while he does it, or you will lose the operation." And with what a pretty stage trick he would whip out a stone or flip out a bullet extricated from some recess in the body and send it rolling over the floor of the amphitheater amidst a round of applause from the students who could appreciate the delicacy and skill of the work. Ah! You must not think you have all the theatricals on your little painted stage. We have them every day in real life.

He had struggled with poverty, and won fame. Upon his first visit to London he had but \$75, and on this he managed to live several months—taking cheap lodgings, studying covered with bedclothes to avoid the expense of a fire, and by the dim light of a tallow candle; two penny-rolls a day constituting his food allowance. A fellow citizen once rescued him from starvation on seeing him gazing with hunger on the bread in a baker's shop. After a time he made the acquaintance of some of the hospital surgeons, among others that of Sir William Ferguson, who inquired at the close of the first interview where he was lodging. Soon thereafter he received a note from Sir William inviting him to dinner. He was fortunate enough to be able to borrow some clothes, his own being too much out of repair, and dressed in them made his way to the house of his host, where he was quite

abashed at being presented to some of the great surgeons of the day, among them Liston and Cooper, as a young American friend of whom he had spoken to them.

Blackman did best in the presence of a large audience. Like Daniel Webster, with whom he had some points in common, he could rise to an occasion. You may remember that Webster said when he got up to reply to Hayne on that memorable occasion when the fate of a nation hung in the balance, that he had a moment of trepidation, with a flash of recollection that his brother had fallen dead on a similar occasion, but that it instantly passed away, that he then felt his feet planted like rocks and that everything which he had ever read in history, literature, law or politics unrolled itself before him like a panorama. The points he wanted stood out illuminated in a glow of volcanic light. If he wanted a metaphor he had only to reach out his hand and grasp it as it went "smoking by." Blackman had a wonderful power in seizing upon the points of a case and presenting them strongly and forcibly; and he had such an extensive acquaintance with surgical literature that illustrative or analogous cases seemed to come as freely from his lips, as one of his colleagues said of him, "as the water gushed from the smitten rock." . . . "Behind all this was that bold self-reliance, the consciousness of power; he knew what he could do, and he knew that he would do it in the operation before him. No wonder that students listened to every word and looked at every motion of finger or knife with intent interest. His attainments in surgical literature were vast. Probably he had no superior on this continent in extent and variety of knowledge in this department. Several years ago, before Dr. Blackman came West," I am still quoting from Parvin's recollections, "the older Mussey, at a party of eminent professional men in the city of New York, happening to ask a distinguished fellow-surgeon the date and other particulars of the first performance of a particular operation, was answered: 'I don't know; but I will introduce you to a man who does know—Dr. Blackman—he is a walking encyclopedia.'" And he could talk while he worked as no other man could talk without working. I have never known a man who could surround an operation with such a glamour as could Blackman. Glamour is the correct term. He enveloped himself in it, and sometimes he blinded us with it to necessary technicalities. Blackman was the most gifted child of genius whom it has been my lot to know.

JAMES GRAHAM.

Our attention is next caught by a country boy, bright, alert, keen and shrewd, qualities derived from his Irish stock. His father was born in County Down, Ireland. His mother's name was Nelson and she was remotely related to my Lord Nelson. In a little sketch he once wrote of himself, he said that he remembered his mother's parents as being well educated, proud and aristocratic in their bearing. This was James Graham. He had that bearing too. When he came to us Graham was very poor. I remember him myself in a little office in Seventh Street which had a small back room, in which he took his simple repast, crackers and cheese, all he could afford to buy. He came to us friendless and unknown. He raised himself to the highest position that could be reached here in medicine, and held it with honor to himself and his profession for a full quarter of a century;

resigning it at last, under protest of all his colleagues because he felt that his day was done. One day in his early youth he stood up in a medical society and made a report of a case. His report was sharply criticised, and he defended himself with an ability in singular contrast with his age and experience. A few days afterward a far-sighted old physician, who was conducting a medical college, came to him and requested him to fill a chair in it. The students in the other schools thought it a joke, and they made up a crowd to go and give him a reception. They went down armed with paper balls and other such missiles of juvenile aggression. They came pouring in the door. Dr. Graham was just at his desk and was stopped by the noise. For a moment he was thoroughly confused, then straightening himself up he begged for a few moments attention. Forthwith he commenced his subject and as—stimulated by the opposition—he continued his lecture, he poured forth such a stream of simple eloquence as won every heart. Cheer after cheer went up as he closed. The whole class was won. In a few years more he was at the post he held for twenty years in the Medical College of Ohio.

The name of no teacher of medicine in this city has ever come down with such a bright halo about it as that of Dr. Graham. It is the universal testimony of students of medicine who have sat at his feet while he taught, that he had no equal as a lecturer on the practice of medicine. It was not that his vocabulary was so great. On the contrary, his words were few, but they were so perfectly clear and choice as to convey, with the greatest force, precisely what he meant to say. Dr. Graham was a master in the art of exposition. His style was perfectly simple. He stood straight as an arrow before his class, and spoke, at first gently, winningly, and then warmly, until his face glowed like a poet's, and music fell from his lips. But it was as a lecturer in clinical medicine that Dr. Graham stood head and shoulders above others. It was at the bedside rather than at the desk that he forgot himself in the subject being studied. It was indeed a rare privilege to hear Dr. Graham lecture on a case of heart disease, so systematically and succinctly could he make a diagnosis, and so clearly and convincingly establish the principles of treatment. Men who had been abroad and listened to the best clinicians of Europe, would say invariably on their return, "I have never heard the equal of Dr. Graham as a clinical lecturer." Profound scholars were abundant, more thorough pathologists everywhere, better clinicians none. Dr. Graham had in his prime a keen insight, a woman's intuition, a fine instinct, which enabled him to fix upon the disease at once, and he had, as only the children of genius have, the gift of making it plain to the commonest understanding. The country student fresh from the plow, and the college graduate fresh from the halls of learning, sat with equal pleasure and profit at his feet.

Ars celare artem. It is given to but few men to be able to dissociate themselves entirely from their work, and the ability to make the audience forget the actor is the characteristic of the consummate artist. Once it happened that the two greatest actors of Shakespeare's plays, Barry and Garrick, were playing the same piece, King Lear, in rival houses in London. The people crowded first to one house and then to the other, as such an opportunity to compare notes seldom happens. Some one asked the poet Rogers what

he thought of the two performances. Musing awhile, he said:

"The town has found out different ways
To praise the different Lears,
To Barry we give loud huzzas,
To Garrick only tears.

A king! ay, every inch a king,
Such Barry doth appear,
But Garrick's quite another thing,
He's every inch King Lear."

Such an artist was James Graham. He could incorporate himself in his work.

WILLIAM WIRT DAWSON.

During the sessions of 1848-49 and 1849-50 there sat upon the benches of the Medical College of Ohio a youth stoutly built, ruddy with the bloom of country life, endowed with a shock of dark hair, keen, brown eyes and an overflowing vitality, which burst bounds occasionally with an outbreak of mischief; yet withal a good listener, a quick observer and a boundless ambition. The name of this youth was William Wirt Dawson. He was registered from Ohio, his preceptor was his brother, and he graduated with a thesis on compression and concussion of the brain; which is to say that the young doctor had a taste for surgery rather than medicine from the start.

In the faculty at that time were famous men: John Locke, chemistry; L. M. Lawson, pathology and materia medica; M. B. Wright, obstetrics; R. D. Mussey, surgery, and king above all, Daniel Drake, practice. These men made the city of Cincinnati known all over the world. The valedictory address to his class of seniors delivered by Daniel Drake has become part of the medical history of this city. The valedictory of his own class was delivered by L. M. Lawson. It was an uncommon appeal to industry and stability of purpose. "Idleness is a moral imperfection; it debases, prostrates and ruins its victims." Again: "The great key to success in the pursuit of science is energy and determination." These were the words that made a deep impression upon this dark-haired young man, as he sat clutching his diploma and looking forward into fate. An old physician in the country said, once in my hearing: "I always knew that Dawson would get along. He used to work at his dissection sometimes until 4 o'clock in the morning." So the young man was soon handy with the knife, and he was soon familiar with the build of the body of man. The very next year, 1851, he was teaching anatomy in the Medical Institute of Cincinnati, with, as colleagues, Mendenhall, Wood and Comegys, the last survivor in the old galaxy. Within ten years after graduation the young anatomist, just turned of 30, had the chair of anatomy in the college of his birth. That was a proud period in his life, for "to have fame when young is the envy of the gods." He had as colleagues, Graham, Blackman, Bartholow and Wright, and was now winning his way to fame in surgery. When Blackman died the chair of surgery naturally fell to Dawson, and there are a thousand men now living who can testify how conscientiously he did his work. They will all say that Dawson was the most painstaking teacher the college ever had. The dullest student could still glibly recite the various lesions of fractures and not even the terrors of the green-room could frighten one of his pupils out of his knowledge of the dislocation of the arm and leg.

We have in Washington the largest and finest medical library in the world. Other nations may boast of

their works of art, their paintings and sculpture and architecture; they may surpass us in every field of literature and of science and in every collection illustrative of these fields. They have finer museums in natural history, finer libraries in every other department, but they can not surpass us in medicine. We owe that collection largely to the work of a man who got his medical education in this city and spent his life in collecting books. The Medical Library at Washington will always be a lasting monument to the labor and learning of John S. Billings.

But I am not to speak of him, or of other men who have gone out from among us, only of those whose lives have been spent with us. This splendid collection of books was packed in the walls of what was once Ford's Theater, the scene of a great tragedy in the history of this nation, a broken down building which finally collapsed and took fire and buried in its ruins a number of people. Fortunately, the medical library had been removed from this building and the precious volumes securely ensconced upon shelves in the fire proof structure, which is one of the many ornaments of our national capital. Now, it is not generally known that the work of securing the erection of this building was done largely by a congressman from the city of Cincinnati, to-wit, John F. Follett; who got the proper assistance from his fellows, or that the interest of Mr. Follett was excited by the unremitting efforts of Dr. Dawson, who being familiar with the inestimable value of the collection and having had impressed upon him the dangerous condition of the building, left no stone unturned in obtaining the coöperation of the proper authorities and securing the necessary appropriation for the new building. Thus was this building erected and the precious collections saved and made available for all time.

Dr. Dawson held every honor which medicine could give. He was one of the standard bearers of his clan. He was the soul of truth. He held quackery in abhorrence. He helped his fellows in distress. He was gentle to children, chivalrous to women, and upright and just in his dealings with men.

CORNELIUS G. COMEGYS.

Dr. Comegys, to whom I have alluded as the last survivor, has just died. He was the most beloved man in our profession, both in and out of it. Comegys was a big, broad man who had climbed, by hard work, to a point of broad survey. He had great ambition, and was busy with schemes day and night to such degree as to be regarded almost as a dreamer. But his ideas ran always in the line of progress, always onward and upward, and he kept his eyes so constantly fixed upon the goal as to be unmindful of the obstacles in his way. Some of his practical friends considered him visionary. He did really see visions, but always of things more perfect and pure than those by whom he was surrounded. Comegys was an embodiment of integrity, purity and truth. Like Schiller, he believed that every man has opened out before him two courses: one leads to the ideal, the other to death. But Comegys could never see anything but the course toward the ideal. By hard work and much self-sacrifice he made himself a fine scholar. And all his life long he strained his abilities to their utmost capacity in the service of his fellow man.

Hear him as he marks out the career of the physician: "We march with armies to care for the foot-sore and fevered soldier, and follow him, too, through

the thickest of the fire, not to aid destruction in her work, but to staunch the wounds she makes. It is not the trumpet call, nor the roar of battle that arouses our activity in the great conflict; but the cries of the wounded and dying—the appalling ruin of the field that inspires our enthusiasm amidst the dark splendor of war. The call of the distressed by night and day incites our energies and supports our weariness. Not only in crowded places, where the ways are easy, but in sparsely settled regions, amidst the sharp vicissitudes of the seasons, by lonely paths or in mountain defiles, unmindful of the tempest, we plod our weary way, the perturbations of our anxious hearts keeping time with the fret of the storm. On every hand, infirmity, sickness, helplessness, fearful casualties, bereavement, despair, death; hoping to strengthen, hoping to assuage or to avert, our days are occupied; sustaining the hopes, the agonies, the distresses of society, our responsibilities are momentous, our burdens are often too heavy to bear."

Hear him again as he pleads for the protection of the people against the frauds and wickedness of the quack. "When the human mechanism becomes deranged, and a great contest is set up between the forces of disease and the vital forces, who shall attempt to interfere—the man who has made these laws a study, who knows the operations of their final causes, who comprehends as far as science has shed light upon the subject, their special and general operations, or the man who is ignorant of the entire mechanism, and laying aside all such labor and investigation, attempts to rescue the suffering system by remedies which, according to his gross views, have been successful in a similar case? An irreparable injury, or even death itself may be the result of this ignorant interference, and what atonement then does the prosecution of an irresponsible man afford?"

"In regard to medicine, everyone" he continues, "must look out for himself. With the same indifference, we ought not to have a standard of weights and measures, nor a fixed value of coin, nor protection against issues of paper money. Let every one take care of himself. No man can assume to be a respectable minister of the gospel without the license of a church organization; no man can practice law without an approved examination before a court; no man can teach without a certificate of qualifications; no man can sell goods or peddle goods, or drive a dray or a cab, or an express wagon, without registering and a license. The public is defended from the impositions of the hackney coachman, but not from the quack doctor and patent medicine vender. No man is believed to be a carpenter, or a machinist, or a master in any other profession, unless he has served an apprenticeship to it. Then why, I ask, in the name of honesty and civilization, when we come to consider the human frame, the most wonderful structure of God, the divine idea of mechanism, in whose structure a thousand wonderful and complicated actions are in play, many of whose laws, after more than two thousand years of investigation, are still unknown, why, I say, do our governments surrender this beautiful structure to be prostituted to the mercenary practices of charlatans?"

A large part of his life was spent in an appeal for legislation to improve our sanitary conditions and to subdue the curse of quackery. He read, he plead, he labored for the creation of a Minister of Health in the Cabinet Department at Washington. He had

personal interviews with the President, and it is to the credit of the strong good man who now occupies this chair, that he listened to him with interest and was not unmoved by his argument. But it was thought that the time was not ripe. It certainly must come soon, and when it comes there will be general lament that the man who was best fitted to fill the place first, *in ad plures*, had gone before.

Comegys kept his youth to the last; he was interested in medicine to the very last day. "We must talk over the scheme of the University," he would say to me whenever I chanced to meet him. He could discuss any subject in medicine with any of the younger men, and with what freshness and philanthropy! In the discussion of the fresh air treatment of tuberculosis at the Academy, only yesterday it seems, he told the story of a young man who had recently consulted him. He had to say to him that his case was hopeless here and to advise him to seek change of air. "But," said the young man, "I have no means even to buy a street-car ticket." Dr. Comegys informed him that money was not necessary, that he should start and walk to Atlanta and beg his way. He would give him, he said, a certificate of his condition and everybody would help him on the road. He could travel like a German student on his *wanderjahre* and no one would refuse him food. "Silver and gold have I none, but such as I have give I thee."

Comegys had the pure spirit of discipleship. This is what he said once of one of his teachers and in the presence of him in a public address. It was in the last days of George Wood, and the occasion was a speech which rightly made him famous before the Alumni Association of the University of Pennsylvania. The Academy of Music was crowded with the *élite* of Philadelphia, for in that city the people still take deep interest in medical affairs. The old master sat on the stage, the central figure in a flood of light, but there was a shadow in front of him, the dark line of the scythe of the reaper, who was even then standing close behind his chair. "Venerable and remarkable man! Who, without ever laboring for fame, has received it; who, without ever climbing for great stations, has been lifted into them, and no man ever suspected his capability for them or envied him his well-merited success."

"Over a vast sea, beyond all storms," he continued with his apostrophe, "I behold a barque slowly moving through sluggish waters, borne so gently by the breeze that fills the stiffened sails that not a ripple breaks upon the heavy waves. Serenely stands the stately master at his post, steering for the last harbor. Somber and shadowy is the scene about him; yet across yon headland comes a rosy tinge of sheen, lighting up the tranquil face of the lone voyager who seeks the port of peace."

These are the men who for three-quarters of a century have borne the standard of medicine and surgery in the Queen City of the West. You may not point out in other fields greater purity of purpose, sacrifice of self, usefulness to others, than these lives have led, or show sentiments more sublime than these ideas have expressed. And the rank and file which followed, though failing from lack of opportunity or ability to express themselves in the same way, have led the same lives and held to the same ideals.

The memory of them inspires us. We, too, believe in necromancy as we know that wisdom and inspira-

tion come from consulting the oracles of the dead. It is as Ruskin said: "The grave is the best pulpit; the voice reaches farthest from the grave."

In contemplating the lives of these men the young physician may well be proud of his profession. When Correggio stood before a picture of Raphael, he cried: "*Anch' io sono pittore*," I, too, am a painter! And Byron, when he stood by the tomb of Galileo, exclaimed: "He was one of us."

There is in this city a band of men, mostly young men, who devote themselves wholly to helping their fellow-men in sickness and pain. For the most part, they have no motive in this work other than that of humanity and love of science. No other set of men may be compared to them in the disinterestedness of their work. Even the clergyman is sometimes sensitive about his particular faith; at least there is irreparable breach between the main divisions. The attorney must sometimes actually pervert the truth and try to defeat the ends of justice. Many of our statesmen have reversed the motto of Pitt, and work for themselves and not for their country. The laboring man works for nobody for nothing. He actually can not afford to, and he must charge for every moment of his time. The physician does much of his work for nothing; for years most of it.

These young men worked for humanity and science at first, but lack of appreciation and disappointment will change some of them. It is true that in after life the sense of the lack of appreciation is for the most part disappointed vanity, but it is different in youth. A few of our young men will persist and succeed without it, but some of them for lack of it will be reduced to the necessity of working for lower motives, will lose courage and zest in life, and a few, fortunately only a few, will strike their colors and betray their trusts. The fault will not be wholly with them; some of it will be with you.

If worth met with the same appreciation as wealth, what a stimulus it would be to virtue and invention! It should be so in a Republic. If it were so, how much more our civilization would surpass that in what we are pleased to call the effete monarchies in Europe. It was so in Greece, and the literature of Greece still rules the world. It is so still in medicine, for medicine is of Greek origin. If it were so in the world at large, what a support it would be to young men. But as it is they often see the prizes drawn by pretenders and quacks. If the young men see patronage going to quacks, what is the stimulus and incentive to work? Carlyle tells the story of a cobbler who was drunk all the time and whose wife and children suffered in consequence. But people patronized the drunken cobbler on account of his wife and children. Next door was an honest, thrifty, reliable workman, who had no patronage because he had no suffering wife and children. Finally, he became discouraged from lack of work and took to drink. There is everywhere vicarious suffering beside that which was endured on the cross. The patrons of quacks contribute to it. No person can take a front rank in any good society who patronizes fraud in any field.

The worst of it is that young men are, by lack of appreciation on the part of the public, discouraged from prosecuting scientific inquiry. See then how badly such neglect reacts. Bacon said long ago: "For in all times in the opinion of the multitude witches and old women and impostors have had com-

petition with physicians. And what followeth? Even this, that physicians say to themselves, as Solomon expresses it upon a higher occasion, 'If it befall to me as befall to the fools, why should I labor to be more wise?' And so is a community degraded. The people are prepared to regard an epidemic as a visitation of Providence. They are taught to look with distrust upon physicians. They are ready, without ever having seen one, to condemn vivisection, and many physicians themselves become only too ready to regard a disease as incurable. So inquiry is stifled and ignorance is exempted from disgrace.

Omne ignotum pro magifico, whatever is mysterious is wonderful. The crowd gapes with wonder at what it can not understand. The truth is, there is no subject concerning which man is so ignorant as the phenomena of nature about him. The mass of men have never been instructed in the physical sciences. Though they have the mind to comprehend they know nothing of astronomy, geology, chemistry, biology, and everything unknown is mysterious. But even people who have the advantage over their fellows in being somewhat informed upon these subjects, are ignorant of the construction and action of their own bodies. Consequently they, too, gape with wonder and are satisfied with the declaration that man is fearfully and wonderfully made. These people do not even understand that the study of anatomy, physiology, biology and *materia medica* rests upon the same laws, and that conclusions are reached in the same way as in the study of any other of the natural sciences. So that even intelligent people support quackery. A lawyer who will talk wisely about the capability of a witness, or who will sift testimony to the last point, does not hesitate to recommend a remedy for a disease, of the nature of either of which he knows nothing at all. As for the clergy, we are fast becoming acquainted with their physiognomies in the newspapers in recommendation of the virtue of quack medicines. So far as I have seen there are not more than two or three religious papers issued in the United States which do not largely subsist upon lies in recommendation of quack medicines.

Of all the studies of science, none is so difficult, so recondite as that pertaining to the body of man. The physician learns first, and as the most important lesson, caution. He holds in daily repetition the maxim of Hippocrates, *nil nocere!* whatever you do, do no harm. His new discoveries are all made first in the field of experimentation. He works with the lower animals, one after another, and after three or four hundred experiments upon the lower animals, he begins cautiously upon the body of man, often enough upon himself, and so establishes gradually first the safety and then the virtue of a remedy. What does the charlatan know about this difficult science of medicine? What does he know about the construction of the body, the uses of the various organs? What does he really know about the nature and action of the remedies? The truth is, he does not even care to know, and individuals of this brutality are allowed to practice medicine. If people could only know that the remedies in *materia medica* are selected with the greatest caution as a result of studies by botanists, chemists and biologists, that active principles are extracted in the greatest purity, and that only such preparations find their way into the *materia medica*, with what aversion and horror would they not look upon the crude mixtures of quackery, and with what recoil would they not regard the charlatans themselves!

The best botanists, the finest physicists, the most accomplished chemists, are ransacking every field of nature day and night to find something new in the treatment of disease. Why do the new rays fascinate us at once? Because we hope with them to see into the body of man. Do you think that if there was any virtue in any quack medicine the physician would fail to use it? "The cunning workman never doth refuse the meanest tool that he may chance to use." But he knows there is nothing in it. It is strange that a shrewd business man or a skilled artisan, who would look with disdain and contempt upon any pretense of discovery in his own field by men who know nothing whatever about the subject, will seize with avidity and will not hesitate to recommend some new remedy, though advocated with claims preposterous enough to be absurd. But the absurdity is not the least of it. The drug is dishonest. The man who makes the claim is the forger who passes counterfeits. If the truth were known every vendor of quack medicine is really liable under the law which imposes a penalty for obtaining money under false pretenses. No society can take high rank which offers its patronage to such men, and no government can prosper which puts its authority in such hands.

We have two classes of quacks, fools and knaves. To the first class belong the half educated, the dreamers, the metaphysicians, the fanatics, the individuals who practice according to a set dogma, who believe only in the administration of minerals or of vegetables, the speculators, the spiritualists, the faith cures, the pseudo-scientists. No advocate of any such branch of metaphysics can make his doctrines plain to any intelligent man. These are the people that believe that medicine cures by some secret dynamic principle, mysterious, undiscoverable, and of course undemonstrable, or who preach the arrant nonsense that a drug acts most powerfully in the smallest possible dose. All these quirks and cranks, and hundreds more that might be named, have their day. They come and go. One substitutes another. No one of these we now have, allopathy (if there be such a thing), homeopathy, eclecticism, vitapathy, or what not, will last another half century. But things similar, things false will always be, and the unmasking of any of them is a thankless task, because *populus cult decipi*, the people want to be deceived, and, as Emerson says, we do not like those who unmask our delusions. It is a strange thing that so many people will turn away from the light and prefer to grope in the dark, and that most men "will take no notice of what is plain before them, but will puzzle themselves in abysses which no understanding can fathom." As Carlyle says, our greatest business is not to see what is dim in the distance, but what is clear at hand. When these people see the truth they do not know it, or are so attracted by half truths as to be led astray. Sometimes, like Buridan's ass, in the midst of plenty they die of starvation because they can not see clearly enough to decide. Buridan maintains that if an ass could be put between two haystacks of exactly equal attraction, he would starve to death, as there would be no reason to prefer either one.

This is the class of people who wear us out with trifles and who make life a burden in drawing distinctions without a difference.

"People who could distinguish and divide
A hair 'twixt south and southwest side."

"And weave fine cob-webs fit for scull
That's empty when the moon is full."

And who spend hours in trying to determine

"How many scores a flea will jump
Of his own length from head to rump."

And this class of people, sometimes with the best intentions, do the most incalculable mischief, and all the more mischief because the intention is good. I often hear urged in support of some such a doctrine that the advocate was so earnest and honest. This fact only makes the doctrine more dangerous. "Nay, I believe," said Ruskin, "that metaphysicians and philosophers (speculators) are on the whole the greatest troubles the world has got to deal with: and that while a tyrant or a bad man is of some use in teaching people submission or indignation, the metaphysicians are always entangling good and active people, and weaving cobwebs among the finest wheels of the world's business: and are as much as possible by all prudent persons to be pushed out of the way like spiders."

If it could be known that the study of medicine is based upon natural laws and conclusions may be reached only as in the other sciences, there would be no room for the different so-called schools of medicine. There is really only one school, and that is the treatment of disease based upon a knowledge of the construction of the body, the uses of organs, the derangements which they undergo, that is, the diseases they suffer, the nature of remedies and the effect of remedies upon disease. That is, medicine is a study wholly according to natural laws, laws which are brought to bear in the study of all the natural sciences. These things are not matters of faith or belief, but of demonstration. True, the demonstration may not be made in all cases as accurately as in the arts and manufactures, because the human body is much more complex, but the effort must be made in this direction, and progress is possible in no other way. Studies in any other direction run into metaphysics, dogmas, isms, ologies and pathies. Not any one of these fancies has contributed anything to the treatment of disease. People think about the schools of medicine as about the sects of religion. But nobody claims that religion is a matter of demonstration. Religion is a matter of faith or belief. Medicine should rather be compared with law. There is only one kind of law, that which represents the wisdom of the ages. This law secures for us society, government, civilization: anything else is anarchy. There is only one school of medicine, that which is founded upon the study of the body, its diseases and the action upon them of remedies. Anything else is quackery. New systems of medicine, forsooth! Suppose a man, or a set of men, proclaimed to you that all your present ideas of astronomy were wrong, that the Heavens were covered in with blue flannel perforated and that what we take to be sun, moon and stars were only openings in the cloth for the penetration of light from the other side! What would you think of it? Well, that is exactly what is true of the so-called new systems of medicine. They are, if not open frauds, nothing but delusions of diseased minds.

Nevertheless, between the fools and the knaves, between the individual who is himself deceived and the individual who makes it a business to deceive others, there is a wide and deep gulf. Immeasurable indeed is the gulf between the men who blunder along knowing little but trying to do right, and men who purposely wreak wrong for personal greed.

The metaphysician is a man who is looking for a

grain of wheat in a bushel of chaff. We may regret the expenditure of so much time for so little reward, nevertheless, we may recognize that he is not off the track of virtue. We feel for him pity rather than contempt, and his efforts are greeted rather with a smile of amusement than with aversion.

How infinitely lower and more abhorrent is that class of men who see in human suffering only a chance of making money, and who do not hesitate to continue it and increase it by deceit and fraud, by the cunning of the quack and the brazen lie of the charlatan.

We come now to the class who live only upon lies. These are the individuals who make money by misrepresentation and fraud, and who actually speculate upon the sufferings of their fellow-men. Every community is infested with quacks, our community the worst of all, as our State has only just passed a law which protects the people against the vilest impositions of quackery, and this law as it stands is so little better than an indignity and insult to honesty and intelligence as to be endurable only on account of the promise of future good.

Sometimes the quack is an ignoramus who really believes for a time in the virtue of his preparation. But not for long; sooner or later the most stupid quack comes to know that his remedy fails. Nevertheless, he does not hesitate to plaster the walls, to publish columns in the papers, to fill the spaces in street cars and in every possible way obtrude his wares under the most gross and wholesale misrepresentation. His liniment will cure every case of rheumatism, his balsam every kind of cough, his salve will cure every sore, his bottle will in fact cure every disease. He can by the thousand furnish testimonials to this effect, and he can find people who have no other road to fame, who are willing to allow their faces to appear in the daily papers in recommendation of his wares.

Now, the fact is, everybody really knows these statements to be false. But so strong is the fear of interference with liberty of action that the quack is allowed to trade upon the sufferings of his fellows. People content themselves also with the belief that the remedy at least can do no harm; they say this especially of the infinitesimal dose. It must be remembered that the lie which is half truth is always the worst of lies. All falsehood degrades; every liar is an enemy of society, and the concealed enemy is worse than the open foe. A community may preserve itself only by turning its back upon every form of falsehood. It is not only the article of pure food and the pure drug which should be stamped with its proper value, but the brand should be put upon every kind of impurity. "The shortest way to check the downward forms of deceit is to set watch more scrupulous against those which have mingled unregarded and unchastised with the current of our life." If these patent medicines and quack medicines could be stamped with their true value, not one of them could remain, and if the individuals who now roll in wealth, some of them, could be punished according to the suffering they have caused, by commission and omission, they would be serving terms in penal institutions.

The people who believe that these remedies at least do no harm, forget that sins of omission are as bad as sins of commission, and that a remedy has control over a disease only at the start. A child can be protected against smallpox during the prevalence of an epidemic, only by being vaccinated within three days after exposure, or can be absolutely rescued from

diphtheria by the antitoxin only within three days after the onset of the disease. Most cases of consumption can be recovered from within three months. These opportunities are lost under the use of quack medicines. The vampire, in its original conception, was a dead man restored to life but without soul and with only life enough to suck the blood of its victim when asleep. In zoology the vampire is a bat which sucks the blood of persons and beasts when asleep. The consumption quack are the vampires which feed upon the slow tortures of this disease.

The true remedies of the materia medica are selected with the greatest care. A committee of the best men from the departments of medicine and pharmacy are chosen to supervise the purity of the preparation, to extract the active principle, to eliminate all crudity and impurity. This is never the case with the quack medicine. If the people could only know how vile are many of the preparations, how at least crude are many of the drugs, or even how cheap is the actual cost of the material, a few cents, perhaps, for which they pay a dollar, they could easily appreciate the indignation which exists in the minds of the men who know these things. And all the while the law in our country supports quackery. It is different in the older civilizations of Europe. The patent medicine must be registered, the exact composition must be given, and the people are thus protected against injurious preparations. Medical men owe it to their fellow-men: to drive these desecrations from the temple. The way is easy. It is only necessary to light up the dark holes with the blaze of truth. Let the evils of the remedies be shown up. The quacks are pretty quick to hide when pursued. In the presence of a real epidemic all quack remedies disappear. The "vitaline" craze ran over the whole of Russia a few years ago. Everybody was having themselves injected with this powerful rejuvenator and renovator. It was like the days of Mesmer. The streets were not wide enough to hold the vehicles of the people of fashion. They tried to persuade the Czar to have his son injected. Finally, they did experiment upon the body of General Gressner, who directly died from the effects. Then, when the charlatan was brought up for manslaughter, he took refuge under the employment of a dirty septic syringe, and when the nature of the remedy had to be disclosed to save his neck from the gallows, it turned out to be nothing but borax and glycerin.

You remember the St. John Long craze that ran through London a few years ago, and the editor of one of the leading magazines took it up. At last, when a great sloughing mass was formed, and a patient finally died of septicemia, and St. John Long was prosecuted for manslaughter, he hid himself from justice with the claim that his remedy was nothing but turpentine and vinegar.

Twenty-five millions of dollars a year are spent for quack medicines in this country! Some time ago it happened in this city that a rich man fell into financial distress. He wanted money and he wanted it quick. To protect himself from bankruptcy he must raise a large sum in three months. He had had some experience with quack medicines before. He picked upon a popular preparation of this class, and learning that it had not been advertised in three of our Western States, flooded the country with the imposture and made the necessary sum of money. But if an epidemic disease had been turned loose upon those innocent communities, if the hot breath of a pestilence

had passed over the land, it could hardly have done the people more harm.

Then, to say nothing of the actual physical damage, the injury to health, the breaking of spirits, the misery which goes with disease, look at the degradation of morals which results from a success of this kind. How wide-spread is the evil influence of fortunes made rapidly by fraud in any field.

And aside from the effect upon the health and wealth of a community and the general effect upon society, see the degrading effect of quackery upon the individual himself. Falsehood puts a brand upon the forehead of a man. He may wear his hat so low in public that the people may not see it, but some of his fellows know it to be there, and when he reaches the privacy of his own home and takes off his hat he sees it in his own face. He knows himself to be a charlatan; that is the worst of it. "Money answers everything, save a guilty conscience' sting." Emerson says that the time comes in the life of every man when all that he has he will lay down for right relations with his fellows. "Boss" Tweed was at the height of his power when he had bought the senators of his State at \$10,000 apiece and had himself surrounded with a crowd of sycophants and flatterers. But life had long since lost its zest. He had a disgust for it and for the parasites about him, and I doubt not that the Tombs were at last a not unwelcome retreat. The time comes in the history of these men, when, as Horace said of condemned criminals, Sicilian dainties will not please their palates and the melody of birds and harps will not bring back sleep. "Reputation, reputation, reputation, oh! I have lost my reputation. I have lost the immortal part of myself and what is left is bestial."

Witness also the degrading effects of quackery, even upon those who only indirectly or more or less innocently deal with it. Many of our drug-stores are stuffed from attic to cellar with quack medicines and patent preparations. And it is a notorious fact that where these products most abound the finest elaborations of the materia medica are not to be found. Some of the druggists, seeing the ease with which fortunes are made by these worthless preparations, are finally led to take a hand themselves. They do not hesitate to advertise Smith's sure cure for epilepsy, Jones' certain remedy for catarrh and Brown's infallible treatment for consumption. And so the druggist who has had the benefit of a classical training in chemistry, is degraded from a skilled pharmacist into a huckster, who not only handles, but recommends worthless goods; and our "honest apothecary" is not ashamed to advance claims which he knows to be false and to take money which he has not earned. Something of the degree of this degradation we learn in the bitter protest made by some of our druggists against the prosecution of the sale of impure drugs, and the insensible obtunding of the conscience is seen in the plea of a certain number to be allowed to brand and sell goods below the standard of purity.

If it could be that only the charlatan suffered, or the individual who believed in what he is pleased to call free latitude of medical practice, the effect would not be so bad. Perhaps it might result in good in securing more rapid extinction of this class. Unfortunately, however, the victims are found in the innocent members of the family, in the little children, upon whom the mischief is wrought both by commission and omission. Some time ago it happened that the

president of the Anti-vaccination Society of London lost his wife and all the members of his family, one after another, during an epidemic of smallpox. Thereupon the man committed suicide. There was general lament that the suicide had not been done first.

Twenty-five million dollars a year are spent for quack medicines! What could be done with that money if invested in medical education? What untold pains could be quieted, what unspeakable misery could be relieved! Look how a little money invested in the study of cholera in Prussia saved us millions a few years ago, and probably shut out cholera from our shores for all future time.

Would it be considered any justification for quackery that the fortunes which have been thus amassed have been used to build churches, erect hospitals and endow orphan asylums by men

"Who think for life-long evil to atone
By building monuments in stone?"

Is it possible to merit heaven by making earth a hell?

Look now upon this picture and then upon that! On the one hand fraud, deceit, degradation, perhaps with wealth. This is the quack. *A monstrum nulla virtute redemptum.* On the other hand purity, self-sacrifice, the highest philanthropy, perhaps with poverty. This is the true physician.

One of his pupils said of Parkes that he never followed him about the wards without feeling that he could become better, with an intense wish to be so, and Romney, the artist, declared that if he wanted to make a representation of the compassionate benignity of the Saviour he would paint the face of the elder Guy. "There is to me," said Sala, "an inexpressible charm in the lives of the good, brave, learned men whose only objects have been and are to alleviate pain and save life."

Look now upon this picture then upon that! The mission of one brings him nearer to the gods; the acts of the other are close to those of the fiend. On the street, in common parlance, they are all doctors. Will you not at least help us to draw the line? Into the hands of which men will you commit the medicine and surgery of the Queen City?

ORIGINAL ARTICLES.

THE MECHANISM AND DIAGNOSIS OF TRAUMATIC CEREBRAL LESIONS.

Read at the Second Annual Meeting of the American Academy of
Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

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In this paper I wish to review the mechanism by which traumatic lesions in the brain are produced, and the means by which an exact diagnosis of the seat of the lesions must be made.

Until recently it has been considered justifiable for the surgeon, after having made a gross diagnosis of fracture of the base, "compression" or "concussion," to stand by and see his patient die, or become the subject of epilepsy, insanity or permanent paralysis. Medical literature is filled with cases illustrating the natural results of these injuries, following the "expectant" treatment. From them, one quickly learns how slowly and imperfectly nature repairs the lesions, and how far reaching are the after effects. Some have

questioned whether a cerebral injury is ever completely recovered from.³ The evidence is now complete, that various forms of insanity, in many cases, originate in and are directly caused by a neglected injury to the brain. This has long been known of epilepsy and various motor and sensory disturbances. In a recent paper read before our Jackson County Medical Society, I reported in detail ten cases of cerebral injury, showing forms of mental derangement, from simple loss of memory, to persistent irritability of temper, melancholia, delusional and moral insanity and mania, all the direct result of intracranial injury. Most of these were due to old injuries; some submitted to operation and were relieved, others not. But the recital of the cases was not so much for the purpose of calling attention to the results of late treatment, as to the fact that symptoms of such nature had resulted from an unrepaired intracranial injury. To show how infrequent interference is in these cases, I need only quote the statistics recently furnished by one of the best hospitals in the country.¹

In six years, 308 cases of severe head injury were treated with 115 deaths. In twenty cases fragments of bone were removed and in 24 cases only was trephining done. Eighty-two of the cases were characterized as "Fracture of the Base," of which 60 died. Three of the 82 were trephined, two without success and the third was successful in opening into the seat of the hemorrhage, but the vessel was not secured and death followed in twenty-one hours. No report is made as to the condition of those who survived. Thirty-two cases, excluding the gunshot cases, came to autopsy and showed extradural hemorrhages in thirteen, which the report comments on as "a larger proportion, of localized extradural hemorrhages than is generally appreciated."

I can not dwell on the necessity of repairing at once and as completely as possible, the effect of an injury to the brain or its coverings. All will I think, acknowledge the desirability but question the ability to locate most of the lesions when recent, and even if located, to relieve them. Apparently little effort has ever been made to get at the basal extradural hemorrhages which comprise such a large proportion of the fatal cases. These extravasations remain fluid for hours after an injury, and the suggestion is directly at hand, that the pressure could be taken off a well localized mass by a carefully directed aspirating trocar or needle introduced directly through the brain mass, as well as by an opening at edge of base and separating the dura. It is not my purpose however to enter into treatment.

It must be acknowledged that the exact diagnosis of recent intracranial lesions often presents a most complex problem. The real difficulty does not lie in the interpretation of symptoms, for these are often complete and conclusive in their indications, but rather in the lack of data furnished by an unconscious patient. There are facts however which may be obtained under the most disadvantageous circumstances, and these are sufficient in the majority of cases to lead to a correct diagnosis. It is always to be kept in mind that the absence of symptoms is as significant and possesses as much logical force as their presence. Also that the brain is not unlimited, hence a localization by exclusion in the absence of a direct diagnosis, is permissible.

Let us take first the mechanism by which the lesions are produced, and then the resulting symptoms with

special reference to their localizing value. The first effect of a blow is received by the scalp, which may be cut, bruised, lacerated, or when protected, may show no evidence whatever of a serious lesion beneath. It is always to be carefully examined for such evidences as it may furnish. It is the most direct avenue for infection, leading to important and often disastrous secondary changes, and on that account is worthy the most painstaking care of the surgeon.

The effect upon the cranium is determined by the force of the blow, and the curve, thickness and density of the bone. The character of the injury can often be inferred from the nature of the accident. In a general way it may be said that it is dependent on the velocity and concentration of the force. When the velocity is great, and the force is concentrated, the effect is most marked at the seat of impact, as when a bullet strikes the skull. But when the force is disseminated and of slow velocity the effect is generally most marked elsewhere, as when a man receives a blow from a sand bag.

With the exception of the fracture at point of impact, which may be depressed, cranial fractures are linear and almost invariably run toward the base, following the curve of the shortest radius and in the line of least resistance. That this is not invariably true is due to the fact that in some instances the force is so applied as to force the fracture to follow a long curve, as in compression of the skull from the sides. The so-called fractures by *contre coup* are no longer to be considered possible.² The only way in which the skull can be injured on the opposite side, is by injury against a resistance which is really equal to a second direct blow. This applies to the brain also, which is often injured by being bruised through its impact against the skull.

Most of the linear fractures have no importance in themselves, and it is unfortunate that modern surgery still classifies head injuries under "fracture of the vault," "fracture of the base" etc., as though these were important. The close association of such structures as the facial nerves, the middle meningeal artery and branches and the sinuses makes it necessary to estimate as closely as possible their direction and extent. It should also be borne in mind that extensive fractures can not be received without grave injury resulting to the cranial contents as a result of the same force which produced them. But a depressed bone in itself does no harm, were it not for the injury it inflicts on the parts beneath. It is the brain and its nerves which are of importance, and which must be considered from first to last. This has been formulated in the statement that "all cases of head injury should be estimated primarily with reference to the amount of damage which the cranial contents have received, and secondarily with reference to their becoming involved."³

The brain is a soft solid, permeated with tougher blood vessels, and poised on a water bed over a very rough and irregular base. This water bed of cerebro-spinal fluid surrounds the hemispheres and is continuous with that in the spinal cord. At the base of the brain, it varies much in depth, owing to the irregularities forming the so-called lakes. Inside the brain the ventricles are filled with the same fluid, and each blood vessel in the brain is suspended in a double lymph space also filled with the same fluid. Between the muscularis and adventitia of all isolated arteries is the adventitial lymph space of Robin, and outside of

this, between it and the limiting membranes is the perivascular space—or space of His. Any increase in the size of the vessels takes place at the expense of the fluid in one or both of these spaces—and as the skull is a closed box, it is conversely true that anything which displaces this perivascular fluid, must be attended by an increase in the size of the vessels, or rupture. Moreover not only the nerves but the nerve cells themselves, lie in spaces filled with the same fluid which connect with the perivascular spaces.

The fluid on the outside of the brain is directly continuous with that in the spinal cord, but that of the subarachnoid and intra-ventricular spaces is only communicable through the small foramen of Magendie at the fourth ventricle, the so-called cerebro-spinal opening. It is this cerebro-spinal fluid which plays the most important rôle in traumatic intracranial lesions.

The other factor is the elasticity of the skull as a whole. This varies greatly from infancy to old age, but must be most marked in the young adult skull with firmly united sutures and a large amount of animal matter in the bones. If dropped from a height on the floor such a skull will rebound like a ball. The interosseous membranes prevent the infant's skull from having the solidity necessary for such a rebound, and the brittle bones of old age break too easily, so that the problem varies somewhat at the extremes of life. It has been shown by Felizet⁴ that the adult skull, when struck a moderate blow, yields under it, forming what he calls the "cone of depression." It is similar to what occurs in a billiard ball or a bell when struck. The blow compresses the billiard ball in one diameter and it lengthens in the transverse. As it rebounds the long diameter becomes the short one and the short one lengthens, and this continues, the alterations becoming continually more feeble until the force is spent. This causes in a bell what we call its tone, which is long drawn out because its edge is accurately round and hangs free so that nothing interferes with the vibrations. But in the skull the effect is necessarily of short duration, the vibrations being quickly interrupted by its buttresses, irregularities and attachments.

Under these premises, what happens from a blow on the head? Let us say for simplicity, that it is not sufficient to produce a penetrating wound. Under the blow the skull is momentarily depressed—lengthens in the transverse diameter, and rebounds, becoming elongated in the diameter in which the blow is received. The bone may or may not be fractured. If depressed beyond a certain point it can not rebound and we have a depressed fracture. The fissure in the bone may involve vessels or nerves in close connection with it, leading to immediate hemorrhage or paralysis. The sudden depression of the skull drives the cerebro-spinal fluid forcibly from under it, and superficially it must spread laterally into the areas where the diameters are elongated—and what is not thus accommodated is forced into the perivascular lymph spaces, or forcibly injected into the spinal column.⁵ This explains how we can have a lesion of the spinal cord from a blow on the head. The quick rebounding of the skull tends to leave a vacuum at the four diameters where the maximum of motion has been, *i. e.*, at the point of the blow, diagonally opposite and at the two points at the extreme of the transverse diameters. Now the impetus given to the cerebro-spinal fluid is such as to send it out of the way, and the reflux of the fluid is relatively slow, so

that we have the vessels left without support, and they give way under the strain at the four points mentioned. Thus are accounted for the extradural and sub-dural hemorrhages.

That which happens in the brain is exactly analogous to that which happens in the cerebro-spinal fluid lying outside. The impetus of the blow received on the vault tends to drive the fluid from the larger ventricles into the smaller, from which there is no escape except through the small opening of Magendie.

All the perivascular lymph spaces receive the same impetus, and momentarily the blood vessels and nerves are unsupported; thus occur numerous minute inter-cerebral hemorrhages into the nerve sheaths, which are found as constant factors in cerebral injuries. The sudden intense distension of the fourth ventricle often results in rupture of its walls. In this way are accounted for the well-known glycosuria which so often follows cranial injuries; also cases of immediate death from laceration of the vagi at their roots. The rush of the fluid through the foramen of Magendie into the spinal cord is sufficient to irritate and often to lacerate the restiform bodies in the bulb. It has been experimentally found that mechanical irritation of these bodies, produces a reflex anemia of the brain, attended with all the symptoms of the so-called "concussion."

Also the evidence of many autopsies points to them as the seat of the fatal lesion, so that the conclusion is irresistible that the opisthotonus, spasms, rigidity and other symptoms joined together under the name of concussion, find their explanation in the irritation of the restiform bodies, by the cerebro-spinal fluid as it is violently injected into the spine.⁶

The brain mass itself, deprived of the protection of the cerebro-spinal fluid, is lacerated at the site of the blow, and on the opposite side through its own impetus against the bone. When the impulse is downward, it is found that the resulting injury against the jagged projections in the base are not more marked than against the smooth and rounded vault. These act like the elastic falx and tentorium which are stretched like sails in different planes between the cerebral masses, and take up a large portion of the force, directly preventing the impinging of the proximal half of the brain upon the distal portion and against the opposite bony wall. It is interesting to note that the tentorium is ossified in some animals, whose brains are built on the fore and aft plan, *e. g.*, cats.

All possible primary lesions thus consist of, 1, the fractures in the skull and rupture of nerves or arteries and sinuses in close connection with it, with their resulting hemorrhage; 2, lacerations of the cerebrum, basal ganglia and the underlying nerves; 3, hemorrhages into the brain substance, nerve sheaths and basal ganglia and edema of tissue adjacent to those parts pressed upon. Of these three sets of lesions, localized hemorrhages upon the surface are in the majority of cases the cause of death or permanent injury, and statistics show that a majority of them can be reached if located. The secondary lesions comprise unorganised blood clots, cysts, hematoidin deposits, collections of colloid bodies, cicatrices, miliary scleroses, adhesions, varicose veins, and last but not least, the secondary infections, pyogenic and sarcomatous.

I wish to-day to consider the symptoms from primary lesions only, *i. e.*, the fractures, lacerations and hemorrhages which we see in a recent case. I wish

to repeat that the linear fractures are of little importance beyond indicating the possible source of other lesions.

The inference to be drawn from immediate facial paralysis, hemorrhage from the ear and a true sub-conjunctival hemorrhage are too obvious to be repeated. The depressed fractures interfere with or suppress the functions of the portion of the cortex pressed upon and demand immediate attention, not with a view to restoring the skull, but wholly with reference to the underlying brain. There is no such thing as a depressed fracture without symptoms, unless you suppose that there is a portion of a man's brain without function. It may take time and study to demonstrate them, however. The effect of the lacerations and hemorrhages depend upon their situation and extent. A laceration may cause immediate and total abolition of function at the site, through the severing of the nerve connections of the part. The phenomena resulting from a hemorrhage, and the mechanism by which it acts, are best seen in cases where a small vessel is ruptured and a considerable time occupied in the development of symptoms. Slight at first, it irritates the abutting cells and the normal action of these cells is manifested peripherally in response to the stimulation. If into the motor area, involuntary twitchings or spasms of a muscle or group of muscles may result. As the hemorrhage increases in amount, it presses upon the cells, and driving out the intercerebral fluid prevents the circulation of blood and lymph through the part pressed upon. From the irregularities of pressure upon the vessels, a halo of edematous tissue invariably forms around the compressed area. This area is bloodless, therefore without function, and this loss is manifested peripherally. It is not to be seen by looking at the compressed area. The resulting symptoms comprise all possible motor and sensory disturbances, mental and moral aberrations according to the parts pressed upon. A good example of the varying effects of pressure from hemorrhage is seen in the eye symptoms resulting from rupture of the middle meningeal artery.⁷ At the outset the eyes twitch toward the side opposite the lesion, and remain there with contracted pupils and often constant nystagmus until the pressure is sufficient to cause a paralytic lesion when the eyes roll toward the side of the lesion, the pupil on the side of the lesion dilates and the paralysis is complete. The importance of a hemorrhage depends upon the nature of the tissues pressed upon and the degree of pressure. A mass the size of a pea, suddenly extravasated into the medulla may be immediately fatal, while a pint of blood may be slowly and harmlessly spread over a hemisphere with a few recognizable symptoms.

A depressed fracture acts like a localized hemorrhage in the cortex and is equivalent to the introduction of a foreign body into the cranial cavity.⁸ From it the general cerebro-spinal pressure rapidly rises and gradually falls, leaving the depressed area anemic in the midst of an area of edematous tissue which rapidly forms.

From the local pressure there results a general difference in the temperature of the sides of the body.⁸ When the compression is slight, the opposite half of the body (*i. e.* the paralyzed half) shows an axillary temperature distinctly higher than that of the other side. Whereas, when the compression is considerable, the reverse is the case, and the opposite side has a

lower temperature than that on the same side of the lesion. It has been suggested as a working hypothesis to account for these facts, that a small pressure produces an irritative lesion of the inhibitory mechanism of the vaso-motor center supplying the opposite side of the body, and so a dilatation of the cutaneous vessels it produces, causing a rise in the surface temperature. A greater pressure produces a paralysis of the inhibitory mechanism, so that the vaso-motor center acts without restraint, constricts the vessels, and leads to a fall in temperature. This point has not yet been fully worked out, but may be of considerable importance when fully developed.

A local compression of the cortex also causes characteristic changes in the pupil.⁸ If the compression is small, an irritative lesion apparently results and at the same time, as the temperature of the opposite side of the body becomes elevated, the pupil of the same side contracts and reacts poorly to light. When the

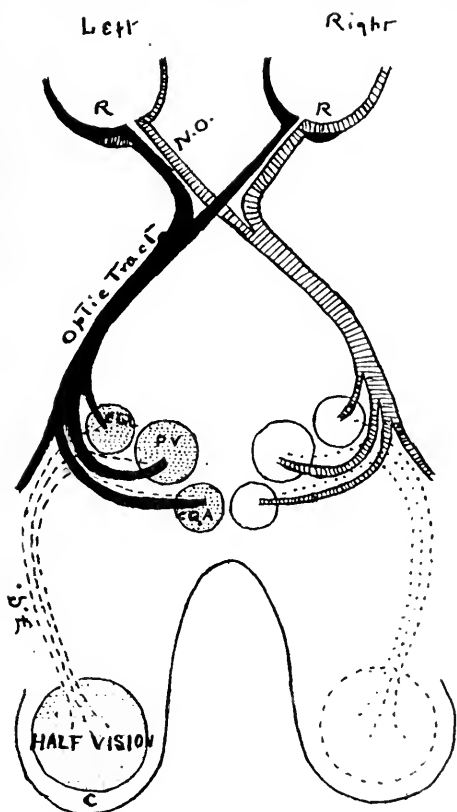


FIG. 1.—Showing course of visual fibers. R, retina; N O, optic nerve; P V, pulvinar; C G L, corpus geniculatum laterale; C Q A, corpus quadrigeminum anterius; F G, fibers of Gratiolet; C, cuneus.

compression is greater (the opposite temperature falls) the pupil of the same side dilates, while the opposite pupil contracts.

When the pressure becomes great enough to considerably affect both hemispheres, the opposite pupil will also dilate.¹⁰ Dilatation of the pupil primarily on the same side as the lesion was described thirty years ago by Mr. Hutchinson,⁹ and has since been known by his name, and the "Hutchinson pupil" has become familiar as a sign of hemorrhage from the middle meningeal artery. The phenomenon was supposed to be due, by Mr. Hutchinson, to the gravitation of the blood toward the base and its pressure upon the third nerve. But recent experiments have developed that pressure at that point is not necessary to produce the phenomenon. Furthermore it would be difficult to explain on this hypothesis, as Mr. Dean points out,

how it is that only the fibers of the third which go to the iris are paralyzed, while the other muscular branches are not. It would appear that any cortical pressure, at least in this region, is sufficient to produce the dilated pupil.

Beside the alteration of the pupil referred to, which is really a paralysis of the muscular fibers of the iris, we may have as eye symptoms: 1, paralysis (and spasms) of the ocular muscles; 2, alteration in the field of vision; 3, incoördination of the parts concerned in the act of vision in each eye singly. In order to understand the ocular symptoms it is necessary to know a little of the central visual apparatus. The movements of the external muscles of the eye are controlled by the third, fourth and sixth nerves, and this motor mechanism "is finely bilateral but the sensory mechanism is badly unilateral,"¹¹ and hence of much greater localizing value. This unilateral disposition affects not each eye singly, but the lateral halves of both eyes. Taking first the muscular apparatus, and the third, fourth and sixth nerves: If we turn our eyes to the right or left it is done by the double synchronous action of the internal rectus of one eye and the external of the other. This is the physiologic process known as conjugate deviation.

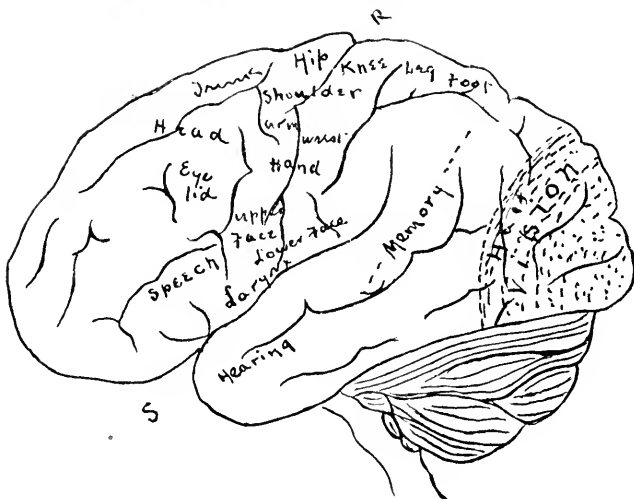


FIG. 2.—Diagram showing external surface of left hemisphere. R, Rolando; S, Sylvius.

Definite relations do not appear to exist between any one part of the motor area and the ocular movements. Irritation of the whole cortex as well as the visual area occasion ocular movements toward the opposite side (conjugate deviation) and these movements are greater, the farther the irritation is removed from the macular region of the visual area. The fibers from their cortical nuclei are collected and rearranged and coördinated at the top of the pons Varolii and pass out thence together, coming into close relations again in the neighborhood of the cavernous sinus and the sphenoidal fissure.¹² The only portion of the cortex which seems to have a definite ratio to any of the muscles about the eye is a portion of the anterior central convolutions in front of the face area (Fig. 2). Pressure at this point causes a falling of the upper lid (levator palpebrae superioris) on the opposite side from the lesion. The connection of the basal motor ganglia with the cortex of the cerebrum is as yet uncertain, but the fibers pass down in the anterior part of the internal capsule and through the pyramidal tract to the neighborhood of the third nerve where they cross. As the internal recti are supplied

by the third and the external by the sixth pair, a limited lesion in the pons may result in separating conjugate movements into its elements.¹³

A considerable lesion in the pons will produce a wide spread ocular palsy.¹² And the farther away from the pons the lesion is, either cortically or peripherally, the more limited will the paralysis be. Lesions above the pons and in the cortex produce physiologic paralysis *i. e.* of associated movements of both eyes. Lesions below the pons will paralyze single nerves and their corresponding muscles. Excepting that a lesion at the cavernous sinus and sphenoidal fissure may take in a group of nerves but affecting one eye only. And this paralysis will be crossed with any body paralysis which may be present: To summarize: Conjugate deviation of the eyes, accompanied by twitching, spasms or other irritative symptoms, is indicative of a lesion in the cortex on the opposite side to the deviation. Conjugate deviation accompanied by paralytic symptoms, dilatation of the pupil, indicates a lesion on the side toward which they deviate. Irregular or partial conjugate deviations and wide spread palsies indicate a lesion in the pons. Monocular palsy may mean a lesion anywhere between the eye and the basal nucleus, but if more than one nerve is implicated, the lesion may be near the sphenoidal fissure, or in the

is known as homonymous hemianopsia. It may be caused by a lesion anywhere between the chiasm and the cortical visual center, but practically for our purpose it is necessary to consider only the cortex lesion, as any hemorrhage large enough to interrupt the conduction in the optic tract would be otherwise immediately fatal. Wilbrand's test is of use here in case of doubt. A fine pencil of light is directed on to the paralyzed side of the retina; if the pupil contracts, the lesion is cortical; if it does not, it is in the optic tract. Central vision in cases of hemianopsia is usually unimpaired, the macular center being apparently double and common to both eyes.

In rare cases the lesion may be so placed as to involve a portion of the macular center, thus causing incoördination of the visual images of one eye and

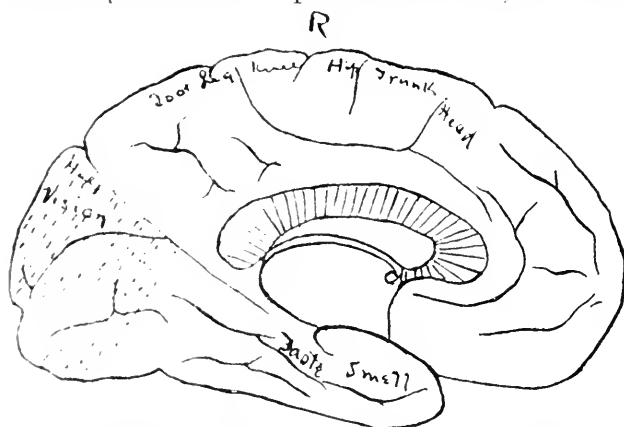


FIG. 3.—Diagram showing mesial surface of left hemisphere.

cavernous sinus. Ptosis results from paralysis of the third in its course or pressure on the anterior central convolution.

In the sensory act of vision, two orders of central apparatus are involved, whose relations are best understood from the diagram (Fig. 1). The optic nerve divides into three parts which go to the pulvinar, the anterior corpora quadrigemina and the lateral corpora geniculata. These are usually spoken of as the primary visual centers. These are in turn directly connected with the cortex of the occipital region of the cerebrum called the secondary or half vision centers (Fig. 1c). As was said in speaking of the motor mechanism, the sensory mechanism is "badly unilateral," and is connected with, not each retina singly, but the corresponding halves of both retinae. This I believe is made clear in the diagram.

The same distinction is to be found here as elsewhere between irritative and paralytic lesions. If the lesion in the visual cortex is slight, the irritation is manifested in subjective sensations of flashes of light, of colored fire, etc., and may be referred to the opposite eye, or may be common to both eyes. A lesion large enough to suppress the function of the cortex is manifested by a loss of vision in the lateral halves of both retinae on the side of the lesion. This symptom

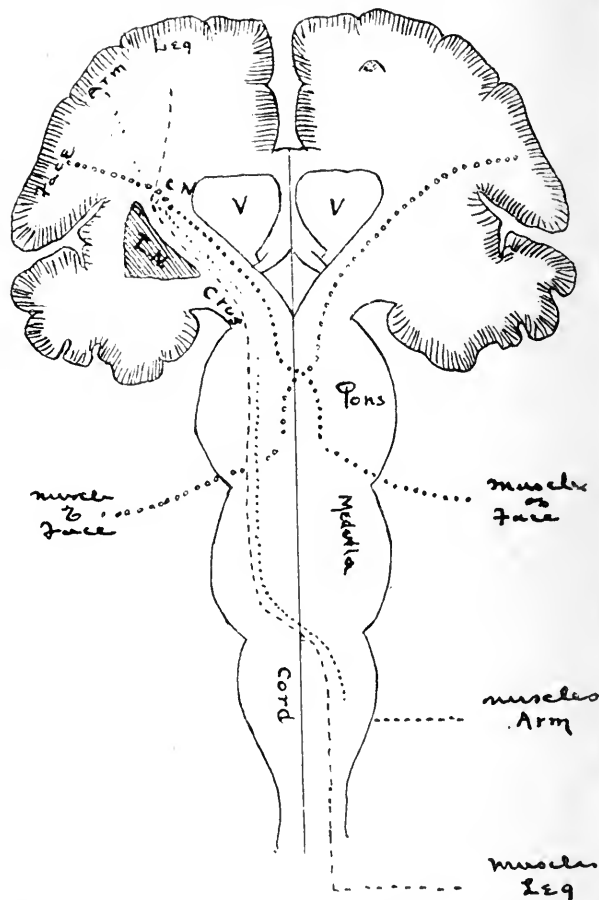


FIG. 4.—Showing course of fibers from motor tracts. V, lateral ventricles; L N, lenticular nucleus; C N, caudate nucleus. Between them the internal capsule.

giving rise to monocular diplopia. The inference from this symptom is immediate and direct as to the implication of the macular center. The sensory eye symptoms must be looked for. It should be remembered that a paralysis of the left side of both retinae means that right half of the field of vision is involved.

Leaving the eye we come to the motor apparatus, of which the centers have been well differentiated. They are grouped around the fissure of Rolando and can be best shown quickly by a diagram (Figs. 2 and 3). The location of the leg, arm and face center, eyelid, speech, hearing and smell are accurate, and any paralysis or spasm of cortical origin will appear on the opposite half of the body. The fibers from the cortex are collected, pass through the internal capsule into the crura cerebri, thence into the pons where the facial portion crosses to the opposite side (Fig. 4). The

arm and leg fibers pass on into the medulla where they cross over. Somewhere between the cortex and the crus cerebri, probably in the internal capsule, the sensory fibers join the motor, but their centers are as yet poorly worked out. A lesion in this part of the cortex is often purely motor. Lower down the lesion must involve sensation.

When the lesion is above the crus cerebri, we have the ordinary crossed paralysis of the face, arm and leg; but from the crus down we may have one or another of the alternate paralyses combined with a lesion of the cranial nerves in most instances.¹² There may be 1, paralysis of the face, arm and leg on the opposite side to the lesion and of the muscles supplied by the third nerve on the same side; 2, paralysis of arm and leg on the opposite and face on the same side; 3, paralysis of the arm and leg on the opposite and of the muscles supplied by the seventh and sixth on same side; 4, paralysis of the arm and leg on the opposite side and the face on both sides; 5, paralysis of face, arm and leg on the opposite side, and anesthesia (from paralysis of the fifth) on the same side of the face; 5, paralysis of the arm and leg on the opposite, and the tongue on the same side. It is important to keep in mind the significance of the cross paralyses. What has been said of paralyses applies equally well to spasms.

So much for connected facts regarding the possible seat of lesions. There remain several disconnected facts, which are often of great significance. The first of these is the hyperpyrexia often attending a hemorrhage into the pons. The screaming fits which result from irritation of the posterior portion (testes) of the corpora quadrigemina and the incoördination of movements following pressure upon anterior portion of the quadrigemina are worthy of note. Pressure upon the middle lobe of the cerebellum also produces incoördination especially in the legs. Vomiting which is so common in head injuries has some localizing value. In the vast majority of cases it is a pure reflex caused by pressure or irritation of the membranes of the brain. It may be also caused by direct implication of the vomiting center in the medulla from which the vomiting is usually active and persistent. In ordinary cases it is to be taken as indicative of a surface lesion, and its frequency may be roughly used in connection with other symptoms in estimating the degree of intracranial pressure.

Similarly manifestations of pain point to a surface lesion as was pointed out by Mr. Hilton many years ago. But all manifestations of pain are apt to be suppressed quickly by the rise in the intracranial pressure. It is a valuable localizing symptom however when present. The retraction of the head and neck, associated with incoördinated movements, mechanical yawning, low temperature, slow and feeble pulse and especially jerky uneven feeble respiration are characteristic of hemorrhages into the cerebellar fossa.

Unconsciousness commonly follows severe head injuries immediately. If it does not pass off in a short time it means an increased intracranial pressure, probably from hemorrhage. If it passes off promptly and after a short lucid interval the patient becomes again unconscious, the diagnosis of hemorrhage is certain. Associated with paralytic symptoms and dilated immobile pupils, it is indicative of excessive intracranial pressure, probably from hemorrhage, and demands immediate operation, if only to relieve an edematous dura in the absence of definite localizing symptoms.

In conclusion it may be said that the cerebral centers are not to be considered as sharply defined in their relation to the body but as spots of maximal relation whose functions merge into and are directly connected with those of other centers. The cerebral centers are not related to the body like the keys of a piano to its strings, but rather as the keys of an organ which by its stops may bring forth many combinations in harmony with the pipe which corresponds to a given key.

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DISCUSSION.

DR. JAY— I do not know of any paper that could be more interesting and more positively demonstrated. The paper deals with positive facts and can be demonstrated, and the thing to do is to take up these facts and to become so familiar with them that we can make the diagnosis and the consequent treatment according to the laws laid down by the paper. That is all I can say about it. It can not be discussed.

THE PRESIDENT—The paper certainly is very exhaustive and very instructive.

DR. GRISWOLD—The applications to be made in practice of this paper are of extreme importance. Going back as far as 1858, I recall the first case that I had in injury of the brain that might have been saved if I had known as much about brain injuries as the doctor does.

A man had received a blow on the temple, just over the frontal bone, near the coronal suture, from a wine bottle. He was a hack driver. He drove sixteen miles that evening, stayed at home, drove back the next day, and the next night could not drive home. He was delirious, had considerable fever and a good deal of pain. He was brought home and I was called to him in the night. There was a little contusion, no depression, and the man was sick, and kept sick till he died two weeks afterward. He had some diarrhea during the disease, there was no paralysis, and the effort was made to say that he had typhoid fever: I stopped that. When I made the post-mortem examination I found the inner table of the skull had been fractured which ran across the meningeal artery, and had produced an extradural affection between the skull and dura mater, which led down over the root of the eye. General meningitis spread from that point and death resulted. If we had appreciated the situation and trephined, we might have saved the man.

Some twenty years ago I was called to a consultation in regard to a boy who had received a blow transversely across the skull by the edge of a board. The boy was struck down, but there was no wound on the scalp and no apparent injury. He did not, however, seem to be quite able to get up. He had a doctor attending him, and I dare say it was four days before I was called to see him. I could not see any special marks of brain injury. The eyes did not work exactly together. He had no pain. Three or four days later I was disposed to make a crucial incision at the seat of the blow and was permitted to do so, and found a depressed fracture, with considerable pressure on the brain. No other symptoms of brain depression, but there was a depressed fracture and several pieces of the bone loose. I took out the loose pieces and elevated the remainder and the boy got well and is well now. He was then 12 years

of age; he is now married and has a family. Never had signs of epilepsy or anything of the kind. I always thought if I had not done that operation he would have been an epileptic.

Three years ago last Christmas I was called in consultation to another case on a man who had been down in a shaft forty feet and a barrel was let down, striking him on the side of the head, smashing his skull and producing quite a wound. The doctor who was called to him on Friday—Christmas was on Sunday that year—did not do much, as he was a young doctor and did not know very much about such things. There was not much paralysis. The wound was over the frontal convolutions, down rather in front of the fissure of Rolando, but involved the speech center. I was called to him Sunday morning and found there was an excessive congestion over all that side of the scalp. I took out probably to the amount of $2\frac{1}{2}$ square inches of skull, all smashed up. The dura was torn open, the speech center was involved, so that a great deal of brain substance came out during the operation. I supposed he would be seriously affected in speech. He got well, and strange to say, he can talk now tolerably well. He lives in Colorado, near Sterling; his name is Shaw. There is a great deal of wound covering there on the skull, and the skull is affected. If he speaks and sneezes you can see the brain bulging out. He never will be worth anything for business, but still, if life is worth living, he has got it.

The doctor's demonstration specializes a great deal more than was necessary in these cases: these did not require so much specialization, except perhaps the first. In 1858, if I had known a little more about the brain, I would probably have trephined.

DR. HENRY HATCH, of Quincy, Ill. —In connection with injuries to the brain I wish to speak about a case that I had about eight months ago, as illustrating that it is not well for us to lose sight of a case after an injury. It was a railroad employe: he had the superior portion of his scalp lacerated from a falling brick, and a lacerated wound a little to the right of the median line. I examined the wound and found no depression of the skull whatever, and supposed he would get along all right by dressing the lacerated wound. It healed without any suppurative or any untoward symptoms, and I supposed the man would get well. About five weeks later pain developed in the region of the wound and it became necessary to open it up, trephine, and I found the inner table of the skull depressed and fractured, while the outer table showed no marks of depression whatever. After this operation he recovered without any more trouble.

DR. HENRY W. COE, of Portland, Ore. The writer of this paper, Dr. Perkins, says that we can remember regarding the centers and diagnosis in these cases if we have some charts handy about the office. I think it would be a good thing after this paper is published, to have this paper in our offices so that it would be convenient for reference when required. It is worked out very carefully, and this subject is somewhat recent. The pathology of injuries of this kind, and the histology of the nervous system is of such a recent date, so far as it has been worked out on any scientific basis, that a paper of this kind is one that this Academy can well be proud of. I am glad to see the doctor note the symptom of pain, and the case just related is in point. We often have injuries of the head in which there is no depression that we can determine, but in which there is a great deal of pain, which continues after the pain from the contusion of the scalp passes away, and I think in all those cases we should explore a portion of the skull. In such cases there is undoubtedly some displacement of the inner table wherein pressure is exerted through the meninges upon the cortical substance beneath. I have seen a case on my way to this meeting, and on which I shall operate on my way home, in which there is practically no depression, at least no depression determined, but there is intolerable pain,

following an injury occurring some years ago. No doubt in this case there is some inflammation, following a fracture of the inner table and some inflammation of the dura. In fact, there may not even be an apparent fracture, merely a slight bulging inward of the tabula interna sufficient to produce the lesion. Where there is some pain, there is generally some dural trouble. The doctor referred to hemianopsia following injuries in certain localities, but he did not mention the fact that we sometimes have this condition in case of a sanguineous patient. We sometimes see this in cases where there has been no head injury, and sometimes we think perhaps there has been hemianopsia there, and yet in some cases where this condition exists temporarily, stimulation will relieve the case. The doctor has no doubt seen a case of this kind but I do not remember hearing it mentioned in the paper. We know that we have that condition of women in labor, where there is a large flow of blood and which perhaps in twenty-four hours passes away, or else passes away quickly under stimulation.

DR. COLE—I feel that Dr. Perkins has placed us under obligation for this remarkably clear elucidation of a very important subject. The study of cerebral topography and cerebral localization and the practical results to be gained from the knowledge of the physiology of the brain and the facts as brought out in the paper, are comparatively recent and are of the utmost importance. Those of us who have practiced a dozen years or more remember with what almost horror we looked upon the prospect of opening the skull. In this day of clean surgery we do it with impunity. We operate for symptoms which a dozen years ago were blind and we can operate with accuracy and we can get positive results. I feel that the Academy owes its thanks to Dr. Perkins for this very able paper.

DR. HATCH—I want to say just a word in line with what Dr. Cole has said, and to go perhaps a little further than the author of the paper has recommended. He said that in simple linear fractures without symptoms of compression, it is as well to pay no attention to them. I believe from experience in quite a number of cases in which I have trephined, that in the majority of cases of simple linear fractures, you will find an infused clot underneath the fracture pressing on the dura, and I believe that the impunity with which we can trephine and enter the skull anywhere on the dome of the skull, has shown us that it is good surgery to explore in every one of those cases. The fact is, in those cases of recovery it is only a week or ten days until they are comparatively as well as they always were. It seems to me good surgery, in absence of other symptoms there than symptoms attending linear fracture, to trephine and find out what you have. I have just got through a case which has recovered which shows that one should not despair in very extensive fractures of the skull. About two months ago a colored man was thrown from a wagon upon the curbstone and fractured a portion of the skull $3\frac{1}{2}$ inches in diameter, lacerating the anterior frontal sinus. The hemorrhage was very extensive; I had him conveyed to the hospital as rapidly as possible and it looked to me as if the case were hopeless. I removed about $3\frac{1}{2}$ inches of the anterior portion of the cranium and caught up the anterior frontal sinus and ligated, and the man is around town to-day apparently as well as ever.

DR. PECK—I would like to detail one case I had six years ago. It is that of a boy of 14 who was employed in the iron mines to drive mules which brought the cars of ore out from the mine. In reaching in to uncouple the chain links between the cars, his head was caught between the projecting beams on the two cars, and by the impact of the cars going down grade behind and jamming them together, the head was caught in the space between the two beams, which afterward by measurement was found to be $5\frac{1}{4}$ inches. I saw him within twenty minutes or half an hour, found a depressed fracture of the left parietal bone at its middle portion just above the ear. The depression,

which was very plainly made out, consisted of two fragments wedged down on the brain, the soft surface of the meninges. The hematoma covering the field of the pressure was pulsating synchronously with his heart, and it was with a good deal of fear that I made an incision. I feared I would have a troublesome hemorrhage before I could trephine and remove one of the fragments of bone in order to get to where I could control hemorrhage. However, on making the incision there was just one gush of an ounce or so of blood, and no further hemorrhage. It was an absolutely clean operation, the pulsations having been transmitted from the brain substance itself and communicating through the triangular openings above and below the angles of the fracture. It was quite a slow operation, cutting out the first fragments of bone, inasmuch as they were wedged down in the shape that it took a great deal of lifting force to get out the fragments of the bone. The symptoms which the boy presented were a semi-unconsciousness, some vomiting, unequal pupils, symptoms of partial compression. I removed one of these fragments of bone, elevated the other, and that boy never had a rise of temperature above 99.6, and in eight days after the injury was out playing ball. There were three lacerations of the meninges; there was an escape of a teaspoonful or more of cortical substance; there was absolutely no functional trouble; there were no symptoms following the injury save that he has a depression in which you can lay a finger.

DR. DANIELS—I feel that we are largely indebted to Dr. Perkins for this instructive paper. I rise to differ from Dr. Peck in regard to miscellaneous trephining in linear fractures. I do not quite favor that, but I do believe that age should have very much to do with all operative measures in that direction. I have found in my experience that children or very young people will bear considerable depression or a great number of linear fractures without any bad symptoms at all, while persons of middle age or beyond, having comparatively the same injury, will have very serious results follow. In adults the use of the trephine is almost imperative. I believe that the consideration of age in these cases, so far as I am able to judge from experience of a considerable number, covering perhaps two hundred in the hospital where I am associated, is an essential one.

DR. JAY—We all admit that in young persons you can have a depression of the skull and probably have no spasms and no paralysis, but experience will tell you that in after life they are sure to have them if the depression is left. I have operated on several cases, twelve, fifteen and twenty years ago, and for years afterward there would be no unfavorable symptoms, but about the time of puberty they would appear. One case is a woman, where the depression remained and afterward required trephining. It is not good surgery to delay trephining.

DR. PECK—Dr. Jay misunderstood, I did not refer to depression; always trephine where there is depression.

It was moved by Dr. Peck and seconded by Dr. Maynard, that the thanks of the Academy be extended to Dr. Perkins for his elaborate and learned paper. Carried.

DR. PERKINS—I wish to thank the Fellows for their very kind reception of the paper, and also to speak of one or two things that have come up. First, in regard to those extradural hemorrhages. I have recently received a report of 160 cases that were done in one hospital by one group of men acting together, and out of those 160 cases, 64 were cases of extradural hemorrhages from the meningeal artery in brain injury. As this is nearly 40 per cent. of the cases, one is justified, perhaps, in cases of an unconscious patient, without any symptoms, in going inside the meningeal artery rather than see the patient die. You will have forty chances in one hundred of relieving him. The basal hemorrhages are more rare and diagnosis is more difficult. The treatment of

basal hemorrhage would be more difficult than the diagnosis but it has often been suggested in my mind how easily we could relieve, in a fresh case of basal hemorrhage, if we knew where it was, by a simple insertion of a hollow needle down through the cerebral mass. We often insert a needle into the brain substance in search of an abscess and no harm is done, and I see no reason why we could not put a hollow needle into the basal hemorrhage if we could know where it exists. It would not be necessary to raise the brain from the base of the skull. In regard to the magnitude of certain injuries, it has been stated by one authority that there was no brain injury so great but that it could be recovered from, and none so small but what death might result. The most terrible wound I know of was in the case of a man who was struck by a tamping iron, which passed through the malar bone and passed out through the cortex. I have seen the tamping iron; it was a very heavy bar, and went lengthwise through the skull and produced a very terrific injury. The man recovered and has all his faculties, as far as known.

In regard to the position of the speech center, and the loss of certain portions of the cerebral matter we know that the speech center lies in the third left frontal convolution, but it has been found that after the loss of it, its function is taken up by the opposite side of the brain. There is a certain interdependence of the brain from one side to the other, which is used in this case, and so paralysis of speech, permanent paralysis, does not result.

In regard to exploratory operation in simple linear fracture, I do not believe in operating for nothing, and if there are no other symptoms present, I doubt if one would be justified in interfering. One operates for symptoms, not for nothing.

PERSONAL EXPERIENCE IN SPINAL INJURIES.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY J. F. PRITCHARD, M.D.

DISTRICT SURGEON C. & N. W. RAILWAY,
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The question of spinal injuries has been so much discussed that one feels like apologizing for presenting anything more on the subject, but as it is yet vital in some measure, we must continue our investigation until we have an approximation to the truth.

In going over my records, carefully kept for many years, involving every case of injury on one line of road, I find that an average of injuries to the back was thirteen per thousand. These include all classes of injuries, and are noted on my reports as contusions, sprains, twists, and injuries which are popularly called concussions, also dislocations, fractures and serious injuries of like nature to the spinal column. But what is remarkable is that of these injuries caused by falls, blows, or other like causes incident to railway life there was but one in which recovery was not complete and permanent. My experience would therefore tend to show that so called railway spine is a myth. In reporting cases, I limit myself to those that had marked symptoms.

Case 1. P. S. Cooney, aged 19: Irish-American, good habits, a freight brakeman, was standing at a switch at a small station to close it as the train passed out of the siding. The ground was slippery and wet, when he, in some way not very well explained, fell under the caboose. He claimed that the wheels ran diagonally across his hip and the lower lumbar region, which statement was corroborated by his conductor who claimed to have been standing on the ground with his lantern and saw the accident. I think they were mistaken, as the car had switch ropes, chains, links, pins, etc., the usual complement for such cars, which would add about 3,000 pounds to its weight, and would no doubt have killed him instantly. My

theory was that he fell in such a position as to go through under the brake-beams and truck-frames, probably doubled up. He no doubt was run over in some such way. When first examined, in an hour or two after receiving the injury, I could find no marks on his body, *i. e.*, no wheel mark or contusion. The spines of the upper lumbar vertebrae were fractured and displaced laterally to a slight extent. He complained of little pain, was totally unable to move his body or legs; had no loss of sensation other than a numbness; no paralysis except as above noted, which seemed to be only an inability to move temporarily. He had full control of bladder and bowels, took his food well and had no rise of temperature at any time. In the course of a few days he complained of a soreness of the muscles with external tenderness over the whole region below the point of injury. This condition improved gradually. He was discharged and resumed labor as flagman on a passenger train, having lost seventy days' time. When discharged his general condition was very good. He had perfect use of all of his muscles and no other difficulty except a slight deviation of the vertebral spines.

Case 2.—Lucian Budyszcz, age 18, Polish laborer, was run over by a caboose which he and a number of others were endeavoring to push out of a side-track by hand. The switch was open and a switch engine coming through the yard at the rate of fifteen miles an hour, struck the caboose and injured several men. Budyszcz's injuries were multiple and complicated as follows: Right elbow and forearm laid open, requiring resection; comminuted fracture of left femur; injuries to his toes, requiring amputation of two or three; dislocation or fracture of all of the fingers on both hands; injury to the spine similar to Case 1, *viz.*, fracture of spinous processes in lumbar region. He complained from the beginning of severe pain in his back, and required large doses of morphia to relieve the pain which lasted nearly two weeks. There was no paralysis or loss of function of any organ, and recovery was complete so far as the spinal injury was concerned. The other injuries healed kindly. He was under my charge about six months, until a settlement could be made with him. He never complained of any spinal symptoms afterward.

Case 3.—R. Kroll, age 28; German, foreman of a gang of track layers, who when going and returning from work used two ordinary hand-cars. They frequently raced on returning, and at the time of this accident were racing. A wheel broke while they were running at a high rate of speed, throwing the whole crew forward in front of the car. One man was killed instantly, another received slight injury, while the subject of this sketch fell under the car and was caught at the junction of the last dorsal and first lumbar vertebra in the gear of the car, causing a dislocation. He was immediately paralyzed from this point downward. We operated later and reduced the dislocation by carefully dissecting free the attachments of the spinous processes, then by making lateral traction on the opposite spinous processes with extension from his feet and shoulders, the dislocation was easily reduced. The spinal canal was not opened. He did not require an anesthetic for the operation, and said he had some return of sensation afterward. He died two weeks later. In this case, while we did not have the privilege of a post mortem examination, it was quite evident that the cord was completely or nearly severed.

Case 4.—John Adamski, Polish, section foreman, age about 40, was attempting to remove his hand-car from the track to clear a special train. The car was struck and he was thrown off, causing contusions of the lumbar and sacral regions which appeared to be muscular only. Later when seen by the writer he complained of nothing but weakness when stooping, no pain or difficulty in walking, no loss of sensation nor any apparent nerve lesions. When the case came into court, however, he had evidently been coached, as he then complained of great pain, loss of use of his right leg, curvature of the spine and in fact everything which would indicate a serious spinal injury. His physicians testified that they found an angular curvature in the lumbar region with contraction of the leg, etc. By order of the court we examined him carefully. Measurement showed no loss of substance in the leg as compared with the other. We placed him horizontally on his face and in a few minutes his leg became straight. On examining the spine, there was not the slightest deviation from normal. It was an evident case of malingering. The court also took this view and granted a non suit.

With these exceptions all other cases reported as injuries of the back did not develop symptoms referable to lesions of the spinal cord. In cases 1 and 2, while there were marked symptoms of injury of the cord, recovery was as prompt and complete as could

be found in any other region or organ of the body, leading me to the conclusion that while injuries in this region may effect the cord, unless there be some prior disease or tendency thereto, we need not anticipate permanent injury.

All court records with the subsequent history of the patient will bear out the above conclusion, and I am fortified in my belief by discussing this subject with anti-corporation attorneys. It has not fallen under my observation to see a case of railway spine, yet there may possibly be such a condition, or rather an imaginary condition while the claim is being prosecuted, which disappears as soon as the judgment is paid.

I find attorneys out of court agree that so-called railway spine is a humbug, and notably in one case in which a prosecution was brought for an alleged injury of this nature caused by the derailing of a sleeping car. The attorney confessed to me that he did not believe that the woman was hurt at all, but said that she was diseased, of bad character generally, and he could bring his action best for spinal disease. He said if he had a similar case again he would set up some such state of affairs as this, that she was in such a condition of health that a shock or fright, or similar disturbances would destroy the general equilibrium and cause incurable disease, but under no circumstances would he ever bring suit for railway spine again. I am satisfied that in healthy systems an injury to the spinal cord will cause one of two conditions, either immediate marked symptoms, from which recovery is likely to occur, or when the cord is destroyed, permanent but immediate loss of function of all parts below the point of injury. I do not think in a healthy system the concussion to this region is more likely to produce permanent injury than will a simple uncomplicated fracture cause permanent loss of function of a limb.

MASTOID DISEASES.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons held at Chicago, Ill., Sept. 25-27, 1895.

BY A. D. BEVAN, M.D.

CHIEF SURGEON ICWA CENTRAL RAILWAY,
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I do not know of any other field of surgical work which involves such a thorough knowledge of the parts involved as mastoid diseases and its resulting complications. I would say that I have here a number of specimens selected from a lot of work which I did during last winter; I operated on thirty-five cadavers, made seventy operations on both sides of each cadaver in this line of work, to determine some of the points in regard to the anatomy, especially the position of the facial nerve with relation to the sub-medial triangle, and to demonstrate the best method of entering the temporal bone and the cerebellum and the sigmoid portion of the sinus.

From experimental work which I did, following very closely in the line of Macewen and Kerner, I determined the points which are practically laid down by Macewen in regard to the opening of the mastoid antrum. The key to the entire situation is the mastoid antrum, and a successful opening of the mastoid antrum can always be made if we adopt and follow these simple rules. If we examine the skull carefully we shall find immediately behind the temporal ridge the posterior border of the zygoma, a ridge running into the temporal ridge. This ridge is the upper line

of a triangle known as the submedial triangle. If we select the upper portion of this triangle as our point for opening the mastoid antrum, immediately below the posterior root of the zygoma, we shall find thus a point about a quarter of an inch behind the external auditory meatus and its roof. Now, if we place a dental bore, which is the best instrument to open the mastoid, or a fine chisel in this direction and open in the direction parallel with the external auditory meatus, we will invariably open into the mastoid antrum. The mastoid antrum is constant. Very often we do not find mastoid cells, but we invariably find a mastoid antrum. The depth varies very much indeed. Sometimes we will find it at the depth of a quarter of an inch, sometimes as deep as five-eighths of an inch from an external surface of the bone, but the landmarks are constant. Now, in order to avoid the important structures in this vicinity, we must understand the exact position of the facial nerve and of the sigmoid sinus. The facial nerve is, as you are all aware, on the posterior wall of the external auditory meatus, running over the facial bone, entering at the internal auditory meatus, it runs first forward and a little upward, until it reaches the stylo-mastoid foramen in the bone; it then makes a right angle turn, then a second right angle turn and comes out. But the simple anatomic fact to remember is this, that the facial nerve is in the plate of bone, between the external auditory meatus and the opening which you have made into the mastoid antrum. Now, that is very important, because you find the statement made by some specialists in ear work (I have seen the statement made several times) that in their mastoid work they first open the mastoid antrum, then they chisel away the posterior plate of bone. If they do this they will cut the facial nerve every time. It would be the greatest luck in the world if the facial nerve was not cut off, but it can always be avoided if the operation is made in the way I suggest.

Another point: Beside the facial nerve, the position to avoid is the position of the sigmoid sinus. I have drilled here an opening into the sigmoid sinus, a large opening with a trephine at this point, but the sigmoid sinus can practically always be avoided. It is possible that is hardly a fair statement to make, because the best practitioners have opened up the sigmoid sinus in work of this kind, but in work which I have done in the dissecting room there was no difficulty whatever in avoiding the sigmoid sinus. The exact position of the sigmoid sinus you can determine by drawing a line from the articulation of the lower and external angle of the parietal bone to the typical mastoid process. The upper two-thirds of the line will give you very plainly the position of the sigmoid sinus. It is a point which might very often be necessary to determine; in an ordinary mastoid case it would not be necessary to open it. Where we suspect thrombosis, the common thing would be to extend our operation downward and outward, after opening up the mastoid antrum, and expose the condition of the sigmoid sinus. Some of the best work which has been done in this line has been done by Von Bergmann, who makes a very neat suggestion in this work. His routine work is this: First, opening the key of the situation, the mastoid antrum, then if there is intercranial lesion, open up a portion over the point just about the position of the temporal sphenoid, removing that plate or working it down and

exposing the dura mater: then with a spatula elevate the dura mater and from this work backward over the interior surface of the temporal bone. More than a majority of the cases are in the temporal sphenoid alone and a majority are through the dura mater.

Von Bergmann's routine of work is, to open into the mastoid antrum, then to expose the temporal sphenoid alone, if the difficulty is found there, as it is in two-thirds of the cases. If, however, he does not find the difficulty at that point, then he extends the operation from the mastoid down over the sigmoid sinus. If he does not find the difficulty at that point, and there is evidence of intercranial lesion, he extends the operation in the same line. These four operations, mastoid antrum to sigmoid sinus, is an extensive operation and you should go from one point to another until you determined the circle.

One interesting point developed is the fact that following mastoid disease without involvement of the temporal sphenoid lobe or cerebellum, patients have died from sepsis, from a septic thrombus in the bulb of the jugular vein. Just at the point of division there is quite an elevated portion of the vein which extends upward, the bulb of the jugular vein, which has been found in several cases to be the seat of septic thrombus and the effects of general sepsis and death.

Another interesting point in connection with this kind of work is the necessity of ligating sometimes the jugular vein. The work in this direction has as yet been limited and I do not think sufficient in number or exact enough in all of the cases to determine the exact value of the ligation of the internal jugular. Personally I do not think it is a good method, unless we can actually demonstrate lateral sinus thrombosis and possible involvement of the internal jugular, because you may have, as has been reported, a case in which the internal ear was like this: The patient had sepsis, and it was found that the septic material had blocked up the jugular above the point of the ligature and had been carried in from the other radicles.

My own work in this line has been rather limited. I have to report a number of cases which illustrate the value of this work. I do not believe, however, that I shall take up the time of the Society. There can be no question but that a large majority—that is putting it very safely—a large majority of intracranial lesions can be successfully combatted by early and properly performed operations. Macewen's work, which is the best work that has been done on this subject, shows that out of some twenty cases, he saved over 70 per cent., even after involvement had begun. But the great value that should be recognized by every physician, is the prevention of intracranial lesion. How many times would a simple mastoid operation prevent intracranial lesion? Any one can do a mastoid operation with a knife and gimlet, if he knows the simple anatomic rules which will enable him to open the mastoid antrum itself.

DISCUSSION.

DR. GRISWOLD—I do not think we ought to let the paper of Dr. Bevan pass without consideration. He mentions the work as comparatively of the same degree with appendicitis. Appendicitis has advanced much farther in its course in the profession in general than the disease of the antrum of the ear. I recall a case that I think might have been cured if we could have followed Dr. Bevan's advice. Some twenty years ago I was consulted by a young man who had pain in his ear. He had been more or less deaf and had had discharge from his

ears since infancy. At this time he was suffering continuous pain and occasional discharge. I turned his case over to an aurist, and in the course of six or eight weeks he died. In the meantime, before he died, the pain got more and more aggravated accompanied by a slight rise of temperature, not considerable, not much increase in pulse and not much mental disturbance and no paralysis: he got a little dull and stupid for the last four or five days of his life: it was pretty difficult to make him understand anything. He did not hear very well with his other ear, but it did not seem as if the disease of which he died caused a great deal of functional disturbance, and I was bound to make a post-mortem examination. I found an abscess, large enough to fill a good-sized teacup with pus. The inflammation seemed to have gone through the roof and affected the dura mater and at last an abscess had formed. The mastoid cells were considerably infiltrated and showed signs of disease, and I have not very much doubt but that the case might have been cured with the advanced surgery that Dr. Bevan teaches now, and that he died for want of good surgery.

THE WOODBRIDGE TREATMENT OF TYPHOID FEVER.

BY W. BAYARD SHIELDS, M.D.

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ST. FRANCIS, ARK.

A good deal of attention has been paid to articles which have appeared at various times in the last few years in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION by Dr. J. E. Woodbridge, of Youngstown, Ohio, one of the trustees of the ASSOCIATION, in regard to his treatment of typhoid fever.

This treatment is according to a method based on the inhibitory influence which antiseptics frequently administered have on the typhoid bacilli in the intestinal canal, checking their activity, hence preventing the rapid and abundant development of toxins, the absorption of which into the system produces the grave nervous troubles so frequently seen in this disease. That the absorption of the toxins formed by the destructive and putrefactive action of the typhoid bacilli is the cause of the nervous symptoms in this disease seems beyond a doubt in my mind, and not, as has been assumed by Liebermeister, to be caused by the high temperature. Strumpell shows after careful investigation, that the height of temperature frequently bears no relation to the amount of nervous derangement, and that in cases of this fever with perhaps high ranges of temperature there are frequently no nervous symptoms. Frantzel has published lately striking cases of this sort. I imagine that these cases are in patients whose nervous centers have greater powers of resistance to toxic influences as we frequently see in other diseases.

The absorption of the result of putrefactive destruction in the intestinal canal also is undoubtedly the cause of the bronchitis. Bacteriologists have of late years proven that the majority of cases of bronchitis (in children especially) are caused by the absorption of the products of intestinal infection, and they almost invariably relieve the bronchial symptoms by small doses of calomel frequently administered which is perhaps our most reliable intestinal antiseptic.

Dr. James Herrick, of Chicago, in a paper read several years ago at a meeting of the AMERICAN MEDICAL ASSOCIATION in regard to his experience in the treatment of a thousand cases of typhoid fever, says that the internal administration of antiseptics prevents the development of nervous symptoms and tympanites by

inhibiting putrefaction and the formation of toxins, which has been my experience in testing the Woodbridge treatment.

From Sept. 15, 1894, to Aug. 1, 1895, we had an endemic of typhoid fever in the town of St. Francis. Nearly all of these cases were of severe type, the morning temperature of some being as high as 104. I treated individually twenty-eight cases, with one death, and that in a man whom I had been called to see on the ninth day of disease, and who strictly against my orders was allowed to eat fried meat and bread. The night following he had a profuse intestinal hemorrhage from which he did not rally. Another case, treated by a physician near by, had died from the effects of intestinal hemorrhage a few days previous. These were the first cases which occurred in this endemic. I used in my cases the Woodbridge treatment modified by sponge baths and rectal injections of a quart of boiled water (cooled) at 10 A.M. and 3 P.M. each day, with thirty drops of carbolic acid in each injection as a deodorant. These cool water injections would reduce temperature and relieve the bowels of effete material. The addition of the acid had been suggested to me some years ago by Dr. Peckham, U. S. Marine Hospital Service, who was then located in Memphis, and had used such injections in typhoid fever with a light mortality.

The last ten cases I treated I also washed out their stomachs, every day for first week of treatment, with cold boiled water which had a most remarkable effect in reducing temperature, and seemingly did not depress them. I introduced the stomach tube with the patient in a recumbent position, anesthetizing their throats with a 5 per cent. solution of cocain, and used a gallon of water at each lavage.

The medical treatment was that of Dr. Woodbridge, using formula number one, two and three, following his directions as near as possible. I believe that the carbonate of guaiacol and small doses of calomel are the most valuable ingredients in this formula.

- R. 1.
- | | |
|-----------------------------|-----------|
| Podophyllin | 1-960 gr. |
| Hydrarg. sub. mur | 1-16 gr. |
| Carb. Guaiacol | 1-16 gr. |
| Menthol | 1-16 gr. |
| Sacch. lactis | q. s. |
- R. 2.
- | | |
|------------------------------|-----------|
| Podophyllin | 1-960 gr. |
| Hydrarg. sub. mur | 1-16 gr. |
| Carbonate Guaiacol | 1-4 gr. |
| Menthol | 1-16 gr. |
| Thymol | 1-16 gr. |
| Sacch. lactis | q. s. |
- R. 3.
- | | |
|--------------------------|---------|
| Carb. Guaiacol | 3 grs. |
| Thymol | 1 gr. |
| Menthol | 1-2 gr. |
| Eucalyptol | 5 m. |

Number 1 was given every fifteen minutes for twenty-four hours, and if in that time the bowels had not acted freely, was continued for twelve hours longer, then No. 2 every half hour for twenty-four hours, then every hour for twenty-four more hours; then No. 3 every three hours. A number of cases seemed to be materially shortened; one case especially with a morning temperature of 103.8, and an evening temperature of 105, reached normal on the morning of the thirteenth day of treatment and the fifteenth day of disease.

The average duration of twenty-three of these cases was fifteen and one-half days. The other cases with

one death did not seem to be materially benefited. One of these cases, to which I was called to see on the twelfth day of the disease, running the regular course of not less than thirty-five days after seeing her, at which time the Woodbridge treatment was instituted. The treatment was left off after twenty days in this case, not seeming to produce any benefit, and the patient treated symptomatically. In all cases pyalism can be prevented by using a tooth powder of potassium chlorate once daily, which destroys the microorganisms around the roots of the teeth which are especially active while the system is loaded with mercury, and is the cause of pyalism. I think the mercury in the prescription is very essential, as it assists in throwing off the effete material. I did not give a single dose of opium or astringent except in one case, and that the case in which I left treatment off after twenty days.

The eliminative action of calomel and rectal injections kept bowels open and prevented diarrhea, the results of the efforts of nature to get rid of the toxins of the disease. They would have under this treatment from four to six actions in the twenty-four hours, which is a thing urgently necessary, according to my judgment, in this disease. Only two had intestinal hemorrhages, one ending in death, and in these cases the rectal injections were left off. Several cases I was called to see which had already exhibited marked cases of tympanites were relieved of the latter by this treatment in a few days. I noticed that especially their nervous symptoms were alleviated by these antiseptics frequently administered, the gastro-intestinal tract being simply flooded. I do not feel so enthusiastic as Dr. Woodbridge does in thinking every case could be saved, but I do think that his treatment, in connection with sponge baths and rectal injections, an improvement over Brandt's one-sided bath, or someone else's exclusively medical treatment, notwithstanding Professor Osler's declaration that no known remedy shortens the disease by one single day.

Not a single dose of the coal-tar derivatives were given. Only the sponge baths and rectal injections of cold water, both of which I think quite necessary, being used to reduce temperature.

Dr. Peckham assured me, that according to his observation, the addition of the carbolic acid to the enema had no deleterious effect, and although I watched it carefully, could see none myself.

I think the stomach lavage a great assistance in the first stage of this disease, but not so essential as the rectal injections. The latter would reduce temperature without the acid, but once in a while a little of the acid would be absorbed, producing free perspiration, though no weakness. My results have not been so good as those of Dr. Woodbridge, perhaps my own fault, not being so familiar with the treatment, but were I to pass through another epidemic, I should certainly rely upon this as my sheet anchor, for seemingly in a number of cases the results were brilliant, although cognizant of the fact that not infrequently a case will start with severe symptoms and subside in a few weeks under symptomatic treatment. I saw in a number of cases of high morning temperature, an amelioration of symptoms under this treatment, and when I would experimentally leave off medicines the symptoms would be aggravated.

Dr. Woodbridge has simply carried to the fullest extent, in my judgment, the treatment advocated by some of the leading men of the profession for a num-

ber of years. The frequency of administration of doses at first does not disturb the patient so much as one would suppose, if so after 10 P.M. I would give a double dose of number one every half hour until morning.

In conclusion I would say that Dr. James Jackson, of Boston, advocated the use of gastric lavage a number of years ago, especially in the first stages of the disease and thought it could be aborted in some cases by its prompt use.

IS HYSTERECTOMY FOR PUERPERAL INFECTION JUSTIFIABLE?

Read by title before the Southern Surgical and Gynecological Association.

BY R. R. KIME, M.D.

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ATLANTA, GA.

At the present time this is an important question and of interest to the medical profession in general. While asepsis and antisepsis have rendered incalculable service in the prevention of puerperal infection, such cases occur and we are compelled to devise means for their relief.

Before adopting any line of treatment or surgical measure in these cases, it should be established that they are life-saving commensurate with the risks incurred by their use.

Before hysterectomy can be adopted as a justifiable measure in puerperal infection it must be demonstrated that it will save lives that can not be saved by less heroic treatment.

From inquiry of eighteen leading gynecologists and obstetricians, I find five opposed and thirteen in favor of the operation.

Out of fifteen cases operated upon eight have died, making a death-rate of 53 $\frac{1}{3}$ per cent.

In most instances it is said that the operation is done as a last resort in severe cases, and with the oft-repeated remark, "the patient would have died without it." While this may be true, all of us have seen such patients get so low and yet recover that I have lost confidence in such positive prognoses.

The advocates of hysterectomy advise it for disease limited to uterine body, such as septic metritis, multiple abscesses in uterine wall, uterine thrombo-phlebitis, and gangrene of uterus.

Pyosalpinx, ovarian abscesses, etc., are the secondary localized results of puerperal infection, hence operations for such do not come within the scope of this paper.

The fact that a patient recovered from hysterectomy is not conclusive evidence that the operation was justifiable. A uterus filled with putrid material can be removed and patient recover in the great majority of cases, yet the condition does not justify such measures. The same can be said of all cases of putrid infection, for they can be relieved by less heroic measures and without sacrifice of pelvic organs.

In septic infection when *serious constitutional* symptoms develop, the process in *most* cases is no longer local, and can not be removed by hysterectomy, the germs and septic material having extended beyond the uterus, tubes and ovaries into the blood vessels, lymphatics, pelvic cellular tissue, and the general circulation. In a few cases the process may be sufficiently local to justify hysterectomy, but to diagnose

such a condition is a difficult task. None but an expert can do so, and they are frequently mistaken in diagnosis.

Most gynecologists that favor hysterectomy advise to curette and tampon uterus, and if the patient does not improve or grows worse then remove the uterus.

If this is a correct guide as to the indications for hysterectomy, then it is not a question of diagnosis, but failure in a certain line of treatment to give relief that demands the sacrifice of the uterus. In severe cases of septic infection to curette and tampon the uterus, then perform hysterectomy, the death-rate would be so high as to condemn the operation and many lives would be lost that could be saved by less heroic means.

To be more explicit, I will deviate from the title of this paper and enter briefly into the pathology and treatment of puerperal infection.

It is of two general varieties, viz.: 1. Putrid infection or sapremia. 2. Septic infection or septicemia.

The first is a local infection due to decomposition of the uterine contents by putrefactive bacteria only without migration of the bacilli, not contagious, non-progressive by invasion, due to absorption of ptomaines not inoculable.

In sapremia, putrid infection, remove the putrid material from the uterine cavity, irrigate, disinfect, drain, and 99 per cent. of cases will recover. Hysterectomy would relieve these cases, but it would be criminal to sacrifice the generative organs when such cases can be treated more successfully and with fewer deaths by less heroic measures.

The second class is due to germ development, their rapid migration and invasion of new tissue even entering the general circulation; if at first local it soon becomes constitutional, highly infectious, and inoculable from case to case. The contagious principle is destroyed by boiling, putrefaction and germicides.

In the treatment of septic infection we have a more difficult problem to solve.

The septic germs soon extend beyond the endometrium, invading its muscular structures, the lymphatics, the blood vessels, etc., and can not be removed by ordinary surgical measures, and it is very doubtful if hysterectomy could completely remove the infected tissues in severe cases.

In putrid infection the curette and tampon might relieve the patient, but in septic infection I do not believe such treatment is advisable, except it might be within one or two days after labor, where placental tissue has been left in the uterine cavity.

It is drainage and elimination we desire in these cases, not obstruction. What surgeon of repute would tampon an abscess cavity through a very small opening without using a drainage-tube, letting the gauze remain two, three or four days, especially when there is a broken down tissue, débris and septic germs present in abundance.

After delivery nature establishes a process of elimination by a current flowing from the uterine cavity, the uterus and vagina being the main trunks of a sewer; the lymphatics, blood vessels, and uterine sinuses, its tributaries, obstruct the main channel, and what is the result? Who could think of filling the trunk sewer of a city with gauze and expect free drainage, even if done antiseptically after scraping out and flushing it? Yet we are advised to curette the uterus and fill it with gauze, damming up nature's channel of elimination, thus preventing the throwing

off of effete material from the placental site, endometrium and lymphatics—obstructing the egress and retaining the phagocytes laden with germs and toxins, completely annulling phagocytosis, producing the very condition we should endeavor to prevent. Some will say only tampon after a thorough curetting; so much the worse, you have broken down and destroyed nature's barrier, opened up new surfaces for absorption, and favor that absorption by obstructing nature's method of elimination. I regret to say it, but it is my conviction that the curette and tampon indiscriminately used kill more patients than they save in septic infection.

Their indiscriminate usage manufactures cases for hysterectomy. In the treatment of these cases imitate nature as far as possible and establish a current of free drainage.

If any foreign substance is in uterus remove it with the forceps, wounding endometrium as little as possible; irrigate the uterine cavity thoroughly with an antiseptic solution and introduce as large-sized rubber drainage-tube as the os will admit. Repeat irrigations and cleansing of the drainage-tube at least once or twice in twenty-four hours. Do not neglect occasional use of salines and calomel if needed, with systematic use of quinin, strychnin, tonics, and good nourishing diet. Quinin certainly has a specific action in these cases in checking germ development and controlling the chills which accompany these cases. I venture to say that where this line of treatment is properly carried out it will save more lives than the combined use of the curette, tampon, and hysterectomy. While I have in a great measure condemned hysterectomy in puerperal infection, I admit it has a limited field of usefulness in septic metritis, multiple abscesses in the uterine wall, thrombophlebitis, if it were possible for us to be positive in our diagnosis, but if in doubt I prefer drainage.

Unless future operative work gives better results, even this limited justification of hysterectomy may be abandoned.

In the above collection of cases I am satisfied, if the operation be limited strictly to severe cases of *septic infection*, rapidly progressive and not in its secondary results, the death rate would be 80 or 90 per cent. of cases operated upon. Even a death rate of 50 per cent. is sufficient to condemn the operation. The proper use of the drainage-tube will not only save more lives, but the uterus, tubes and ovaries will be preserved for future usefulness and the surgeon's conscience left more at ease.

CÆSAREAN SECTION TWICE IN ONE PERSON.

BY J. W. COAKLEY, M.D.

MT. ETNA, IOWA.

August 3, 1893, I was called to see Mrs. P., aged 30 years, in her fourth pregnancy, there having been previously one abortion. I had performed craniotomy in two preceding labors on account of so great contraction of the pelvis that it was impossible for the child to be delivered, as the conjugate diameter was less than two and one-half inches.

It was difficult to assume the responsibility of the operation owing to opposition to it by elder members of the profession, as indeed it has been one of the most hazardous operations known until within the light of aseptic surgery.

Dr. Harris collected with great industry 153 operations performed by the older methods in the United States, 56 of which, or 37.5 per cent, ended in recovery; under this showing it will be seen that more than one-half of the cases proved fatal.

Baudon, writing in 1873, said, in Paris there had not been one successful case in 80 years, though the operation had been performed on perhaps as many as 50 women. I believe the responsibility for these results to be due to septic infection in the first place, and second, the postponement of the operation until death impended. I believe the surgeon is, in the majority of cases, responsible for the death of the patient when due to sepsis; and further, when the dressing is complete no inexperienced nurse should have anything to do with the case.

However, I decided not to destroy this the fourth child, and the mother consenting to the operation I called as assistants Drs. Sweet and Bryant. I operated on August 4, 1893. On the evening of the third I gave a cathartic and moved the bowels thoroughly, and emptied the bladder prior to the operation; every antiseptic detail was carried out with cleansing and disinfecting the patient's abdominal surface and vagina. In all the steps of the operation the most rigorous precaution was observed. Morphia and belladonna with nux vomica were given to sustain the nerve centers during anesthesia by chloroform.

After the patient was under full anesthesia I made an incision to the peritoneum through the abdominal wall in the median line from four inches above the umbilicus to within two inches of the pubis. The peritoneum was opened on a grooved director with scissors, and the uterus lifted bodily outside the abdominal cavity and wrapped in hot antiseptic towels. The upper part of the wound was temporarily closed with silver sutures to restrain the abdominal contents; a broad, flat sponge was wrung out of hot bichlorid solution and placed posterior to the uterus over the abdominal incision for further safety; a rubber ligature was passed around the neck of the uterus to prevent hemorrhage. An incision four inches long into the uterus and penetrating to the sack was then made to prevent the escape of the amniotic fluid into the cavity of the abdomen. The child was removed from its lair with membranes intact, which were then ruptured and placenta removed: no vessels of any size were severed. The rubber ligature was taken off, uterus washed out with disinfectant fluid and the uterine incision powdered with iodoform. The edges of the wound of the uterus were brought together with deep interrupted sutures of catgut about one-half inch apart, made with a curved needle one-quarter inch from the edge of the incision through the muscular tissue of the uterus, but not including the mucous membrane. Sutures were tied firmly, but not so tight as to strangle the enclosed tissue. For the purpose of approximating still more the edges of the incision, a set of superficial stitches of silkworm gut were inserted between the other stitches about one-quarter the thickness of the uterine walls.

Careful inspection was made of the abdominal cavity, and we concluded not to irrigate because no blood or other septic material was found within the abdomen. The peritoneum was united with continuous sutures of silkworm gut: the abdominal walls were next coaptated with interrupted sutures of silk, the whole wound being dressed with iodoform gauze and absorbent cotton.

Within an hour the mother conversed joyously over a living babe, and myself and assistants were no less pleased than the brave mother. The next day her temperature was normal and but for slight vomiting from the anesthetic the patient was tranquil. On the third day after the operation, she had a little fever for the first, owing to secretion of milk; the temperature of 100 lasted one day. On the fourth day, temperature normal, and she furnished milk for infant, and the mother was anxious for food to appease her own appetite. On the fifth day bowels moved and temperature normal; on the same day dressings were changed, wound completely healed by first intention. On the tenth day of the operation no untoward symptoms. On the twenty-first day of the operation patient walked through the house and felt as well as ever, excepting muscular debility.

During a subsequent pregnancy in the same patient the husband urged a miscarriage to be performed, which I refused absolutely, not feeling justified in destroying a child which the mother desired to save. Under the present advancement in antiseptic surgery, when we have statistics to show that the fatality to the mother in craniotomy is 47 per cent., my answer was in the negative.

I was again called to see this same woman in labor at full term pregnancy on July 27, 1895, and gave morphia to control the pains and prepare her until next day for the second operation. The room had been washed in bichlorid solution, and sulphur fumigations had been used and thorough sprinkling with carbolic acid solution at the time of the operation, and the patient had attended to antiseptic baths and vaginal douches, and her system had been fortified by tonics. I was assisted in the operation by Drs. Sweet, Salts and Davis, with my wife as special nurse. The patient was anesthetized at 11 A.M., having first taken nux vomica and morphia. Only about 1 ounce of Squibb's chloroform was inhaled during the entire operation, which lasted fifty minutes. This time the case was somewhat complicated by reason of the placenta being attached near and over the os uteri, as in a case of placenta previa. I cut through the former cicatrix and found the wall of the uterus to be extremely thin. The rubber ligature was tightened, the child turned, to save time membranes were ruptured, child removed and turned over to Dr. Salts. Placenta quickly removed with all adherent portions of the decidua carefully separated. Ligature was loosened and uterus washed out with a disinfectant fluid through vagina. Hypodermic injections of ergot and strychnia were given. The uterine cavity and edges of wound were powdered with iodoform, after first being sponged nearly dry, and sutures and all subsequent details finished as above related in the first operation. The patient did not lose more than an ounce of blood at most; neither had I to ligate nor use torsion on any vessels. Her temperature never rose but one degree above normal after this the second operation, and that on the third day at the appearance of the milk; after that no rise of temperature and she furnished plenty of food for the child. On the fourth day the dressing was changed and found no irritation, wound completely healed by first intention. We irrigated the uterus twice a day as in the first operation for the first five days afterward, with a reflux catheter and a bichlorid solution, and the next five days once a day with warm solution of boracic acid. Finding no discharges after this the tenth day, we abandoned all further uterine

interference, believing that organ to be in a healthy condition which I think was owing to the antiseptic injections during and after the operation especially. She rode out five miles on the twenty-first day after the operation.

My judgment in the matter is, the Cæsarean operation is a superior one and should be generally performed when the child can not be born alive in any other way. The girl, two years old, after the first operation, and the boy after the second one, with the delighted mother, live and thus add a further triumph to the success of antiseptic abdominal surgery.

THE VALUE OF DIFFERENTIAL DIAGNOSIS IN DENTISTRY.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY V. A. LATHAM, M.D.

CHICAGO.

The subject of diagnosis is one of much importance to a practitioner, and the man who can diagnose rapidly and correctly is usually successful in his profession. In medical works great importance is laid on diagnosis even to such a degree that special works are written on the subject. Who does not remember the differential tables in nervous, respiratory and cardiac diseases, and the dread they inspired at examinations? Without their aid we are not able to diagnose our cases, and hence the urgency of requiring students to learn them. I have constantly been surprised at the difficulties which students encounter in dental surgery and pathology. Even a well-read student finds it hard to bring his knowledge to bear promptly and efficiently upon the patient before him. The recognition of the several symptoms which the student has learned from lectures or reading can be best directed by the teacher at the side of the operating chair, just as it is at the bedside in medicine; but in his absence it is not always easy for the student to get a clue to the nature of the case before him. Every member of the dental profession can recall the days of his service in the operating room, and remember his difficulty in procuring help from the professor or his assistant, for as a rule, the corps of instructors in our colleges, medical and dental, is much too small to allow more than a passing glance or word to any inquiring student, and he does the best he can. Whether this is a wise plan or not is a subject for discussion, for several reasons. First and foremost, the student is incapable, in the majority of cases, of understanding the treatment of his earlier cases. Again, the patient, even a charity case, under these conditions is entitled to good judgment in his diagnosis, though willing to submit to the student operator; his position demands the supervision of a chief, not only for the care and result of the operation, but for the welfare and regard of the institution in which the operation was held. It is not always a patient's fault that he is a public case, and indeed we, as a class of students, graduates or undergraduates, must remember it is through their misfortune we obtain our practical experience, and so ought to give every care and attention to do the best we can for the "subjects of the clinics." The larger the clinics, the more benefit we may derive from them. The larger the corps of capable demonstrators under the guidance of an experienced diagnostician as "chief," the more practical and successful professional men and women we become.

It is evident that before any one can successfully treat a disease, he must be acquainted with its nature and the symptoms it produces. For instance, before prescribing for a patient suffering from pain in the head, he must ascertain from what that pain arises. It may result from a carious tooth, when treatment or extraction will give relief; or from periostitis, when potassium iodid will be beneficial; or from constipation, for which only a purgative is required; or again, it may be symptomatic of an incurable disease of the brain, which might be aggravated by many of the remedies well fitted for the cure of a less formidable disorder.

Diagnosis is the science which teaches us thus to distinguish one disease from another, and to trace symptoms to the causes from which they spring. Now diagnosis is valuable not only for treatment, but it enables you to form an accurate opinion as to the future course of a disease. For example, two persons may complain of palpitation of the heart; in the one you may be able to prove that the organ is healthy in its structure, but unduly excited by disordered digestion; in the other, you may find it affected with an incurable disease that may at any moment terminate your patient's life. It seems a curious fact that works on dental surgery are so very imperfect and rambling on the subject of diagnosis. I doubt if any branch of medicine is so poor in this respect. And although the dental section may be given grace on account of its late arrival, still it is a matter of regret that our text-books should be so much behind, and research so slow in progress, that is slow in availing itself of so many new facts introduced from science generally. What is the reason? I am afraid it lies in five sources:

1. The hurry to obtain a diploma.
2. The study of *only just* what seems absolutely necessary in the practice of dentistry, and a corresponding inability to apply general principles.
3. The fear of encroaching on general medicine.
4. Insufficient preliminary *education*.
5. Lack of a thorough knowledge of the *normal conditions*; and a habit of relying too much upon one mode of treatment.

Diseases are distinguished from each other by such alterations in the organs themselves or in their secretions as can be ascertained by the senses of the observer (physical signs); or by changes in the functions of the parts affected (symptoms). The physical signs are least liable to misconception, inasmuch as we are independent of any suggestion on the part of the patient. Thus we see a carious tooth or an exposed pulp, or a swelling we know that there must be some abnormal condition of the part. Physical signs can not be exclusively relied upon for the formation of a diagnosis; the symptoms and history of the case must also be taken into consideration. It is generally difficult for a student to guide a patient's account of his complaint in such a way as to derive the necessary information from it. Most persons ramble in describing symptoms, and insist in many cases on giving their own or other person's opinions as to the nature of their disease, instead of confining themselves to a narration of facts. The only way to overcome this is by conducting your examination in a systematic manner, and by having a definite aim in every question you ask. Students are apt to suppose that some particular sign or symptom is sufficient to indicate each disease. Unfortunately, this is not the

case. On the contrary, we can rarely diagnose any morbid condition without taking into consideration a number of symptoms; indeed we are often forced to determine the nature of a malady by proving what it is *not* rather than what it is, diagnosis by exclusion.

The subject of "taking cases" ought to be insisted upon in all medical and dental hospitals and colleges, and all students should be required to examine cases and to write out their histories in their operating or clinic service, the reports to be read and criticized before the class by the professors of the several subjects. To know which points are the important ones is anything but easy, and can only be acquired by experience, and through sound teaching. How many valuable cases become wholly worthless from the reason of bad or incomplete histories is only known to those in the profession who try to do legitimate and scientific study. Hospital internes are generally poor history takers because they are badly trained, and are often overwhelmed with work, the number of patients allotted to each interne being too great to permit thorough, painstaking work. This is often injustice to the patients, and always so the interne; for the value of his appointment lies in the opportunity for the close study of his cases, under a staff of skilled consultants, from whom he can inquire concerning obscure points in signs and symptoms, and whose discussions and remarks upon treatment and results serve to impress the points indelibly upon his memory. For this training he gives his time and strength, and certainly has a right to all the privileges of his position; he ought not to be worked like a machine! It is not the number of gold fillings inserted in a day, but the nature of the caries, its etiology, treatment and results we are after. What good is it to teach a student to insert a gold filling with a perfect adaptation and contour if he does not recognize the variety of decay, the resistance and pathologic conditions offered by the histologic elements, the condition of the gums, the development and articulation of the maxillæ and teeth, the state of the secretions of the stomach and oral cavity, as well as the general condition of the patient? It is worse than useless to expect good results, except by chance, without accurate knowledge on these vital points. For we must remember that the general health will permit only of temporary measures in such constitutional states as diabetes, locomotor ataxia, pregnancy and in convalescence from the acute fevers.

The most difficult problems, perhaps, we have to diagnose in dental pathology are the neurologic. Dental irritation is one of the commonest and most powerful causes of reflex nervous disturbances. We all know of many cases treated by the medical profession for months which might have been relieved by attention to the teeth. Understand, I do not mean to omit the medical treatment of such diseases as syphilis, malaria, neoplasms, and so forth. The terminations of the fifth nerve, namely the pulps, seldom allow increased circulation because of the resistant walls surrounding them, by which the entire pressure is reflected back to the central nervous system and to all peripheral nerves. Even when the sufferer indicates a special tooth, we may find the trouble in the other jaw and on the opposite side. It may not be amiss to consider here some varieties of pain and their indications. Two sources of dental pain are: 1, the nerves of the tooth-pulp; the dentinal

fibrils and the contents of the inter-globular spaces of dentine; 2, the alveolo-dental periosteum.

Pain arising from the pulp and from the dentinal fibrils is always the same in character, but may vary in degree. The pulp and protoplasmic elements of a tooth may set up a localized pain; but usually the pain arising from these structures is now localized, being felt at a distance. Periosteal disease, on the contrary, invariably causes local pain, and never pain at a distance, or only such as is quite insignificant when compared to local pain. Thus, true neuralgia never arises from uncomplicated alveolo-dental periostitis. Neuralgia, therefore, never arises uncomplicated from a dead tooth. This, as proven by experience, helps us to arrive at a correct diagnosis of the cause of one variety of dental pain. Often obstinate cases of obscure neuralgic pain can be cured by curing alveolo-dental periostitis of a dead tooth. This may be explained by assuming that the periostitis is complicated with some irritation or inflammation of a neighboring pulp; which irritation or inflammation may be passed on from the inflamed periosteum to the pulps in its proximity by continuity of tissue. When this is the case, the pulp is attacked from the proximal end, the inflammation following the apical foramina nerve and vessels. Where alveolo-dental periostitis occurs in live teeth, there is almost always some irritation or inflammation of the pulp, which may be secondary or otherwise. The following are modes of diagnosing causes of pain, in or from the teeth.

1. Explore with the mirror and a sharp pointed probe, find the cavities, then test for living or dead pulps. If the deep cavities are sensitive or the nerves exposed, here is the probable cause of the pain. These are our easy, straightforward cases. If, however, no pulp canals are open, then we must

2. Test by percussion and thermal changes. If the pulp is found unduly sensitive hyperemia and irritation are indicated; if insensitive to thermal changes, partial or complete necrosis may be diagnosed. (The heat test must be applied for some time, so the tooth feels hot to the finger, before necrosis can be regarded as proven.) This is not always true, though it is fair to conclude that hypersensitiveness to thermal changes indicates the tooth as a probable cause of neuralgia; while diminished sensibility is as often a sign of partial or complete necrosis. If we are still doubtful

3. Drilling is justifiable, for if the pulp be alive, though much receded by calcification, pain will generally be felt by the cutting of the dentinal fibrils before the pulp is reached. Carefully distinguish, however, between pain caused by the pressure of the instrument in cases where alveolo-dental periostitis is present, and that due to hyperemic pulp. Any branches of the fifth nerve in the head, face or teeth, or even more remote nerves, as the superficial cervical or even the brachial nerves, may be the seat of neuralgic pain arising from any tooth on that side. The pain, however, never crosses the vertical median line, often the faulty teeth being unsuspected by the patient. Reflex neuralgia from such a tooth may occur anywhere, but usually its favorite location is where the nerves emerge from foramina and where they anastomose. There are also certain preferred sites for certain teeth. For example, pain in the ear and pain shooting down the shoulder and into the arm, if dental in origin, is almost certain to arise from an inferior tooth. Pain, supra- and infra-orbital, almost

always arises from a superior tooth. Temporal pain, pain in front of tragus over auriculo-temporal nerve or parietal pain, "parietal focal spot," usually arises from a tooth in either mandible. Pain felt in one tooth is often due to a companion tooth in other mandible. Pain widely diffused in character, *i.e.*, shooting along many branches of the fifth nerve at one and the same time is usually from a tooth far back in the mouth, third molar. Pain of a live pulp is not continuous but capricious, lasting a short time and suddenly disappearing, periodic in appearance, frequently benefited by medicines, as salicylate of soda, quinin and other tonics or stimulants. In both these particulars neuralgia arising from the pulp agrees with neuralgia arising from unknown or constitutional causes (idiopathic neuralgia). This similarity of behavior has often led to a false diagnosis of the etiology of neuralgia on the part of physicians and dentists. The pathologic pulp which causes neuralgia of the usual capricious character is often in a state of chronic inflammation; acute pulpitis seldom reaching the dental surgeon in the early stage, the pulp soon dies. In pulpitis, cold alone is acceptable to the patient for giving relief, periosteal symptoms being nearly always present. Nerve exhaustion means increased nervous irritability. Anemia of young subjects, especially, causes severe neuralgia to arise from such slight causes as exposure of dentine at the necks of the teeth, through irritation of the dentinal fibrils and their canalicular terminations.

With regard to etiology of dental periostitis and pulpitis, the diplococcus pneumoniae may be regarded as a factor, usually accompanied by the staphylococcus pyogenes aureus and albus. Long continued pulpitis may cause inflammation of the antrum just as well as a severe catarrhal inflammation can do so. Non-eruption of the teeth, which is very hard to diagnose in the early stages, can also cause a purulent condition of the antrum, and may give frequent and persistent neuralgia, as well as trismus from irritation of the inferior dental nerve.

Causes of neuralgic pains are: 1, sensitive dentine; 2, fibroid pulps; 3, crowding; 4, necrosis of pulp in a confined space; 5, exostosis; 6, alveolar periostitis; 7, filling over exposed pulp; 8, malpresentation of third molar; 9, rheumatic and gouty diathesis; 10, anemic and chlorotic states; 11, serous calculus on roots; 12, malaria; 13, pulp nodules; 14, sympathy; 15, recession and absorption of gum and alveolus; 16, pressure of gases in the pulp chamber; 17, traumatism.

The most pernicious form of neuralgia is that which is due to septic influences occurring after some traumatic injury, in which paresis or paralysis of the nerve effected sometimes follows.

Differential Diagnosis between Antral Abscess and Ozena. Points in favor of the former are: 1, the presence of pulpless teeth; 2, a shortening of the face from the oral cavity to the orbit; 3, accumulation and sudden reaccumulation of pus, showing at the hiatus, in middle meatus, half an inch from anterior extremity of inferior turbinate bone; 4, discharge of pus increased on putting patient in horizontal position, especially on the sound side; 5, relative darkness over the diseased maxilla when the bones of the face are illuminated; 6, puncture through nose and aspiration of fluid; 7, the presence of carious teeth, especially roots, in upper mandible. Bulging of the cheek and deformity of the jaw are not always present. Ozena is recognized by: 1, characteristic fetid discharge;

2, olfactory anesthesia; 3, detection of denuded necrosed bone in nares; 4, presence of crusts of dried secretions and ulcers, especially in naso-pharynx; 5, the teeth may be normal; 6, diathesis (syphilitic or strumous).

The following appended tables may be useful:

Sensitive Dentine.

When the examination over a considerable part of the cavity walls does not respond to simple pressure. Pain is not persistent.

Hyperemia of the Pulp.

Pain of boring character; tooth highly sensitive to hot and cold temperatures, and painful in mastication and on pressure. Hard to distinguish from exposed dentine. Absence of throbbing pain (pathognomonic of pulpitis); serious neuralgia may be a symptom.

Chronic Pulpitis.

Pain less severe than in the acute form, not very intense nor long in duration when present. Comes on at irregular intervals—often vague neuralgic pains. Sudden changes of temperature, or applications of irritants will produce a paroxysm of pain, lasting from a few minutes to hours. Pulp shows inflammation limited to exposed spot, the rest pale and healthy.

It is often difficult to distinguish pulpitis from hyperemia. In hyperemia the throbbing character of the pain is not so well marked and the pulp usually not exposed. Pulpitis must also be distinguished from periostitis; the differential points being as follows:

Pulpitis.

Pain—sharp, lancinating or throbbing, intermittent and reflected within the tooth.

Thermal changes cause pain.

Pressure or percussion on tooth gives no pain at first.

Slight pressure on a piece of wool in cavity generally gives acute pain.

With pulpitis we may have pericementitis by continuity.

If the Pulp is Sensitive.

When the examination is made near the pulp, it responds to pressure.

Pulpitis.

Pain of a boring character rapidly increasing, assuming a throbbing form, extending from the diseased tooth to the neighboring teeth and to the side of the face, the tooth forming the center of its intensity. The larger and younger the pulp the greater the pain. In time the pain subsides, to return though on the slightest provocation, or the horizontal position being resumed. Pulp injected with blood throughout, the the exposed part deeper in color.

Necrosis of Pulp.

Pain becomes changed to a dull heavy ache with a feeling of tension. Tooth feels too long, raised in alveolus by the pericementitis and periostitis, and loosened; may have some swelling at the side, on the gum or at the root; a change of color can be seen by strong light, the dead tooth having a dark line in the pulp region.

Periodontitis.

Pain, dull, heavy and constant, and without the tooth.

Thermal changes do not cause pain.

Pressure or percussion on tooth gives pain from the first.

Slight pressure does not give pain except through pressure transmitted to the periosteum.

Tooth loosens and elongates.

A student may be well versed in the sciences of his profession, and yet unable to diagnose the simplest case of disease presented in actual practice, simply because the knowledge has not become his own in sufficient degree to enable him to comprehend appearances. Diagnosis, to be useful must not only be clear and satisfactory to our own minds, but made so plain to those in charge of the case as to render them alive to the real necessities present, thus securing that coöperation without which treatment will be ineffectual, if not actually a damage to those we essay to

benefit. No diagnostician who is conscientious as well as competent will set up his own opinion as the standard, but will always rely upon the perception of those to whom he wishes to make the diagnosis plain, and in this very idea is the safety: for the recapitulation of the case may reveal points previously unnoticed, so giving certainty and confidence to the patient and himself. To become a good diagnostician, it is imperative to understand principles and laws, in preference to formularies and modes; and to comprehend these, one's powers must not only be good, but kept in constant use, thus insuring the best and latest methods, reading and experience.

808 Morse Avenue.

FADS AND "ADS."

Read before the Southeastern Missouri Medical Association.

BY W. P. HOWLE, M.D.

ORAN, MO.

Who is there, these days, without a "fad"? Every man has at least one, some have many, whether they know it or not. Doctors are especially prone to this trouble. One doctor's fad is writing and reading articles for his medical society, another doctor's fad is to object to everything written or said. I know a doctor whose fad is fine horses. He thinks a doctor without a fine horse is no doctor at all. I know another doctor whose fad is a cleanly office, and he is disgusted with any doctor who does not keep his office clean. I know another doctor whose fad is to have an office in such a condition that all are disgusted who enter it. Iodoform or carbolic acid is the first thing you smell, and dirt is found in and upon everything he handles. If asked why he indulges this fad, he claims it is because he is so enormously *busy* that he has no time to clean up. Keeping a dirty office is not his only fad. His principal fad is to impress upon every one that he is a wonderfully busy doctor. I have a neighbor (and this reminds me that some people's fad is talking about their neighbors, but I am not talking about mine), but as I said before I have a neighbor who invariably tells me every time he sees me how much work (practice) he has done. I have another neighbor whose fad and "ad." is loud talking. He is always known when he is in town. He talks in a loud voice to his friends across the street, saying: "How are you?" "How are you to-day?" "How are your folks?" "Why, hello, Jim! I'll see you directly. I am *busy* now." Fads and ads. go together. Each of us have more or less egotism. We may be modest in the main, but the doctor who has no weak point is an exception. So much for fads and ads. which do little harm and are to some extent excusable. But the object of this paper is to call attention to a fad that is doing the profession, and through it the laity, more harm than all other fads combined. I refer to our daily use of *proprietary compounds*. This is an everyday fad with the majority of us. Some of us indulge this fad in one way, some in another. We prescribe these compounds for several apparently good reasons: They are generally palatable; some of them are quite reliable; it saves time and trouble in prescribing. For instance, I believe that quinin and iron are indicated in a certain case, I prescribe someone's elixir of quinin and iron already made. The dose and proportion may not be exactly what I want, but through laziness or carelessness I fall into the trap for me. These compounds, as a rule, are labeled

and indication given, and some have an extra wrapper, on which are reports of cases treated and results. These we do not order, but the smooth manufacturer saw the point. He knew if the doctor prescribed the compound the curiosity of the patient would lead him to read all about it, after which the patient gets a fad of his own, and that fad consists in buying these compounds without consulting the doctor. So you see there is an "ad." and fad in this connection that makes it interesting. Look at such remedies as — hypophosphites, maltin, bromidia, listerin, — emulsion and the host of other proprietary medicines. They are being bought at *exorbitant prices* because we recommend them. See the unfairness, if not rascality, that is hidden over our signatures. When you write a prescription and mention calomel as an ingredient do you call attention to its many virtues in other complaints beside the one you prescribe for? In prescribing quinin do you give it such a "send off" as do the manufacturers of — give their products? If you do not, and do not think it right to do so, why do you prescribe these compounds? You know that they are being "puffed" by their makers to a greater extent than many patent nostrums, and we know comparatively as little about some of them as we do of — sarsaparilla. One of my fads and ads. is not to prescribe any remedy with an almanac attachment. As a rule, I make my own prescriptions. Once in a while I prescribe acetanilid; I don't know how it is made, nor do I know exactly how calomel and quinin are made. I know that quinin is made of Peruvian bark, that calomel is made of mercury and that acetanilid is a coal-tar product; but none of these have an almanac attachment. They are simply labeled and the patient can not tell from that label what they are made of or for. And I get in another of my fads by *telling* him (for his money's sake). I am tired of assisting ready-remedy-makers in swindling the profession and, through it, their patrons. This article is written to draw out the opinions of the Society on this subject. I brought the matter up at our last meeting and no one would back me in condemning this fad; but to-day I think I have backers who will point out our error in this matter in ways that I have not mentioned. I appeal to you again and ask each of you to express himself fully. I believe we are all guilty. If we are and can see that we are doing wrong, why shall we not stop? We save time and trouble at the expense of study and duty. It is a sad comment, but some of us are actually too lazy to make out a prescription of our own, and in its stead we write the name of somebody's compound, labeled with directions not only for the complaint we are treating, but for divers others. We read in our journals that — is a specific for la grippe. We take the fellow's word for it and prescribe it. This is a fine way to learn and practice medicine, a *nice* way to study our cases and to learn what is the real lesion in la grippe. La grippe, like malaria, assumes many phases, but it is evident the routine prescription of any one remedy is wrong. Let us study medicine and pharmacy for ourselves. Let us make out our own prescriptions. In fact, let us do our duty as physicians and cease patronizing ready-remedy-makers. We can never restore medicine to its proper sphere by connivance with drug manufacturers. We ought to be teachers of pharmacy instead of its dupes. The proprietary vendor, taking advantage of our laziness and credulity, tells us that he can make our work easy.

light and pleasant; that he has a remedy, a certain noted physician's prescription, which is giving grand results; it is composed of this, that and the other, and is superior to anything known for prevalent diseases. We now have nothing to do but prescribe it and the work is done. The pharmacists have come to our relief. They have analyzed diseases for us, found out the remedy; *they know it all!* We fall into the trap; we cease to investigate; we step down and out while the pharmacist takes our place. We can play *granny and nurse*, but the proprietary man does all the rest. Twenty years from now, if the fad is not "sat down on," the medical student will have to go to the drug manufacturer's establishment for medical knowledge; there will be no colleges. The proprietary man is trying to usurp our place, but is unwilling to teach what he *pretends* to know. You ask him how he makes his product. He will give you a formula, but at the same time tell you he has a *secret* process of *combination*. The true physician has always been and is still willing to publish any and all he knows, but the proprietary man says: "Oh, no! I can not tell you *how* I make my compound. I am making money while you, my dupe, are growing poor. I, with my stolen knowledge, am growing rich, and you are silly and lazy enough to help me." Do you not think it time to call a halt? I do; and I move that this Society refuse hereafter to give any man's compound, who refuses to tell of *what* and *how* it is made.

ANASTOMOSIS OF DUODENUM.

BY C. P. THOMAS, M.D.

EVERETT, WASH.

The patient, J. G. W., was brought to the Everett Hospital Feb. 13, 1896, shot in the abdomen, at close range, with a .38 caliber revolver, ball entering about three inches above and one inch to the left of the umbilicus, and lodged in the back. The abdomen was opened an hour after the injury was received, by a four-inch longitudinal incision at the bullet wound. The cavity was filled with blood; the patient in extreme shock and pulseless. A large hole in the mesentery, which was bleeding profusely, was closed with catgut. The duodenum had two small holes in it about six inches from the stomach, which were closed with fine silk by the Lembert suture. Another perforation was found about ten inches from the stomach which nearly severed the gut and tore the mesentery at the same place. This portion of the gut was resected and end-to-end anastomosis made with the Murphy button. No other perforations could be found. There had been but little escape of the intestinal contents before the operation, owing to their having been empty, and none since. The peritoneal cavity was closed with glass drainage without much irrigation or sponging, owing to the extreme condition of shock which existed. Considerable difficulty was experienced in bringing the ends of the gut within the bowls of the button, owing to the thickness of the gut and to the purse-string sutures having been placed too far from the ends of the gut, and in order to be sure that the serous surfaces were in perfect contact, a continuous silk suture was placed around the entire line of union. The time required for the operation was forty-five minutes. The drainage was removed the fourth day and liquid diet begun the sixth day. Half of the button was passed

the tenth and the other half the thirteenth day. It was found that the secretion of the stomach had destroyed the catches on the springs, which allowed the button to separate. Patient's recovery has been uneventful; he remained in the hospital but four weeks. The button used was one made from a cut which appeared in the *Medical Record* in 1893. It differed but little from the genuine Murphy button which I now have and will use in the future. Preparations had just been made for an operation for appendicitis on another patient, when he was brought in, thus no time was lost in beginning.

The points of special interest are that the anastomosis was done in the duodenum and that the button came away in two pieces.

A FEW NOTES ON EPILEPSY.

BY L. PIERCE CLARK, M.D.

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The peculiar ideas that epileptics entertain about their attacks are well illustrated by some of their remarks in describing their seizures. Two or three characterized their fits as "dreamy spells." These were minor attacks in which consciousness was not completely lost, but there was confusion of ideas and a paralysis of will over many of the voluntary movements of the body. These have been designated as psychic attacks by some writers, but by others they are still classed with petit mal. The latter class of diagnosticians regard the subdivision, psychic, as an unnecessary refinement in classification and one not fully justifiable clinically.

One patient has designated his aura in a dramatic manner by saying: "First red, white and blue, followed by a sensation of falling down, down for a long distance; then darkness." During the attenuation of consciousness, the brain has time to record many sensory phenomena. As the elements of consciousness begin one by one to die out, they disturb the time and space relation to a remarkable extent, as on careful inquiry this patient did not remember in a single instance of striking the ground or floor.

Another patient describes the beginning of his attacks in a very hopeless manner. He is attacked by great mental depression in which he is "suddenly stunned by an indescribable sorrow;" this in turn is followed by a "feeling of extreme physical languor, then unconsciousness."

The description of the aura as a vapor, of the ancient Greek designation, has a counterpart in the case of V. S., who says: "There is a kind of wind or vapor which fills my head full to bursting before I get dizzy at all." The wind or vapor idea is established firmly in his mind as a part of his epilepsy, because he is periodically troubled with flatulence and sometimes these periods are concomitant with his seizures.

One patient, who has an epileptic sister, seems to have been thoroughly tinetured with the contagious and infectious idea so prevalent among us at present. She firmly believes that her sister contracted epilepsy from her because they occupied the same bed at night. She carries the idea still further and manifests a great dislike in being obliged to bathe at the same lavatory with those who have a worse form of the disease than she, lest she should contract the severer form. After hearing the patient's description of her sister's seizures, the idea of contagion does not seem so prepos-

terous or wrong, as they partake more of the nature of hysteria than of true epilepsy. They are of such a character that it sometimes takes "three or four men to hold her lest she does injury to herself or others." She is quite prone "to tear her hair" and inflict other bodily injuries upon herself. The symptoms in this case seem to point very strongly to hysteria instead of to epilepsy. Hysteria might easily make its appearance under such circumstances, especially when a member of the family, living with the epileptic, was "nervous and sensitive" and proved an easy subject for suggestion by being constantly associated with a living example. We see an analogy to this in the cases cited by Mercer, Esquirol and others, in which it seemed that other sisters and brothers became insane through association with members of the family who were suffering from insanity previously, this being induced through the influence of suggestion upon a weak and unstable nervous organization.

Although such ideas as have been above recorded are prevalent among epileptics, yet however awful and severe they may appear to them, it does not preclude hope of relief from their severe malady, but makes them even more hopeful than the phthisic patient.

RESEARCHES ON RAPID PHOTOGRAPHY BY MEANS OF EDISON'S KINETOGRAPH AND THE ANIMATED REPRODUCTION WITH THE KINETOSCOPE.

SHOWING ALSO BY THIS METHOD THE PRESENT AND
FUTURE POSSIBILITIES OF TAKING AND RE-PRODUC-
ING CERTAIN ANIMATED PHYSIOLOGIC MOVE-
MENTS AS THE LARYNX, HEART, INTES-
TINES, ETC., AND CERTAIN DISEASES
HAVING VISIBLE SYMPTOMS, ETC.
WITH A HISTORIC REVIEW
OF FIFTY YEARS OF
PHOTOGRAPHY.

Read before the French Academy of Medicine, Paris, February, 1895, and
in the Section on Physiology and Dietetics, at the Forty-sixth
Annual Meeting of the American Medical Association,
at Baltimore, Md., May 7-10, 1895.

BY J. MOUNT BLEYER, M.D., F.R.A.M.S.

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Corresponding Member to the Mexican Academy of Medicine; Cor-
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NEW YORK.

(Concluded from page 677.)

Then followed some experiments with drums, over which sheets of sensitized celluloid film were drawn, the edges being pressed into a narrow slot in the surface, similar in construction to the old tin-foil phonograph. A starting and stopping device very similar to the one now in use was also applied. The pictures were then taken spirally to the number of two hundred or so, but were limited in size, owing to the rotundity of surface, which brought only the center of the picture into focus. The sheet of celluloid was then developed, fixed, etc., and placed upon a transparent drum, bristling at the outer edge with brass pins. When the drum was rapidly turned, these came in contact with the primary current of an induction coil, and each image was lighted up in the same manner as described in the previous disk experiment, with this difference only, that the inside of the drum was illuminated.

Edison and Dickson made the next step by adopt-

ing a highly sensitized strip of celluloid half an inch wide; but this proving unsatisfactory, owing to inadequate size, one-inch pictures were substituted on a band one and one-half inches wide, the additional width being required for the perforations on the outer edge. These perforations occur at close and regular intervals, in order to enable the teeth of the locking device to hold the film steady for nine-tenths of the forty-sixth part of a second, when a shutter opens rapidly and admits a beam of light, causing an image or phase in the movement of the subject. The film is then jerked forward in the remaining one-tenth of the forty-sixth part of a second, and held at rest while the shutter has again made its round, admitting another circle of light, and so on until forty-six impressions are taken a second, or 2,760 a minute. This speed yields 165,600 pictures in an hour, an amount amply sufficient for an evening's entertainment, when unreel before the eye. By connecting the two ends of the strip, and thus forming a continuous band, the pictures can be indefinitely multiplied.

For this system the advantage is claimed by them over a continuous band, and of a slatted shutter forging widely ahead of the film, would be this, that in that case only the fractional degree of light comprised in the 1-2720 part of a second is allowed to penetrate to the film at the complete sacrifice of all detail, whereas, in the present system of stopping and starting, each picture gets one-hundredth part of a second's exposure, with a lens but slightly stopped down; time amply sufficient, as any photographer knows, for the attainment of excellent detail even in an ordinary good light. It must be understood that only one camera is used for taking these strips, and not a battery of cameras, as in Mr. Maybridge's photograph of "The Horse in Motion."

The next step they take, after making the negative band, is to form a positive or finished series of reproductions from the negative, which is passed through a machine for the purpose, in conjunction with a blank strip of film, which after development and general treatment, is replaced in the kinetoscope or phonokinetoscope, as the case may be. When a phonograph record has been taken simultaneously with such a strip, the two are started together by the use of a simple but effective device, and kept so all through, the phonographic record being in perfect accord with the strip. In this conjunction, the tiny holes with which the edge of the celluloid film is perforated, correspond exactly with the phonographic records, and the several devices of the camera, such as the shifting of the film and the operations of the shutter, are so regulated as to keep pace with the indentations made by the stylus upon the phonographic wax cylinder, one motor serving as a source of common energy to camera and phonograph, when they are electrically and mechanically linked together. The establishment of harmonious relations between kinetoscope and phonograph was a harrowing task, and would have broken the spirit of inventors less inured to hardship and discouragement than Edison's veterans. The experiments have borne legitimate fruit, and the most scrupulous nicety of adjustment has been achieved, with the resultant effects of realistic life, audibly and visually expressed.

The process of "taking" is variously performed: by an artificial light in the photographic room, or by daylight under the improved conditions of the new thea-

ter specially erected. This building is known as the kinetographic theater. Entering, we are confronted by a system of lights and shades so sharply differentiated as to pain the eye. Later we find that the contrasts are effected by the total exclusion of light from the lower end of the hall, heightened by draperies of impenetrable black, against which stands out in sharp relief the central stage, on which are placed the kinetographic subjects, bathed in the full power of the color rays, pouring down from the movable roof. This distribution of light and shade is productive of the happiest effects in the films, as the different figures are thrown into the broadest relief against the black background, and a distinctness of outline is achieved that would be impossible under ordinary conditions. This theater in shape is irregularly oblong, rising abruptly in the center, at which point a movable roof is attached, which is easily raised or lowered at the will of a single manipulator. Its color is a grim and forbidding black, enlivened by the dull luster of many hundred metallic points; its material is paper, covered with pitch and profusely studded with tin nails. With its flapping sail-like roof and ebony hue, it has a weird and semi-nautical appearance, and the uncanny effect is not lessened when, at an imperceptible signal, the great building swings slowly around upon a graphited center, presenting any given angle to the rays of the sun, and rendering the operator independent of diurnal variations. The movable principle of this building is identical with that of our river swinging bridges, the ends being suspended by iron rods from raised center pots. The exigencies of natural lighting incident to the better "taking" of the subjects, and the lack of a suitable theatrical stage, etc., however, necessitated the construction of this specially devised building. This invention is due to Mr. Dickson, the chief photographer and engineer of the Edison laboratory. At the other end of the hall in this theater is a cell, indicated by an ordinary door and an extraordinary window, glazed in panes of a lurid hue, which gives the finishing touch to the Rembrandtesque character of the picture. The compartment is devoted to the purpose of changing the film from the dark box to the kinetographic camera, being provided with a special track from the mysterious recesses at the back of the stage to its own special precincts, where fresh films are substituted for the ones already employed. The process of developing, etc., is performed in the main photographic building of the Edison laboratory.

When any subject of a great magnitude is ready to be taken where there are more than one in number, they are kept as close together as possible, and exposed either to the glare of the sun, to the blinding light of four parabolic magnesium lamps, or to the light of twenty arc-lamps, provided with highly actinic carbons, supplied with powerful reflectors equal to about 50,000 candle-power. This radiance is concentrated upon the subject while the kinetograph alone, or in connection with the phonograph, is hard at work storing up the records and impressions for future production. For the reproduction of these photographic impressions a machine called the kinetoscope is made use of. It consists of a cabinet containing an electric motor and batteries for operating the mechanism which acts as the impelling power to the film. The film is in the shape of an endless band fifty feet in length, which is passed through the field of a magnifying glass perpendicularly placed. The photographic impressions pass before the eye at the rate

of forty-six per second, through the medium of a rotating, slotted disk, the slot exposing a picture at each revolution, and separating the fractional gradations of pose. Projected against a screen, or viewed through a magnifying glass, the pictures are eminently life-like, for the reason that the enlargement need not be more than ten times the original size. For exhibition purposes the projecting room must be hung with black, in order to prevent any reflection from the circle of light emanating from the screen at the other end, the projector being placed behind a curtain, also of black, and provided with a single peep-hole for the accommodation of the lens. The effect of these somber draperies, and the weird accompanying monotone of the electric motor attached to the projector, are horribly impressive, and one's sense of the supernatural is heightened when a figure suddenly springs into his path, acting and talking with a vigor which leaves him totally unprepared for its mysterious vanishing. Projected stereoscopically, the results are even more realistic, as those acquainted with that class of phenomena may imagine, and a pleasing roundness is apparent, which in ordinary photographic displays is conspicuous by its absence.

Nothing more vivid or more natural could be imagined than these breathing, audible forms, with their tricks of familiar gesture and speech. The inconceivable swiftness of the photographic successions, and the exquisite synchronism of the phonographic attachment, have removed the last trace of automatic action, and the illusion is complete. The few illustrations accompanying this illustration show in every one of the pictures, and each succeeding one of the rapid photographs taken the details of the movement made within the time to that of completion can be seen by examining them closely. The rapidity with which the impressions are made is such that it is interesting to notice the slight difference from one to the other. Taking for instance, the organ-grinder, the monkey jumps upon his shoulder, and if the phonograph attachment is connected, the accompaniment of a strain of music from the organ is also heard. The rich strains of a tenor or soprano are heard, set in their appropriate dramatic action, the blacksmith is seen swinging his ponderous hammer, exactly as in life, and the clang of the anvil keep pace with the with his symmetrical movements; along with the rhythmical measures of the dancer go her sounding footfalls; the wrestlers and fencers ply their intricate game, guarding, parrying, attacking, thrusting and throwing, while the quick flash of the eye, the tension of the mouth, the dilated nostrils, and the strong, deep breathing give evidence of the potentialities within. In fact, one can photograph by this means from every characteristic section of social, artistic and industrial life, and from many phases of animal existence. Still in selecting the themes for this rapid method of photography it needs utmost discrimination.

III. — THIS METHOD OF PHOTOGRAPHY IN THE SERVICE OF PHYSIOLOGY, PATHOLOGY AND LEGAL MEDICINE, ETC.

From what has been said and demonstrated in these pages, and can readily enough understand the object lessons taught us by these methods of rapid photography and the reproduction of its many graded animated photographs. What is the future of this all? Ask rather from what conceivable phase of the future

the kinetograph can be debarred. In the advancement of science in the revelation of unguessed worlds, in its educational and re-creative powers, and in its ability to immortalize our fitting but beloved associations, the kinetograph stands foremost among the creations of modern inventive genius. Mr. Dickson says, "It is the crown and flower of the 19th century magic, the crystallization of eons of groping enchantments. In its wholesome, sunny and accessible loves are possibilities undreamt of by the occult lore of the East; the conservative wisdom of Egypt, the jealous erudition of Babylon, the guarded mysteries of Delphic and Eleusinian shrines."

In the study of physiology the possibilities which are opened to us by this means are startling. No one can yet fore-shadow the coming researches to be made from time to time by this mode of rapid photography. Every phase of physiologic research will be possible. The microscopic lens and the kinetograph will be amalgamated into one and the infinitesimal world by this aid will yet be discovered. The pathologic symptoms usually witnessed in disease can be photographed, and life imbued into every one of them—thus giving us time to study them closer, and at leisure. The lecture room thereby will also be endowed with additional edification. This is an entirely new field which the modern explorer has got to travel and note down and make his geographic drawings yet.

To speak hastily here, the photographic art which was put early to the service of medical studies, was due the genius of Dr. Maddox of England, and who also discovered the bromid of silver gelatin emulsion process, and thereby bringing the photographic technique up to its high standard. The first who busied themselves with the experimental investigation in this line of photography were Marie and Czermak. They both made use of it in physiologic researches and even to-day some of their work can not be beaten: Czermak, also constructed the first apparatus for laryngoscopic photography. The pictures which were taken by this apparatus gave in detail every single part of the larynx. Since then others have photographed the larynx, by many different means. French of Brooklyn, N. Y., and myself also have done good work. Also we find that Ozolan of Paris in 1869 made use of the photographic process in physiologic studies, and specially designed a camera for photographing the heart beats. Since the early daguerreotype photography in medicine, many studies have been made in perfecting rapid and sensitive plates and those of Dr. Wm. G. Thompson's of New York City. With these he had been able to experiment in picturing the heart beats of animals and thus enlarged our knowledge in a heretofore unexplored field regarding the view of the diastole and systole of the heart in its movements in succeeding periods of time. This work promises to afford a valuable means of illustrating the action of drugs on the heart and of recording accurately any experimental observations upon the cardiac movement without the error of the personal equation of the observer. His photographs show a full diastole and a full systole, with a series of any number of intermediate views. These serve him as standards of comparison with photographs of the altered diastoles and systoles which occur under the influence of cardiac stimuli or depressors. There is no doubt that under such favorable scientific truths before us, Dr. Thompson can not fail to give us a full pharmacopeia and the therapeutics of the circulatory system and digestive

tract. But what lies in store for us by means of rapid photography with the aid of the kinetograph and kinetoscope is at present hard to say—as many wanting technical appliances in the shade of microscopic lenses, etc., are still being experimented upon in this domain.

So also with photographing the larynx, in order to show the living movements of abduction, adduction of the vocal bands, vocalization dynamics, and under their various pathologic conditions, etc., with some additional devices all this can not fail to be accomplished.

In the study of microscopic subjects, a class of special interest, as lying outside of the unaided vision of man, it may be said, that in the treatment of these infinitesimal types, much difficulty was experienced in obtaining a perfect adjustment so as to reproduce the breathing of insects, the circulation of the blood in a frog's leg, and other similar processes of nature.

Mr. Dickson with his high grade of mechanical skill overcame such obstacles as laid in his way and succeeded in photographing and enlarging the animalculæ in a drop of stagnant water in which these animalculæ are suspended, which proved to be an exacting task. This was accomplished by the aid of a powerful lime-light, concentrated on the water, by the interposition of alum cells for the interception of most of the heat rays, and by the use of a quick shutter and kindred contrivances, the obstacles were overcome, and the final results were such as fully to compensate for the expenditure and time and trouble. Mr. Dickson, in speaking of this result, says: "Suppose that the operator has at last been successful in imprisoning the tricky water goblins on the sensitive film, in developing the positive strip, and placing it in the projector. A series of inch-large shapes then spring into view, magnified stereoptically to nearly three feet each, grewsome beyond power of expression, and exhibiting an indescribable celerity and rage. Monsters close upon one another in blind and indiscriminate attack, limbs are dismembered, gory globules are tapped, whole battalions disappear from view. A curious feature of the performance is the passing of these creatures in and out of focus, appearing sometimes really of their own size and proportions."

One can not help wondering at the progress and future of this branch of the science and the many uses in which it has already been called into service, taking a survey from records of the infinitely little and the infinitely great from microscopy, which deals with the invisible, to the vastness of astronomic wonders. I could here go on and cite many more instances to which this mode of rapid photography in medicine and other sciences could be put to, but suffice it to say, from what I have hinted at will prove good in all undertakings where motion and animation is wanted in demonstrating them in the study of any subject.

All the foregoing finished experimental work up to the present time are but the heralds of those to come out of the multiplying schemes which are on foot. Hitherto the limitation has been to the consideration of detached subjects alone, all of which are most successful, but Mr. Edison and Mr. Dickson are increasing the facilities to such an extent—high is their ambition—that a number of actors can be put into a group and taken. Also to increase the stage appointments, with a view to the presentation of an entire play, set in an appropriate frame. This work once made appli-

cable in this line, it can be indefinitely extended to any given phase which is desired to be reproduced. They speak of their method so confidently that it points to ultimate success. Every day adds to the security and the celerity of their undertaking. No scene, however animated and extensive, but will eventually be within reproductive power. The advantages of this method are simply countless.

In these preliminary pages which I communicate to your body, I only touch upon the subject before me in a very primary way, and prepare you for that which will follow in detail in a near future. This, however, is enough to show you that the birth of animated photography has taken place, and its new era can now be hailed by exclaiming, Eureka!

Since this paper was read Mr. Edison and others have succeeded in so improving the kinetoscope that to-day we have the realization of the foreshadowing of that vitascope by which it is possible to witness moving life-size figures of men, women and animals when thrown upon the screen by means of bright lights and powerful lenses. The original photographs, as by the kinetoscope and developed on the film roll, are about the size of a special delivery stamp, and to produce a life-size picture they are magnified about six hundred times. Each vibration of the film, or the apparatus which revolves it, is magnified in like proportions. With these possibilities, the kinetoscope will be another important piece of apparatus added to those of recent discoveries, put to the disposal of medicine.

NOTE.—I wish to express my sincere thanks to Mr. Dickson, chief of the Edison Laboratory, for the many points herein given which were taken from his private notes and sketches.
460 Lexington Avenue.

SELECTIONS.

On an Unpublished English Anatomic Treatise of the Fourteenth Century.—At the annual meeting of the British Medical Association held in London, August, 1895. Payne¹ exhibited to the Section of Anatomy and Histology the manuscript of a treatise of surgery prefixed by a short treatise on the anatomy of the human body, written by an English surgeon and dated the year of our Lord 1392. The name of the author is unknown.

The date of this manuscript is of much interest. A treatise on anatomy and surgery by an English author, written in the English language of the fourteenth century is undoubtedly unique although it is quite possible, as Payne suggests, that the MS. treasures of the British Museum and other great libraries may be found to harbor similar productions. The only documents comparable to it are the works of John Arderne, the translations of Lanfranc's Surgery, and translations of the French surgeon Henri de Mondeville. Payne calls attention to the importance of the fourteenth century in the history of English science as of English literature and theology. In literature and theology the verse of Chaucer and the prose of Wycliffe are sufficient examples. In science we have the notable work of John Arderne, the first English surgeon. The fifteenth century was uneventful. The Black Death and succeeding pestilences, and the wars of the Roses brought the progress of science and medicine in England almost to a standstill so that in the sixteenth century "when the revival of learning and the introduction of printing led men to take stock of their intellectual possessions, little more was done in practical medicine than to gather up the threads of the fourteenth century tradition." The works of Arderne and the unpub-

lished treatise here mentioned had an extraordinary resurrection in the middle of the sixteenth century. The document of the unknown writer was a folio on paper, in double columns of 190 leaves, written in a very fine and very legible black letter. It may interest many of our readers to reproduce the preface as read by Payne:

"The Holy Trinity that is head and well of cunning, giver and graunter of grace to all tho that by her power trevailen truly about science and cunning; that is help and edification to his people, graunte you grace that this compilation shall have so for the usen and disposen the fruyt of medicyns and of worchyng in it conteyned that it turne specially to the worships of God and profit of the peple. The which compilation of sirurgie I have compiled and drawn aftir the discreet autoritie of my moost worshipful maistris and predecessours of the same science. And specially aftir the noble counsell of my worthi maistir Lanfranke, puttyng therto worchyng that I have assaied and proved in my tyme and other expert medicyns y gaderid of dyvers worcheris that they also have assaied and proved, y compilid and endid in the year of our Lord MCCCCLXXXII. Wherefor I prie and counseile you that usen the worchyng in this doctrine, contynue that ye ben gracious and helpinge to the pore for Goddis sake, and to the riche for a competent salarie, and also that ye seien for his soule that compilid this tretis, and for all tho that helpide therto and for alle cristen a paternoster and an ave marie. And though it be so that I y sum tyme addyng and sum tyme with drawyng have transposid the ordynance of thes myn aforseid maistreis, and so by cause of ignorance have fallen othir while in to errour, I biseche you tendirly that it schal reden or heren or undirstonden that ye have me excusid, and that ye adden and fulfillen benygly the defaultis in it conteyned after the decre of the worshipful Galen in the ij De morbo et accidente, and in the v and in the last chapitre leggyng this text. Olde mennys sawis schulen be declarid frendly of here feloweris, and if ther failen any thing, it schal ben bi hem benygly fulfilled."

The first part includes the anatomy. It is divided into three sections called "Distinctions." The classification is as follows:

"The First Distinction hath seven chapters; treats of the definition of anatomy, and of embrion, and of all his consimilar members: 1, Definition of Anatomy; 2, Anatomy of Embrion; 3, Anatomy of Marrow, Bones, and Gristles; 4, Anatomy of Ligaments, Sinews, and Cords; 5, Anatomy of Arteries, Veins, and Gristles; 6, Anatomy of Brawnes, Lacertes, and Villis; 7, Anatomy of Fatness, Skin, Hair, and Nails. The Second Distinction hath fifteen chapters; treats of a man and all divers members: 1, Anatomy of the Head; 2, Anatomy of the Forehead; 3, Anatomy of the Eye; 4, Anatomy of the Nose; 5, Anatomy of the Mouth; 6, Anatomy of the Neck; 7, Anatomy of the Shoulder; 8, Anatomy of the Arm; 9, Anatomy of the Breast; 10, Anatomy of the Wombe; 11, Anatomy of the Matrice; 12, Anatomy of the Haunches; 13, Anatomy of Manne's Privy Members; 14, Anatomy of the Thighs, Legs, and Feet; 15, Recapitulation of all the Bones in a Man's Body. The Third Distinction treats of the four complexions, with the signs of the Zodiac, and has ten chapters."

Anatomy is defined according to Henri de Ananda Villa (Henri de Mondeville) thus: "Anatomy is the rightful division and knowing of a man's body, and of his single parts and members, the which body is the subject or the matter of all science of medicine and of sirurgery." The anatomy is a compilation from several authors but chiefly from Lanfranc, of Milan, and Henri de Mondeville. Lanfranc was born in Milan about the middle of the thirteenth century and died in Paris about 1306. His chief work was the *Chirurgia Magna* and the unknown author of this MS. quotes very liberally from Lanfranc's work. Henri de Mondeville, or de Ananda Villa, was a French surgeon, who died about 1320, whose name after centuries of neglect, has lately been brought into prominence and whose writings, thought to no longer exist, have recently (1893) been published in Latin and French. The French edition published by M. Nicaise, was reviewed editorially in the number of this JOURNAL for April 28, 1894. Our unknown writer follows precisely the arrangement of Mondeville as far as anatomy is concerned; he also quotes Mondeville by name very often. While this treatise appears to be founded entirely on the works of Lanfranc and Mondeville, there is one feature about the

¹ British Medical Journal, Jan. 25, 1896.

manuscript which Payne says shows that the writer, though a compiler, had a distinct individuality. He practiced in London. He speaks of the inefficacy of operation in carcinoma of the breast as follows:

"And furthermore to speak of this sikenes in woman's pappes, there was a worshipful riche woman in London in my tyme, the whiche had such a canker in her pappe, to whom weren clepid the most discrete worcheris of the Cyte, both of fisik and surgerie, among whom I was present, and worching in the same cause. But I seie surely evermore the malice encrease from day to day, and for al that we myghten do the sycknesse was so fervent that it profitid ful litil to the patient, so that not agenstondynge al our craft and cunnynge at the laste it is woundid and so the woman diede withynne short tyme aftir."

Speaking of the number of bones in the human skull, which was a disputed question, he says:

"But though it so be that we have tretid in this partie of these vi. bonys in the heed that ben necessarie to the dosinge and difference of the brayn. Nethelless we afferme not that ther beth sicke vi. bonys in ech mannys heed ffor truly I foond in the charnel of Seynt Marie spetil at London a scolle bone that was al oon hool boon lik a basenett, outtaken oonliche the ij. small petrouse bonys and the nether chekebon," etc.

In one part of his treatise he speaks of the four complexions or temperaments: sanguen, coler, fleume and melancholie, and their connection with the signs of the Zodiac, the four elements, the course of the planets, etc.

The fate of this manuscript is interesting. It appears that it was copied and issued under another name as the author. Payne shows that the little work known as Vicary's Anatomy, printed in 1577 as: "A profitable Treatise of the Anatomy of Man's Body," must have been an almost actual transcript of the work of the fourteenth century surgeon. There are such extraordinary verbal agreements in Vicary's book with our author that any other interpretation is hardly possible especially in view of the fact that no reference to the literature published in the two intervening centuries is made in Vicary's book which would undoubtedly have been done had he compiled a work on anatomy. It may be concluded that Vicary was in possession of a copy of this hitherto unpublished MS. of which he made an abridgement. One does not like to look upon Vicary as an impostor, and there is, as Payne states, another supposition. Possibly Vicary did not profess to be the author. The only known printed edition of his work was brought out fifteen years after his death by his colleagues at St. Bartholomew's Hospital, and they may have found a manuscript tract which they regarded as Vicary's, though he had never claimed it as his. In any event the real author was the anonymous writer of the fourteenth century, about whom it would be extremely interesting to learn more.

The Pain of Renal Stone.—Before the Medical Society of London, Mr. Hurry Fenwick read a paper on the above subject, as reported in the *British Medical Journal*. He has had a series of uncomplicated nephrolithotomies to account for the difference which appeared to exist in the character and severity of the pain produced by stone in the kidney. He asserted that uncomplicated stones in the kidney could be divided into three classes: a, those lying loose in the pelvis; b, those under the capsule lodged in the cortex of the kidneys; and c, those contained in the fleshy part of the kidney, the columns of Bertini or pyramids. The pain and suffering in loose pelvic stones were usually typical. They evoked colics, radiations, and often bladder symptoms. The cortex stones did not evoke colics, radiations, or bladder irritability, but merely a severe fixed pain. The intermediate group (the parenchymatous class) partook of the characters of both, for the hollows in which they lay often communicated with the pelvis by fine channels. One prominent symptom seemed in many instances to separate the embedded stones from the pelvic stones. In the cortical stones the patient was forced to sleep on the kidney in which the stone was lodged, but could not turn, without pain, on the healthy

side. Often in the pelvic stones the patient lay on the kidney of the unaffected side. Another sharp line of difference between the cortical and the pelvic stones was found in the urine. Pelvic stones usually caused pus in the urine within a year or so, but the cortical stones did not change the character of the urine, even after twenty or more years. "Dr. Rolfe followed with a paper on the cases of renal pain calling for medical, as distinguished from surgical, treatment. He divided the cases into those in which the pain was dependent on reflex nervous disturbance, and the so-called 'aching' kidney. The former is met with in association with valvular disease of the heart, more particularly aortic, and thoracic, and especially abdominal, aneurysm. The aching kidney, he suggested, was usually due to movable kidney, but was also met with as the result of tight-lacing, and from undue acidity of the urine or other excess of some normal constituent of the urine."

Epidemic, Rapid Termination of Diseases.—At a recent meeting of the Brussels Academy of Medicine, Rommelaere called attention to the peculiar asphyxia which so often occurs in diseases apparently progressing favorably, amounting at times almost to an epidemic. He does not refer to acute fevers, but to the cases of bronchial catarrh, chronic phthisis, typhoid fever, diphtheria, etc., which show no symptoms of a speedy fatal termination, and especially the cases of influenza. All is going well, auscultation indicates nothing definite, the prognosis is favorable, when suddenly the scene changes, intense dyspnea supervenes, with cyanosis, coma and fatal asphyxia, no medication produces any effect, and the patient rapidly succumbs. The necropsy reveals lesions indicating atelectasis. The pulmonary artery is choked with a clot, and the bronchial arteries are engorged. Repeated experiments showed that if a coloring liquid is injected into such a lung, the vascular arbor is colored by it, but the unexpanded portion is unaffected by it. If atelectasis is produced in a rabbit by the creation of a pleural fistula, and a coloring liquid injected, the sound side alone is affected by it. Even when the unexpanded portion is insufflated with air, the coloring liquid still does not pass into it. If an injection of methylene blue is made in the jugular of a rabbit in this condition, the sound lung alone shows the effect of the coloring matter. Rommelaere concludes from these facts and various experiments that this condition is due to arterial lesions and to some change in the blood, and sometimes to the presence of air in the pleura. This effect upon the vascular walls of the lesion of the blood in the circulation has already been noticed, especially in tuberculous phlegmasia, and modern bacteriologic investigations have distinguished the presence of the Koch bacillus, where the necropsy once revealed merely the simple fact of the obliterating arteritis. Rommelaere states it as his opinion that it will be found before long that the pneumococcus and staphylococcus are also capable of producing the same phenomena. It is already proved that Eberth's bacillus can penetrate the vascular walls and produce changes in the endothelium.—*Semaine Médical*, February 12.

The London Lancet Holds Out the Olive Branch.—The *Boston Medical and Surgical Journal* commends the course of the *Lancet* in its antagonism to the war spirit. It says: "In a recent issue the *Lancet* alludes editorially to the intimate and beneficial character of the mutual intercourse between English and American medical men during the last generation, and points out that if the question of peace or war were referred to medical men, there could be no question of the continuance of cordial relations. In the same issue, Dr. T. Lauder Brunton, under the title of 'Psychology of President Cleveland's Message,' points out that that message, while apparently warlike, was really pacific, and the time chosen, just before the Christmas season, was especially favorable for the two great nations which it concerns to put the proper, that is, the peaceable, interpretation upon it. The friendly feeling between the mem-

bers of the learned professions in England and this country is certainly a matter for congratulation, and it is pleasant to know that the influence of our valued English contemporary is for peace and good will."

Antiseptic Value of Subnitrate of Bismuth.—Since the introduction of naphthol, salol and salicylate of bismuth, our old friend, subnitrate of bismuth, is being neglected and some even assert that its action is merely plastic or mechanical, and declare that its action is valueless. But they are mistaken: it is a powerful bactericide: applied to wounds it heals them: arrests inflammation, suppuration and all putrid conditions, and owes to its microbe-destroying properties its recognized efficacy in gastrointestinal disorders. These properties have been proved in many experiments, especially those of Gayon and Dupetit with the ferments of new wine. Its fine effects in fistulas and urethritis are evidently due to this cause also. The moment it comes in contact with moisture it seeks to resolve itself into its elements, oxid of bismuth and nitric acid, which readily explains its antiseptic action, for, as Duclaux remarks: "The presence of even a trace of nitric acid in an organic solution arrests the development of a host of microbes." The oxid also has germicidal properties. And this is not all. As soon as the subnitrate of bismuth reaches the intestines, it meets sulphohydric vapors which transform it into black sulphur, and thus liberate another acid and generate nitric vapors, which have a special antiseptic action on the putrid gas producing bacteria, as is well known. But in order to be effective it must be absolutely pure, not mixed with carbonate like the kind known in trade as "light subnitrate." Another important point is that it should be very finely pulverized: large grains become coated with the black sulphur and the inside remains intact, which accounts for the fact that the same dose to the same patient often produces different effects. CARLES in the *Archives Clin. de Bordeaux*, February.

AN ALBUMIN TESTER FOR URINE.

By JOHN W. ONEILL.
CHICAGO.

This Albumin Tester is designed to simplify and to increase the delicacy of the nitric acid test for urine. The apparatus is blown from glass tubing and bent in the form of the letter U. One limb, two inches in height and five-eighths of an inch in diameter, is practically a test tube. To the bottom of this and



curved upward to form the second limb of the U is a capillary tube, the open end being enlarged to form a small funnel. A narrow strip of black one-quarter of an inch wide extending from the top to the bottom of the large tube, for a background, will be an advantage. This can be painted or a strip of black paper fastened to the glass.

The urine to be tested is poured into the large tube until it reaches the level of the bottom of the funnel in the capillary tube ("A" in cut). The nitric acid is then dropped into the funnel: it passes down the capillary tube and up under the

urine in the large tube without disturbing or mixing—lifts it up, so to speak. If albumin be present it is shown by a delicate white line.

1421 North Clark Street.

NECROLOGY.

WINTHROP SARGENT, M.D., who was at one time a prominent physician of Philadelphia, died March 16 at Roxbury, Mass., where he had resided and practiced his profession for several years. He was born in Gloucester, Mass., on July 8, 1822, and received his education in Dartmouth College, and subsequently studied medicine at the University of Pennsylvania, from which institution he was graduated in 1847. He entered upon the practice of his profession in Montgomery County, where he remained until 1855, when he removed to Philadelphia. He was for many years secretary and afterward president of the Montgomery County Medical Society. While in Philadelphia he was school director for six years. He was appointed surgeon in charge of the Government Hospital in Kingsessing in 1862. Not long after that his wife died and he removed to Boston.

WILLIAM SAVERY, M.D., died at his residence in Philadelphia March 13. Dr. Savery was attacked with the grippe about Christmas, which brought on rheumatic gout, to which his death is ascribed. Dr. Savery was born in Philadelphia Oct. 20, 1832. He was graduated from the Philadelphia College of Pharmacy in 1854, and was appointed resident apothecary and medical registrar at the Friends' Asylum for the Insane, and served in that capacity till 1860. He graduated at the University of Pennsylvania in the medical class of 1861, and was resident physician in the Wills Eye Hospital from 1861 to 1862. From April, 1862, to October, 1863, Dr. Savery was resident physician in the Pennsylvania hospital. He was also volunteer surgeon in the United States Hospital at Fredericksburg, Va. From 1870 to 1871 Dr. Savery was physician to the Winnebago tribe of Indians in Nebraska under appointment of General Grant. From 1872 until 1888 he was attending physician to the Hospital of the Good Shepherd near Bryn Mawr, where he engaged in private practice. Since that time he led a retired life.

JOB SYMMES CRANE, M.D., who died at St. Augustine, Fla., on March 26, was the senior practitioner of Elizabeth, N. J. He was in active practice until about two years ago, when he was taken with an apoplectic attack. Paralysis resulted, and he was lately sojourning in Florida, in the hope of receiving benefit to his health. He was a native of Elizabeth and a graduate in arts at Princeton College, and in medicine at the New York College of Physicians and Surgeons, class of 1849. He was a member of the New Jersey State Medical Society and of the AMERICAN MEDICAL ASSOCIATION as long ago as 1871. Dr. Crane was for many years one of the directors of the National State Bank and was one of the founders of the Union County Medical Society and an ex-president of the same. He was at the time of his death, president of the Union County Savings Bank, and one of the directors of the Home for Aged Women. He was also ex president of the staff of the Elizabeth General Hospital and Dispensary, institutions which he helped to inaugurate in 1877.

THOMAS M. FRANKLIN, M.D., who died at Greenwich, Conn., March 22, was a graduate of the medical department of the University of the City of New York, class of 1847. He was one of the physicians to the Eastern Dispensary from 1847 to 1851, and a ward cholera physician in the early summer of 1851. He afterward held office in the Thirty-fifth Street Cholera Hospital. He was assistant physician at the Government Hospital for the insane in Washington from 1865 to 1872, and medical superintendent of the New York City Lunatic Asylums on Blackwell's Island and Hart's Island from 1878 to 1886.

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SATURDAY, APRIL 11, 1896.

PRACTICAL AIDS IN THE DIAGNOSIS OF PERICARDIAL EFFUSIONS, IN CONNECTION WITH THE QUESTION AS TO SURGICAL TREATMENT.

Pathologists are well aware of how often pericarditis with effusion is not recognized clinically. OSLER says in his Practice of Medicine that probably no serious disease is so frequently overlooked by the practitioner. The prognosis in extensive purulent effusion is grave. Medical treatment is practically of little avail and the results of paracentesis of the pericardium have so far been rather disappointing. An early and radical operation ought to increase the percentage of recoveries. A necessary prerequisite for operative treatment is a reliable diagnosis. EWART,¹ the well-known writer on physical diagnosis, summarizes in a timely article numerous practical points to aid one in the diagnosis of pericardial effusion, especially when this is large enough to raise the question as to surgical interference.

EWART, stimulated by an early mistake, worked out for himself a complete method of physical examination, the underlying principles in which are: 1. accurate percussion and palpation; 2. careful auscultation; and 3. observation of the pulse. He discusses under separate headings the following signs, some of which are new:

1. Considerable extension of the lateral boundaries of the total area of dullness. Careful percussion will guard against the mistake of narrowing the outline of the sac on account of the superficial resonance of the borders of the lung, which overlap the sac instead of coinciding with its lateral boundaries.

2. Great extension of absolute dullness: the sternum absolutely dull. This sign is not absolutely diagnostic,

because it may be due to a number of conditions that will separate the two upper lobes of the lungs, such as a much enlarged heart, aneurysm, mediastinal tumors, etc.

3. The depression of the liver. In no other condition except in pneumothorax and in thoracic sarcoma is the hepatic depression so marked, at least in the middle line, as in large effusions into the pericardium. The hepatic percussion note may begin at the level of the tip of the xiphoid instead of at the infrasternal notch.

4. Dullness in the right fifth intercartilaginous space (ROTCH'S² sign). As a result of pericardial effusion within the right corner of the sac, the usually resonant area in question may become dull on percussion. EWART regards this sign as possibly present in certain cases of enormous dilatation of the right auricle from tricuspid stenosis, and hence not sufficient to supply the diagnostic verdict.

5. The diagnosis between pericardial effusion and cardiac dilatation. The lower angle of the pericardial dullness projects to the right. Normally the right auricular border is convex, it retires downward and inward toward the xiphoid. The outline of an effusion of fluid spreads out at the base, its lowermost angle projects outward. "From a surgical standpoint the practical importance of this sign, which seems to be the only one establishing a diagnosis between pericardial and cardiac dilatation, lies in the fact that aspiration of a dilated right auricle has been repeatedly recorded." A faithful mapping out of the right border of dullness is necessary.

6. The lower left angle of dullness, the relation of the apex beat to this angle. In cardiac enlargement or displacement the apex beats at the extreme left limit of the dullness and at its lowest level. Not so in pericardial effusion. The apex will beat somewhat inside and above the boundaries of dullness.

7. The first rib sign. In all cases of considerable pericardial effusion it was possible to feel the upper edge of the first rib; this means a rising up of the clavicle. This condition also occurs in some cases of dilatation of the heart. It can be easily studied without disturbing the patient.

8. The posterior pericardial patch of dullness. Whenever fluid accumulates in the pericardium the resonance at the left posterior base is modified in a most definite manner. A patch of marked dullness is found at the left inner base, extending from the spine for varying distances outward. When all the signs in front support the diagnosis of effusion, the presence of this posterior patch of dullness furnishes a complete and crucial evidence of fluid.

9. Tubular breathing below the right mamma. This sign is not constant, but should be looked for in severe cases.

¹ British Medical Journal, March 21, 1896.

² Boston Medical and Surgical Journal, 1878, Vol. xcix, p. 427.

10. The posterior patch of tubular breathing and egophony. "Immediately below or slightly to the left of the tip of the left scapula a patch of about two inches in diameter presents well-marked tubular breathing and egophony." This is confirmatory of other signs. It is generally present.

11. The secondary pleural effusions. The occurrence of pleural effusions belong to the latter stages of pericardial effusion, and their diagnostic value is therefore diminished.

12. The large and slapping pulse of pericardial effusions. The peculiarity of the pulse is its great size and velocity of impact, and the sudden collapse of the wave.

It will be seen that EWART has supplied available signs that are novel and which, in conjunction with others commonly described, may facilitate the diagnosis. He cautions against the expectation of finding the classical account of the disease directly and wholly applicable to individual cases. Irregular cases of pericarditis are common and of special importance to the surgeon.

OYSTER SHUCKER'S KERATITIS.

DR. ROBERT L. RANDOLPH has a long article in the *Johns Hopkins Hospital Bulletin* on the above named affection. It is a traumatic affection due to an injury from a particle of an oyster shell, and is chiefly remarkable for the rapidity with which infiltration appears at the seat of the wound, in marked contrast to the history of wounds by other kinds of foreign bodies of the same size and in the same location.

A small particle of the oyster shell is violently chipped off by the hammer that is used in the shucking process, and it flies into the eye. The particle is generally too small and too light to penetrate to any distance into the cornea. Large pieces, however, are sometimes detached and are driven through the entire thickness of the cornea, and when such a thing happens loss of the eye usually results. This occurrence is happily rare. Unlike other foreign bodies that lodge in the cornea, the particle of shell can seldom be detected. This is probably due to the fact that in the rapid infiltration that takes place the particle of shell is thrown off.

The use of the hammer to break off the edge of the shell before introducing the knife blade constitutes the chief element of danger in oyster shucking as practiced in Maryland. In other sections, as for instance, in the far South and down East, the shucker dispenses with the hammer and sticks in the point of the knife at once in order to pry open the shell. This no doubt explains why the disease is seldom seen in the portions of country just mentioned.

DR. RANDOLPH'S study of the disease involved a careful bacteriologic investigation yielding the following conclusions:

1. Oyster shucker's keratitis may be defined as a traumatic keratitis where the injury is produced by a particle of the oyster shell.

2. The disease is chiefly remarkable for the rapidity with which the cornea undergoes necrosis at the site of the injury, this area of necrosis being usually very small, owing no doubt to the small size of the foreign body. Small foreign bodies of copper, steel and sand usually produce no appreciable keratitis; and even when they lodge in the cornea, commonly require several days to cause a noticeable inflammation. On the other hand, the oyster shucker presents a marked infiltration of the cornea at the point of injury within twenty-four hours after the accident.

3. This decided reaction on the part of the cornea makes the injury a peculiarly dangerous one when a large area is wounded, or when entrance has been made into the anterior chamber, such conditions in my experience being invariably followed by loss of the eye through panophthalmitis. How often do we see the cornea injured in the same degree by other kinds of foreign bodies and still the vision not entirely destroyed?

4. Bacteriologic investigations failed to discover any specific organism, nor did any of the organisms obtained from cases of oyster shucker's keratitis manifest any pathogenic properties when introduced into the cornea of rabbits, with the exception of the pyogenic cocci. It is not likely then that the disease is of parasitic origin.

5. The carbonate of lime, of which the oyster shell is almost entirely composed, was found to possess qualities irritating enough to call forth a keratitis when introduced into the cornea of a rabbit, and it is more than probable that several other chemie ingredients of the shell would be more or less irritating to the cornea.

6. It is certain that bacteria always play a part in traumatic keratitis, but it is evident that in this variety of traumatic keratitis the cornea is rendered especially susceptible to the effects of microorganisms, by the irritating chemie ingredients of the oyster shell, notably the carbonate of lime.

Baltimore is the greatest oyster market in this country; there are at least six thousand shuckers in Maryland, and most of these are found in the shucking houses of Baltimore. In many of the northern cities, as for instance in Portland, Boston and New York, oysters are received in great quantities that are shucked in Baltimore, so that oyster shucking in those cities evidently does not exist as a trade to the extent that it does in Baltimore. The magnitude, then, of the oyster industry in that city may be said to account for the frequency of oyster shucker's keratitis.

REPORT OF COMMISSIONER OF EDUCATION.

The Report of the Bureau of Education, just issued, contains a valuable report on medical education that has already been editorially summarized in this journal. It is, however, so suggestive in some of its facts and details, that one is fully justified in referring to it again.

The details given of the requirements for entering on the practice of medicine in the different States are perhaps the most suggestive of all. The report truthfully says that the advance in this respect is the greatest that has been made in the history of medicine in this country. In eighteen States, it says (the number now is twenty or more), a mere diploma is no

qualification, but the candidate must pass a satisfactory examination as to his fitness, and there is now hardly a State or Territory where some sort of medical practice act is not in force. Imperfect and unsatisfactory as many of these yet are, they are indications of progress and a promise of better things. It is to the credit of the State of Illinois that much of this progress is due to the work of her State Board of Health while under the leading influence of the late DR. JOHN H. RAUCH, and it is to be hoped that it will not be long before she will again take front rank in the reform of which she was, in a sense, the pioneer.

An aspect of these legal enactments that, while apparent enough, may not have been fully considered by the profession as a whole, is the influence they have exerted and will exert still more in the future on the institutions for medical education in this country. At the date of the report (1893) there were 132 medical schools in the United States, and this number has undergone a considerable addition since that time. We are yet in the period or stage of growth in this respect, probably at its acme, and the reaction, it is possible, may not be very far ahead. This practice of publishing the results of examinations for admission to practice with the figures or percentages of failures by graduates of the different colleges can not fail to have a certain influence in some ways, though the statistics may be occasionally somewhat deceptive and require qualifying allowances. The requirements of a greater number of years of study and attendance will probably tend to extinguish in time some of the weaker and more poorly equipped institutions, as students will hardly be likely to wish to spend four years in colleges with what PROFESSOR WELCH calls a "pathetically meagre outfit," and one that can scarcely afford them the means of fitting themselves to pass any really practical examination. The additional requirement of an ante-matriculation examination which appears to be now coming in vogue, and which, like the others, is likely to become generalized throughout the country, seems also unfavorable to low-standard medical colleges. Whether these will continue to exist, supplying rural practitioners, while the higher grade institutions meet the wants of the urban practice, as MR. ERSKINE MILLER appears to infer, is more than doubtful, unless we assume, without any reasonable grounds, that the reform movement is to stop short of the point it has already reached in some parts of the country. There is, moreover, no class of medical men who need to be better fitted for their work than the country practitioners, and they often show that they are able to meet the requirements. With increasing age of the community, the conditions will approximate to those of other long-settled countries, and a high standard will be exacted as well in the country as in the city. The degree of prior education, within certain limits, has, however,

only a partial bearing on the qualifications for practice, and it may be that some schools will revert to the old practice of giving the M.B., or the licentiate degree instead of the at present universal Doctor of Medicine, according as the candidate has had a collegiate or university education or its equivalent, or not. It is certainly one of the possibilities of the present tendency of change in the matter of medical education.

There is, however, one tendency in the medical legislation of the day that is possibly not altogether to be commended; that is the tendency to make the medical practice acts too rigid and inflexible so that instead of only fulfilling their legitimate function of ruling out incompetents and quacks, they may exclude from practice within their territory even some of the highest qualified members of the profession. A law that makes attendance on three or four courses of lectures of a prescribed length, within as many consecutive or separate years prior to graduation, an absolutely essential condition before a candidate is even admitted to examination, will make it impossible for a physician to qualify who had received his degree in the bad old days (not so very remote) when inability to pass for a diploma after two courses was considered a sign of deficient intellect, and would put an actual premium on the dullards of those times. A man who can not meet these requirements may have been a student and investigator for all the intervening years since graduation and have made a national reputation that has caused him to be called to high professional positions for which he is disqualified by the provisions of the law. The demand for such provisions or for the expurgation from the law of clauses intended to meet such cases as are mentioned above is not, to say the least, wise or discriminating, or in accordance with the best interests and traditions of an honorable and learned profession. There is no danger of overcrowding the ranks if the qualifications are made sufficiently high, and these can be determined in any case without the universal application of rules that, however good they may be in general and in intention, are in exceptional cases abused. The exceptions taken by a metropolitan medical journal to the clause in the New York act which was evidently intended to meet such cases, are therefore not so much in the line of progress and virtue as their writer seems to think. Our medical legislation should be guided and inspired by a liberal scientific professional spirit and good Anglo-Saxon common sense, and while its enactments should be efficient and comprehensive they should also be in all things reasonable. We need no Chinese standards here.

VISUAL PROBLEMS IN MOUNTAIN CLIMBING.

The African explorer HENRY M. STANLEY, in *Science*, comments upon the experience of BONVALOT

and other mountain climbers in respect of the perception of distance:

"I do not know that the attention of psychologists has been sufficiently called to the experience of mountain climbers as bearing on the problem of the perception of distance. Both SIR MARTIN CONWAY in his recent book, 'The Alps from End to End,' and M. BONVALOT, in his book, 'Across Thibet,' have some suggestive remarks of the same general tenor on this subject, but I will quote only those of M. BONVALOT, as they seem on the whole the most pertinent. Speaking of the highlands of Thibet, he says:

"It is difficult to imagine how hard it is to find one's way among these highlands, where a man loses all sense of perspective, his eye wandering over immense spaces without seeing, at given distances either trees, houses, human beings, animals or edifices, the height of which is known to him. It is by the incessant and unconscious comparison of such objects as these that he has learned to form an idea of distance. Here in the desert we have in a few weeks lost this sense of distance which we had gained by the experience of our lifetime. All that one sees is so alike; one hill is like another; according to the time of day a frozen pool either sparkles in the sun or disappears, so that one does not know whether it is large or small; a little bird fluttering its wings upon a clod of earth looks like a wild animal which has been lying down and is getting up; a crow flying away with its prey in the morning mist seems to be a gigantic condor carrying off a lamb in its claws, while at sunset this same crow, cleaning itself on the summit of a rock, looks the size of a yak or a bear."

"It is plain from this experience that M. BONVALOT happened upon a new spatial world of size and distance, which he had to learn by a method of local visual signs, just as in infancy he learned the space world of the nursery room. It would be interesting to inquire of such travelers the exact nature of the signs they used in constructing the new space world."

THE UNWELCOME "EX."

We observe with sincere regret that a few of our exchanges are regularly printing items from the JOURNAL and simply crediting them to "Ex." Under our copyright and the order of the Trustees, we will be obliged to bring to legal notice those who continue these annoyances. The Trustees have given free and full permission to medical journals to republish any item that appears in the ASSOCIATION JOURNAL, but it is intended as a matter of common courtesy that due credit shall be given, and the general permission contains a proviso to that effect.

THE MEDICAL COLLEGE ASSOCIATION will meet on Monday, May 4, at 4 P.M. Gentlemen going by the JOURNAL Special will arrive in Atlanta in ample time.

CORRESPONDENCE.

"She has Suffered Many Things." Another Case.

NEW YORK, April 2, 1896.

To the Editor:—By request I report a case to go along with that of Dr. Cory's reported case, Vol. xxvi, p. 587 of our JOURNAL.

Some ten years ago a middle-aged widow presented herself for treatment, and the examinations disclosed the following:

1. Antelexion and hyperesthesia of the uterus.
2. Asthma, shown by dyspnea.
3. Bright's disease of the kidneys, shown by albumin, casts and fatty epithelia.
4. Fibroid tumor attached to the fundus of uterus, globar, pedunculated, about three inches and a half in diameter.
5. Pleuritis, shown by pain and friction sounds, about lateral third of chest.

6. Tuberculosis of lung, shown by impaired resonance on percussion, crackling respiration, elastic and inelastic lung fibers in sputum and the morphology of tuberculous blood.

This case was treated on the Salisbury plan. 4, disappeared in two months; 1, was hard to cure; 5, speedily disappeared; 3, also; 2, occasionally reappears; 6, disappeared and has reappeared, but now is in abeyance.

This case shows what perseverance will do in most unfavorable circumstances, where the principle is adopted of stopping causes, sustaining nature, oiling the machine with medicines, saving and conferring vital force and letting nature do the cure, as she always will if she has a chance.

Respectfully yours, EPHRAIM CUTTER, M.D.

Transactions Pan-American Medical Congress.

HARRISBURG, PA., April 5, 1896.

To the Editor:—Will you kindly inform me through the JOURNAL, whether members of the Pan-American Medical Congress who paid their \$10 fees are entitled to the Transactions of the meeting? If so, are they published yet, or if not, when and where can we obtain them? I have written to Dr. Reed, the Secretary, twice, but can not get an answer from him. If I am entitled to a copy, and they are published, I would like very much to have my copy.

Yours truly, J. WALTER PARK, M.D.

ANSWER: Write to Professor Wm. Pepper, Philadelphia.

A Wise Suggestion.

PHILADELPHIA, April 6, 1896.

To the Editor: In view of the vital importance of the subject others of your readers like myself would doubtless like very much to have from Dr. Halderman himself the details of the case of "Death from Antitoxin," reported by Dr. James L. Taylor in the correspondence of your issue of April 4.

Respectfully, JAMES TYSON.

"Our Journal."

FARMLAND, IND., March 10, 1896.

To the Editor: Like the "general practitioner" of medicine in a backwoods district, I presume the editor of a medical journal at his desk, is not burdened with compliments of his success, but I wish to say to you that I appreciate the ability with which "our JOURNAL" is conducted, and the advanced views and literary skill of its editorials.

Very respectfully, LEWIS N. DAVIS, M.D.

NEW YORK, March 24, 1896.

By the way, the issue of March 21, which I have just received, is the best for a long time. The topography is beautiful, the make-up admirable, the cuts clean, the contents interesting. Well done, thou g. and f. s.

Yours truly, A. L. G.

BOOK NOTICES.

Handbook for the Bio-Chemical Laboratory, including methods of preparation and numerous tests arranged alphabetically. By JOHN A. MANDEL. 12mo. Cl. \$1.50. New York: John Wiley and Sons. London: Chapman and Hall, Limited. 1896.

We can not better set forth the aims and purposes of this laboratory guide than the author has done in his preface:

"An attempt has been made to give concise directions for preparing the most important substances that enter into the composition of the fluids and tissues of the animal body. The methods herein presented are compiled from the most recent and important works on physiological chemistry; and in certain instances two or three procedures are given for obtaining the same result. The two hundred or more tests are arranged in alphabetical order; and the name of the scientist who suggested the test, or the name under which it is ordinarily known, is given in each case."

The work has been carefully and conscientiously done and the book will be found very useful by those engaging in laboratory work.

Uric Acid as a Factor in the Causation of Disease, a contribution to the pathology of high arterial tension, headache, epilepsy, mental depression, paroxysmal hemoglobinuria and anemia, Bright's disease, diabetes, gout, rheumatism, etc. By ALEXANDER HAIG, M.A., M.D. Oxon., F.R.C.P. Third edition, with fifty-four illustrations. Philadelphia: P. Blakiston, Son and Co. 1896. Pp. 600, 8vo. Cl. Price \$3.

This book which has now reached its third edition contains a vast amount of information upon the physiology of the production and elimination of uric acid and urea, and the pathologic changes caused by the retention of these excrementitious substances. The relations between certain forms of headache, mental depression, Raynaud's disease, rheumatism and uric acid are so clearly set forth with mathematical accuracy.

The author was himself a sufferer from the gouty diathesis, and has learned to control it practically by a suitable vegetarian and non-alcoholic dietary.

An Inquiry into the Difficulties Encountered in the Reduction of Dislocations of the Hip. By OSCAR H. ALLIS, M.D. The Samuel D. Gross Prize Essay. 8vo. Cl., pp. 167. Philadelphia: 1896.

In this excellent monograph, the author has apparently thrown light upon some details of the mechanism of hip joint dislocation as set forth by Reid, Gunn and Bigelow. The early work of Reid showed the method of reduction by manipulation and Gunn left very little for Bigelow by his prior demonstration that the real obstacle to reduction in most cases is the "untorn portion of the capsular ligament," the very same that Bigelow subsequently named the Y ligament and with which readers of Gray were familiar under the name of the ilio-femoral ligament. It is a pity that Dr. Allis should have failed to give Gunn the priority in this matter which is clearly his due. Dr. Allis has, however, added a valuable work to the literature of the subject, and we are glad to see that in those cases of dislocation that can not with ordinary effort be reduced by manipulation, he boldly recommends open incision. With the ordinary aseptic technique in vogue there need be little danger, and as the Roentgen ray may not always be handy, the careful incision may clear up the matter by perfecting the diagnosis.

Don'ts for Consumptives, or the Scientific Management of Pulmonary Tuberculosis. By CHARLES WILSON INGRAHAM, M.D., Binghamton, N. Y., February, 1896. 8vo. Cl., pp. 218.

This book is one that should be placed in the hands of every walking patient suffering from pulmonary tuberculosis, for it shows the pulmonary invalid how he may make and maintain a modern sanatorium of his home, and how recovery may be hastened in many cases. The exact relation of the title to the context of the book may well be questioned for it not only con-

tains an account of what a consumptive should not do but what he should do.

The suggestions are recognized as pertinent and sensible and if carried out by all of the class for whom intended, would greatly diminish the scourge.

ASSOCIATION NEWS.

Section on Neurology and Medical Jurisprudence.

HARTFORD, CONN., April 4, 1896.

To the Editor: The Section of Neurology has arranged for a paper with lantern demonstrations of the medico-legal relations of the X rays. It has been intimated that other similar papers are in course of preparation to be read before other sections. If this is so we shall be very happy to arrange for a combination of these papers at one place and time. If any sectional officers will write me, such arrangement can be made before the program is printed. Or if any one expecting to read a paper on this subject will write me, "a symposium" can be arranged to our mutual benefit. Signed,

T. D. CROTHERS, Chairman of Section.

Rush Monument Committee.

BALTIMORE, March 31, 1896.

The members and delegates of the AMERICAN MEDICAL ASSOCIATION who were constituted members of the Rush Monument Committee at the last session of the ASSOCIATION in Baltimore, are earnestly requested to report to the undersigned the names of contributors and the amounts received from them, not later than Monday, April 20, 1896, in order that the results of the year's work of the Committee may appear in the annual report to be presented at Atlanta on the sixth of May next.

The following Subscriptions to the Rush Monument Fund have been received:

Jan. 6,	Dr. Timothy H. Bishop, New Haven, Conn.	\$10.60
" 6,	Dr. Benj. F. Kittrell, Black Hawk, Miss.	1.00
" 20,	Dr. C. S. Laughlin, Paris, Ill.	1.00
" 20,	Dr. W. A. Buchanan, Paris, Ill.	1.00
" 20,	Dr. W. H. Ten Broeck, Paris, Ill.	1.00
" 20,	Dr. Z. T. Baum, Paris, Ill.	1.00
" 20,	Dr. L. J. Weinstein, Terre Haute, Ind.	1.00
" 20,	Dr. J. P. Worrell, Terre Haute, Ind.	1.00
" 20,	Dr. W. C. Eichelberger, Terre Haute, Ind.	1.00
" 20,	Dr. S. J. Young, Terre Haute, Ind.	1.00
" 20,	Dr. T. A. Mason, Terre Haute, Ind.	1.00
" 20,	Dr. B. E. Swafford, Terre Haute, Ind.	1.00
" 20,	Dr. F. W. Shaley, Terre Haute, Ind.	1.00
" 20,	Dr. Walker Shell, Terre Haute, Ind. . . . .	.50
" 20,	Dr. J. D. Mandeville, Philo, Ill.	1.00
" 20,	Dr. J. L. Firebaugh, Robinson, Ill.	1.00
" 20,	Dr. T. N. Rafferty, Robinson, Ill.	1.00
" 20,	Dr. C. Barlow, Robinson, Ill. . . . .	.50
" 20,	Dr. O. Mitchell, Marshall, Ill.	1.00
" 20,	Dr. W. H. Haslet, Dalton, Ill.	1.00
" 20,	Dr. Mark Rowe, Redman, Ill.	1.00
" 20,	Dr. J. A. Baughman, Neoga, Ill.	1.00
" 20,	Dr. Milton D. Norris, Catonsville, Md.	1.00
Feb. 11,	Dr. E. D. McDaniel, Mobile, Ala.	5.00
" 11,	Dr. C. H. Franklin, Union Springs, Ala.	5.00
" 11,	Drs. Davis & Davis, Birmingham, Ala.	5.00
" 11,	Dr. R. M. Cunningham, Pratt City, Ala.	5.00
" 11,	Dr. E. H. Scholl, Birmingham, Ala.	5.00
" 11,	Dr. W. H. Johnson, Birmingham, Ala.	5.00
" 11,	Dr. C. A. Thigpen, Montgomery, Ala.	5.00
" 11,	Dr. J. B. Gaston, Montgomery, Ala.	5.00
" 11,	Dr. J. C. LeGrand, Anniston, Ala.	5.00
" 11,	Dr. J. T. Searcy, Tuscaloosa, Ala.	2.00
" 11,	Dr. J. C. Hendrick, Greenville, Ala.	2.00
" 11,	Dr. S. C. Henderson, Brewton, Ala.	2.00
" 11,	Dr. J. A. Wilkinson, Flomaton, Ala.	2.00
" 11,	Dr. Shirley Bragg, Lowndesboro, Ala.	2.00
" 11,	Dr. Jno. A. Pritchett, Haynesville, Ala.	2.00
" 11,	Dr. W. D. Gaines, Milledge, Ala.	2.00
" 11,	Dr. J. J. Harlan, Hackneyville, Ala.	2.00
" 11,	Dr. J. A. Gogans, Alexander City, Ala.	2.00
" 11,	Dr. L. W. Johnston, Tuskegee, Ala.	2.00
" 11,	Dr. S. A. Holt, Eufaula, Ala.	2.00
" 11,	Dr. D. E. Cason, Asa, Ala.	2.00
" 11,	Dr. R. F. Harper, Ozark, Ala.	2.00
" 11,	Dr. W. B. Asberry, Anniston, Ala.	2.00
" 11,	Dr. W. B. Cameron, Sumterville, Ala.	2.00
" 11,	Dr. R. L. Sutton, Orville, Ala.	2.00
" 11,	Dr. S. C. Carson, Bessemer, Ala.	2.00
" 11,	Dr. G. T. McWhorter, Riverton, Ala.	2.00
" 11,	Dr. M. W. Murray, New Decatur, Ala.	2.00
" 11,	Dr. Jerome Cochran, Montgomery, Ala.	17.00
" 15,	Iowa and Illinois Central District Medical Society, 25.00	
Mar. 14,	Interest on Mortgage note.	25.00
	Previously reported	3,548.39

Total. \$3,729.39

GEORGE H. ROHE,
Secretary and Treasurer, Rush Monument Committee.

Section on Obstetrics and Diseases of Women.

Brief address by the Chairman JOS. TABOR JOHNSON, M.D.

1. A Note on Cervical Stenosis as a Factor in Pelvic and Uterine Disease, HENRY P. NEWMAN, Chicago, Ill.
2. Vento-fixation of the Uterus. How to Remove Pus Tubes without Rupture, I. S. STONE, Washington, D. C.
3. Extra-uterine Pregnancy Viewed from a Clinical Standpoint, W. G. MACDONALD, Albany, N. Y.
4. Symptoms, Diagnosis and time for Operation in Ruptured Tubal Pregnancy, JOSEPH PRICE, Philadelphia, Pa.
5. Stomatitis Materna, J. SCHNECK, Mt. Carmel, Ill.
6. Gauze Drainage in Pelvic and Abdominal Surgery, MILO B. WARD, Topeka, Kan.
7. Degenerative Changes that occur in Uterine Fibro-myomatous Growths, AUGUSTUS P. CLARKE, Cambridge, Mass.
8. Drainage in Abdominal and Pelvic Surgery, FRANKLIN H. MARTIN, Chicago, Ill.
9. Some Suggestions in the Prophylaxis and Management of Puerperal Eclampsia, H. D. THOMASON, Albion, Mich.
10. Ovarian Grafting instead of Hysterectomy when Uterine Annexa are Removed, R. T. MORRIS, New York, N. Y.
11. Puerperal Sepsis, its Prophylaxis and Treatment, E. E. MONTGOMERY, Philadelphia, Pa.
12. Intestinal Obstruction following Laparotomy, H. O. MARCY, Boston, Mass.
13. Hysterectomy as an Accompaniment to Bilateral Removal of the Appendages, REUBEN PETERSON, Grand Rapids, Mich.
14. Improved Method of Trachelorrhaphy, AUGUSTIN H. GOELET, New York City.
15. Puerperal Infection, its Pathology, Prevention and Treatment, R. R. KIME, Atlanta, Ga. Discussion to be opened by Dr. J. B. S. HOLMES of Atlanta, Ga.
16. Uterine Fibroids When and How to Operate, ALBERT H. TUTTLE, Cambridge, Mass.
17. Gonorrhea in the Puerperium, ALBERT H. BURR, Chicago.
18. Discussion on Vaginal *versus* Abdominal Section for small Tumors and Pus in the Pelvis. To be opened on the Vaginal side by R. S. Sutton of Pittsburg, Pa.; on the Abdominal side by W. E. B. Davis of Birmingham, Ala. Discussion continued by Drs. Joseph Price, J. M. Baldy, F. Henrotin, J. W. Boxée, H. O. Marcy, W. H. Wathen, L. S. McMurtry, R. O. Douglas, N. O. Hardin.

Section on Laryngology and Otology.

1. Chairman's Address, G. V. WOOLEN, Indianapolis, Ind.
2. Adenoids, PRICE BROWN, Toronto, Canada.
3. Some remarks on Adenoid Vegetations in the Vault of the Pharynx. Based upon 100 Operations, G. HUDSON MACKUEN, Philadelphia, Pa.
- Discussion to be opened by ALEXANDER MACCOY, Philadelphia, Pa.
4. Extra-dural Abscess from Mastoid Empyema (Illustrated, Stereopticon), B. ALEXANDER RANDALL, Philadelphia, Pa.
5. Primary Inflammation and Abscess of the Mastoid, report of case, DUNBAR ROY, Atlanta, Ga.
6. Contribution to Cerebral Disease Following Middle Ear Suppuration, M. S. LEDERMAN, New York, N. Y.
7. The Operation of Mastoid Antrotomy for the Cure of Obstinate O. M. P. C., with description and presentation of the Author's Antrotome, H. A. ALBERTON, Brooklyn, N. Y.
- Discussion to be opened by ARTHUR G. HOLMS, Atlanta, Ga.
8. Extirpation of the Larynx, NORVAL J. PIERCE, Chicago, Ill.
9. Surgery of the Nasal Vestibule, with Report of Cases, ROBERT C. MYLES, New York, N. Y.
10. Electrolysis by a Current Controller for the Reduction of Spurs of the Nasal Septum. A Supplementary Report, W. E. CASSELBERRY, Chicago, Ill.
- Discussion to be opened by W. H. DALY, Pittsburg, Pa.
11. Treatment of Chronic Non Suppurative Otitis Media, S. MACCLEN SMITH, Philadelphia, Pa.
12. Some Considerations with regard to the Value of Intratympanic Operations in Deafness, F. H. SHASTID, Galesburg, Ill.
13. Iodin Applications in Eustachian Hypertrophy and Thickened Drumhead, A. J. IRWIN, Mansfield, Ohio.
14. Pneumo- and Phono-Massage Treatment for Deafness Resulting from Suppurative Disease of the Middle Ear, LOUIS J. LAUTENBACH, Philadelphia, Pa.
- Discussion to be opened by E. L. SHURLY, Detroit, Mich.
15. Post Nasal Malignant Tumors, Necessity of Early Diagnosis and Treatment, JAMES H. SHORTER, Macon, Ga.
16. Chronic Abscess at the Base of the Tongue, C. W. RICHARDSON, Washington, D. C.

17. Stricture in the Upper Third of the Trachea successfully treated by Divulsion performed through the Larynx, JOHN O. ROE, Rochester, N. Y.

18. Uncommon Accidents following Operations on the Nose and Throat, MAX THORNER, Cincinnati, Ohio.

Discussion to be opened by E. F. INGALS, Chicago, Ill., and ROBERT C. MYLES, New York.

19. Nasal Hydrorrhea, D. BRADEN KYLE, Philadelphia, Pa.

20. Clinical Notes on Ortho- and Para-chloro-phenol, CONRAD BERENS, Philadelphia, Pa.

21. The Paquelin Cautey, Adapted for Nose and Throat Work, J. MOUNT-BLEYER, New York, N. Y.

22. Electro-cautey Amputation of the Uvula, HANAU W. LOEB, St. Louis, Mo.

Discussion to be opened by JOHN O. ROE, Rochester, N. Y., and JAMES H. SHORTER, Macon, Ga.

23. The Successful Treatment of so-called "Cold in the Head," J. E. SCHADLE, St. Paul, Minn.

24. Keloid Tumors of the External Ear, W. SHEPPEGRELL, New Orleans, La.

25. Treatment of Acute Inflammatory Process of the Labyrinth, J. F. FULTON, St. Paul, Minn.

Section on Cutaneous Medicine and Surgery.

1. Address of Chairman, DR. BULKLEY, New York, On Some of the Newer Remedies Used in Diseases of the Skin.
2. The Occurrence of Lupus in the Wife and Daughter of a Tubercular Subject, J. M. WINFIELD, Brooklyn, N. Y.
3. Excision and Skin Grafting for the Cure of Tubercular Disease of the Skin, M. B. HUTCHINS, Atlanta, Ga.
4. Electrolysis in the Treatment of Lupus Vulgaris, A. RAVOGLI, Cincinnati, Ohio.
5. A Special Form of Dermatitis Due to Crab Bites, T. C. GILCHRIST, Baltimore, Md.
6. Trichorexis Nodosa, G. T. ELLIOT, New York.
7. Leukokeratosis Buccalis and its Treatment, H. C. YARROW, Washington, D. C.
8. On the Treatment of Carbuncle Without the Knife or Caustics, W. E. SHAW, Cincinnati, Ohio.
9. Acetanilid in Skin Diseases, with Report of Cases, A. M. WILSON, Kansas City, Mo.
10. Report of a Case of Chancre of the Lip, E. F. BRUSH, Mt. Vernon, N. Y.
11. A Case of Syphilis Innocently Acquired in Childhood, HENRY A. PULSFORD, East Orange, N. J.
12. Typhoid Fever Complicating the Early Stages of Syphilis, W. D. HAINE, Cincinnati, Ohio.
13. Syphilis Successfully Treated by Hydriatics, ELMER LEE, Chicago.
14. Syphilitic Headaches, their Cure, MERRILL RICKETTS, Cincinnati, Ohio.
15. A Fatal Case of Subcutaneous Gummata, WM. T. GOTTHEIL, New York.
16. Discussion on Syphilis and Marriage, participated in by P. S. CONNER, Cincinnati; EDWIN MARTIN, Philadelphia; J. FOSTER BUSH, Boston; A. RAVOGLI, Cincinnati, and others.
17. Rapid and Successful Treatment of Herpes Zoster, A. H. OHMANN-DUMESNIL, St. Louis, Mo.
18. Further Observations on Urticaria, T. C. GILCHRIST, Baltimore, Md.
19. Discussion on Chronic Ringworm of the Scalp, opened by L. DUNCAN BULKLEY, New York.
20. Institutional Treatment of Scalp Ringworm, CHARLES W. ALLEN, New York.
21. Experience with Ringworm of the Scalp in the New York Skin and Cancer Hospital, HENRY A. PULSFORD, East Orange, N. J.
22. Practical Notes on Ringworm of the Scalp, F. J. LEVINSKY, New York.
23. A Case of Trichophytic Onychomycosis, F. HOLMES BROWN, Grand Rapids, Mich.
24. Facial Baths and Massage in the Treatment of Acne, J. ABBOTT CANTRELL, Philadelphia.

Section on State Medicine.

The Section on State Medicine will meet in Room 15, Kimball House.

OFFICERS OF SECTION.

CHARLES H. SHEPARD, Brooklyn, Chairman.
ELMER LEE, Chicago, Secretary.
Executive Committee—L. H. MONTGOMERY, Chicago; G. W. STONER, Baltimore; C. A. LINDSLEY, New Haven.

TUESDAY, MAY 5.

1. The State Care of Physically Defective Classes, WM. E. WIRT, Cleveland, Ohio.

2. The Sanitary Control of Smallpox, S. L. TEPSON, Wheeling, Va.
3. Preventive Medicine in Apoplexy, EPHRAIM CUTTER, New York City.
4. Heredity as a Social Burden, A. W. WILMARTH, Norristown, Pa.
5. Hygiene versus Drugs, C. F. ULRICH, Wheeling, W. Va.
6. The Prevention of Smallpox, ELMER LEE, Chicago.
7. Drugs vs. Animal Viruses as Prophylactics, REGINALD B. LEACH, Paris, Texas.
8. A Plea for the Domestic Destruction of Garbage, N. E. WORDIN, Bridgeport, Conn.
9. The Welfare of the Community Demands that Marriage Should be Regulated, DANIEL R. BROWER, Chicago.
10. Age and Sex Incidence of Mortality in Michigan, from Diphtheria and Croup, During Twenty-five Years, from 1870 to 1894; a Statistical Study, CRESSY WILBUR, Lansing, Mich.
11. The Prophylaxis of Functional Nervous Diseases, JOHN PUNTON, Kansas City, Mo.
12. A New Treatment of Phthisis, H. W. MITCHELL, New York.
13. Pure Water, FRANK W. EPLEY, New Richmond, Wis.
14. The Evil Results of Overstudy in the Young, THORNTON PARKER, Groveland, Mass.
15. Treatment of Insanity, S. V. CLEVINGER, Chicago.
16. Prevention of Infectious Diseases, J. M. G. CARTER, Waukegan, Ill.
17. The Prophylaxis of Typhoid Fever, JOHN ELIOT WOODBRIDGE, Cleveland, Ohio.

WEDNESDAY, MAY 6.

18. Physicians as Pauperizing Agents; a Review of Some Neglected Points in State Medicine, DOUGLAS H. STEWART, New York. To be read by Dr. Manley.
19. The Turkish Bath, etc., FORBES WINSLOW, London, England.
20. The Therapeutic Action of the Turkish Bath, V. TAGELLSKI, London, England.
21. The Need of Public Baths, CHARLES H. SHEPARD, Brooklyn, N. Y.
22. The Prevention of War and the Promotion of Peace in Relation to State Medicine, EDWARD DAVIES MCDANIEL, Mobile, Ala.
23. Health Boards as Disturbers of the Peace, CHARLES MCINTIRE, Easton, Pa.
24. The Inadequacy of Public Hygiene as a Means of Preventing National Physical Decay, J. H. KELLOGG, Battle Creek, Mich.
25. The Physician's Duty to the General Public, J. W. COKENOWER, Des Moines, Iowa.
26. Health Departments of Large Cities and their Organization, JOHN B. HAMILTON, Chicago.
27. The Methods of Drainage Now Prevailing in Some of Our Eastern Seaboard Municipalities Tending to the Production and Dissemination of Disease, AUGUSTUS P. CLARK, Cambridge, Mass.
28. A Department or a Bureau of Health? Which? S. S. HERRICK, San Francisco.
29. Some Thoughts Relative to a National Department of Public Health, F. E. STEWART, Detroit, Mich.
30. Progress in State Medicine in Pennsylvania, E. O. BARLWELL, Emporium, Pa.
31. Should the State Provide Hospitals for the Treatment of Tubercular Patients? J. S. JENKINS, Tecumseh, Mich.
32. Serum Therapy in Some Diseases, G. T. VAUGHN, P. A. SURGEON, M. H. S., Philadelphia.
33. Suicide: Three Cases, with Remarks, JOHN L. DAVIS, Cincinnati, Ohio.

THURSDAY, MAY 7.

34. State Prevention and Cure of Inebriety, O. EVARTS, College Hill, Ohio.
35. The Abuse of Alcoholic Drinks, its Relation to Public Health and its Prevention, W. BAYARD, St. Johns, New Brunswick.
36. Recent Studies Relating to the Toxic Effect of Alcohol Upon the Nerve Cells, W. H. RILEY, Battle Creek, Mich.
37. The Non-alcoholic Treatment of Consumption, O. G. PLACE, Boulder, Colo.
38. Hospital Management Without the Therapeutic Use of Alcohol, SARAH HACKETT STEVENSON, Chicago.
39. Twenty-one Years' Experience in the Non-alcoholic Treatment of Disease, J. H. KELLOGG, Battle Creek, Mich.
40. What Constitutes True Clinical Experience in Medical Practice and its Relations to the Public Health, N. S. DAVIS, Chicago.
41. The Evolution of Medical Opinion as to Alcohol and Other Narcotics, I. N. QUIMBY, Jersey City, N. J.

42. The Proposed Permanent Badge for the AMERICAN MEDICAL ASSOCIATION, R. FRENCH STONE, Indianapolis, Ind.
43. Tuberculosis, Infection from Food, CHARLES E. WINSLOW, Los Angeles, Cal.
44. Modern Respiratory Advantages, W. T. ENGLISH, Pittsburgh, Pa.

Papers have also been promised by the following: T. D. Crothers, Hartford, Conn.; A. B. Judson, New York; C. H. Hughes, St. Louis, Mo.; G. F. Cook, Oxford, Ohio; G. E. Martin, Carthage, S. Dakota; Charles S. Sheldon, Madison, Wis.

Section on Dental and Oral Surgery.

1. Chairman's Address, R. R. ANDREWS, Cambridge, Mass.
2. A Few Causes of Failures in the Dental and Medical Professions, B. B. SMITH, Pensacola, Fla.
3. Modern Methods of Treating the Antrum of Highmore, W. X. SUDDUTH, Chicago, Ill.
4. Further Investigations Upon the Antrum, M. H. FLETCHER, Cincinnati, Ohio.
5. Pyorrhea Alveolaris, EUGENE S. TALBOT, Chicago.
6. Articulation, W. E. WALKER, Pass Christian, Miss.
7. Cataphoresis, H. W. GILLET, Newport, R. I.
8. The Technique and Pathology of the Peridental Membrane, VIDA A. LATHAM, Chicago, Ill.

SOCIETY NEWS.

Nebraska State Medical Society.—A meeting of this society will be held in the Federal Building, at Lincoln, Neb., on May 19, 20 and 21, beginning Tuesday afternoon, May 19.

The Chicago Medical Society at its annual meeting held April 6, elected the following officers; Harold N. Moyer, M.D., President; Fernand Henrotin, M.D., First Vice-President; Arthur D. Bevan, M.D., Second Vice-President; Junius C. Hoag, M.D., Secretary; Arthur R. Reynolds, M.D., Treasurer; Edmund J. Doering, M.D., Chairman of Publication Committee; D. W. Graham, M.D., Chairman Committee on Library. Delegates were elected to the AMERICAN MEDICAL ASSOCIATION. The annual address by the retiring President, Dr. L. L. McArthur, was an interesting one, on the technique of Surgical Operations on the Kidney. He advocated the transverse incision.

The Tennessee State Medical Society, as already announced in the JOURNAL, will meet in its Sixty-third annual session in Chattanooga, Tenn., April 14, and continue in session for three days. A rate of one and one-third fare for the round trip over all the railroads in the State will be given to those in attendance. The hotels will all give a reduction in rates of 25 per cent. The place of meeting has been secured, and is all that could be wished for. The local profession, or rather the Chattanooga Medical Society, will banquet those in attendance one evening during the meeting.

Iowa State Medical Society.—The forty-fifth annual meeting of the Iowa State Medical Society will be held in Des Moines April 15, 16 and 17, 1896. Delegates to the AMERICAN MEDICAL ASSOCIATION will be elected at this meeting. Railway rates of a fare and one-third have been granted. The route selected is the Chicago & Northwestern; train will leave Council Bluffs May 2, 5:25 P.M., and Des Moines 9 P.M., arriving in Chicago next morning at 7:45, and leave at noon on the JOURNAL special train via Big Four road, Queen & Crescent and Southern Railways, to Atlanta without change of cars, arriving Monday afternoon, May 4. As heretofore announced, the JOURNAL special train will leave Chicago 12 M., Sunday, May 3; Indianapolis, 6 P.M.; Cincinnati, 10 P.M., and arrive in Atlanta 3:10 P.M., Monday.

The Second International Congress of Gynecology and Obstetrics.—The second meeting of this Congress will be held in September, 1896, at Geneva, Switzerland, in the halls of the University. Dr. Betrix is the General Secretary for gynecology, Dr. Cordes for obstetrics, while Dr. Boucart is the General Treasurer for both.

In the Section for Gynecology the following is the official program: 1. Treatment of Pelvic Suppuration—Reporters: Dr. Bouilly, Paris; Dr. Kelly, Baltimore; Dr. Zweifel, Leipzig. 2. Surgical Treatment of Uterine Retro-deviations—Reporters: Dr. Kustner, Breslau; Dr. Pozzi, Paris; Dr. Polk, New York. 3. What Method of Closing the Abdomen Presents the Best Guarantee against Abscesses, Eventrations and Hernias?—Reporters: Dr. Granville-Bantock, London; Dr. La Torre, Rome.

In the Section for Obstetrics: 1. Relative Frequency and Most Common Forms of Pelvic Contractions in Different Races, Groups of Countries or Continents—Reporters: Dr. Fancourt Barnes, London; Dr. Dohrn, Königsberg; Dr. Fochier, Lyons; Dr. Kufferath, Brussels; Dr. Jentzer, Geneva; Dr. Lusk, New York; Dr. Rein, St. Petersburg; Dr. Pawlick, Prague; Dr. Pastalozza, Pavia; Dr. Traub, Leyden. 2. Treatment of Eclampsia—Reporters: Dr. Charles, Brussels; Dr. Charpentier, Paris; Dr. Halbertsma, Utrecht; Dr. Loehlein, Giessen; Dr. Mangiagalli, Milan; Dr. Parvin, Philadelphia; Dr. Smyly, Dublin.

"As indicated by the number and choice of reporters, the Committee, desirous of provoking upon certain questions, investigations and debates as general as possible, has endeavored to present the opinions of the principal schools for discussion, and it is hoped by the Committee that members of the profession engaged in this specialty will attend in large numbers and take part in its discussions or read original communications. Switzerland has always extended a cordial welcome to Congresses held in that country, and this may be taken as a guarantee that the reception which will be given will be worthy of its traditional hospitality. The Committee of Organization will make all preparations that members of the Congress and their families may be assisted in combining their journey to Geneva with other excursions in different parts of Switzerland. The regulations are briefly these: The founders and permanent or life members pay a single initiation fee of 300 francs, which absolves them from the payment of any future dues. Members for one session only pay a fee of 30 francs, upon the receipt of which they will receive a card of membership to the Congress, entitling them to all privileges during that session, as well as a copy of the Proceedings of the Transactions of the Congress. Those desirous of taking part in the discussions are requested to inform the Secretary before the fifth day of July, 1896, stating definitely the questions they desire to discuss."

Association of Military Surgeons of the United States.—Lieut. Colonel Eustathius Chancellor, Medical Director N. G. Mo., Secretary of the Association has announced the program for the sixth annual meeting to be held in Philadelphia, Pa., May 12, 13 and 14, 1896. The indications promise a successful meeting. The presence of many distinguished representatives from the military services and of a large gubernatorial detail from nearly every State in the union has been assured. Headquarters will be established at the Hotel Walton, where the regular business of the sessions will begin at 3 p.m., of Tuesday, May 12. The morning session of Tuesday will be held at the Broad Street Theater at 10 o'clock where addresses will be made by Governor Hastings, Mayor Warwick, General Snowden, Dr. Da Costa, and Dr. Louis W. Read, President of the Association. In the evening there will be a reception at the Hotel Walton. On the morning and afternoon of Wednesday the Association will be the guest of the University of Pennsylvania, with luncheon at the Houston Club. On Wednesday and Thursday evenings receptions will be given by two of the prominent military organizations of Philadelphia; on Wednesday evening a special reception to the medical officers and ladies at the Hotel Walton by the Citizen's Committee; and on Thursday a noonday luncheon tendered by Mr. Wm. S. Saunders at the Art Club. A committee of ladies will look after the welfare of all ladies in attendance on the occasion. Members will wear undress uniform during the day: full uniform with side arms in the evening.

The following papers have been promised for the meeting:

The Physiology of Bathing and Swimming, Surgeon H. G. Beyer, U. S. N.; The Emergency Ration, Captain C. E. Woodruff, Ass't Surgeon, U. S. A.; Experiments with Emergency Ration: Tetanus Resulting from Powder Burns, Captain L. A. La Garde, Ass't Surgeon, U. S. A.; The Effects of Cannon Firing and Explosion on the Ear, Dr. Samuel Sexton, New

York City: Instruction of the Hospital Corps, U. S. Army, Colonel C. H. Alden, Ass't Surgeon-Gen'l, U. S. A.; The Better Type of Medical Officer, Lieut.-Col. A. A. Woodhull, Deputy Surgeon-Gen'l, U. S. A.; A New Bullet-Forceps, Colonel N. Senn, Surgeon-Gen'l, Ill. N. G.; The Annual Encampment, and What it Teaches the Surgeon of the National Guard, Captain J. J. Erwin, Ass't Surgeon, O. N. G.; The Vitality of the Cholera Spirillum in its Relation to Certain Fruit Acids, Passed Ass't Surgeon T. C. Craig, U. S. N.; Is there a Necessity for Differences Between the Standards of Physical Efficiency in the Regular Army and the National Guard, Lieut. Col. Chas. R. Greenleaf, Deputy Surgeon-Gen'l, U. S. A.; What is the Most Practicable Plan of Sanitary Organization for the United States Army? Major J. Van R. Hoff, Surgeon, U. S. A.; The Effects of the New Gun in Field Service, General J. D. Griffith, N. G. Mo.; Notes and Comments on the French Field Sanitary Service, and what we may learn from it, Major Valery Havard, Surgeon, U. S. A.; Modern Methods of Sewage Disposal as Applicable to Military Posts, Major A. C. Girard, Surgeon, U. S. A.; Baths, Bathing and Swimming for Soldiers, Lieut. H. L. Chase, Ass't Surgeon, Mass. V. M.; The Illustrated Travois, Major W. C. Shannon, Surgeon, U. S. A.; Some Thoughts on Wheeled Vehicles for the Transport of Wounded, Major Geo. W. Adair, Surgeon, U. S. A.; What Standard of Visual Acuity should be Required of the Enlisted Men of Our Military Services? Capt. J. M. Banister, Ass't Surgeon, U. S. A.; Methods of Caring for Wounded in Field and Hospital of the Chinese and Japanese Armies, C. U. Gravatt, Surgeon, U. S. N.; Synopsis of a Report on the Medico-Military Arrangements of the Japanese Army in the Field, 1894 and 1895, made to the Director-General, British Army Medical Department, by Surgeon Col. W. Taylor, Army Medical Staff, presented by Colonel Dallas Bache, Ass't Surgeon-Gen'l, U. S. A.; Problems in Medical Administration, with Solutions; accompanied by Suggestions as to the Application of this Method to the Instruction of the Medical Officers of the National Guard, Presented by Colonel Dallas Bache, Ass't Surgeon-Gen'l, U. S. A.; The Epidemiological Features of the Late Epidemics of Plague in China and Cholera in Japan, Passed Ass't Surgeon W. F. Arnold, U. S. N.; Recent Advances in Anthropology Applied to the Physical Examination of Recruits, Major P. F. Harvey, Surgeon U. S. A.; A General Consideration of Athletics: their Value in the Training of Soldiers, Lieut. W. A. Brooks, Jr., Ass't Surgeon, Mass. V. M.; Outlines of the Sanitary Organization of the Army of Denmark, Major John Van Rensselaer Hoff, Surgeon, U. S. A.; Coöperation in Public Sanitation, Surgeon J. C. Wise U. S. N.

The Therapeutic Effect of Anti-phthisin.—In November, 1895, the Parish Medical Society of New Orleans, La., appointed a commission for the investigation and a public test of anti-phthisin, as to its value in tuberculosis, to be made in the Charity Hospital of New Orleans. The commission consisted of the following members: Dr. Edmond Souchon, President; Dr. A. J. Bloch, Secretary; Dr. J. D. Bloom, House Physician, Charity Hospital; Prof. John Elliott, Prof. R. Matas, Prof. F. W. Parham, Dr. F. Loeher, Dr. Charles Chassaignac, Dr. John H. Bemis, Dr. Joseph Holt, Dr. H. L. Lewis, Dr. P. E. Archinard, Dr. O. P. Pothier, Dr. McShane, Dr. C. J. Lanfried. The treatment of cases began November 27, and its final report was presented to the Parish Medical Society at its regular meeting, March 28, 1896. The report is voluminous, and will be published in full. The following are the conclusions in surgical cases:

"A consideration of the three improved cases would certainly lead us to believe that antiphthisin has decided value, and we should commend its careful tentative employment in such cases, in conjunction with general measures and the usual appropriate surgical operative treatment. The glandular case we consider especially encouraging. This case would seem to have required a most serious operation for the removal of the gland, with great uncertainty of ultimate benefit. The improvement under antiphthisin treatment would alone justify us in ascertaining that we have in this remedy a most valuable aid in the management of such cases. We beg to call attention in this connection to the case of Dr. Ambler of Ohio, reported recently in the *New York Medical Record*, as confirmatory evidence of the value of antiphthisin in glandular tuberculosis. The hypodermic employment of the remedy

would seem to be especially advantageous if administered under careful aseptic precautions."

Conclusions in medical cases: 1. In nearly every case the area of lung involved decreased, if it did not clear up entirely. 2. Auscultation bore out the results of percussion, vesicular respiration replacing, in a greater or less degree, morbid breath-sounds. In those cases which were classed as cured, the departure from health being only such as is due to the results of every continued pneumonic process. 3. Secretion was diminished even in the cases marked only improved, and entirely absent in others. 4. Bacteriologic reports in most of the cases bore out the results obtained in physical and other examinations. 5. The general condition of the patients improved in the large majority of cases, even in those whose physical examination did not show any great improvement. 6. The use of the remedy was not attended with any danger to the patient. 7. Finally, antiphthisin does seem to have *curative*, and not simply palliative qualities.

The Wayne County (Mich.) Medical Society held its weekly meeting March 26, at which meeting Dr. Wm. H. Humiston, of Cleveland, Ohio, read a paper on "Some Practical Points in Gynecology." The Doctor eulogized the position and work of the Wayne County Medical Society, and showed where the Society could be of material aid in helping to pass a law by which we as a State would be rid of the quacks, and cited the Cleveland Medical Society as an example. He said he hoped to see our Society of 150 members reach a membership of 300 in another year. He also alluded to the "Detroit Notes" appearing in the AMERICAN MEDICAL ASSOCIATION JOURNAL, which he said was very commendable, as it kept the profession of our city in touch with the profession outside: that it fostered a professional feeling and was a factor in building up the JOURNAL and the AMERICAN MEDICAL ASSOCIATION. The Doctor explained that his paper was for the general practitioner and not for the specialist. He started out with the mode of examination, and what one could learn by manual manipulation, described the sound as a means by which the uterus could be placed or its size determined, and stated that there were none of his senior class but what could determine from digital examination the position and size of the uterus, and said that there was no better way of replacing a retroflexed uterus than by the knee elbow position. The sound and applicator were dangerous instruments to use within and about the uterus, as he had known a number of instances where inflammation had been started, where old troubles had been made active, and the patient placed in quite a precarious condition. The Doctor also spoke of the preparation of patients for operations, especially for celiotomy. He found a considerable number of patients who passed a diminished quantity of urine with a high specific gravity, and said that he made it a routine practice to give all patients before operating a glass of hot water before each meal and at bedtime: that by this means his patients after operation did not suffer from thirst as they were wont to do before resorting to this plan. As to the anesthetic, he left the choice to his anesthetizer.

Dr. C. Henri Leonard, in opening the discussion, said that he was glad to meet an operative gynecologist who was so conservative. The Doctor took issue with the essayist on the danger that might be brought about by the use of the sound and applicator, and said that he could readily see that in the hands of the inexperienced it might and could do damage, but where a reasonable amount of dexterity in manipulations was used by competent men, he did not see the possibility of any damage being done, especially where instruments were kept clean. He himself used lots of soap and water on his hands and instruments, and no bichlorid nor carbolic acid, and had yet to have his first death from any manipulations or operations that he had instituted, and this record in the practice of this specialty for nearly twenty years is not only gratifying, but convincing that his treatments are on the right lines.

Dr. J. H. Carstens said that he was practicing and advocating the same as the writer of the paper, as set down in his essay; that he believed that we could do a great deal by reaching abscesses through the vault of the vagina, evacuating them and draining them, and then when need be, after the acute trouble was over, to resort to radical means to extirpate the

diseased parts. The Doctor also said that he had time and time again opened the abdominal cavity, extirpated one ovary, and found the other partially diseased; that he could excise portions of it and save a part; that he had had several cases where he resorted to these procedures and had had the satisfaction of having his patients menstruate at regular periods and without pain.

Dr. W. H. Longyear agreed with the writer of the paper, and could see where the suggestion of giving abundance of hot water several days before operations upon the pelvic and abdominal organs, would prevent them from having the extreme thirst that we so often have our patients troubled with after these operations. He differed with Dr. Leonard in the conservative treatment of inflammatory diseases of the pelvis, and said that we ought to resort to surgery in the earlier stages and more often than we sometimes do.

Drs. James Sampson, G. R. Cruikshank, J. C. Asbaugh, of Windsor, Ontario, and Drs. G. A. Kirker, K. Gunsolus, O. P. Eaton and W. R. Brand, of Detroit, spoke upon the merits of the paper.

Dr. Wm. H. Humiston exhibited two ovaries from a patient whom he had operated on, which showed chronic degeneration and which contained several small abscesses. They were about the size of an orange, and the patient gave the history of repeated abortions, which were brought on by her own hands. The uterus was twice its normal size, and retroflexed. The Doctor placed it in position by ventral fixation and closed the abdominal wound. The operation was made at the Woman's Hospital, this city. Dr. J. F. Bennett gave the history of the patient whom the Doctor had operated on, who, among the other signs and symptoms that these patients always have, had a continual show of flow the last three months which could not be controlled by intrauterine applications of ergot, etc.

PUBLIC HEALTH.

Improvements in the Drinking Water of Paris.—Fifty-nine communes of suburban Paris have had nothing for drinking water but the water from the Seine, taken below the city, until last January. This is now changed, and the water is all drawn from the river above the city, filtered and delivered to three reservoirs, from whence it is distributed, and considered "quite satisfactory."

To Prevent Epidemics in Arkansas.—According to a law passed in 1895, whenever the health of the citizens of Arkansas is threatened by the prevalence of any epidemic or contagious disease in that or any adjoining State, and in the judgment of the Governor of Arkansas, the public safety demands action on the part of the State Board of Health, the Governor shall call the attention of the Board to the facts and order them to take such action as the public safety of the citizens demands to prevent the spread of such epidemic or contagious disease.

Typhoid Fever Caused by River Ice.—The *Medical Press and Circular* states that there has heretofore been published, in that and other journals, an abstract of the report of the Paris municipal analyst, which revealed the fact that much of the ice served out in clubs and restaurants is of inconceivably filthy origin and laden with nameless abominations. It is now stated that the military officers at Rennes have suffered from a typhoid epidemic which has been traced to the ice which was used to cool the champagne at a banquet. The ice had been taken from the neighboring river at a point where the town sewers empty themselves.

Mortality in New York City in 1895. There were in 1895, 43,420 deaths, with an average annual rate of 23.11 per 1,000 in an estimated population at July 1, of 1,879,195. The census population of April, 1895, was 1,851,060. The births numbered 53,731, marriages 20,612 and still-births 3,372; these three items are all regarded as incomplete. Deaths under five years 18,221, of which the males were 9,782 and females 8,439. Deaths under one year 11,267; males 6,186, females, 5,081. Deaths among the colored 1,100. By infectious diseases there were deaths by diphtheria 1,634, smallpox 342, measles 793, scarlet fever 468, typhoid fever 322, mumps 10. The number of

reported cases of diphtheria and croup was 10,353, measles 8,203, scarlet fever 3,808, typhoid fever, 965 and smallpox 41. Numerous as were the reported cases of measles, there was a decline from the reported cases in 1894, while the proportion of deaths to reported cases was much heavier. The mortality by phthisis at 5,205 was heavier than in 1894, when the white plague carried off 4,658.

Public Works in Italian Cities. The last few years have seen many sanitary improvements in the chief cities of Italy. Rome has changed much and has not grown more beautiful; although the new quarter on Monte Testaccio has had a regular "boom," if such a term can be applied to any part of the Eternal City. The water supply is abundant, many new sewers have been built and also some important works to regulate the Tiber and prevent inundations. A hundred million francs have been devoted to building new sewers in Naples since the cholera epidemic of 1884, demolishing unsanitary buildings and improving others, with the introduction of an abundant water supply and the opening of many streets and public squares. Florence has also opened many new streets and squares, while Palermo has spent forty-four millions of francs in introducing a new water supply and sewer system.—*Journal d'Hygiène*, March 12.

Higher Grades of Antitoxin for Diphtheria.—According to a circular of information recently issued by the New York City Board of Health, after diligent experimentation for a stronger serum against diphtheria, three grades of an extra-potent antitoxin has been produced at the laboratory of that Board. While the serum prepared by Behring and others, and designated by them as Nos. 1, 2 and 3, contain respectively 60, 100 and 150 antitoxin units to each cubic centimeter, the New York Board is now ready to supply what it indicates as its No. 4, having a strength of 200 antitoxin units to the cubic centimeter, No. 5 representing 300 units, and No. 6, 400 units. In using these it will be necessary, of course, to diminish the size of injections in accordance with the added potency of the new preparations; No. 4 having one-half the dosage of No. 2, No. 5 one-half that of No. 3, and No. 6 about one-third of that of No. 3. The price charged per phial for No. 4 is \$1.25; for No. 5 is \$2.00, and for No. 6 is \$3.00. The Behring imported serum also comes in an extra-potent strength, which approximates a concentration of five times the former standard, which is spoken of as the one hundred fold serum. The new variety is called the five hundred fold serum. The old form, as well as the new, is still imported. This concentrated serum is preferable for immunizing purposes as an injection of half a cubic centimeter, about eight minims, of a five hundred fold serum suffices for inoculation before infection. With such a small quantity of serum, local secondary symptoms have not been observed. This extra-potent serum is not prepared from serum of lower activity by a process of concentration, but is obtained direct from the animal body.

Drainage and Plumbing Laws in the Iowa Board of Health. The legislatures of three States, Iowa, Ohio and New Jersey, are engaged upon bills whose intent is the protection of the people's health from injury by bad plumbing. The *Sanitary Plumber* says of the Iowa bill: "This proposed enactment, in its first section, makes it unlawful for master or journeymen plumbers to follow the trade without having first obtained a license. The second clause provides for an examination, under authority of the Board of Health, of the applicant for a license; and section third makes provision for the creation of a Board of Examiners, consisting of the chairman of the Board of Health, a member of the Board of Public Works, and a practical plumber. From May 1, for one year, the sum of \$5 per day for actual service being each member's remuneration. Section four defines the duties, the scope of examination of candidates (practical knowledge of plumbing, house drainage and plumbing ventilation), the fees for licenses, and the licenses so issued being valid all

over the State. The fifth section provides for the appointment in towns and cities of inspectors of plumbing who shall be practical plumbers, and who shall inspect all plumbing work for which permits must be issued. Section six makes it mandatory on Boards of Health in towns where there is a sewerage and water service to formulate a code of rules, and require the filing and approval of plans for work in relation to plumbing, both new work and repairs, before such work can be commenced. The seventh section defines the violation of the statute to be a misdemeanor, the penalty being by a fine and by the revocation of the license. In connection with the movement it should be stated that it had its origin in the desire of master plumbers to elevate the standard of plumbing work in the State but strangely enough the measure is denounced by the press as an effort to create State Boards at the expense of the taxpayers. It is expected, however, that it will become a law."

Vital Statistics for New York State in January, 1896.—The last *Bulletin* of the Board of Health of the State of New York contains the following bills of mortality: There were 10,176 deaths reported during January, and an estimated death rate of 18.50, there having been an average daily mortality of 328, against one of 305 in December, and of 354 in January, 1895. Compared with the preceding month the relative infant and zymotic mortality was the same; there was an increase in mortality from scarlet fever, measles and cerebro-spinal meningitis, and a small decrease from typhoid fever and diphtheria. Compared with January, 1895, there were considerably more deaths from scarlet fever, measles and typhoid fever, that from zymotic diseases being about the same. The increased mortality is over all parts of the State, that from scarlet fever, measles and cerebro-spinal meningitis being limited to the maritime district, the decrease in typhoid fever and diphtheria being general. Scarlet fever was reported from 46 localities in various parts of the State, against 43 in December; diphtheria was reported from 32 localities, the same as in December; typhoid fever from 22 localities, against 34 in December. One death occurred from smallpox, in Brooklyn. Consumption caused 100 more deaths than in December, but 100 fewer than in January of last year. Acute respiratory diseases caused 2,000 deaths, an increase of 250 over December, but 570 less than in January, 1895, and less than in this month for five years. There were 687 reported deaths from diseases of the urinary system, which is an unusual number; other local diseases caused about the same mortality as in December. The large increase in mortality which for several years has been reported in January over December, due to grip, has not occurred and the usual annual recurrence of grip which appears to have set in during December has been far milder than any of the series, not more than 500 deaths being attributable to it this month. There has been a remarkable epidemic of jaundice in the Hudson Valley district, and the reports of death from jaundice elsewhere in the State indicate its probably more wide-spread distribution. The average mean temperature for the month was 4 degrees below the normal, with wind more northerly than usual, of moderate average velocity, and a deficiency in the precipitation (rain or snow fall).

Typhoid Fever at Wilmington, N. C.—The last *Bulletin* of the North Carolina Board of Health has an instructive account of a sequence of typhoid fever cases, due to the use of drinking water polluted with sewage. In the latter part of last November a social gathering of young people, chiefly collegians and their friends, met in an assembly hall. A part at least of the drinking water supplied by the custodian of the hall, was obtained from a polluted source, and as a consequence several cases of typhoid fever, with two fatalities, occurred. The following are some of the significant facts recounted by the *Bulletin*, in relation to these cases: "There are only two sources from which the water supply might have come—the river at the

dock, or the well at Haar's store. But there is no reason to suppose that Haar's well was infected as it is used by his household and quite a number of small stores in the neighborhood, and there has been no report of sickness from the persons using it. We submit the report of Dr. Pate, the bacteriologist at Gibson Station, made at the request of Dr. A. H. Harriss, the Superintendent of Health of Wilmington. Four samples were sent to Dr. Pate: 1, water from the dock at half flood; 2, water from Haar's well; 3, water from the hydrant of the city water works; 4, water that had been in the cooler in Germania hall for ten days. Although no typhoid fever germs were found by Dr. Pate, it is to be remarked that the dock water contained large quantities of intestinal bacilli, and these may have been the cause of the fever, and probably were, as it is now claimed and generally admitted, that the common bacillus of the colon under favorable circumstances may aid in the development of the typhoid germ. At any rate the action of the careless janitor was followed by a terrible calamity—the sacrifice of two beautiful young women, the darlings of their respective families, and endangered the lives of four other young people."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

New Jersey: Newark, January 1 to 31, 1 death.
Tennessee: Memphis, March 21 to 28, 8 cases.
Louisiana: New Orleans, March 21 to 28, 92 cases, 16 deaths;
Shreveport, March 21 to 28, 1 case.
Kentucky: Paducah, March 24 to 31, 1 case.

SMALLPOX—FOREIGN.

Nantes, February 1 to 29, 2 cases.
Dublin, March 14 to 21, 2 cases.
Acapulco, March 15 to 22, 3 cases, 1 death.
Birmingham, March 14 to 21, 1 case.
Buda-Pesth, March 4 to 11, 1 case.
Calcutta, February 15 to 22, 1 death.
Callao, February 16 to March 8, 4 deaths.
Guayaquil, March 13 to 20, 5 deaths.
Madras, February 22 to 28, 3 cases.
Moscow, March 1 to 7, 1 case.
Odessa, March 7 to 14, 6 cases, 2 deaths.
Paris, March 7 to 14, 1 death.
Prague, March 7 to 14, 8 cases.
Rotterdam, March 14 to 21, 1 case.
St. Petersburg, March 7 to 14, 10 cases, 3 deaths.
Trieste, March 7 to 14, 1 case.
Warsaw, March 7 to 14, 6 deaths.

CHOLERA.

Calcutta, February 15 to 22, 58 deaths.

PLAGUE.

Hong Kong, February 15 to 29, 74 deaths.

YELLOW FEVER.

Sagua la Grande, March 13 to 20, 5 cases.

MISCELLANY.

Divorce in Connection with Suicides and Insanity.—An article in the *Idea Libérale* (French), condemning divorce, states that the number of suicides and insane among the divorced or separated is ten times as large as among the married, and from four to seven times as large as among the unmarried.

Physicians' Beards.—The *Nord Médical* replies to an article on this subject by our esteemed contemporary the *Boston Medical Journal*, which concludes that medical men should not wear beards for bacteriologic reasons, acquiescing and adding that they should all be bald also.

New York Coroner.—On March 27, Dr. Theodore K. Tuthill, of New York city, was appointed by Governor Morton to be Coroner, in place of Dr. William O'Meagher, deceased. He is 45 years of age. He has served as pension surgeon during a part of President Arthur's administration and during the whole of Mr. Harrison's term.

Experimental Rachitis.—Gley and Charrin have produced numerous typical cases of rachitis in animals by inoculating the parents with diphtheritic, tuberculous, pyocyanic and syphilitic toxins, followed by the characteristic curvature of the bones, atrophy, stunted growth, enormous epiphyses, etc., in the offspring.—*Gazette Méd. de Paris*, March 7.

When Will the British Medical Association Visit Canada?—The Montreal Branch of the British Medical Association have invited the Association to meet in Montreal this year. This invitation can not be accepted, as arrangements have already been made to meet in Carlisle, but it is probable that the Medical Association will before long follow the example of the British Association for the Advancement of Science and hold a meeting in Canada.

An Accurate Diagnosis.—He was an only son, a medical student who had a fatal fondness for the fair sex, and as he limped to his usual seat at the breakfast table, his mother inquired of him what was the matter. "Oh," he said, "had a stroke of paralysis last night." "What!" the whole family shouted in terror. "Oh," said the embryo physician, with an exhibition of scorn befitting an American explaining a bit of dry humor to an Englishman, "you see, I just went around to see her last night and her pater objected with a gun, and I came home with this fine case of lead paralysis."

Serum therapeutics in Japan.—Dr. Kitasato is an enthusiast for serum treatment, and has introduced it into Japan with great enthusiasm. His antitoxin is very powerful, nine cubic centimeters being as much as is ever required. The laboratories at Tokio are magnificently equipped, the people are eager to adopt the new treatment, and the percentage of deaths from diphtheria has been reduced from 56 to 8.8 per cent. He prefers the serum from sheep.

The Lyman Prize at the Boston Hospital.—The *Boston Medical and Surgical Journal* states that the "Lyman Prize for the year was awarded to Dr. G. B. Henshaw, of Cambridge, for a paper entitled 'The Treatment of Typhoid Fever by the Typhoid-Thymus Extract.' In announcing the above award it was also stated that the judges had decided 1, that for the future the amount should be awarded to one paper, and that only one prize should be given each year; 2, that the prize would in future be open to competition to any one not more than five years out of the hospital, instead of three years, as in the past."

Study of the Intra-organic Chemic Transformations.—Kaufmann has been studying the respiratory changes, the total excretion of nitrogen and the heat generated in these processes. He used Kjeldahl's process for the determination of the nitrates in the urine, and Hirn's method for the remainder. The man or animal was placed in the air-tight chamber, and the heat and the respiratory changes were determined with great accuracy by tests of the atmosphere before and after. The knowledge thus obtained will be found very useful in future study of these processes, both normal and pathologic. *Gazette Méd. de Paris*, March 7.

Acetylene Gas.—The editor of *Science* writes regarding this substance as follows: "Acetylene gas seems hitherto to have been promoted chiefly with a view to selling stocks and franchises, though we understand the process is not covered by patents. It seems, however, probable that the gas will have important practical applications, which shows once more the practical importance often following chemic research. Acetylene gas is a hydrocarbon compound resulting when water is added to calcic carbon, which is made by fusing lime and carbon in an electric furnace. The only commercial acetylene is now made at Spray, N. C., but it is reported that a furnace is being erected at Niagara Falls, and that large quantities of the gas will soon be manufactured. The advantages of the gas are its brilliant white light, ten to twenty times as great as coal

gas, its portability and (it is claimed) its cheapness. It should be remembered, however, that it is poisonous and, especially in certain compounds, explosive."

Professional Infection.—Dr. Guernonprez, of Lille, was operating on epithelioma of the face, when an abrupt movement turned back his nail. A papilloma developed under the nail soon after, that resisted all treatment for nineteen months. He reports also the case of another physician, now suffering from a cancerous ulceration, who had a habit of scratching his face, and as he often had occasion to treat cancerous troubles, the cause was undoubtedly infection thus received. *Bulletin de l'Académie de Médecine*, March 10.

Dr. L. A. Sayre's Nineteenth Birthday.—Dr. Sayre, of New York city, celebrated February 29 as his nineteenth birthday, although entering upon his 77th year. As the year 1900 has been decreed not to be a leap year, Dr. Sayre's next birthday will not recur until eight years have passed away. Dr. Sayre was the recipient of a shower of congratulations, "receiving messages from England, Germany, France, India, Siam, and from nearly every State in the Union. He received more than one hundred telegrams and cable messages. Several persons sent original poems commenting upon his extreme youth. One of the presents was an oil painting of the old homestead at Madison, N. J., where he was born."

A White Race Native to Tropical Africa.—The *Illustrated Africa* states that a remarkable discovery has been made public by Captain H. D. Laymore, of the Gold Coast constabulary. There is a region beyond the Koranzas to the northeast that is yet unexplored by white men, but the native caravans are constantly passing through the district, which is declared by those who have visited it to be inhabited by a race of white men living in caves. All accounts agree that these cave-dwellers have light hair and blue eyes, and, according to a Mohammedan priest and hadji who had seen them, they are a strong and fearless, but exclusive race, and do all in their power to prevent strangers from passing through their territory.

Pneumococcus Abscess of the Ovary.—Etheridge, *American Journal of the Medical Sciences*, April, 1896, reports three cases of abscess of the ovary due to the pneumococcus. The author has not been able to find any report of ovarian inflammation due to this microorganism. Clinically the cases did not seem to present any special or peculiar conditions. None was preceded by lobar pneumonia as shown by the histories. The striking condition was the tenacious, viscid character of the pus in one of the cases. Etheridge mentions the following as the possible routes of invasion: *a*, the genital passages; *b*, the intestines; *c*, the general circulation. In two of the cases the abscess wall contained "luteal cells," which is interpreted as indicating a corpus luteum as the starting point of infection of the ovary.

Necessity of a Revision of the Supposed Streptococcus Throat Troubles. Widal and Bezancon announce that they have been investigating this subject, with care, and they are convinced that streptococci are always present in healthy mouths and throats. They found them even in the depths of healthy tonsils and they can not be considered an evidence of pathologic conditions. They also isolated and examined 122 specimens of streptococci to find if there were any differences between those found in normal and diseased conditions. They found none. They assert one fact of importance, viz., that bacilli to be virulent must first have penetrated into the tissues. Streptococci found in the mouths of smallpox patients, had scarcely any pathogenic effect on animals, while cultures made from the blood and tissues of the same patient were highly virulent. *Bulletin Médical*, March 15.

Statistics of Pneumothorax. Wishing to secure accurate data for a study of this subject, Galliard addressed a circular letter

to the physicians of Paris and other towns in France, begging them to supply him with the following information: The number of patients in their charge January 22, at 10 A.M., suffering from pulmonary tuberculosis. Also the number of cases of simple pneumothorax, hydro- and pyo-pneumothorax at that same hour. He received 282 replies to his appeal. The total was as follows: 3,415 tuberculous patients, (2,253 men and 1,162 women), 35 with unilateral pneumothorax and 1 bilateral. Of these, 19 were simple pneumothorax, 9 hydro-pneumothorax, 4 pyo-pneumothorax and 3 pneumothorax without vomiting. There was only one case among 283 children. Biarch has kept a record of all cases of this kind in three hospitals in Vienna for twenty-four years, amounting to 433 among the 58,741 tuberculous patients.—*Gazette Méd. de Paris*, March 14.

The Fauna of Cadavers.—M. Mégnin, who has been for some years associated with Brouardel in his medico-legal studies, presents in the form of a monograph (*La Faune des Cadavres*, Paris, reviewed in *British Medical Journal*, March 21) the results of his studies of the biology of the insects found in dead bodies. He shows that it is now possible to determine in an exact manner the time of death of an individual by an examination of the cadaver and of the successive generations of insects found inhabiting it. He has demonstrated that these successive inhabitants always arrive in the same order from the time of death to that of complete disintegration. This period he divides into eight stages, each characterized by a typical denizen. This fact he explains thus: As decomposition proceeds, there is a regular sequence of bacteria. The odor evolved he supposes is characteristic for each successive stage, and these odors serve to attract the particular fauna diagnostic of each of the eight stages. The importance of these observations from a medico-legal standpoint can not be overestimated. M. Mégnin shows by numerous interesting cases that his observations can be used practically.

Large Bequests to Hospitals and Societies in New York.—The will of the late George Bliss, of New York city, partner of Governor Morton, includes the following charitable bequests: Yale University, to be used at the discretion of the president of the institution, \$50,000; Woman's Hospital of the State of New York, \$20,000; Hospital of the New York Society for the Relief of the Ruptured and Crippled, \$20,000; Manhattan Eye and Ear Hospital, \$10,000; also about \$40,000 more to religious organizations; in all not less than \$140,000. Under the will of Bryan Lawrence, late of New York city, St. Vincent's Hospital will receive \$2,500. St. Joseph's Hospital, St. Frances' Hospital and St. Benedict's Home for Colored Children \$1,000 each. Under the will of Mr. William Moir, the sum of \$5,000 will be donated to the Presbyterian Hospital, and also to the Northern Dispensary of New York, in all about \$60,000 being bestowed upon the charitable institutions belonging to the Presbyterian denomination.

Must Consider all the Heads of Damage.—In the case of Brown vs. Foster, decided Feb. 21, 1896, the appellate division of the supreme court of New York said that the jury, when they rendered a verdict for the plaintiff, resolved in her favor all the questions of fact on the merits; and it was then their duty to give her such a verdict as would compensate her for the injuries she had received by falling on an icy sidewalk in front of defendant's premises, by reason of alleged negligence on the part of defendant. There was no doubt that these injuries, while they were perhaps not permanent, were grave. The rule in such a case, the court says, is that where the jury conclude that the plaintiff is entitled to recover they must, in assessing the damages to be awarded, consider all the heads of damage in respect of which the plaintiff is entitled to compensation. These are the bodily injuries sustained; the pain suffered; the effect on the health of the sufferer, according to its degree and its probable duration; the expenses incidental to an attempt to

effect a cure or to lessen the injury; the pecuniary loss sustained through inability to attend to a business, as to which, again, the injury may be temporary or permanent. If they have taken all of these elements of damage into consideration, and have awarded what they deem a fair and reasonable compensation under the circumstances of the case, a court ought not, unless under very exceptional circumstances, to disturb their verdict. In this case the jury, finding that the plaintiff was entitled to a verdict, gave her one for the amount of her doctor's bill, \$108, and no more, and the court holds it inadequate.

Disciplinary Measures in a County Society.—The New York County Medical Society has, at its last stated meeting, expelled by a unanimous vote one of its members, on the score of unprofessional conduct. The charges against the practitioner are in part that he has been for three years or more the conductor of a "private clinic," which latter he has largely advertised in the newspapers and in other ways, and thereby violated one of the by-laws of the Society. He had been summoned to appear before the Society's Committee on Ethics and answer to the accusations against him, but he had disregarded the mandate, as required by the terms of his membership in the Society. Discipline perforce followed. If the reported conversations, given in the daily press, are true the expelled member will not let the matter rest there, but will without delay call the Society to account in the courts in a suit for damages for defamation of character; and also that the true causes for this act of discipline is rather a matter of personal spite or jealousy, on the part of some neighboring practitioners, than the particular alleged fault that has been brought up against him by the Committee on Ethics.

An Anti-Typhoid Serum.—The *British Medical Journal*, February 29, states that in a paper before the Paris Société de Biologie on February 22, on "the Early Diagnosis of Typhoid Fever by a Bacteriologic Examination of the Stools," M. Chantemesse said that last June he had succeeded in immunizing several horses against the virus of typhoid fever. He had obtained the serum of such strength, that one-fifth of a drop inoculated into a guinea pig twenty-four hours before infection protected it against a dose of typhoid virus fatal to animals not previously injected with the protected serum. It was ascertained, also that injections of the serum produced no injurious effects upon a healthy man. M. Chantemesse stated that he had since employed injections of serum in three cases of typhoid fever. The temperature showed a regular fall from the time the first injection was made, and several days after the commencement of the injections all three patients were quite free from fever, and had commenced to convalesce. M. Chantemesse added that the cases were not yet sufficiently numerous to permit any trustworthy conclusion to be drawn.

Bright Points.—Patient: "Doctor, I'm in a bad way." Dr. Newmethod: "Diet." "I can't sleep." "Diet." "I can't eat." "Diet." "I'm bilious." "Diet." "My hair is turning gray." "Dye it."—*New York World*.

"I hear the Apache Indians have broken out again." "Heavens, how many have they murdered?" "Nobody; they've got the measles."—*Yale Record*.

"You've been hanging around here long enough," remarked the citizens' committee, as it proceeded to give the white caps a taste of their own medicine.—*Detroit Tribune*.

"Father," said Sammy, "the teacher says you ought to take me to an optician's. He says I've got astigmatism." "Got what?" "Astigmatism." "Well, if he don't thrash that out of you," roared Mr. Wipedunks, "I will!"

First Physician: "How is that patient you got \$5,000 out of the liability company for? Able to be out?" Second Physician: "Not yet; I'm going to get my whack out of that \$5,000 first."

Mr. Dolley: "Medical experts say that the uncarbolized kiss is deadly." Miss Flyp: "I'm no coward."

Gastroscopy.—In the *British Medical Journal*, Dr. Rosenheim is quoted as the inventor of a new gastroscope—made for him by Hirschmann of Berlin—which he expects will be suitable in some cases for which other instruments will not suffice. That author in the *Deutsche Medicinische Wochenschrift*, has discussed the position of the cardia and the course of the lowest part of the esophagus. He concludes that the usual position of the cardia in the adult is opposite the twelfth, rarely the eleventh, dorsal vertebra. The anatomic relations are important in respect to the use of the gastroscope. He maintains that where it is impossible to pass a stiff tube into the stomach with the patient in the dorsal position, the difficulty is due to muscular cramp or to the physiologic bend at the esophageal foramen in the diaphragm. By introducing the rigid tube from the right side of the mouth and pressing the point to the left, the lowest part of the esophagus can be most readily passed. A certain gentle pressure may be necessary, and a change in the patient's position from the back to the right side may facilitate it. In a minority of cases with disease involving the cardia, the parts may not be distinctly seen by the gastroscope without an anesthetic. The author then refers chiefly to Mikulicz's investigations into esophagoscopy. This authority used a curved tube in order to overcome the difficulty of passing through the lowest part of the esophagus; he thought that it was impossible to accomplish this with a straight tube. This curve introduces difficulties in respect to the optical arrangements. The author maintains that the optical apparatus should be in the straight line. His observations lead him to say that in nearly 70 per cent. of the cases examined by him a straight gastroscope can be passed into the stomach. Under certain conditions, such as an abnormal curving of the esophagus due to pathologic causes, it may be impossible. A local spraying with cocaine by means of a special apparatus has been tried by the author to overcome the cardiospasm, but with indifferent success. He concludes that with few exceptions it is possible with a straight or slightly curved instrument to get deep enough into the stomach for gastrosopic purposes without an anesthetic and without doing any injury. One gastroscope will not suit all cases, but a straight instrument suffices in by far the majority of cases.

Practical Notes.

Blisters.—Huchard asserts that blisters are a survival of barbarism, or words to that effect. He has observed albuminuria and acute uremia, as also interstitial nephritis, follow the application of a single blister, and strongly deprecates their use, even in pleural troubles.—*Bulletin Médical*, March 15.

Lactic Acid in Ulcerations of the Cornea.—Dolgenkov has secured excellent results in forty cases, most of them chronic, by dropping three or four drops of a 50 per cent. solution of lactic acid into the sore; the inflammation disappears, and the ulceration heals completely.—*W'atch*, No. 29, 1895.

Oxydizing Powers of Organs.—Abelous and Biarnes announce that this power can be measured in an organ by the effect of salicylic aldehyde upon it. The spleen, lungs and liver are pre-eminent; next come the kidneys, suprarenal capsule, pancreas and thyroid glands, while the nerves and muscles scarcely possess it at all. This is contrary to what has generally been accepted.—*Bulletin Médical*, March 11.

Cantharidin Internally Administered in Tubercular Disease.—The *New York Medical Journal* has the following formulas of Dr. J. Frendenberg (*Therapeutische Wochenschrift*) for the exhibition of this drug: Cantharidin 1 part, alcohol 1000 parts, distilled water, 100,000 parts. He directs a teaspoonful, diluted with water, to be taken three or four times a day in cases of cystitis. Solutions of cantharidin are not very stable; consequently if the remedy is to be used for a considerable length of time, as in scrofula and tuberculosis, it is better to order it in pill form according to the following prescription:

Cantharidin, 2 milligrams (0.031 gr.), white bole, 2 grams (30.86 grs.); mix and divide into thirty pills, of which one is to be taken daily, before breakfast.

Adherences between the Peritoneum and the Symphysis discovered in Suprapubic Cystotomy.—At the last meeting of the Soc. de Chir., Paris, Rollet reported three cases of adherences observed between the cul-de-sac of the peritoneum and the pubis, which is so rare that Petersen's and Polaillon's are the only cases on record in France, while it often occurs that the peritoneum descends very low. Some members thought that Rollet might have mistaken the latter for adherences, but in either case surgical interference is not contraindicated.

Treatment of Certain Tumors in the Mouth with Chlorate of Potash.—Dumontpallier recommends this treatment in high terms, as he has been very successful with it in his practice. He applies it, finely pulverized to the tumor, four times a day, and administers it internally also, in a solution of 4 grams to 120 grams of water. He ascribes its beneficial effect to the fact that it passes into the secretions of the salivary glands, and thus keeps the tumor under its influence all the time. This treatment must be continued two or three months and the kidneys must be kept in good order. All sources of irritation from the teeth must be carefully exterminated. Before resorting to the bistoury he urges this treatment to be tried in almost all cases.—*Bulletin Méd.*, March 11.

Hiccough and Other Suffocative Symptoms.—The *Popular Science News* has an annotation to the effect that a means of relieving a certain proportion of such cases has been accidentally found, as follows: "A female patient presented herself at a French hospital for a rebellious hiccough, which had resisted all treatment for four days. She was asked to show the tongue, and it was noticed that with the putting out of the tongue, the hiccough ceased. The same thing has been since tried, and with success in other cases. All that is necessary apparently is to strongly push the tongue out of the mouth and hold it so for a minute or two. It is also suggested now to try the same thing in suffocative cough, as whooping cough, and choking by irrepressible gases."

Family Tendency to Appendicitis.—Many families are known where several members have suffered from appendicitis, and the question is being discussed just now, whether this is due to a congenital malformation, or an arthritic tendency, or to a tendency to parenchymatous gastritis, which is known to be hereditary and Hayem's experience has been that it is an invariable accompaniment of appendicitis. Whatever the cause, a family diathesis of this kind is an indication for prompt intervention at the first symptom of appendicitis, and Faisan considers it sufficient to call for the removal of the appendix even in the mildest cases of trouble. Bouchard noted some time ago that victims of appendicitis were especially those who suffered from gastric troubles. *Gazette Méd. de Paris*, March 7.

Louisville.

UNIVERSITY OF LOUISVILLE. The Medical Department of the University of Louisville held its annual commencement exercises at Macauley's Theater on March 30, the graduating class numbering fifty-nine. Dr. J. M. Bodine, who has been Dean for the past twenty-seven years, presided, the Hon. Jas. S. Pirtle, President of the Board of Trustees, conferred the degrees. The valedictory address was delivered by Dr. Henry Wm. Coleman of West Virginia, and Dr. C. M. Rosser of Texas, delivered the alumni address, his subject being "Doctors and Doctors." Dr. H. A. Cottell delivered the Faculty address, the "Life and Character of the late Professor Edward Rush Palmer, M.D.," being his subject. He prefaced his remarks with the following: "Like a plaint of sorrow after shouts of joy; like the cry of pain that calls the kind physician from the circle of good cheer to the bed of suffering; like an elegy of

blight after sunshine and bright flowers of May time; like the heart-breaking phrases of the funeral march after the bright melodies which have gladdened this festal day, I come with sorrow's solemn theme, and change the scene from gay to grave while your Alma Mater pays tribute to the memory of her most beloved and gifted son. For never in the fifty-nine years of its eventful existence, from among the eminent names upon the professional list, has the University lost a teacher so bright, so eloquent, so original and at the same time so beloved of his pupils as Professor Edward Rush Palmer." After giving many facts relating to Dr. Palmer's life and his ancestors, Dr. Cottell concluded with the following: "I have recited as best I could the incidents in a remarkable life and have attempted to portray in homely sketches the character of a benevolent, forceful and benevolent man. If I have read the lines aright the lessons to be learned from his life are, singleness of purpose, faith in one's self, faith in humanity, and faith in the final triumph of good. Such was the creed that Palmer's life proclaimed, whatever his work might be. He had no sympathy with asceticism, or pessimism, and no patience with hypocrisy or cant. The windows of his soul were thrown wide open to the sun, and Apollo, the god of sunshine, music, poetry and medicine ever held him in fealty if not in worship. His sunny spirit has gone out from the circle of the days and the solemn question, where, with its awful significance, bids us pause once more ere we say farewell. Has it, like gentle Hesperus, but faded away for a season in the many tinted clouds of evening twilight, to shine anon with with fairer luster in the morning sky? Let us have faith to hold it so."

METEOROLOGIC SUMMARY.—The report of the weather bureau for the last month shows many interesting points about the climate of Louisville and vicinity. The maximum temperature was 71, and the minimum 16, the mean being 40. The prevailing winds were southerly. The mean atmospheric pressure 30.107 inches, the maximum velocity of wind 35 miles, direction southwest, date 28th. Total precipitation 4.86 inches, this being exceeded only eight times in the last twenty-four years. Number of clear days 8, number of cloudy days 14, number of partly cloudy days 9.

NORTON INFIRMARY.—The tenth annual report of the John N. Norton Memorial Infirmary has just been issued and shows this worthy institution to be in a splendid condition. It has as a frontispiece a very good picture of the Infirmary, then follows a list of the board of trustees, officers and managers; then a report from the President, The Rt. Rev. T. U. Dudley, Bishop of Kentucky.

DR. BURNSIDE.—Dr. Robert Burnside of Barboursville was stabbed on the evening of March 28, and as a result of his wounds died April 2. Sawyer, the man who stabbed Dr. Burnside, is a desperate character, and his attack upon the Doctor was wholly unwarranted and unexpected. There were no witnesses but a few boys who were too scared to know what to do, and there is little doubt but that the murderer will go scott free.

Cincinnati.

THE MORTALITY REPORT for the week ended Friday, March 27, shows: Diphtheria 2, measles 2, typhoid fever 2, whooping cough 1, other zymotic diseases 2; cancer 1, phthisis pulmonalis 19, other constitutional diseases 7; apoplexy 4, bronchitis 11, convulsions 2, meningitis 6, nephritis 4, pneumonia 20, other local diseases 31. Deaths from developmental diseases 11, from violence 3, under 1 year 22, from 1 to 5 years 29, from all causes 128. Annual rate per 1,000, 19. Deaths during the preceding week, 123; during corresponding week 1895, 146; during corresponding week 1894, 99; during corresponding week 1893, 108.

DR. CHARLES S. MUSCROFT has been appointed a member of the Ohio Penitentiary Board of Managers.

DR. ORPHEUS EVERTS has just published a small poetic volume entitled "Facts and Fancies."

A CASE OF SEVERE EPISTAXIS was admitted to the City Hospital last week which resisted all attempts to stop it for two days.

THE GRADUATING CLASS of the Miami Medical College numbered twenty-six, while the Medical College of Ohio turned out eighty-four, and the Cincinnati College of Medicine and Surgery twenty-four.

THE SUIT against Dr. A. P. Taylor, of Lexington, Ky., for \$6,000 for malpractice, has resulted in a verdict for the defense.

AN EPIDEMIC of cerebro-spinal meningitis is raging at Paintsville, Ky. There are twenty cases and nine deaths reported.

THE ACADEMY OF MEDICINE discussed the subject of expectation in street cars and on the streets. The Women's Civic League are endeavoring to arouse a public sentiment against this filthy habit, and the Academy passed a resolution endorsing their move.

DR. B. F. BEEBE presented to the Academy a case of supposed chylous ascites. The patient, a middle-aged man, locomotive engineer, and of a good history, noticed a swelling on his abdomen about six months ago with no other symptoms. This rapidly increased and on account of the severe dyspnea Dr. Beebe had inserted a trocar into the abdomen and extracted about two gallons of fluid resembling milk. Upon examination this fluid was found to be composed of fat globules finely divided, no flocculi or other ingredients, after standing ten days the fluid decomposed and turned a dirty yellow. The heart and kidneys were normal. At present it is estimated there are two or three gallons of fluid in the abdomen. Emaciation is becoming noticeable.

DR. H. W. BETTMAN presented a case of locomotor ataxia in which the stomach was found to be of normal size but located below the umbilicus and extending down to the floor of the pelvis. This was demonstrated by trans-illumination with the electric light.

DR. JOS. RANSOHOFF presented a case of excision of the shoulder for tubercular disease of the head of the humerus. The incision had been made across the arm instead of parallel to its long axis, and the result was very satisfactory. A case of cyst of the spermatic cord in which the cyst had been removed without rupture was also shown.

DR. W. B. WEAVER presented a case of an infant which had been intubated when nine months old for some dyspnea and cyanosis; relief was at once obtained, and some time after the tube had been removed the child coughed up a piece of tin about half an inch square.

Detroit.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION at its meeting Monday, March 30, did not have a regular paper, but there were very many pathologic specimens presented, and a number of very interesting cases reported. Dr. Theo. A. McGraw showed the specimen of a case of extrauterine pregnancy of five months, which he had operated on. Dr. F. D. Summers reported a case, and showed specimen of a cyst of Fallopian tube, left side, in a girl past 15 years of age. The history was one of amenorrhea and dysmenorrhea; and only by examining the patient under chloroform was he able to make the diagnosis, which was then quite easy. Dr. Theo. A. McGraw reported another case of double fracture and dislocation of head of humerus, where he attempted to do the McBurney's operation with McBurney's hook, but was unable, made an incision over the head of humerus and found the greater tuberosity of humerus separated; also head of bone fractured and dislocated in the axillary space. This made it impossible to raise it with the above named instrument, and the doctor was obliged to make an incision in the axillary space and extract the head of the bone. Dr. W. R. Parker reported five cases of obstetrics with L. O. P. position in the last few months, two of them being primiparæ.

THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY held its commencement at the Detroit Opera House March 24, at which forty students received their degrees of M.D., of which four were ladies. Dr. L. E. Maire read the address for the faculty.

THE WAYNE COUNTY MEDICAL SOCIETY at its regular meeting Thursday, April 2, had a general discussion on "Medical Legislation."

HEALTH OFFICE REPORT for week ending April 4: Deaths under 5 years 37, total 85. Births, male 57, female 58, total 115. Contagious diseases: Diphtheria, last report 12, new cases 10, recovered 10, died 3, now sick 9; scarlet fever, last report 20, new cases 11, recovered 10, died 2, now sick 19; small-pox, last report none, new cases none, recovered none, died none, now sick none; measles, last report none, new cases 2, recovered none, died none, now sick 2.

HARPER HOSPITAL in its monthly Bulletin for February, 1896, gives the Annual Report for the year ending December, 1895, which, owing to the generosity of many of the business men of the city, is a very pleasing one; moreover, much of the efficiency of the hospital is due to the fact that although the Board of Trustees is largely composed of business men, yet they have left the workings of the hospital almost entirely in the hands of the medical men who are in connection with the hospital. The President of the Board of Trustees in his report mentions the fact that the collections from the earnings of the hospital together with the interest received from the free bed and general endowment funds, exceeded the running expenses of the hospital for 1895. He reported the graduation of fifteen nurses from the Farrand Training School, well equipped for their profession. He also said that the work of the Polyclinic had never been more satisfactory than during the past year, the number of patients treated being 2,365, and prescriptions furnished 7,567. All examinations, treatment and prescriptions were free. The number of patients in the hospital Jan. 1, 1895, was 61, the number admitted during the year was 1,450, making a total of 1,511. Discharged 1,300, died 124, remaining Dec. 31, 1895, 87. The receipts for 1895 amounted to \$42,284.65. The earnings for 1895 were \$37,109.11; the collections turned over to the Treasurer were \$32,059.18. The disbursements for same year amounted to \$42,284.65, which amount did not include the cost of the ambulance barn. The endowment funds of the hospital now are: William Kieft Coyl Free Hospital, \$211,751.40; private free beds, \$86,000; Farrand Training School for Nurses, \$20,000; the Henderson free bed, \$2,500; general endowment, \$58,500. Dr. J. H. Carstens, the Chief of the Medical Board, reported that during the year 1895 there were treated 1,358 different persons, being 81 more patients than were treated in 1894. There were 599 medical patients, 1,093 surgical patients, including 375 gynecologic cases. According to the report of Dr. Sargent, the microscopist, there were 1,198 specimens of urine examined, 110 specimens of sputum, 35 specimens of pathologic material, such as tumors. In each case of diphtheria the diagnosis was confirmed by the growth and microscopic determination of the Klebs-Loeffler bacillus.

Philadelphia.

IRON HYPODERMICALLY GIVEN IN ANEMIA.—At the meeting of the College of Physicians, held April 1, among the papers read was one by the President, Dr. J. M. DaCosta, "On the Hypodermic Use of Iron," in which he referred to his experience with various forms of this agent, since 1874, when he originally used the ammonia citrate in symptomatic anemia. He now uses the citrate of iron and magnesia, in solution in water and finds that it rapidly produces the chalybeate effects upon the blood and is entirely free from local irritation or abscess.

CHRONIC ILLNESS IN A CABIN PASSENGER DEBARS HIM FROM IMMIGRATING.—A second-cabin passenger on the trans-Atlantic steamer *Rhyndland*, because of alleged chronic illness was

debarred from landing by the Commissioner of Immigration, on March 18. The passenger was a man 26 years of age, who was accompanied by his father, an Irish farmer. It is stated that the latter made no comment upon the fitness of the law, by which his son was refused permission to land, but condemned the steamship company for selling the tickets when it must have been cognizant of the provisions of the law. The father expressed his intention of returning with his son by the next steamer. It is said that this is only the second instance of a cabin passenger being debarred from landing at this port. Some years ago an English philanthropist sent over two young girls consigned to a New York Children's Aid Society through whom it was intended to send them to homes somewhere in the west. That case appealed to the supreme court, which sustained the action of the local Board of Charities, which then had supervision of immigration at this port, and which had ordered them to return to England.

EVIDENCES OF MAN'S ANTIQUITY.—At the March meeting of the Contemporary Club, Prof. Edward S. Morse, of Salem, Mass., by invitation delivered an address on the subject, "When did Man first Appear on Earth?" At the beginning, the lecturer stated that it was impossible to declare positively within 100,000 years, how long man had existed on earth. There were marked differences in races of mankind forty or fifty thousand years ago, but we must believe that they had a common origin. There must have been a time when there was a common type. Man has been produced by the convergence of several lines of development the same as in the case of all animals. Whatever age the geologists are willing to ascribe to the tertiaries, the lecturer was disposed to accept as the date of man's appearance upon earth. At the conclusion of Professor Morse's address, Prof. D. G. Brinton stated that few geologists now think the four instances of human remains that were found in the tertiaries, to be genuine. It has come to be believed that man's origin was at a much later time, following the glacial epoch. While man himself is connected with the great chain of organic life, direct ancestry, in Dr. Brinton's opinion, had not been proven. He did not find an absolutely final argument. He had no doubt man began at one place. He further believed that man achieved his high position not by a long slow method, but that he burst into the world in one time, with his faculties and powers greater than any of his parents possessed. He cites Shakespeare and Goethe as illustrations of this exceptional endowment. Darwin himself acknowledged that what was called spontaneous variation was far beyond all his means of investigation. There is some change which occurs in prenatal life which develops the first genius or poet of a century, and it was something of this nature which occurred when man was developed from a lower animal.

VACANCIES IN BERCKLEY STAFF FILLED.—At the meeting of the Department of Charities and Correction, the vacancies in the attending medical staff of the Philadelphia Hospital were finally supplied after a most exciting and lively canvass. Dr. Augustus A. Eshner, a graduate of Jefferson College, was elected to fill the vacancy occasioned by the resignation of Dr. E. L. Vansant, and Dr. Alfred Stengel, a graduate of the University of Pennsylvania, succeeded to Dr. J. M. Andus' position. Dr. H. B. Allyn was elected Registrar, succeeding Dr. J. Chalmers DaCosta, who was advanced to the Surgical Staff. Dr. J. Wharton Sinkler resigned from the Neurological Staff; Dr. Charles H. Burr will probably succeed to the position.

PHILADELPHIA DENTAL COLLEGE. Dr. Henry I. Dorr has resigned from the Philadelphia Dental College and will remove permanently to California on account of his health. Dr. L. Greenbaum has been elected to his chair of Anesthetics and Odontotechnics.

THE HOSPITAL FOR CONTAGIOUS DISEASES. A Committee of the County Medical Society has been appointed to confer with a Committee of the Woman's Health Protective Association in reference to the proposed new hospital for contagious diseases.

DEATH OF THE OLDEST ALUMNUS OF JEFFERSON MEDICAL COLLEGE. Dr. Jacob M. Gemmell, who for some years enjoyed the honor of being the oldest living graduate of Jefferson Medical College died at his home in Philadelphia March 21, in the 86th year of his age. He was born in Alexandria, Virginia, Sept. 24, 1810, and was graduated in medicine in 1831. After practicing for a few years in his native place, he removed to Altoona where he was physician to the Pennsylvania Railroad. Since 1876 he had resided in Philadelphia. For many years he had been a member of the Blair County Medical Society and of the State Medical Society, of both of which he had been President.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 28 to April 3, 1896.

First Lieut. Henry C. Fisher, Asst. Surgeon, is relieved from duty at Ft. Yates, N. Dak., and ordered to Plattsburg Bks., N. Y., for duty.
Capt. Adrian S. Polhemus, Asst. Surgeon, will be relieved from duty at Ft. Douglas, Utah, upon the expiration of his present sick leave of absence, and ordered to Ft. Wingate, N. M., for duty.
Capt. Philip G. Wales, Asst. Surgeon, now on duty at Ft. McPherson, Ga., will report in person to the commanding officer, Ft. Monroe, Va., for temporary duty at that post.
Capt. Francis J. Ives, Asst. Surgeon, is relieved from duty at Plattsburg Bks., N. Y., and ordered to St. Francis Bks., Fla., for duty at that station, relieving Major Daniel G. Caldwell, Surgeon.
Major Daniel G. Caldwell, Surgeon, on being relieved from duty at St. Francis Bks., Fla., will report in person to the president of the Army retiring board at Washington Bks., D. C., for examination by the board. By direction of the President.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the fifteen days ended March 31, 1896.

Surgeon P. H. Bailhache, granted leave of absence for three days, March 30, 1896.
P. A. Surgeon C. E. Banks, to proceed to Baltimore, Md., to inspect un-serviceable property; then to rejoin station at Washington, D. C., March 30, 1896.
P. A. Surgeon C. T. Peckham, granted leave of absence for thirty days, March 26, 1896.
P. A. Surgeon L. L. Williams, granted leave of absence for fifteen days, March 26, 1896.
P. A. Surgeon J. O. Cobb, granted leave of absence for two days, March 25, 1896.
P. A. Surgeon J. B. Stoner, to proceed from Baltimore, Md., to Savannah, Ga., and assume command of Service, March 16, 1896.
Asst. Surgeon Emil Prochazka, to proceed from Detroit, Mich., to Evansville, Ind., for temporary duty; then to rejoin station at Detroit, March 19, 1896.

Change of Address.

Andrews, Jr., B. B., from St. Louis, Mo., to Stella, Neb.
Baird, T. M., from Hot Springs, to Forest City, Ark.
Caldwell, J. R., from 202 Gladys Ave., to Chicago View Hotel (Ashland Ave. & Madison Street), Chicago, Ill.
De Hart, J. N., from 203 Willoughby Ave., to 137 Keap Street, Brooklyn, N. Y.
Hamilton, John B., from 20 Custom House, to 315 Rand McNally Building, Chicago, Ill.
Jeffery, Alicia F., from California Building to 633 Bert Street, Denver, Colo.
Kirkpatrick, O. B., Cherry Fork, Ohio, to 56 Lexington Ave., New York, N. Y.
Musser, C. J., from St. Louis, Mo., to Hampton, Iowa; Mull, Fred, Allendale, Mo.
Owsley, W. T., from Lexington to Glasgow, Ky.
Perdue, E., to Orrick, Mo., from St. Louis, Mo.
Robinson, R. D., Indianapolis, Ind.

LETTERS RECEIVED.

Andrews, Edmund, Chicago, Ill.
Burr, C. B., Flint, Mich.; Bartholow, Paul, Philadelphia, Pa.; Bardwell, E. O., Emporium, Pa.; Bausch & Lomb Optical Co., Rochester, N. Y.; Busey, S. C., Washington, D. C.; Breuer, C. H., Omaha, Neb.; Bulkley, L. Duncan, New York, N. Y.
Crane, A. M., Marion, Ohio; Caywood, J. R., Somerset, Ohio; Cokenower, J. W., Des Moines, Iowa; Coholan, M. J., New Britain, Conn.; Crothers, T. D., Hartford, Conn.
Duff, John Milton, Pittsburg, Pa.; Dick, E. B., Mt. Pleasant, Ill.; Day, L. T., Westport, Conn.
Elliott, A. R., New York, N. Y.; Ewing, F. C., St. Louis, Mo.
Fahner, John, Joliet, Ill.; Franceville, J. C., Apalona, Ind.
Gordon, W. Frank, Danbury, Conn.; Garcelon, A., Lewiston, Me.; Garber, J. B., Dunkirk, Ind.; Gardiner, C. A., New Orleans, La.
Halsey, C. C., Montrose, Pa.; Haldenstein, I., New York, N. Y.; Hassard, John G. & Co., New York, N. Y.; Hubbard, H. C., Sidnaw, Mich.; Hughes, C. H., St. Louis, Mo.; Hummel, A. L., Adv. Agency, (2) New York, N. Y.
Imperial Granum Co., New Haven, Conn.
Johnson, H. L. E., Washington, D. C.; Jackson, Edward, Denver, Colo.; Johnson, Jos. Taber, Washington, D. C.
Knowles, B. H., Tecumseh, O. T.; Kell, J. Baillie, Barnhill, Ohio; Kane, H. H., New York, N. Y.
Love, J. N., St. Louis, Mo.; Lindsley, C. A., New Haven, Conn.; Larkin, F. A., Chicago, Ill.; Lord & Thomas, Chicago, Ill.
Mallon, T. F., Washington, D. C.; Mills, Chas. K., Philadelphia, Pa.; Munk, T., Berlin, Germany; Montgomery, E. E., Philadelphia, Pa.
Palmer, W. R., Johnsonburg, Pa.; Pearce, Herman E., Kansas City, Mo.; Patch, E. L., Boston, Mass.; Post Graduate Med. School, Chicago, Ill.
Roy, Philemon, Washburn, Wis.; Ruggles, Gale Co., Columbus, Ohio; Roberts, John B., Philadelphia, Pa.; Reed, C. A. L., Cincinnati, Ohio; Rawson, Allen A., Cornu, Iowa; Risley, S. D., Philadelphia, Pa.
Small, Edward H., Pittsburg, Pa.; Seaman, Yates Dent, New York, N. Y.; Smith, E., Burchard, Neb.; Shoup, Jesse, Washington, D. C.; Stuver, E., Rawlins, Wyo.; Smogg, D. P., New York, N. Y.; Shurly, E. L., Detroit, Mich.; Smith, M., Indianapolis, Ind.; Sheboygan Binding & Box Co., Sheboygan, Wis.; Smith, Q. C., (2) Austin, Texas; Smith, Owen P., (2) Portland, Me.
Talbot, E. S., Chicago, Ill.; Thompson, S. W., New York, N. Y.; Thomson, H. D., Albion, Mich.; Trueblood, Chas., Chesterfield, Ind.
Uddegrove, S., Philadelphia, Pa.
Vincent, D., Cleveland, Ohio; von Ruck, Karl, Ashville, N. C.
Woodbridge, J. E., Cleveland, Ohio; Warfield, W. A., Washington, D. C.; Woolen, G. V., Indianapolis, Ind.; Wynn, F. B., Indianapolis, Ind.; Washington Chemical Co., Washington, D. C.; Wright, J. P., St. Louis, Mo.; Wilson, D. C., Ironton, Ohio.

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No. 16.

ADDRESS.

THE PATHFINDERS.

Delivered to the Graduated Class of the Barnes Medical College, St. Louis, Mo., March 17, 1896.

BY JAMES T. JELKS, M.D.

Professor of Gynecology and Syphilology in Barnes Medical College, St. Louis, Mo.; formerly Professor of Genito-Urinary Surgery and Venereal Diseases in College of Physicians and Surgeons of Chicago; Ex-President of Arkansas Med. Society; Ex-Secretary Obstetric and Gynecological Section American Medical Association; Member of Chicago Med. Society, Mississippi Valley Medical Society, American Ass'n of Obstetricians and Gynecologists, and Southern Gynecological and Surgical Ass'n, and Ex-chairman of Section on Anatomy and Surgery of American Medical Ass'n.; Consulting Surgeon Mo. P. and I. M. Ry's.

HOT SPRINGS, ARK.

Gentlemen of the Graduated Class:—I have been requested by the faculty of Barnes Medical College to address a few words to you in parting. I feel the importance of the occasion, and if I shall say anything which you can carry home with you and which will enable you to be better physicians or truer men I will have done much. You have passed your final examination for the degree of M.D.; upon this I congratulate you and trust the future may bring to you, all that your mind can picture of success or your heart crave of sympathy.

You have only made a beginning; have simply learned the alphabet of your new life. We have tried to teach you *how* to study; how to use the tools of your new calling; have simply laid the foundation; upon this you must build a superstructure of hay, wood or stubble, or a structure of solid materials which will weather the storms of adverse fate, or come through the fires of criticism unscathed; then I say, your life work is just begun; remember the battle is not necessarily to the swift or the brilliant, but success comes rather to the painstaking, laborious one, who knows no such word as fail, and who is willing and anxious to work, contented, if he does well whatsoever his hands find to do.

Think not there are no more worlds to conquer; that the wonderful strides in the arts and sciences of medicine and surgery during the last twenty years, leaves no field for you to investigate. Some one of you may be an Alexander to lead the hosts of sanitary science along new fields and beside pleasant pastures. Few thought two months since of the possibility of photographing through opaque objects, and yet to-day, the world is familiar with the "X" ray of Roentgen, and its possibilities in medicine and surgery, as they loom up before us, are fairly dazzling. Here is a Pathfinder indeed; and we believe the time is not far distant when we shall see our friends as we talk with them over the telephone, whether they be in the next house, the next town, or as far from us as St. Louis from New York. New worlds are lying out all around us waiting a conqueror who shall show us the way.

"Then be up and doing,
With a heart for any fate;
Still achieving, still pursuing
Learn to labor and to wait."

There are two classes of men in life. The artist who plans, who leads the way, and the artisan who follows and does the work planned for him by the leader. These two comprise the working classes of humanity. Of the first class or

THE PATHFINDERS

I propose to speak a few words to you to-night, hoping thereby so to stimulate you in your work that some one among you may develop as a leader among men.

It is an easy matter for any one to follow the king's highway from place to place. It is comparatively easy for one versed in woodcraft to find his way out of a great forest and into the homes of civilization; or for the mariner with his compass to steer his course over the trackless sea. We can all follow where the Pathfinders lead. That was a beautiful character of Cooper's, "The Pathfinder" or old "Leather Stocking," with his unerring judgment of men and nature; always pushing out beyond the outposts of civilization, whether that was in the forests of New York, along the shores of the northern lakes or on the boundless prairies of the great West! And there are such men in the profession of medicine—leaders whose look is ever forward—and behind whom follow the great mass of the profession; many times ignorant of the hard work and sufferings and triumphs of him who was the pioneer along a rough and rugged road, now smoothed for the easy going of the less laborious ones. I would not have you understand that the work of the artisan is less honorable than that of the artist who plans the beautiful structure. Both are alike praiseworthy; and while it is given to a few to be leaders of men, yet we may all be workers.

"And departing leave behind us
Footprints in the sands of time."

The poetess Ella Wheeler Wilcox has written:

There are two kinds of people on earth to-day,
Just two kinds of people, no more, I say.
Not a sinner and saint for 'tis well understood
The good are half bad, and the bad are half good;
Not the rich and the poor, for to count a man's wealth
You must first know the state of his conscience and health;
Not the humble and proud, for in life's little span,
Who puts on vain airs is not counted a man;
Not the happy and sad, for the swift flying years
Bring each man his laughter and each man his tears.
No, the two kinds of people on earth I mean,
Are the people who *lift* and the people who *lean*.
Wherever you go, you will find the world's masses
Are always divided in just these two classes.
And, oddly enough, you will find, too, I wean,
There is only one lifter to twenty who lean.

The dead level of mediocrity we may all attain; it is the floor upon which we were born and upon which most of us will fret and work out our earthly existence. We are the artisans who do the drudgery of

the world, and I would not complain of mediocrity, for to the many, to the artisans, must the world look for the accomplishment of its vast problem of labor. Though we may belong to this class, let us love our work. If you do not love this profession you have chosen—love it enough to give your life enthusiastically to it, then let me urge you now to give it up, before it is too late, and find something to do which will command all the love and energy of your souls.

Enthusiasm, fanaticism if you will, moves the world. The enthusiasts are the Pathfinders for the world. "Youth without fire leads to an old age without warmth." Then while the warm blood of youth permeates your hearts, plunge headlong into your work. "Whatsoever your hands find to do, do it with all your might," and thus only may you hope to attain to an old age warmed by the thought of a life well spent. He who is without enthusiasm in his calling is a finished being, and is simply waiting for the inevitable, which shall take him over to the great majority.

I do not propose to go over the whole field of medicine and give you an outline of all its leaders, but to call your attention to a few of the men who have led us into the broad fields and green pastures of modern medical knowledge.

It has not been many years since the practice of surgery meant great agony to the patient. He had to be held, while the sharp steel severed nerve and muscle and bone. Think of the awful suffering of the wounded who had to have an extremity amputated, or a dislocated one restored to place! Think of the dreadful agony of maternity! And all these pains alleviated by a few whiffs of chloroform or ether!

My friend, Dr. Ghent, of Texas, tells of a woman who was a patient of his under these trying circumstances for her fifteenth time. He administered chloroform, and when she came to herself and found a lovely little boy in her arms burst into tears. She was so sorry that she could not go back and have them all over again under the benign influence of this God-given pain destroyer.

Yet the production of anesthesia for surgical operations we owe to an obscure country doctor in the backwoods of Georgia, Dr. Crawford W. Long. The pains of surgery and maternity annihilated and all things made possible to the surgeon by his ability to do thoroughly and without shock to the patient anything operative which should be found necessary!

CRAWFORD W. LONG.

In the brief time allotted to this address I can not go into all the details of the ether controversy. Dr. Luther H. Grandy, of Atlanta, Ga., in an article published in the *Virginia Medical Monthly* for October, 1893, gives its details. From the papers before him, supported by sworn testimony of those who witnessed the operation, it is clearly proven that Dr. Crawford W. Long removed a tumor from the neck of Mr. James Venable while anesthetized with ether on March 30, 1842. Dr. Long's ledger is produced and from it an extract is taken which shows Mr. Venable's bill for 1842, and reads as follows:

JAMES VENABLE, DR.		
Jan. 28,	Sulphuric ether.. . . .	\$0.25
March 30,	Ether and excising tumor	2.00
May 13,	Sulphuric ether.. . . .	.25
June 6,	Excising tumor.. . . .	2.00

Dr. Long, and later on Dr. J. Marion Sims, published the details of this operation.

On July 3, 1842, Dr. Long amputated the toes of a

negro boy for disease, doing the operation under ether anesthesia.

On Sept. 9, 1843, he extirpated a tumor from the head of Mary Vincent.

On Jan. 8, 1845, he amputated two fingers of a negro boy: two witnesses state that one finger was removed while the negro was anesthetized, and the other one when he was awake, just to show the bystanders that anesthesia was possible.

Dr. W. T. G. Morton, of Boston, gave ether for Dr. J. C. Warren in the Massachusetts General Hospital on Oct. 16, 1846. This was in a public hospital and was heralded over the world by the profession at once, and ether was soon in universal use.

While it is true that the young village doctor of Jefferson, Ga., was the first to use ether for the painless performance of surgical operations, he did not publish the fact until after Morton and Warren had written of their work. Priority of work lies with Crawford W. Long, priority of publication with Morton. Both deserve praise and honor. The timidity and retired, obscure position of the young country doctor prevented him from publishing his discovery to the world, but it was known to his neighbors and friends.

Boston, Mass., has erected a monument to Morton. One stands in Paris commemorating the discovery of the unknown country doctor in the backwoods of Georgia, and the State of Georgia has decided to place his statue in the hall of the immortals at Washington, D. C.

At a later period chloroform supplanted ether in many surgical operations and the profession is largely indebted to Sir James Y. Simpson, of Edinburgh, Scotland for popularizing its use.

Recently there was gathered to his father's house and to "Our Father's house" another man who lived and died in a small town in the mountains of Georgia, and whose name will go sounding down the corridors of time with honor.

ROBERT BATTEY.

Dr. Battey's operation has been merged into Tait's, but he deserves great honor and praise for his bravery in devising an operation for the relief of suffering women. He was as modest as he was gentle and brave, and to know him was to love him for his personality.

The profession was forty years learning the lessons Bernutz and Goupil tried to teach them, and to

LAWSON TAIT.

is due the credit of compelling it to recognize the value of their teachings. They uncovered for us the pathology of certain diseases, and later Neisser and Næggarath taught us their etiology, and as long as time shall last these men will stand out among the Pathfinders of this generation which has furnished so many leaders.

PASTEUR.

Pasteur, by his investigations, ascertained that fermentation was produced by living microorganisms, and that chicken cholera was an infectious disease and could be prevented by vaccinating the flocks with an attenuated virus. He also demonstrated that pebrine, a disease of silk worms, which was destroying the silk industry of France, was microbic and contagious, and hence preventable. He applied the same enthusiasm to his effort to discover the cause of anthrax, as it affected sheep. He found the source of

the disease, cultivated the germs, attenuated them, and by using the weakened germs and their ptomaines protected the flocks of France from destruction. Following up his idea for vaccination for infectious diseases, he has saved many lives from that frightful malady, hydrophobia; and the artisans in the profession have but followed Pasteur's lead in all the work which has led up to the antitoxins of diphtheria, pneumonia and other contagious diseases.

LISTER.

Resting back on Pasteur's work on the cause of fermentation lies the source of the inspiration which filled the soul of Joseph Lister of Edinburgh, and lead him to the experiment which culminated in the triumphs of modern antiseptic and aseptic surgery.

We call the details of modern surgical work Listerism, and correctly we do it, for Sir Joseph was the Pathfinder who led the way, when all the world was buried in the darkness of ignorance. The fact that we may to-day invade, with impunity, any organ of the human body; that thousands of lives are annually saved, that suffering has been lessened, is all due to the labors of these two men; first Pasteur, then Sir Joseph Lister. When the profession fairly learned that suppuration was not "laudable," that surgical inflammation was preventible, and that it was produced by microorganisms, then the pathway was opened for the hunt for the causes of those diseases which were not surgical. And one by one they have yielded up their secrets to the keen eye of the microscopist, aided by Koch and his method of staining tissues to be examined. Robert Koch became a Pathfinder, and when in 1882, he announced that he had discovered the cause of tuberculosis, the world fairly went wild. Since then, what mighty strides have been made in uncovering the sources of many of the scourges which afflict mankind! Consumption, typhoid fever, diphtheria, yellow fever, cholera, leprosy, the infectious diseases, puerperal fever, tetanus, all inflammatory diseases, *et id genus omne*! Malaria has recently yielded its hematizoon to the labors of Laveran, and we predict that the infecting microbe of each of the contagious diseases will be isolated before many years, and all this work, and all the lives saved by modern aseptic and antiseptic surgery, have been made possible by the enthusiasm of Pasteur, the loving, devoted Frenchman, and of Sir Joseph Lister, the laborious Scotchman.

MC DOWELL.

In the early part of this century, there lived in the backwoods of Kentucky, an obscure practitioner who was as brave as Julius Caesar; a man who had "courage of his convictions," who dared to lead where, for long years no man was brave enough to follow. And from the pioneer work of that country doctor in the little Kentucky village, has grown up a host of ovariologists; wherever the operation of ovariectomy is performed and a woman's life saved, there is erected a monument to the name and memory of Ephraim McDowell, the Pathfinder in the field of abdominal surgery. All honor to the obscure, brave and undaunted country doctor in the wilds of Kentucky! And yet, while living, he was abused and maligned as a murderer. When dead, the whole world of medicine and surgery honor his memory.

SENN.

Less than fifty years ago, there was born in a canton in Switzerland a little boy; his parents brought

him to this country, and he grew up to robust manhood in the west; secured a good English education, struggled hard with poverty to secure his medical degree; obtained it with honor, and became an interne in the Cook County Hospital of Chicago, Illinois. A few years ago he took up the suggestion Sims made in 1878, and on dogs demonstrated that abdominal section, ligature of bleeding vessels and suture of wounded viscera, was not only feasible, but entirely practicable. After a great deal of painstaking work and careful experimentation he laid before the professional world the result of his work.

To-day the labors of Nicholas Senn are bearing fruit the world over, and while it is possible that in certain cases the Murphy button may supplant the decalcified bone plates in the intestinal surgery of the future, yet for all time, Nicholas Senn has written his name on the surgical history of the world. And whenever in the future, human life is placed in jeopardy, by wounds of internal organs, whether on the battle field or in the street brawl, and is saved by either of these or any other device, that life will be a monument, first to Sims for suggesting it, and next to Senn for showing the world how to do it.

The warm hearted friend, the enthusiastic, laborious physician, the brilliant operator and orator, the generous donator to the profession of the largest private medical library in the world, Nicholas Senn, will go down to posterity as the Pathfinder in intestinal surgery.

HAIG.

And we venture to place another man in this category of Pathfinders. When the profession realizes that all the cases of migraine or sick headache, diabetes, many of chronic Bright's disease, the cases of so-called idiopathic epilepsy, Raynaud's disease, the cases of so-called neurasthenia and hysteria, all cases of mental depression and consequent suicide, many of the forms of neuritis and the neuralgias and many of the skin diseases, as well as all forms of rheumatism and gout, are but expressions of that dreadful poison which each of us make every day and hour, viz., uric acid; I say, when we realize that all this mass of suffering, probably more than from all other causes put together, is produced by poison of endogenous manufacture, we will have cause to be thankful that personal suffering, with frequent attacks of sick headache, drove Alexander Haig, of London, to investigate uric acid and its protean manifestations.

Future generations will be freed from much suffering by following in the pathway Haig has cut out for us in the dark field of preventable human suffering.

SIMS.

In a little village in South Carolina, in 1836, a young man hung out his shingle for the purpose of practicing medicine. In a month or two the leading man of the village called on him and said: "Marion, have you had a case yet?" being answered in the negative, he was told to go up to the man's house, that the baby was ill. The young doctor went and found a very sick child. He thought the child had cholera infantum; told the family to send to his office in one hour and he would have the medicine ready. To his office he went, and got down from his bookshelf "Eberle on Children," the text-book of that day, and began to read up on cholera infantum. As the time drew near for Jennie to come for the medicine he was no more enlightened than when he began to read. One pecu-

hilarity of Eberle's book was, that there was a prescription on nearly every page. Well, in the young man's bewilderment he did not know what better he could do than to fill the first prescription, and he did it. In after years I heard him tell about it, and he remarked that "he turned a page on that baby every day, and filled the next prescription." When he got along toward the end of his prescriptions, the baby was ready to be transplanted as a rosebud to paradise, but the doctor did not know it. He had never seen death. He had heard the best of lectures, but had never seen sickness; there was no clinical teaching of medicine then. He paid a final visit to the child, and while sitting beside it and watching the little sufferer, suddenly it stopped breathing. Immediately the doctor picked the baby up, lowered its head, and lifting its legs in the air shook it, thinking the child had fainted and that he would thus get some blood into its brain and revive it. The old woman, who had come in to see the child and incidentally to size up the young doctor, placed her hand on his shoulder and said, "Doctor, you need not shake that baby; it is dead!"

It was a pitiful sight to see the young village doctor who had never seen sickness and death, called to prescribe for a sick child; pitiful to see him go to his books and after an hour's reading, fill the first prescription; pitiful to see this doctor "turn a page on that baby every day;" sadder to see him stand by the child's dying couch and utterly fail to realize that the icy fingers of the grim monster were laying their relentless grasp on its heart strings; and sadder still, as the fleeting breath suddenly ceases, to see him raise it up, lower its head and shake it, in a vain endeavor to shake the blood into its lifeless brain; and pitiful to hear the old woman, who had no faith in young doctors, say, "Doctor, you need not shake that baby; it is dead." What more pitiful sight than this? He who goes forth to save life, utterly unacquainted with death!

See this village doctor again. An accident to a woman suddenly reveals to his brain the way to successfully relieve suffering motherhood of a fearful disease, vesico-vaginal fistula, which had, from all time, been incurable, and which renders its victim a hopeless recluse, forever shut out from society. See him again, when he essays to practice those steps which a revelation from heaven has told him is the way to relief, fail utterly to accomplish a cure; again he tries and again he fails! But he believes first in himself, and knows he is right and must succeed. Again and again failure follows fast on failure. He had gathered together from among his acquaintances six women afflicted with this trouble. He supported them entirely at his own expense. He inspired these women with the belief that he could cure them. At first his professional friends assisted him in his operations; but at last they gave it up, and making assistants of his patients, he continued to operate on them; and for four years he kept at it, knowing he must succeed when he had eliminated all his errors. At last about the end of the fourth year, and on one of the women, the thirteenth operation success crowned his efforts. With success came failure of health.

See him again, broken down in health, go to New York to recover it and to tell the story of his successful work in the relief of the surgical diseases of women. See him thus broken in health, and after showing the profession in New York how to do this work, rejected by this profession and the very men to whom he had

loaned his instruments. See him struggling with poverty and distress, the spirit all taken out of him as he feels in his heart that "Man's inhumanity to man makes countless thousands mourn." Alone, without money and without friends, in that great city! Not only without friends in the profession, where his warm heart expected them, but facing their opposition and finding it everywhere, he turned! He says his condition drove him as near crazy as it was possible for him to be and not lose his mind entirely.

See this enthusiastic, warm-hearted man, broken in health, in spirits and in purse; persecuted by the leaders of the profession he went to teach, and God knows they needed it! See him with his wife and children in distress, and his good wife cutting up her new dresses to make her children look respectable at school! But while in the depth of despair he found a friend at last. It is said, you know, that the darkest hour is just before dawn. And whom do you suppose that friend was? Henri L. Stewart, a newspaper reporter! Through him he reached the medical profession who were not connected with medical colleges, as well as those who were, and then the noble women of New York; and his great enterprise was founded. "The stone which the builders rejected, the same has become the head of the corner."

Struggling, in want, rejected by the profession of New York, and absolutely given no opportunity to show that he could cure a hitherto incurable disease! See him in Europe, with all the leading surgeons sitting at his feet, like Saul of Tarsus at the feet of Gamaliel! Invited to operate in the hospitals, congratulated by them on his success, given private cases on which to operate, his name spreading over the whole of the old World! Verily, a prophet is not without honor save in his own country. And while in the midst of these triumphs, on October 18, 1861, he writes his brave, devoted wife that he would not say *that day* was the happiest of all the days of his life, but that it was the proudest save three others. The first of those three other days was the one on which she gave him a rose bud through the garden fence (which rose bud he kept to his dying day); the second when she gave him her hand in marriage; and the third, the first anniversary of the founding of the Woman's Hospital of the State of New York.

From utter failure with the sick child of the village tailor, he became the successful and beloved physician for the crowned heads of Europe, who were glad to decorate him with medals. It is said of him, that there was no capital in the old world in which he could not have all the patients he could attend to in twenty-four hours after his arrival. And to-day, thousands of loving mothers owe their relief from suffering and restoration to the companionship of their kind, to J. Marion Sims!

While the little village of Lancaster, South Carolina, claims him, and Montgomery, Alabama, gave him to the world, yet, he belongs to humanity, and for all future time, the name of Sims is immortalized. Not only will suffering and injured motherhood for all time owe him a debt of gratitude, but until Sims in 1878, advocated before the British Medical Association, that all persons wounded in the abdomen should have their wounded viscera sewed up, and the bleeding vessels ligated, surgeons dared not invade the peritoneal cavity in this class of injuries.

This beautiful city has honored herself by erecting in her borders a well equipped school of medicine

named in his honor. The first hospital ever erected in the world for the treatment of diseases of women, was done by the energy and labors of this man, and stands to-night in the city of New York commemorating his life and work; and that city has also erected a monument in bronze to his memory. It was my privilege to know him personally, and a nobler, gentler, lovelier, braver man never lived than J. Marion Sims, the village doctor, the physician for the crowned heads of Europe, the reliever of woman's suffering! All hail to his God-like character and beloved memory! Here was a Pathfinder whose life and labors you may be proud to emulate, and I commend him to you as an example in every and any walk in life. Through darkest Africa and Asia, over the entire continent of America, and from the frozen steppes of Russia to the sunny, vine-clad hills of Italy, all future generations of women will owe him a debt of gratitude.

Having thus briefly referred to some of the leading men of this country, I beg permission, gentlemen of the graduated class, to conclude my remarks by the briefest allusion to the prospects which are before us. The Science and the Art of Medicine are not yet complete; there are many arduous labors to be performed; there are many brilliant triumphs yet to be achieved, and I doubt not the several members of this youthful, yet brilliant company, will be found in the front rank of that grand army who are to-day laboring to advance the bounds of our theory and to multiply and perfect the resources of our practice.

To the cultivation of true science, to the alleviation of human suffering, to the divine business of going about doing good, and to the leaving of our beloved profession something richer and better than we found, it is the goal toward which we should set our steadfast feet. The accomplishment of these high aims implies on our part, a lifetime of laborious days, and nights devoid of ease, of unwearied patience, of constant mental and physical exertion, of utter self-abnegation. The way is rugged, but the reward is sublime!

ORIGINAL ARTICLES.

TREATMENT OF FIBROIDS OF THE UTERUS.

SURGICAL ENVIRONMENTS. OPERATING ROOM. STERILIZING INSTRUMENTS. LIGATURES AND HANDS. PATIENTS. PREPARATORY AND AFTER TREATMENT. DRAINAGE.

BY FRANKLIN H. MARTIN, M.D.

PROFESSOR OF GYNECOLOGY POST-GRADUATE MEDICAL SCHOOL OF CHICAGO; SURGEON TO WOMAN'S HOSPITAL.

The environments of a patient who is about to submit to a surgical operation for a fibroid of the uterus must be made surgically clean. These environments include operating room, bed, sterilizers, instruments, ligatures and operators' and assistants' hands and clothing.

OPERATING ROOM.

In a private house a room should be selected which has direct light through one or two large windows: a room which can be stripped of furniture, hangings and carpets. It should be convenient to the bedroom of the patient, or better the bed can be placed in the room in readiness for use when the operation is finished—the operating room constituting the bedroom. The woodwork of this room should be thoroughly

scrubbed with soap and water, and the walls and ceiling carefully wiped free of dust. The room should be thoroughly aired by opening the windows and a reliable means of heating should be at hand in order to render it dry and to keep it at a temperature of 80 degrees F. when required. The table, which is selected for the operating table, and the stands for instruments and dressings, together with all receptacles or slop tubs and basins should be carefully scrubbed and then conscientiously wiped with a 1:500 solution of chlorid of mercury. All tin, iron or porcelain basins should be boiled for one-half hour in a wash boiler or other large boiler, as a means of sterilization.

The bed, if possible, should consist of a hair mattress which has recently been purified by steam. In a hospital a large steam sterilizer should be provided where hair mattresses can be sterilized frequently. The bed should be completed with dry sterilized sheets, blankets and pillow slips. If there is no sterilizer at hand the bedding can be sterilized by boiling in water one-half hour, and drying in a pure room, and ironing with a hot iron by an intelligent attendant or nurse. Gowns, towels and aprons should be sterilized in the same manner as the bedding, provided there is no regular steam sterilizer at hand.

In an institution the operating room should have floor and walls of such material that they can be thoroughly washed with antiseptic solutions and provided with a central drain which will allow the cleaning of the walls and floors with water direct from a hydrant through a hose. The drain should be reliably trapped, or better, drain directly in to the external air. For convenience, a perfectly fitted operating room should have several anterooms, including a preparatory room where the solutions are prepared, the water sterilized, and where the heating apparatus for the sterilizers and the sterilizers themselves are located. This room should have washable walls. There should also be one or more anesthetizing rooms, and finally there should be convenient dressing and wash rooms for the surgeon and his assistants. The private operating room which I use at the Woman's Hospital is shown in Fig. 1. It has direct side light and a large skylight. Its walls and floors are of marble. It is lighted at night entirely by incandescent electric lights, gas being impracticable where an anesthetic is necessary; these lights are in abundance, so that an operation can be performed equally well at night or day. The preparatory room is adjacent. This is shown in Fig. 2. It is entirely in marble. The battery of Boeckmann's sterilizers is shown in the foreground. In the farther end are two large tanks in which the water is sterilized for the operation, one being filled with cold sterilized water and the other with hot water. They are connected with the operating room by large faucets which pass through the wall. Directly off from this room is an anesthetizing room, and adjacent to this are two dressing rooms with washing utensils. In the operating room is a spectators' rail which separates the operator, assistants, nurses and all operating paraphernalia from those who may be invited to witness operations.

Sterilizers.—In a private house, in emergency cases, an ordinary copper or tin wash boiler may take the place of the most elaborate sterilizer. The gowns, towels, gauze operating sheets and all large articles used externally can be thoroughly sterilized by boiling for thirty minutes. For sterilizing instruments, silkworm gut, silk and other smaller articles a smaller

kitchen article such as a sauce pan, or porcelain-lined flat pan, may be utilized as a sterilizer.

In large institutions large steam sterilizers are employed. I have used the Arnold sterilizer for dressings and instruments and other small articles until quite recently, since which time I have adopted for my hospital work the Boeckmann steam sterilizer (Fig. 3). These sterilizers are simple in construction, durable, inexpensive, efficient for all work, even the sterilization of catgut, and they possess the advantage of sterilizing with steam, while at the same time when the process is finished the articles are left perfectly dry.

At the Woman's Hospital several of these sterilizers are employed and everything that is liable to be required in several operations is sterilized, and the

for the operation in hand, the balance being reserved for future cases. Tubes of silk and silkworm gut may be prepared in considerable numbers and sterilized by steam with an efficient cotton filter and afterward carried to operations anywhere. On opening, the cotton stopper is first burned down low with the tube, then removed and the skein of material carefully lifted out with sterilized forceps and placed in sterilized water when it is ready for use.

Catgut is the form of absorbable ligature which I employ for buried sutures. I have it sterilized in the Boeckmann sterilizer with dry heat at a temperature of 284 degrees F. for a period of three hours. Previous to sterilization the catgut, cut in suitable lengths, is wrapped in oiled paper, one thread in each paper and the paper enclosed in small hermetically sealed

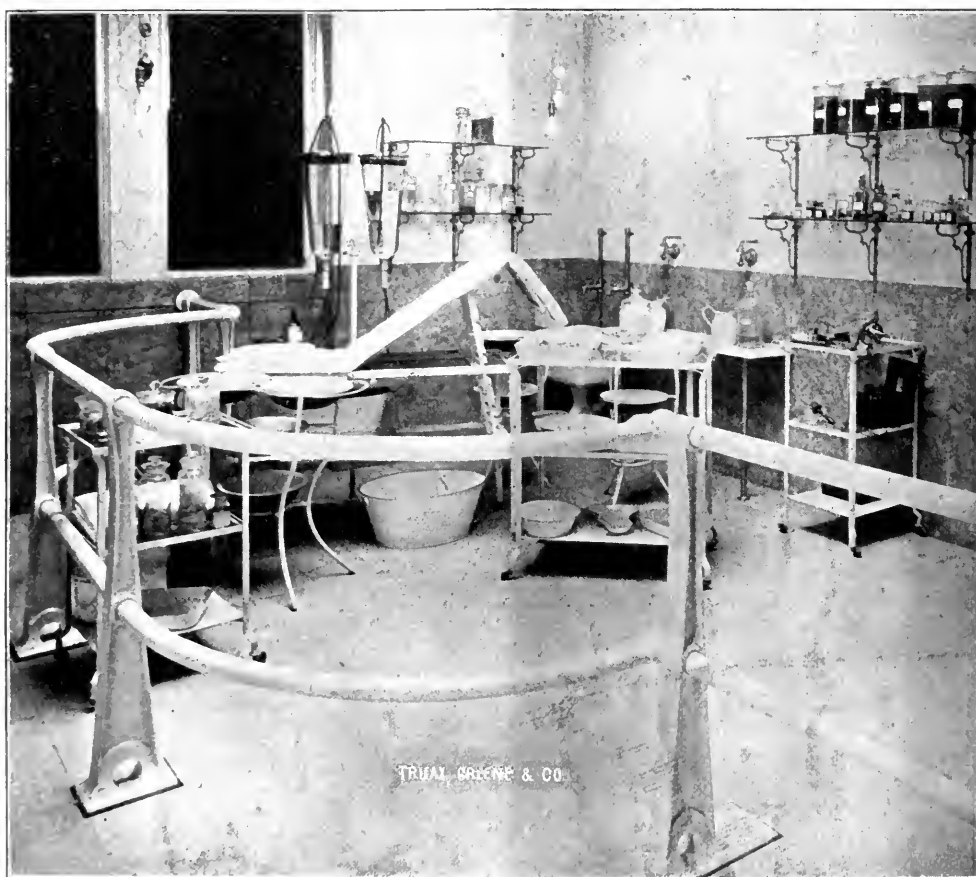


FIGURE 1.

unopened sterilizers are placed in the operating room for future use. Surgeon's and nurses' gowns, towels, gauze, silk and silkworm gut in cotton-stoppered test tubes are removed as they are required at the time of the operation, while a separate hot water sterilizer (Fig. 4), is employed immediately before the operation for sterilizing the instruments.

Ligatures. I employ braided silk, silkworm gut and catgut for sutures and ligatures. Silk and silkworm gut I sterilize by boiling, or by steam in the Boeckmann sterilizer. They are placed in small skeins in large test tubes loosely stoppered with cotton and subjected to a temperature of boiling water for twenty minutes on two successive days when I have no sterilizer at hand, and to the temperature of the superheated steam for a like length of time in my hospital work. I only open at the operation a sufficient number of tubes

envelopes. While this accomplishes perfect sterilization, as can be demonstrated by bacteriologic tests it has been argued that sterilized catgut may act as a very favorable nidus for the growth of pathogenic germs in tissues in which it is buried, tissues which without the presence of this perfect sterilized culture medium would be competent to resist the few germs left in a wound, after ordinary surgical precautions had been exerted. For this reason I not only render my catgut aseptic with heat but I supplement that process by saturating it with non-poisonous antiseptics. According to Arthur Woodward Booth's admirable article in the *Therapeutic Gazette*, December, 1894, he found that pyoktanin blue in a 1 to 1000 alcoholic solution will render catgut thoroughly antiseptic and at the same time impart to it a longer life. Pyoktanin is a much more powerful antiseptic than

chromic acid and therefore may be employed in more diluted form. Compared with bichlorid of mercury it is a more perfect germicide, non-poisonous, and it imparts a longer life to the gut. Catgut saturated with pyoktatin becomes an antiseptic suture, the antiseptic of which can in no way prove a source of danger.

THE WRITER'S METHOD OF CATGUT PREPARATIONS.

A skein of new catgut is cut into about four lengths. This makes the threads of about forty inches each. Each section of the skein is twisted into a loose knot and they are soaked in ether for twenty-four hours in order to remove the fat. It is then boiled in alcohol, in a closed jar, for one hour in the steam sterilizer,

when the catgut is threaded directly from the bottle. The bottle, or several bottles, with their rubber stoppers may be immersed in a 1 to 1000 bichlorid solution on the instrument table ready to be opened by the surgical nurse in the course of the operation. After it has once been opened I discard any small amount of catgut which may remain after the operation, preferring to use always from a fresh supply.

Instead of boiling the catgut in alcohol it may be sterilized in closed envelopes in the Boeckmann sterilizer as before described, at a temperature of 284 degrees F., and then treated from that point in the same way as that sterilized by boiling in alcohol.

It seems to me that this is an ideal and simple method of catgut preparation. There can be no doubt

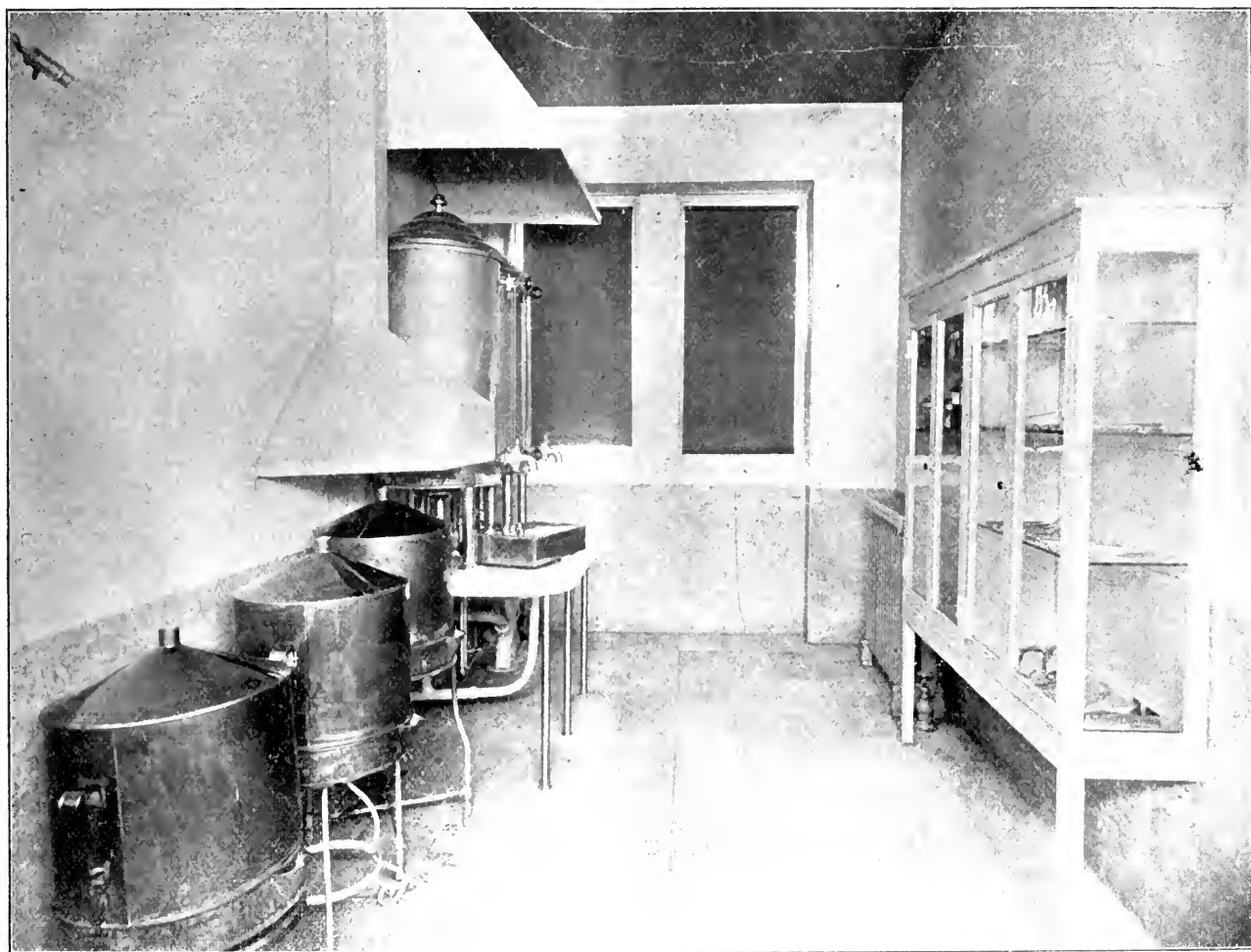


FIGURE 2.

Before boiling in alcohol the bunches are divided into their separate threads and each thread twisted into a little coil. After the sterilization by alcohol it is carefully removed from the jar by an intelligent conscientious nurse, with sterilized forceps in sterilized hands, to a jar containing a solution of pyoktatin 1 to 1000 in absolute alcohol. Here it is allowed to remain for twenty-four hours in order to become thoroughly saturated with that powerful antiseptic. I then have it distributed into small wide-mouthed one-half ounce bottles, containing oil of juniper. Into each of these bottles about four of the forty-inch strands are placed. The bottle is then corked with a rubber stopper and is not opened until it is to be used at an operation,

of its absolute sterilization after it has been boiled in alcohol for two hours, or after it has been submitted for three hours to a temperature of 284 degrees F. in the sealed envelopes in the Boeckmann sterilizer.

Dr. Booth found that pyoktatin permeated every fiber of catgut when it had lain in a 1 to 1000 alcoholic solution of the drug for twenty-four hours.

Dr. Booth quotes Sternberg as quoting Jaenicke on the antiseptic properties of pyoktatin as follows:

Staphylococcus pyogenes aureus restrained by solution of 1 to 2,000,000; bacillus anthrax aureus restrained by solution of 1 to 1,000,000; streptococcus pyogenes aureus restrained by solution of 1 to 333,000. In blood serum stronger solutions are required.

Thus we have not only a sterile catgut, but we have that sterile catgut thoroughly saturated with an efficient and non-poisonous antiseptic. The juniper oil preserves the catgut indefinitely, it fixes the methyl blue so that it will not stain the hands, and it keeps the catgut soft and pliable.

The life of the catgut in the tissues prepared by this method is a little less than that prepared by chromic acid, but considerably longer than that prepared by bichlorid of mercury. By placing it in small bottles it can be handled economically without the necessity of ever being obliged to open twice the same supply.

Sponges.—Sea sponges are not safe when prepared under the most careful supervision, whereas gauze sponges may be perfectly reliable whenever there is the simplest device at hand in which they may be boiled.

The best gauze sponges are made from loose-mesh gauze folded into three or four thicknesses, with the edges fastened with a running stitch of cotton thread. They may be made of any size. These sponges are sterilized in a steam sterilizer, or in emergency cases they may be sterilized by boiling with the instruments.



FIGURE 3.

In laparotomy cases I prefer these sterilized by the dry method. They are then used but once and are discarded. This is not economical because of the large number of sponges frequently required, nor is it necessary. The advantage possessed by the dry sponge is in the increased absorptive power of the gauze.

Gauze. The writer has devised an apparatus in which to sterilize gauze for operations, either for hospital operations or operations away from home. Chas. Truax, Greene & Co. kindly constructed this apparatus for me, as well as the furniture shown in the operating room in Fig. 1. It consists of a little stand which fits into the catgut sterilizer of the Boeckmann apparatus, or which can be set into any steam sterilizer (Fig. 5). The stand contains seven large test tubes, two inches in diameter, and about eight inches in length. In each of these tubes can be placed all the gauze of any one kind that will be required at any ordinary operation, which is about two yards of sheet iodoform gauze. Ordinarily I have two tubes filled with iodoform sheet gauze, one with plain sterilized gauze, one with one-inch strip iodoform gauze cut the strong way of the

cloth, one with two-inch strip iodoform gauze cut in the same way, and one with a skein of silkworm gut and a skein of braided silk. These tubes are loosely filled and their mouths closed with cotton. They are then subjected to steam sterilization in the Boeckmann or other steam sterilizer at maximum heat for one hour. They are then set aside and the following day they are again subjected to the superheated steam for one hour, and then dried by removing the cork in the top of the Boeckmann sterilizer so as to get the action of the dry heat. The contents of the tube are now thoroughly and permanently sterilized, and will remain so for weeks if the cotton stoppers in the mouth of the tubes are not removed.

When I wish to preserve these tubes for indefinite use I have the nurse slip a sterilized rubber cap over the cotton and the end of the tube before removing them from the sterilizer. They may then be set aside for an indefinite time.

When I wish to operate away from the hospital, I place the rack containing the tubes required into a metal box (Fig. 6), and that in turn is stored away in my instrument bag.

Preparation of Operator and Assistants.—It should not only be taken for granted but should be insisted on, that any and all persons participating in the high calling of surgery should take a general bath, including the hair, every day.

Dress.—For important operating, such as we have to deal with, special dress for the operator and assistants is indispensable. Suits of white ducking or linen should displace the street apparel. Over this sterilized gowns should be worn. In this dress the operator can be comfortable and do hard work in a temperature of 80 degrees F. When he is through operating all wet clothing, made so by perspiration and the fluids of the operating room, can be replaced by his ordinary dry out-door dress and the reminders of the operating room are left behind.

Preparation of Hands.—After the nails are filed short and smooth the hands and forearms should be thoroughly scrubbed for fifteen minutes in hot water with a stiff nail brush and plenty of pure soap. The water should be changed at least five times. The time should be estimated by an actual time piece and not by guess work. A nurse should supervise this part of the work in important operations, and report to the responsible chief any laxity on the part of any participant. The spaces beneath the nails should be thoroughly brushed and the undersurface of the nail scraped with a steel nail cleaner. After the soap and water scrubbing, the hands should be washed in alcohol and then immersed in 1:1000 bichlorid of mercury solution, and this solution brought into contact with all irregularities by means of the hand brush. The hands should, finally, be rinsed in warm sterilized water. Before beginning the operation the hands should be rinsed in hot water which is placed in a basin close to the operator, so that it may be used from time to time during the operation. After the hands are once washed they should not be allowed to come in contact with anything before or during the operation which is not surgically sterile.

Arrangement of Operating Room.—The steam or dry heat sterilizers containing dressings should be convenient to the nurse. Reservoirs of sterilized water, hot and cold, should be placed near the sponge table. Two large glass irrigators should be at hand. The table with which the Trendelenburg position may

be obtained is necessary, and should be placed in an advantageous position for light and assistants. For a laparotomy, the arrangement of the furniture and participants of the operating room should be approximately as follows: The table near the center of the room with the head of the patient near the chief window. Anesthetizer at head of patient. Operator on right of table (from head). Chief assistant and assistants opposite the operator with the chief nearer the head of the table. The surgical nurse in charge of instruments at stand to right of operator. Nurse in charge at foot of table with sponge dish on small stand in reach of second assistant. Assistant nurse to her right, the latter to work sponges, and to attend to irrigators, sterilized water, etc. Superintending nurse without regular assignment, ready for emergency. To left of operator, small table with sterilized solution for hands. Back of the assistants a similar table. Visiting physicians, admitted after everything is ready for the operation to begin, are arranged around the room out of reach of the operating corps, or any concerned in the operation.

If the case is one where a vaginal operation is required, the head of the patient is directed away from the window, and the patient in the exaggerated lithotomy position is placed with the buttocks directed toward the light. The limbs are supported on either side by two assistants. The operator sits at the foot

primary details. The following summarizes the signs of chronic interstitial nephritis: Lowered specific gravity of urine: patient arising at night to void urine (when there is no bladder or urethral disease to give rise to such a procedure); an enlarged heart with accentuated second sound; a tense pulse and diminished urea. Albumin is frequently absent. The diagnosis is doubly sure when hyaline casts are found.

Every patient should be scrutinized in all these points. If the foregoing state of affairs exist to a marked degree I refuse to operate. If, however, with the above symptoms I find a normal quantity of urine, which does not show a reduced specific gravity under 1010 to 1014 and the amount of urea does not sink lower than six or seven grains to the ounce, if the patient is well preserved generally without advanced heart disease, I am confident that I can operate with safety, if I can secure proper preparation.

I prepare these patients, first by placing them on an exclusive farinaceous diet with milk and fruit for an indefinite number of days before the operation. A week or ten days before the operation a diuretic is added with instructions to drink large quantities of water, the object being to increase the daily quantity of urine from 60 to 100 ounces, in order to thoroughly flush the kidneys and rid the patient of dangerous accumulations. With 60 to 100 ounces of urine flowing for several days, with the patient living

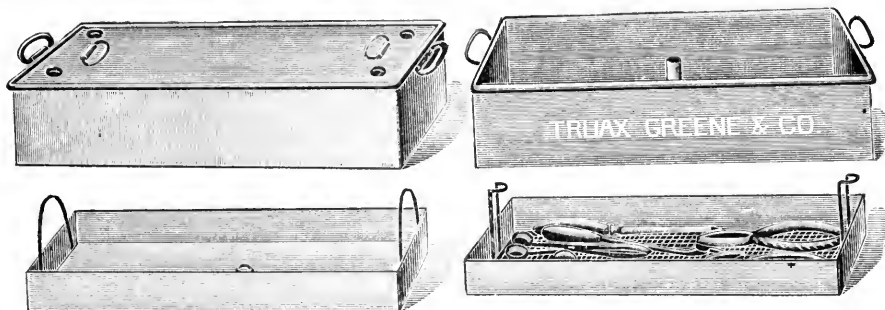


FIGURE 4.—Boeckmann's Instrument Sterilizer.

of the table with the instruments at his right hand. To the left is the nurse with sponges and the irrigator.

PREPARATORY TREATMENT OF PATIENT FOR LAPAROTOMY OR VAGINAL OPERATIONS.

Kidneys.—The failure to recognize obscure kidney disease in patients before submitting them to a severe operation has been the cause of many avoidable deaths. We should not only recognize kidney difficulties in every case but we should also know when a case is laboring under some form of kidney trouble, whether that stage has been reached beyond which it is safe to proceed. It is not enough that the urine in any given case is approximately of normal quantity, of approximately normal specific gravity, and that it gives negative results in tests for albumin and sugar. It is necessary to learn the history of the case, to estimate the specific gravity in a twenty-four hour specimen, to ascertain the amount of urea for twenty-four hours, and supplement this with a thorough and complete microscopic examination.

In diabetes we should not operate. In interstitial nephritis when the disease is not far advanced an operation may be risked with proper preparatory treatment. These latter cases are the very ones which from their great difficulty of diagnosis are often neglected, and consequently disaster results. The importance of the subject must be my excuse for entering into

on a non-nitrogenous diet, with the urea in improved proportion considering the diet, I feel safe in risking an operation.

Dr. Charles W. Purdy, who has had an enormous experience in watching the behavior of kidney diseases under operations, says in reference to *chronic parenchymatous* nephritis: "I see no reason why these cases, if unaccompanied with dropsy may not be operated upon if carefully selected."

Bowels.—In preparing patients for an ordinary laparotomy I begin preparations of the bowels two nights before the morning of the operation. The first point is to seek thorough emptying of the bowels throughout their entire length. The second point should be to render their contents thoroughly aseptic and the third should be to impart to them a maximum tonic.

The bowels are emptied by means of mercurials and salines. The first night of preparation, six grains of blue mass are given. The next morning at 6 A.M., one drachm doses of citrate of magnesia are given every hour until the bowels move, or feel as though they would move with the aid of a small enema. This ought to insure a thorough movement of the entire length of the intestinal canal. If the movements are such, with the above treatment, to insure a thorough evacuation, and to start a free flow of bile, as indicated by the yellow glistening appearance of the stool,

no further catharsis is necessary. The lower bowel should be thoroughly evacuated, however, by the employment of large enemas of soap and water, repeated four or five times during this second day of preparation. The last enema should be given late in the afternoon of this second day of preparation, if the operation is to be done the following morning, and the next morning if the operation is to be performed in the afternoon. The bowels are rendered aseptic by large doses of bismuth and salol. During the first and second days of preparation, gr. x of salol and gr. xx of subnitrate of bismuth should be given every six hours.

The bowels are stimulated by means of carminatives, alcoholic stimulants and strychnin. The second day of preparation 1 drachm doses of tr. of cardomon in one ounce of brandy are given every six hours. Strychnin is commenced three days before the operation in 1-40 gr. doses every eight hours, and gradually increased in quantity until 1-20 gr. doses are given. The bowels should be kept in a thoroughly aseptic condition by feeding the patient a milk diet for two days before the operation.

External Preparations of the Patient.—The first day of the preparation the patient should receive a thorough general bath and then be placed in clean clothing and a clean bed. The abdomen should then be rubbed with a saturated solution of permanganate

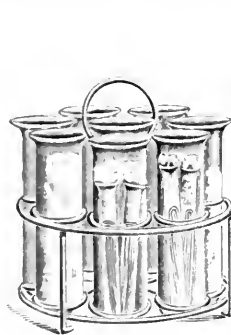


FIGURE 5.

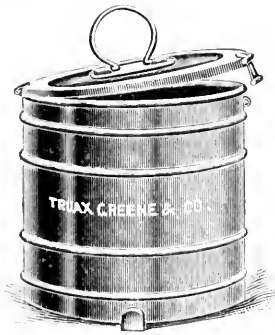


FIGURE 6.

of potassium until it is of a uniform mahogany color. This should be scrubbed off by means of a sponge or brush and the application of a saturated solution of oxalic acid. A green soap compress should be bound on the abdomen, this latter to remain all night. Vaginal douches of, first, soap and water; second, 1:5000 bichlorid solution, and third, plain sterilized water should be employed this first night. These should be repeated the night before the operation, and a last vaginal douche given immediately before the operation. The second night of preparation should begin with shaving of the abdomen and pubis, and should be followed by applying a bichlorid compress. Immediately before the operation, after this compress is removed, the abdomen should be scrubbed with green soap and hot water, this to be followed with alcohol or ether, and covered with an antiseptic towel until the incision is made.

The bladder should be evacuated by means of a catheter immediately before the operation.

Dress. The patient is to be put in a long, loose, woolen night gown immediately after an operation, and is thoroughly covered, except the abdomen, with flannel blankets during the operation.

Operation. I am suspicious of an operator who operates on time. The best operators are those who operate well in the smallest space of time; this

implies that the best operators are slow operators. An abdominal incision should be a clean, true, unhaggled cut, so that accurate coaptation is possible. Cold sponges should be employed on the external incision in order to contract the capillary vessels and check their bleeding without the necessity of forceps. Forceps should be employed, however, everywhere in abdominal surgery that their use will save blood, because most of our old-fashioned shock was caused by unnecessary loss of blood. Keep the operative field free from oozing points if possible, even at the loss of a little time. The peritoneum is best opened between two catch forceps elevated so as to present a thin fold. After a small opening is made, the finger passed into the cavity should act as a guide upon which to complete the incision. The peritoneal edges should be attached to the integumentary edges by means of catch forceps, to prevent its peeling off from the abdominal walls in the subsequent manipulation. In all pelvic surgery of smaller tumors the pelvis should at this point be elevated by means of the Trendelenburg table; the elevation being sufficient to draw the bowels away from the field of operation, and to elevate the contents of the pelvis. Sterilized silk or catgut should be employed for any pedicle which it is safe to tie and drop. Catgut may be employed to close simple peritoneal rents.

Drainage should be employed in all cases where extensive enucleation has occurred, where there is a slow venous oozing from separated adhesions or where aseptic matter has in any way contaminated the peritoneum. Drainage, in competent hands, never does any harm, therefore, where there is the slightest doubt, it should be employed. It has saved many lives, and made more comfortable those who might not have died without it, but who have been given the advantage of it.

After my operation is finished, the peritoneal cavity is thoroughly dried; then if there has been at the operation a process of enucleation, leaving of necessity slight oozing points, or in cases where ordinary adhesions have been separated, after drying the cavity as far as possible, I place in the cul-de-sac a glass drainage tube and pump out any remaining fluid. I next protect the abdominal contents from the abdominal wound with a large flat sponge, and insert the sutures, after which I again pump the drainage tube. If there is more than a drachm of bloody fluid, I leave the tube in until the sutures are nearly all tied and the sponge removed; then I make a last trial of the tube. If the fluid amounts to one-half drachm or more, and is bloody, I allow the tube to remain; if, on the contrary, the tube is nearly dry, or the contents is simply colored water, the result of flush, if it has been employed, I remove the tube. What has been done influences one in regard to drainage. I almost invariably drain after it has been necessary to flush. I believe the peritoneum is satisfied, to an extent by the flushing, and will consequently neglect, in a degree, to absorb any remaining fluid. Experience seems to sustain that argument. Mikulicz drain is almost indispensable in a limited number of cases. Cavities may be packed with gauze which can not be reached with glass drainage tubes. Hemorrhages in cavities so packed will cease, when a glass drain would not avail. Operations are now possible with the Mikulicz drain which were impossible without it. The question about drainage is not, shall we drain, but how, and how often.

To Prevent Intestinal Obstruction.—In abdominal surgery one is constantly watching the behavior of the intestines. They are our prominent point of attack in our preparatory treatment, they are our greatest source of anxiety during the operation, and upon their management after the operation much watchfulness is imposed. All of this anxiety is caused by our desire (with the exception of care against wounding when operating) to prevent obstruction. It, therefore, is a point in the technique of this work to which discussion may profitably be directed.

The pathology of obstructions is well summed up by a valuable contribution on this subject by Dr. Ashton, of Philadelphia, from which I quote:

"Adhesions between the intestines and raw surfaces: *a*, to an omental stump; *b*, to the edges of the vaginal wound following supra-pubic or vaginal hysterectomy; *c*, to a pedicle; *d*, to raw surfaces on the intestinal wall.

"2. Paralysis of the intestines.

"3. Local spasm of the intestines.

"4. Impacted feces.

"5. Bands of inflammatory lymph.

"6. Adhesions between coils of intestines or between the gut and neighboring parts, due to traumatic inflammation.

"7. Kinking or twisting of the intestines, due to faulty technique.

"8. Including the intestines within the loop of a suture of the abdominal wall, or between the edges of the abdominal incision.

"9. Slipping of a coil of intestines through a slit or an aperture."

Under the first head, "Adhesions between the intestines and raw surfaces," we must seek our remedy during and following the operation. Intestines should be handled and exposed as little as possible in order not to produce hyperemia or denudation of their surfaces. An omental stump of any considerable size should be selveged by inverting its raw edges with a running catgut, or with ligature. When denudations of the pelvic or intestinal peritoneum can not be reinforced by a superabundance in the neighborhood, care should be taken to carefully arrange the intestines in as near the normal position as possible. A pedicle of large size should be covered by securing over its end the peritoneal covering with a running stitch of catgut. Raw surfaces of any considerable size on the intestines should be covered with peritoneum if possible, with the edges well secured. Paralysis of the intestines may be avoided by emptying them thoroughly previous to the operation of all irritating matter (which may ferment and cause distension) by rendering the contents aseptic by means of bismuth and salol, and the employment of full doses of strychnia to act as a muscular tonic. Carminatives, such as wintergreen, cardamon, etc. may also be employed as antiseptics and muscular tonics. During the operation the intestines should not be handled or chilled in order to avoid paralysis. After the operation, nourishment of non-fermentive and easily absorbable nature should be employed. The bowels should be stimulated to early action in order to keep them empty and avoid the beginning of distention, which soon leads to paralysis. An early movement of the bowels, or free passage of flatus, assures a normal disposition of the bowels as regards location. If they adhere after such time, it will be in an advantageous, not cramped position.

A flat sponge beneath the abdominal wound, after carefully spreading down the omentum and before the wound sutures are inserted, will avoid including an intestine within the loop of a suture, or between the edges of the abdominal wound.

When ventral fixation of the uterus is practiced, great care should be exercised in disposing of the intestines in such a manner as to avoid their slipping through the opening left between the uterus and the abdominal wound.

AFTER-TREATMENT.

The immediate after-treatment consists in stimulating the patient out of any tendency to nervous shock which may exist. She should be surrounded in bed with dry heat, and in hospitals placed on a water bed. If there has been any considerable loss of blood, the feet may be elevated in order to restore blood pressure in the brain. In severe cases of shock from loss of blood, it is well to bandage the blood out of the lower extremities by means of elastic bandages. A saline solution under the integument may assist to fill the blood vessels. Oftentimes the difficulty is not lack of fluids so much as lack of tone, which allows a patient to bleed to death, as some one has put it, "into her own dilated capillaries and venules." Here direct arterial stimulants and vaso-constrictor remedies are called for, as well as strong nerve stimulants. In these cases, I immediately order hypodermics of nitroglycerin, strychnin and digitalin. Stimulating enemmas of whisky and warm water may also be given. What is done for shock should be done promptly, as patients who are allowed to go on for a few hours with a sub-normal temperature and high pulse, are with great difficulty restored.

Dressing Glass Drainage Tube.—The glass drainage tube, when it is allowed to remain, should be emptied with a syringe with a long rubber nozzle the first time in one hour. If the fluid is more than a drachm it should be dressed again in an hour, if a drachm or less, the interval between dressings should be increased one hour, and the same rule followed until the fluid is less than a drachm and of a light amber color, and the interval from four to six hours. At this time the tube may be removed. If it is left longer than thirty-six hours, a piece of sterilized gauze should be put in its place for six hours, when the latter is removed and the wound is closed with slight pressure and its closure is obtained by extra pressure of external straps.

Care of Capillary Gauze Drain.—If capillary gauze drain has been employed instead of the glass drainage, the protruding gauze (from vagina or abdominal wound) should be kept abundantly covered with a pad of loose fluffy gauze, and this should be changed as often as it becomes saturated with fluids. If all drainage ceases in twelve to twenty-four hours as indicated by dry dressings, the gauze packing may be removed. However, if drainage is free and patient is normal it may remain forty-eight to sixty-two hours. When it is possible this drainage should have its exit through the vagina. After it has been removed a loose gauze packing should be placed over the wound.

Dressings.—The wound is closed with silkworm gut, including all parts of the wound edges, and dusted with sterilized iodoform, and the dressing is a thick one of iodoform gauze, held in place by adhesive straps tight enough to take the strain off the sutures without puckering the integument. Over

this is placed a good allowance of absorbent cotton, and all retained with a binder. The dressings are not disturbed for four days unless there is pain or temperature. At the end of the fourth day the dressings are carefully removed, and the wound is thoroughly but carefully washed with equal parts of 95 per cent. alcohol and 1:5000 bichlorid solution. Iodoform is again applied and the dressings renewed. The seventh day, before the stitches are removed, I again have the wound washed in the same manner and, after their removal, dressed as before.

In vaginal operations the vaginal wound is dusted with sterilized iodoform and the vagina loosely packed with strip gauze. It is removed in forty-eight hours and after twelve hours vaginal douches of bichlorid of mercury solution followed by plain water are employed once or twice daily.

Bowels.—If flatus has not passed freely, per rectum, in twelve hours by the simple employment of a rectal tube, I employ the "one, one, one" enema, one ounce of sulphate of magnesia, one ounce glycerin and one ounce water. If this does not start the gas in two hours, I order it repeated in double quantity. If this enema is not retained, and flatus has not passed, I order an enema of soap and water one pint, with one-half drachm of turpentine. If they are still obdurate, I begin one-half grain doses of calomel in ten grains of bicarbonate of soda, given every two hours for four doses, or until gas passes, alternated with drachm doses each of gran. citrate magnesia and sulphate magnesia in an ounce of water. Following these remedies in one hour, another "one, one, one" enema is given. It must be an obstinate case indeed that will not yield under the above remedies. If the stomach is irritable and will not tolerate the bicarbonate of soda, the calomel may be given dry on the tongue. Other salines may be substituted for the above if they are objectionable. The bowels should be moved from above on the fifth day with small doses of some effervescent salt, or, if required, a more vigorous laxative.

Diet.—First week, fluids; second week, semi-solids; third week, semi-solid and solid food in small quantities; fourth week, good substantial food, with a few curtailments. As soon as the patient is out of the anesthetic, I begin to give hot water in teaspoonful doses as often as every fifteen minutes. If the stomach tolerates this, the quantity is increased to one-half ounce, and the interval may be increased in length. If the patient is nauseated and the hot water causes vomiting (and it should be hot water), or increases the nausea, it should be withheld. When the patient can take the hot water, and still complains of thirst and begs for cold water the nurse is instructed to let her rinse her mouth with cold water. Ginger ale is a good alternate with water for the first twenty-four hours. After twelve hours, drachm doses of peptonized milk may be sandwiched with the water. If peptonized milk is offensive, plain sterilized milk may be substituted, or sterilized milk and lime water. Milk in some form, I feel to be the most perfect food. It should be increased every hour until $\frac{1}{2}$ ounce doses are given by twenty-four hours, to one ounce by forty-eight hours, and to two ounces by the end of sixty-eight hours. Barley water may be alternated with the milk. Later, the monotony may be relieved with the meat and shell-fish broths, thin gruels, etc. The fourth or fifth day the patient may be allowed to extract the juice of broiled beef by chewing it; the fiber, of

course, should be rejected. Tea may be given the second or third day as a relish. Orange juice, and the juice of other fruits, may be given in small quantities the third or fourth day. Rules can not be laid down in regard to the diet of these patients, general principles only can be hinted at. The patient should be seen each day and her wants studied. If stimulants are required, one of the best is good brandy. Champagne is all right if its sweetness does not make it objectionable. If patients are unable to retain enough by stomach to properly nourish them, enemas of either milk or stimulants should be resorted to.

Getting Up.—Uncomplicated laparotomy cases are gradually bolstered up until they can sit in a bed with a bed rest at about the fifteenth or sixteenth day, sit up in a large chair at the twenty-first day, and leave the hospital from the twenty-eighth to the fortieth day.

SERO-THERAPY IN THE TREATMENT OF TUBERCULOSIS; REPORT OF CASES.

Read before the St. Louis Medical Society, March, 1896.

BY PAUL PAQUIN, M.D.

In January, 1895, I had the honor of submitting to the St. Louis Medical Society, a report of experiments made at the St. Louis City Hospital and at the Poorhouse in the treatment of 22 cases of pulmonary consumption, all of which were in the second and third stages. This report was rather premature. Had it been possible, it would have been delayed much longer in order to establish better the results of the clinical work done. But circumstances, over which I had not sufficient control, made it imperative for me to present the experiments at that early date. I was highly gratified, however, by the encouragement given me by a few of the many excellent men in this Society, and later on by eminent physicians of other societies, where I had the honor to read papers on the same subject. But, as usual, in such instances, by far the largest number of physicians who heard and read the reports were very skeptical, and some of them, without the least investigation, or with cursory examination into the question, passed severe criticisms and even attempted to break the force of clinical argument without justice or logic. To-day, I have the honor to report more than a year's work, covering all the results obtained directly or indirectly, by me by sero-therapy in consumption, in cases treated longer than three months, discharged, abandoned or dead.

To those of my critics who would or could see nothing valuable or scientific in the production of immunized horse blood serum in the treatment of tuberculosis, I beg to refer to the labors of Bernheim in 1890, who attempted the transfusion of goat blood in the treatment of pulmonary tuberculosis; Bertin and Picq, who in the same year tried the same thing in tuberculous rabbits; Coupard and St. Hilaire, who in 1891, injected dog serum in the trachea in pulmonary tuberculosis; Héricourt, who in the same year treated tuberculosis in man with dog blood serum; De Schweinitz on guinea pig immunization in 1894; Babés and many other European scientists who experimented with dog blood serum up to 1895; and, finally Maragliano, who increased the immunized property of the serum of the ass and treated patients successfully, and, announced that he had arrested tuberculosis in rabbits by the use of equine serum immunized, which was done precisely on the lines

followed in the work of your humble servant, began some years back, carried on irregularly afterward under extreme difficulties (with meagre laboratory facilities, precluding proper uninterrupted animal experiment), and practically applied in 1895. In discussing sero-therapy in tuberculosis, I will have occasion to refer to sero-therapy in diphtheria and other diseases.

At the outset, let me say that one must study very thoroughly the true cause of the principles underlying the cure of pulmonary consumption, to reason out the means by which serum or any other treatment may arrest this fatal malady.

One unfortunate result of bacteriology has been the establishment of the almost universal belief that pulmonary consumption is due exclusively to the bacillus of Koch; and that no other cause need exist in the system; that any human being with tubercle-bacilli in the system has for that reason tuberculosis of a serious character, irrespective of physiologic factors indicating and sustaining health and without regard to any pathologic conditions assisting in morbid developments. As a matter of fact, there is probably no human being wholly free from occasional contamination by the tubercle bacilli. Tizzoni has clearly proven by post-mortem examinations of beings killed accidentally, that, a large percentage of the human race who die from other causes have bacillary glands without the development of serious morbid phenomena. The germs of consumption develop and result in serious consequences in the tissues only when the soil is fit for their growth and nature's natural defensive forces are lowered. It is then that the fight for supremacy between the cells of the organism and the parasitic germs invading them, result in victory for the enemy and destruction and death of the body. This should be remembered in therapeutics.

If it has proven anything, sero-therapy has pointed out clearly that it is not as a germ-killer that serum acts in any disease, but as an agent physiologically antagonistic and capable of neutralizing in some other way, the effects of the poisons of the germs on the system. In diphtheria, it is clearly proven, that while serum does arrest the disease at once, germs remain in the throat many weeks afterward. It is evident that the serum in such a malady gives nature simply a chance to defend itself against the germs and their toxic products. So it is with other diseases which are treated with serum. The serum simply neutralizes the effects of the toxins in a preventive manner and thereby gives nature a chance to strengthen its forces and in time destroy the microbes that may invade it. Consequently, it will be obvious to all, that every case of tuberculosis can not yield alike to the serum treatment or any other treatment, and, that we must consider the disease, not only as to the action of the toxins of the bacilli of tuberculosis but also as to the toxins of other germs, and the ravages made in the tissues, such as infiltrations, nodules, softening, cavities and the various other lesions, which interfere more or less with the functions of the nervous system, respiration and circulation, and which once formed, are sufficient to lead to death independently.

THE IMMUNIZATION OF HORSES FOR THE PRODUCTION OF ANTI-TUBERCLE SERUM.

The principles underlying the condition known as immunity are two-fold, viz. those which underlie natural immunity and those which underlie acquired immunity.

Natural immunity may be complete, absolute, or it may be relative. When absolute, it seems to depend more on a certain deficiency in nutritive elements upon which the specific germs must feed and live, than on any other factor. Acquired immunity, which probably is never permanent, seems to depend chiefly, if not wholly, upon special defensive forces created for the occasion by nature in an organism invaded by pathogenous microbes or impregnated with their products. These special forces have been proclaimed as being two or three in number. The first of more doubtful nature to-day than it was some months ago, and not believed in now by most observers, is the product by the cells of the affected organism of an agent with the alleged power to neutralize chemically, the poison generated by the microbes living at the expense of tissue, blood and lymph. If Behring's law was formulated on this hypothesis, as the word antitoxin implies, it is not well founded, although its application is practicable and correct on other more probable grounds of immunity.

The second, and probably the true defensive force, better demonstrated than the former, is the increase in number and perhaps in the quality of the phagocytes, whose chief duty it is to destroy foreign microscopic organisms and their products, and, foreign particles and assist in the repair of organic breaches.

The third, theoretical and vague, is the increase of general vitality of the organism and the assimilating and disassimilating power of the cells of the body, a very important adjunct or assisting force, which in therapeutics as in experiments, should receive grave consideration. Such is the conclusion, I opine, one will usually reach after careful study of the reports of the foremost experimentalists and clinicians of the age, to this date.

The equine species possess a relative immunity to the germs of tuberculosis. While it is occasionally possible to produce experimentally local and rarely, it is said, a more or less extensive general infection in the horse and the ass, some of these animals react quickly to hypodermic injections of the tubercle poison itself, that is to say, the product of or substance forming the structure of the tubercle bacilli. Hence, there exists serious difficulties in the way of experimentally endeavoring to immunize equine blood for therapeutic purposes. Some of these animals are more deficient than others in the nutritive qualities necessary for the proper nourishment of the bacilli, and, consequently react poorly; others react much more to the toxins of the destructive germs; the result is that the so-called antitoxin produced varies according to the susceptibility of the animal treated with the toxins. Here arises one of the serious problems besetting all investigators in their efforts to establish a positive method of estimating the antitoxic, or more properly speaking, the therapeutic value of anti-tubercle serum. A horse failing to react to the toxins or to the desiccated bacilli (tox-albumins and other matters of or in the substance of germ structure) after two or three months of injections, may be considered immunized properly if one does not consider the pre-existing natural immunity of the animal, but its serum may be found comparatively deficient in therapeutic potency, for instance, in the power to increase phagocytosis, for, as stated before, it is the properly acquired immunity (long experience with which will force thorough appreciation) that produces the effect-

ive therapeutic agent. It is the same acquired potency which acts in diphtheria, tetanus, etc.

In the past, I expressed theoretically, the idea that possibly the natural serum of a horse, apparently antagonistic to the bacilli of tuberculosis, contained a natural antitoxin which was merely increased by immunizing injections, but I have almost arrived at an opposite conclusion on this point. The light shed more and more glaringly every day by the study and application of the Behring law and the studies of other biologic questions, in experiments and clinical tests, point strongly to the theory that therapeutic serum, whatever its chemistry or biology, is a physiologic element manufactured purposely by nature, if I may so speak, as a defensive power as above mentioned. This explains, in part at least, the rapid success clinically, without immediate bactericidal effects of the serum in diphtheria, particularly in the earliest part of the disease, and also of the comparatively quick success of the tubercle antitoxin in acute cases of pure tuberculosis, or tuberculous pneumonia, before extensive transformation or destruction of tissue, as will be seen further.

The immunized serum of the horse in tuberculosis is essentially due to the careful, continuous process of saturation of the system with tubercle toxins (and even the germs sometimes) without allowing the advent of any lesion or any serious constitutional disturbance or disease, and with the production of the least amount of poisonous waste matter in the blood. Other therapeutic serums are or should be produced on the same grounds.

Herein arises a very important question in the production of all kinds of serums which even advanced experimentalists would do very well to study more closely, and which those ignorant of the nature, physiology and pathology of the lower animals, meagerly equipped or wholly untrained for laboratory investigation, and who assume to try the production of antitoxin for use in the human system, must always find a dangerous stumbling block. It is a question, indeed, which forces on the mind of the profession the great risk that its members run of causing poisoning or of using ineffective, useless serums, and thus fail to save life when they depend on inexperienced sources for such products, for therapeutic purposes. There exists, as will be seen, really grave dangers in serum from incompetent producers. The health of the animal to be immunized must be positively ascertained, not only with reference to such fatal maladies as glanders, which only experts can safely diagnose in the early stages, but with reference to any indisposition or morbid conditions often very difficult to recognize, during which the economy will produce in the blood agents more or less deleterious, and which may perhaps be fatally poisonous when introduced into man's circulation. In my experience, the serum of an animal which has not even been touched except to make the diagnosis of his condition, sometimes produce in man fever, local erythema, urticaria, cellulitis and other untoward symptoms of a more grave character. These symptoms in the beginning of my clinical tests and last summer were more common because of our ignorance then on many problems bearing on the nature of serum, most of which are clearing up before persistent inquiry, instituted more scrupulously in the last few months. It must be that the blood of animals, whether immunized or not, sometimes contains sub-

stances of an irritant, poisonous character, possibly of the order of leucotoxins or some special cellular toxic products, which are not rejected with sufficient rapidity, perhaps, by the usual channels of excretion. Hence the necessity of watching and applying proper hygienic measures and sometimes special therapy to animals under process of immunization, in which analytical and physical indications point to improper disassimilation. Naturally, one must have and should apply a good knowledge of the physiology and pathology of lower animals, to be able to judge of these conditions. But unfortunately, for the public and and for the profession, ignorance of veterinary science does not seem to deter those who are bent on revenue only, from the attempted production of organic, therapeutic agents, requiring for their preparation special training or fitness which they do not possess.

Realizing this important question in full force, we are doing more scrupulous work than ever in this line. In fact, we did not deem it so important in the beginning of our clinical trials because we relied too much on foreign experimentalists in sero-therapy, who proclaimed the *innocuousness* of serum; relied, too, on our first results which were so remarkably free from accidents as to have been misleading. We are now, I believe, deciphering some of the causes of certain objectionable symptoms that sometimes follow sero-therapy in *any* disease. The fact that more than fifty thousand injections of the serum I produce for the treatment of tuberculosis have been made in human beings with not a serious accident and far less a fatal result, which can not be said of *all antitoxins*, shows that it is not likely to do much harm, and the reports in given cases show its value in certain conditions. We will always find in sero-therapy, as in all other forms of therapy, susceptible organisms and idiosyncrasies which militate against the use of serum hypodermically, but they are not very common—there remains for these, rectal injections, the value of which I am not yet, however, ready to assure.

To recapitulate briefly then, the horse or other animal to be immunized should be healthy to begin with and watched daily and treated properly. The accomplishment of this is a matter depending on proper equipment and qualifications enabling the proper study and analysis and care of the animals to a degree of safety for the profession and the patients.

The health determined, the degree of natural immunity should be established. The natural toxic powers of the blood should be determined and the daily or less frequent immunizing toxin dose should be regulated, the quantity varying usually between 1 c.c. and 10 c.c. followed or not by bacillar tox-albumins, according to the indications, bearing in mind the reaction produced and the general effects on the economy, as evinced by thermal readings, the physical and chemie nature of the urinary secretion (when analysis is indicated), and by various symptoms which experience will reveal to the trained observer and experimentalist, all of which scrutiny we apply with strict diligence in our work.

We have purposely used, in the past, all of the tuberculins in the market and have reaped different results. Their strength varies according to their dilution and their source, and their use is not always wholly and uniformly reliable. To one conversant with the variability or strength in toxins of bacterial origin, it will be evident that to control a standard strength of antitoxin as exact as possible, one must

generate his own immunizing products. The necessity of this is enhanced by the fact that the bacilli of tuberculosis sometimes lose their virulence after certain generations and under certain conditions, and their alleged toxins are, consequently, absolutely useless. Therefore, after varied experiments and results we have abandoned the use of even the best commercial tuberculin except for experimental purposes and comparative studies, and we use only the products of home cultures of tested virulence.

It has been suggested by a few to use the ass or mule as superior to the horse for immunizing purposes. This is a mere fancy born on false therapeutic grounds and ignorance of the nature of these animals. Both the latter animals are by far more susceptible to certain microbic diseases than the horse. To glanders and certain other affections they succumb much more quickly, and to organic disease of the bones, skin and feet, they are frequent victims as compared to the horse. These maladies can not but make their serum more liable to dangerous results in man. On the other hand, there is no evidence to prove the superiority of the serum of these animals in any disease above that of the horse, which is generally much more healthy, and I believe the serum of the ass and mule less valuable because of their usually more pronounced natural immunity, and it is, as heretofore stated, the *acquired immunity* which produces antitoxin. In fact, one may try for months and fail to properly immunize the ass or mule. Similar failures sometimes occur in trying the horse.

The antitoxic property of the serum may be determined by its power to neutralize physiologically a given quantity of toxins of a given strength injected afterward in a rabbit or guinea pig, preferably the latter. A guinea pig weighing 500 grams dies within a certain number of hours when injected with a certain quantity of tubercle toxins of a certain strength from a culture of a certain age and kind, the exact details of which would require more time to explain and are not essential in a paper of this kind. Anti-tubercle serum that will neutralize this minimum fatal dose so that when injected it will not kill a guinea pig of 500 grams may be considered the unit of antitoxic value. But I can lay no rule on this question as yet. Our results are not definite enough or sufficiently uniform, nor have those of Behring, Maragliano and other investigators given as yet more satisfactory data. Owing to the variety of natural resisting power and natural immunity in the equine species, it will be at once apparent that the value of serum must occasionally vary also, and that much work is yet to be done to arrive at a uniform strength. However, with careful work one produces serum of generally uniform power. The European laboratories have accomplished nothing more than this as yet.

With respect to the use of serum in therapeutics, it is necessary first to test it on animals, in order to establish whether or not it contains the residue of the tuberculins used in the horse in producing immunity, or any other toxins. There is no chemie reaction known for this purpose. However, I may state here that these experiments, often repeated, have resulted in establishing the fact that ten days after the last dose of immunization no tuberculin remains in the blood of the animal, and, consequently, the serum separated therefrom is free from microbic toxins of this character. When, after some months of injection, the horse has ceased to react to the tuberculins for

some ten days of increased doses of toxins, it is considered immunized and capable of assisting nature in arresting tuberculosis. It is not as yet practicable to test each specimen of serum in tuberculous animals to establish its therapeutic value on Behring's mathematical law concerning antitoxin. For one reason it takes too long to get reliable results from tests on already affected animals. Behring has not himself as yet applied this law satisfactorily to tubercle antitoxin. We must depend on the knowledge that a certain number of days after the last reaction, and after the last immunizing dose, leave the serum with an average strength and a certain freedom from toxicity, which can be enhanced by laboratory processes and on the serum's neutralizing power in its action on tuberculin in small animals. It is to be hoped that the labors pursued in various parts of the world will, in the near future, establish a more positive method of determining the antitoxic value of anti-tubercle serum. So far, notwithstanding the unreasonable demands of critics, we must be content with the results obtained with immunized serum in clinics, as well as in animal tuberculosis. Various series of small animals have been under treatment and at the time of this writing some are still under treatment to decipher various points bearing on this question, but as yet we are not in a position to make any definite reports. It is not too much to say, however, at this stage of our work, that anti-tubercle serum is based on truly scientific grounds and has just as much right to exist and be considered by the profession as any other antitoxin, taking into consideration, however, the lesions existing in tuberculosis, which are quite different from those existing in other diseases treated with serum, with the exception of leprosy and syphilis. The serum for the latter two diseases is not estimated nearly as exactly as the anti-tubercle serum, and yet it is used in man.

The occasional charges that anti-tubercle serum is not well founded is childish. When human beings recover from consumption by the use of a remedy that does not harm, it is sufficient evidence of its scientific value to warrant its use, and it is manifestly unfair to try and dissuade one on any technical ground from considering it, particularly when nothing else can be offered to the unfortunate consumptives that has recoveries to its credit and improvements in even desperate conditions.

THE PROPERTIES OF SERUM.

Bearing on the whole subject of sero-therapy in any disease, we may profitably consider briefly the various properties, physiologic and therapeutic, ascribed to serum. The former consists of: The coagulating property, the toxic property, and the globulecide property.

The Coagulative Property. It has been established that the blood of one animal introduced into the circulation of another may cause an intra-vascular fibrinous clot, as has been proven by Héricourt and Hayem.

The Toxic Property. The serum in its natural state is often toxic and produces veritable symptoms of intoxication of different kinds, and fever, as I have often observed and mentioned before. Fortunately, most of these undesirable and dangerous elements may be prevented by proper treatment of the animals and the serum itself. One may add to this, the poisonous condition of serum after muscular exercise which is sometimes great.

The Globulecide Property (which produces oligocythemia and oligochromemia). The globulecide property of serum, of any kind, is a question of great importance in medical practice and little considered by the practitioner. It is a property which in large and carelessly administered doses may cause the destruction of thousands of red cells on being introduced in the system, and one which only technical experience can eliminate from the serum. This power may, in a few hours, according to the dose administered, reduce the red cells in the blood to the number of many thousands per cubic millimeter and prostrate patients fatally; but if the serum is given in very small doses at first and increased slowly, the diminution of red cells is imperceptible, and the increase is occasionally remarkable in a few weeks.

The therapeutic properties are as follows: 1, the bactericidal property; 2, the immunizing property; 3, the attenuating property; 4, the antitoxic property; 5, the stimulating property to organic defense.

The first named, the bactericidal property, which exists in certain serums is inconstant and can not be considered as possessing immunizing power, for it is destroyed, as explained by Dechaine, at 60 C., while the immunizing power remains at 70 C. Nor is the bactericidal property of a given serum a specific as a curative agent in a given germ disease, or as a force arresting the progress of a malady, because a certain degree of heat may destroy this bactericidal property and yet leave unaffected the so-called curative antitoxic property.

As to the third, the attenuating power, it was based on the misinterpretation of various results in experiments. It is now totally abandoned by the advanced laboratory technicians.

The fourth is the antitoxic (curative) power of which I have spoken above, the basis and understanding of which seem doubtful. It is very interesting now because the use of the word antitoxin so universally, has given origin to the belief that there can be produced in serum a chemie agent *capable* of destroying a bacterial poison.

Many have directed their efforts for years, in all parts of the globe, to establish the true chemie nature of the toxins and antitoxins, and all have failed. It is most difficult if not as yet impossible to establish facts relative to their chemie reaction when in presence of each other. But it has been demonstrated that while one may mix an antitoxin with a toxin in a test tube and inject thus with impunity a quantity of toxins that would be fatal if injected alone, a larger dose of the mixture always ends fatally. If a certain quantity of antitoxin could actually neutralize a certain quantity of toxins, a large dose of the mixture in the right proportions would not, by toxic effects, cause death. As has been pointed out, the venom of serpents being analogous to toxins and which can be rendered inoffensive in certain doses, otherwise fatal, by the mixture of antivenom serum in the same manner as diphtheria antitoxins, regains all its virulent power in the mixture when heated to 70 C., a temperature which destroys the serum but not the venom. This proves that there does not occur a chemie neutralization of the serpent toxin by the antitoxin. A serpent venom and a bacteria toxin are virtually identical. To what virtue then may be justly attributed the value of the so-called antitoxin in therapeutics? As already mentioned it is to the acquired force properly ascribed to serum known as the stimulating power

of the defensive cells of the organism. Without discussing this in detail, it may now safely be advanced on the results obtained by Metschnikoff, Gabritschewsky, Issaëff, Calmette, that immunized blood serum stimulates phagocytosis to greater activity, which results finally in destroying the microbes. The cells probably destroy the toxins in their interior by the action of cellular diastase.

THE EFFECTS OF SERUM IN TUBERCULOSIS.

Since the beginning of our clinic tests of serum in tuberculosis, we have treated many different kinds of tuberculous processes. Tuberculous affections of the throat, lungs, joints, bones and bowels have been treated with this agent exclusively, pulmonary consumption of all varieties constituting the greatest number of the cases. We will consider, briefly, pulmonary tuberculosis.

This disease is the most prevalent form of tuberculosis, and, remarkable as it may appear, it seems to be the most frequently unrecognized and the most commonly misjudged condition until it is *too late* for human intervention to even arrest the progress of the disease. This is not so strange, however, when we consider the past, and even the present, erroneous and careless clinical teachings in many quarters of the land. The diagnosis of this malady and certain other diseases of the chest, which so easily confuse the physician's ear and mind, do not always receive sufficient attention. To begin with, the pathologic conditions of the lungs due to, or complicated by, the bacilli of tuberculosis alone or aided by other microbes are insufficiently weighed by the majority of physicians and too often grossly neglected by medical teachers in certain schools, too absorbed in their clientele to have time for exact clinical investigation and teaching. In the next place, the careless tendency to classify (either to please patients or to shift the grave and unpleasant duties), apparently trifling but really serious symptoms under the head of bronchitis, or the misleading name of catarrh, without proper investigation or observation, is too extensive. In the third place, there is too little exactness in the meager investigations usually made, bearing on the history of the patients, and as a result the beginning of the lung disease is often dated by the physician months or years after its true incipency. The pathologic condition, which after examination of patients is termed incipient, is frequently in fact passed beyond the first or even the second stages. Indeed, I have seen tubercular unfortunates almost at death's door declared in the early stage of consumption by men of reputation. Finally, the exact nature of the lesions existing and the complications are not always given sufficient attention. As a result of this prevalent carelessness in diagnosis, the forms of treatment are faulty and the results thereof disappointing and discouraging. Patients are held under treatment for bronchitis or trivial affections for months, years, and sent away at last to some other climate to die of consumption. Or they are dosed with cough syrups, cod-liver oil and various nostrums, irrespective of conditions, until irremedial lesions are formed.

On the other hand, consumptives often seek professional advice only after irremedial lesions have been established. In our clinical experience *not a single case of incipient tuberculosis* brought to my notice have I had the opportunity of treating with the serum. More than 75 per cent. of all those who have honored me with their confidence more or

less completely, were in advanced disintegration locally, advanced prostration and emaciation generally, had tuberculosis dyspepsia of the gravest character, and many of them in fact were practically moribund. Desperately ill, often with desperate cavities, lung contractions, and lung tissue transformations, wrecked nervous systems, the unfortunates grasped the proverbial straw of the drowning man. It is chiefly from such hopeless cases, some of which are referred to me by physicians, as favorable and typical, that the results of sero-therapy have been established or criticized in my own clinical work, as well as in that of most other physicians, and many are to-day attacking sero-therapy from this basis. Not one case of chronic tuberculosis of duration shorter than one year from the real incipency has been treated by sero-therapy to my knowledge, and yet, to my amazement, I find myself confronted by uncomplimentary remarks on sero-therapy in tuberculosis by medical men, considered competent, solely because of the failure of serum to cure moribunds, even after improving sometimes their weight and strength temporarily, which no other treatment has accomplished. Evidently there is a disposition to make it appear that a treatment of consumption must either accomplish miracles or must be considered as valueless.

This unwarranted position assumed by a few prejudiced persons, is evidenced by the efforts made in certain quarters, to depreciate sero-therapy in tuberculosis by proclamations of the number of deaths during this treatment, knowing well, or ignoring from lack of experience and medical knowledge, that no remedy can ever cure the class of tuberculous conditions in which the equilibrium of nature is utterly lost by virtue of irreparable lesions or constitutional disturbances. These efforts are unfair and small in the minds of broad-minded people. The effects of serum are not mystic or magic. They must be considered on the broad basis of physiology and pathology. It is a great injustice to patients and investigators alike, to reject any treatment of so hopeless a disease as consumption, simply because desperate cases can not be resuscitated.

That serum in any disease is entirely harmless is a fallacy, and that it is very dangerous is also a mistake, and that it has its advantages and disadvantages must be recognized by every physician who conscientiously practices medicine.

As I have said, it is well established that serum is globulecide. It destroys the red blood corpuscles to some degree if suddenly given in large doses, particularly if injected into the circulation. Hence the damage that may be produced on account of this effect, and the occasional death by collapse when the disease (diptheria, say) has subsided. In tuberculosis if the serum is injected in animals or man in very small doses to begin with, say 0.5 to 1 c.c., once a day, for a few days, and then increasing very gradually to 5 c.c., and even to 10 c.c. per day, according to the results, the ultimate effect, with few exceptions, is usually not only to increase the quantity of the red cells but also to increase the strength and avoirdupois of the individual. In exceptional cases a feeling of depression occurs from the first days of injection and gradually increases. These, usually observed among the anemic, are unfavorable cases for sero-therapy by hypodermic injections and should not be kept under it, unless applied per rectum.

On the other hand, the white blood corpuscles

increase enormously, hence the *increased power of phagocytosis which is the curative force in microbial affections*, but which, in tuberculosis can not be independent of the sustenance of the red cells.

The untoward local effects of serum injections for any disease are now fairly known. Erythema, exanthema, cellulitis, myelitis, articular pains and swellings, sero-infiltration of the connective tissue about the eyes, etc., have been noted by most observers on sero-therapy and are mentioned above. Beside this must be mentioned the occasional appearance of albumin in the urine. In tuberculosis I have observed before treatment, albuminuria more or less pronounced, without casts in about 11 per cent. of the cases examined in the last twelve months. Under sero-therapy the quantity of albumin did not increase except in two cases. On the other hand, I noted transitory albuminuria appear in three cases out of thirty-six, where it did not previously exist, but with no ulterior bad results.

One rare but alarming symptom that has occurred to me and others in sero-therapy is a sudden flushing of the face, apparently a serious disturbance of the vaso-motor system. It is seemingly due to some elements of or in the serum albumin as various tests to modify or extract this substance leaves the serum free from such a property. It has never proved serious in the fifty-odd thousand injections of anti-tubercle serum in human beings.

VARYING NATURE OF PHTHISIS, WITH RESPECT TO TREATMENT.

A fact singularly overlooked in medicine is the "unity without conformity" which exists in pulmonary consumption. While all forms, at a certain stage, present symptoms in common, which are sufficient for a proper diagnosis, the lesions are often very different and the prognosis should be made accordingly. A dozen pathologic conditions may be found in pulmonary consumption: White granulations; yellow granulations; gray and dark granulations; gray infiltration (or catarrhal pneumonia); red hepatization; fibrinous nodules (blood residues); fibrosis; cretaceous masses; cavities; vesicular emphysema; tubercular pleurisy; complications of laryngeal tuberculosis; mixed microbial infections and perhaps others. These different conditions have varying importance, as well as have the degree of their existence in areas and intensity and the stage of the disease. With respect to constitutional changes, it is not logical, therefore, to expect uniform results in all forms of tuberculosis at any stage—each case must be treated on its merits. It is idle to expect sero-therapy or any other kind of specific therapy to arrest progress as easily, if at all, in a chronic case with contracted tuberculous lungs as in a case of acute tuberculosis with infiltrations. In each case there is a loss of vital capacity by virtue of lung alteration precluding the air from penetrating more or less extensive areas of obliterated lung tissue and oxygenizing the blood. In each case there may be high fever due to mixed or unmixed toxins manufactured in the morbid areas and absorbed by the circulatory system, but the patient with a contracted lung can scarcely ever hope to recover his health and can surely never have the transformed tissue restored to proper lung tissue: while the patient with lungs filled with the products of acute tuberculosis, as fatal as this disease has been heretofore, may sometimes be restored if treated before the breaking down of tissue.

In therapeutics, it is essential then to pay proper attention to existing pathologic conditions of the lungs before attempting to make a prognosis or to prescribe. As to mixed infections, they are so common in all forms of pulmonary tuberculosis, the question must always be present in the mind of the clinician.

I had hopes of touching on some of the numerous forms of tuberculosis in other organs than the respiratory apparatus, but my paper is already too long. I wish to state simply that in all of these, there may and there does usually exist at a certain stage, microbial complications of serious nature which must be considered and treated by special processes, which no specific treatment of pure tuberculosis is supposed to reach properly.

With these observations in mind, let us consider the results in one hundred cases treated by myself and others by the use of serum. In these you will see quite different results, according to the classes to which they belong, respectively. Some of the failures, as unavoidable as they must have been, in the hand of human beings not endowed with omnipotence, have been selected by certain physicians as evidences of the inefficiency of sero-therapy in tuberculosis. I condone nothing, I give you our success and failures.

REPORT OF CASES.

In the following report of cases treated in the last fifteen months exclusively by the use of serum, I mention partial improvements and failures as well as recoveries. But space and time fail me to give a detailed explanation of every case in the paper. In reading this report, one should take into consideration the stage of the disease and the lesions. Results must vary according to the nature of the disease and whether it was accompanied by high fever, extensive infiltration, etc., or whether the third stage or even what may be termed the fourth stage, had been reached with such conditions as cavities or contractions of the lungs or other pathologic phenomena demonstrating beyond a doubt that the disease had been existing a long time and altered the tissues of the organs affected beyond repair or had produced irremedial constitutional changes.

ACUTE TUBERCULOSIS.

Miss V. Z., East St. Louis, Ill., physician in charge Dr. J. L. Wiggins, East St. Louis, Ill. Consultants, Dr. J. R. Lemen, St. Louis, Mo., and myself. Miss V. had been ill several months and the last weeks previous to consultation she had been prostrated in bed with a complete history of acute pulmonary tuberculosis. The range of temperature was between 103 and 104 continually for many weeks prior to treatment. The one microscopic analysis made by us demonstrated the bacilli of tuberculosis. Each physician consulted diagnosed acute tuberculosis. Every ordinary method of treatment was pursued and the fever remained at 104 and even reached 105, with symptoms of delirium, etc. On auscultation and percussion, it was found that the lungs were both largely involved and infiltration was nearly complete in one. Dispnea was excessively pronounced, weakness extreme. Prognosis fatal. Everything having failed, it was decided, after consultation between Drs. Wiggins and Lemen, to try the serum which I produce. The treatment began, I think, on June 9, 1895. The dose ranged between 20 and 40 ms. daily, and continued some six weeks more or less regularly. The result was that the temperature decreased gradually and steadily after seven days' treatment to normal temperature, which was reached on June 22, or thirteen days after the first injection. Injections were continued until the end of July. The patient gradually picked up, gained strength and flesh and is again at work. Her occupation previous to her illness was that of an actress. Since then she has been engaged in various pursuits in a clerical way and is said to be healthier than before. She weighs 132

pounds, whereas she was emaciated to at least 80 pounds before treatment. The germs of tuberculosis have disappeared entirely and every symptom of lung trouble is absent.

R. C. G., St. Louis, Mo., aged 65 (?); Dr. Simpson was physician in charge; three consultants. Diagnosis of all was acute tuberculosis or tuberculous pneumonia, which was evidenced by acute pneumonia with almost complete infiltration of the left lung and extensive infiltration of the right. Prognosis, fatal termination. The patient at the beginning of treatment weighed between 150 and 160. Serum was continued about three months more or less regularly every day, after which it was administered irregularly for about two months. This patient suffered, before the beginning of treatment, with imperfect kidney secretion, and had to be injected with care accordingly. The microscopic analysis of the sputum was made first. I was assured, by Dr. Ravold, bacteriologist of the city board of health and of the St. Louis Medical College, and later by Dr. George W. Cole, of the Woman's Medical College, my brother, a chemist, and myself at the St. Louis Sanitarium before and at the beginning and during the course of the treatment and in every instance, until after some weeks of treatment, the bacilli of tuberculosis were found in quantities more or less profuse. The patient received injections of serum almost daily in doses varying from 10 to 40 ms. for about three months, and irregularly thereafter for a month or two more. At the end of three months no bacilli were to be found in the sputum, and repeated analyses made by the same analysts failed to reveal them. I am sure they are not to be found now. The patient, who was at the beginning of treatment in bed, picked up in flesh rapidly and at the last date upon which I saw him, in the month of December, weighed over 200 pounds. He is now traveling, visiting his children, and reports splendid health. There remains, however, in this case a pleuritic adhesion on the left side which is probably a permanent cicatrix lesion, and possibly of a fibrous transformation in the lower lobe of the same lung. This patient exhibited before and during treatment, and does yet exhibit to a slight degree, symptoms of asthma. He has returned to work and is able to attend to his duties as real estate broker and feels perfectly safe and happy.

Mrs. F., San Antonio, Texas, practically the same kind of a case as Miss V. Z., the first patient reported above, and the success was the same. She is well to-day.

These are the only three true acute cases of pure tuberculosis that have been treated with the serum to my knowledge, all three responding alike and are well to-day.

CHRONIC TUBERCULOSIS.

It is obvious that it is exceedingly difficult to establish an arbitrary line between the first and second stages and the second and third stages of pulmonary tuberculosis. Whoever may hear me or read this might for convenience sake include in the first stage all those whose conditions have not broken down the tissues or produced a marked constitutional depression or infection. This does not include incipient tuberculosis, which is earlier still and seldom brought to the physician, and far less the pre-tubercular conditions which the doctors seldom see. The second stage is exceedingly grave and other stages may be classed as usually hopeless and beyond remedy.

Mrs. H. R., St. Louis, Mo., consulted me in February, 1895. Her history was that she had had slight hemorrhages, had been ill for two years, had coughed and was coughing very severely and had expectorated previously a muco-purulent material, occasionally tinged with blood. The sputum at the time of examination was full of bacilli of tuberculosis and largely loaded with different forms of pusgerms. Her attending physicians kindly acquiesced in her desire to try the serum. Mrs. R. at the beginning of treatment evidenced infiltration in the apex of the right lung between the third and fifth rib, covering an area of about four inches laterally and penetrating the lung, more or less through and through from anterior to posterior. There were mucous râles about the middle of this area, very pronounced, and interrupted breathing on both sides. The circulation was exceedingly rapid and fever ranged usually from 98 to 101.25, rarely it went above that. The patient had night sweats, had lost much flesh, being reduced to the weight of ninety pounds. During the first two or three months of her treatment there was illness in her mother's

family, in which a brother died of tuberculosis, and illness in her own family, one of her own children being confined to its bed several weeks, all of which conditions precluded Mrs. R. from getting sufficient rest and peace and nourishment, and all of which forced her to an excessive amount of worry and annoyance and labor. Notwithstanding this, however, on the regular dose of 30 ms. a day for three or four months and then irregular treatment every second, third or fourth day, with a loss of three weeks at one time, covering a period of six months all told, Mrs. R. improved in flesh to the weight of 132 pounds, and became strong accordingly, developed a splendid appetite, and for the last three months her sputum, which is exceedingly scarce now and comes only when she is affected by cold, exhibits no bacilli of tuberculosis. She suffered a miscarriage and six weeks illness recently, but her lungs remain apparently sound. The physical lung symptoms which existed at the beginning have disappeared, and so far as I can judge the patient has recovered.

Mr. E. D., St. Louis, Mo., age 36, occupation shipping clerk; history of glandular tuberculosis dating back eleven years. Had pneumonia four years previous to his examination in my office, May 16, 1895. Had been declining six months, had night sweats and fever, pain in left lung, back and front, pulse 108 at time of examination: abnormal temperature ranged from 99.3.5 to 101: coughed chiefly in the morning: expectorated a yellowish matter: slept fairly on the right side but could not sleep on the left side because of pain in the chest: was too weak to attend to his duties. There was marked dullness in the left lower lobe and crepitus of the left apex over a lateral area of four inches, extending about three inches downward, interrupted breathing, both sides. All these symptoms disappeared almost entirely in four months of treatment consisting of 15 to 30 ms. of serum a day. Examination of the sputum made since revealed no bacilli. Mr. D. is at work from twelve to fifteen hours a day, Sunday included, and feels strong and in good health and so far as can be judged by the absence of symptoms enumerated, he has recovered. He did not bear injections of serum well, being often upset, but he persisted and recovered.

Mr. F. S., St. Louis, Mo., came to me to be examined in February, 1895. He weighed about 145 pounds at the time. Had had very profuse hemorrhages at Hot Springs and was sent home considered hopeless; had lost about fifty-five pounds from his regular weight, which was above normal for his size: was coughing a great deal night and day: expectorated a thick, yellowish matter loaded with bacilli of tuberculosis and other microbes, and was rapidly declining and weakening. He was unable to perform any of his duties as a groceryman. His physical condition evidenced tuberculous affection of both lungs, particularly in the right, over the whole of which interrupted breathing was very plainly perceptible with loud rumbling. The lower half of the lung exhibited moist râles. The left was slightly involved in the same manner. These symptoms after seven months of more or less regular treatment, which consisted of 20 ms. in the beginning and was increased to 30 and 40 and once in a while to 60 ms., almost entirely disappeared with the exception of a slight interrupted breathing. Flesh was regained to the amount of 170 pounds and strength seems to be as good as ever. Mr. S. is now and has been for four months attending to his usual duties, working hard every day and complains of nothing. He expresses the opinion that he is free from disease. In this case there was a slight cavity formed and expectoration has not entirely disappeared, and once in a while bacilli of tuberculosis are found, and yet his condition of health seems to be generally improving, and in my judgment, his condition has been arrested by the serum and is held at bay by it and the assistance of natural forces. I will have occasion to refer to this case again, inasmuch as health seems to be restored and the bacilli of tuberculosis are still present, which seems to sustain the idea that anti-toxins do not kill germs but chiefly neutralize the effects of the results they produce by increasing natural forces.

Mr. F. B. M., St. Louis, Mo., age 20; occupation railroad clerk, working at night: had had bronchitis at the age of 14: had suffered from night emissions from early puberty. Previous health feeble: cough scarce; pain in the lower lobe of the left lung; temperature 99 to 100 F. Physical examination evidenced dullness of the lower left lobe beginning at a line drawn below the nipple and extending down toward the base. Microscopic examination revealed the bacilli of tuberculosis not in large numbers. Mr. M. was treated from May 27, 1895, to the middle of September, practically four months. All physical symptoms and evidences of tuberculosis have disappeared. He is now at work as before and apparently in good health. No bacilli have been found in the examinations made since.

Mr. G. N. F., St. Louis, Mo., was examined April 29, 1895;

age, 45; occupation, bookbinder. Had had a dry hacking cough two years: had had pneumonia at age of 18: congestion of lungs two years previous to his examination. Feb. 7, 1895, he had hemorrhages which dragged him to bed, and at the beginning of treatment he weighed 130 pounds: expectoration thick and yellowish: bacilli of tuberculosis numerous. Temperature 99.3.5 to 101 and 102: infiltration of the left apex below second rib about three inches downward and four inches across, evidenced both anteriorly and posteriorly: dullness over same region: crepitus over some of the area and râles and crackling on deep inspiration extending below left breast anteriorly. Mr. F. was treated with tubercle antitoxin from the beginning of May until the beginning of October, almost every day at the dose of 30 to 40 ms. Since then several examinations have been made and no germs of consumption are to be found. On the other hand, physical symptoms had at the time of my last examination practically all disappeared and there is little, if any, expectoration whatever. The patient has resumed his work and considers himself cured and I consider the disease arrested. He weighs to-day 140 pounds, which is more than his normal weight before his illness. He has been attending to his usual duties several months.

Miss S., Nashville, Tenn., was admitted to the Sanitarium in May, 1895, and remained there under treatment some three months. She came with a written diagnosis of pulmonary tuberculosis from her family physician, which was substantiated by microscopic and physical examination. The bacilli of tuberculosis were found in large numbers and the patient was rapidly losing ground both in weight and strength, coughing considerably, particularly at night, and expectorated occasionally a yellowish matter and sometimes a greenish matter. Night sweats had existed and fever ranged from 99 to 102 F. She was treated with serum at doses ranging from 20 to 30 ms. After three months she had gained ten pounds. She then migrated to Las Vegas, N. M., where she continued the treatment, and her improvement continued. She, at first, lost flesh there, but again increased and every vestige of symptoms seems to have disappeared, if I may judge from the reports sent me. The bacilli and all physical signs of lung disease have disappeared. Bacilli have not been present for over two months. The disease in Miss S. is considered arrested, I judge, by her attending physician and she considers herself cured.

Miss G. A., St. Louis, Mo., age 19 years; occupation, music and vocal student: had had influenza in Memphis six years before, dry cough for a year: weighed 123 pounds; hemorrhage four years previous to examination, Sept. 26, 1895; larynx infiltrated: temperature from 99.5 to 101: coughing considerable and expectoration in the morning of a yellowish matter. Bacilli of tuberculosis quite numerous. Heart disease evidenced by regurgitation. Treatment began the last day of September, 1895. Injected very small doses on account of her heart condition, that is, 10 to 25 ms. daily. At this time Miss A. weighs 135 pounds. The bacilli of tuberculosis have disappeared. For two months there was but one or two in the field of bi-monthly examinations. Cough has almost entirely disappeared. Strength has been regained and appetite is splendid. This patient is considered as having almost if not practically recovered, as there exists no longer the physical signs of infiltration, and the first signs of breaking down which existed at the beginning of the treatment are absent.

Mrs. N., Chicago, Ill., age 33, has a family of six or seven children; began treatment at the Sanitarium May 19, 1895, and continued at the institution under the treatment for a period of two months, at which time she went away and later reported as being free from disease, her expectoration having ceased and her cough being *nil*. This patient had been ill two years, had had pneumonia, following an operation for hemorrhoids. Having had no opportunity of making an examination since this report I am unable to verify it with personal data.

Mr. V., employed at our institution, a patient under the charge of Dr. L., had laryngeal tuberculosis and pulmonary tuberculosis. His condition had been declared, in writing, hopeless by a number of specialists in St. Louis, including all the leading ones. He has been treated under the special care of Dr. L. and occasionally myself for a period of about ten months, having received from 30 to 120 ms. a day. At the beginning of his treatment there existed infiltrations of the larynx and other lesions: he had lost his voice, weight and strength. He was in a hospital, unable to perform any work. He is now assisting in the care of some twenty-two horses in company with another man, working many hours every day in water and dust, and his appetite has improved and his strength keeps good. He is sensitive and susceptible to colds, but under the treatment of serum he had gained a condition which permits him to do all the manual labor that can be asked of almost any man. Rarely

have we found bacilli in the scant expectoration during the last four months. I am unable to say more of this case because of the fact that he is not a patient of mine and I do not see him regularly. I report him because he is under my supervision and the injections are done by my assistants or myself. The case is surely under control at present. Some physicians pronounce him practically cured.

Mrs. A. C., age 26, married, has had three children and two miscarriages, one recently. At the age of 12 she received a kick in the chest, at which point pain appeared frequently and whenever the patient contracted cold. At her examination infiltration was discovered over an area of about three inches in diameter on the right side below the breast, also a dullness in the left lung between the second and third ribs, extending about two inches downward and about two inches laterally. She had had the various symptoms of tuberculosis for some years and dated the accidental incipency of it fourteen years previous when she had received the kick at a spot where the consolidation occurred. She had had several hemorrhages. The active development of the disease dated three years previous to my examination, which occurred June 7, 1895. At that time she weighed 115 pounds, to-day she weighs 135 pounds. She had dyspnea, expectorated a great deal, coughed almost incessantly, had a very poor appetite. Now all these symptoms have disappeared and her strength has increased so that she is able to perform her daily duties. She comes to my office almost daily and expresses herself as improving continually. The physical signs above mentioned have disappeared to a considerable extent, although not completely. Pleuritic lesions exist beside the consolidation mentioned. Bacilli of tuberculosis have been found but once in very small numbers in the last three months and this was long ago.

SURGICAL TUBERCULOSIS.

B. McG., age 18 years 2 months, had been suffering with joint and bone tuberculosis for seven years and had ten operations performed on different parts of his body to open abscesses and to remove necrosed bone. The seat of the primary trouble was the right hip-joint, but was giving him trouble on every limb. The left tibia was much involved, having at one time eight openings discharging tubercular pus. The hip had three openings that would heal and open alternately and one that was open continually for seven years. He had an abscess on each arm, one of the sternum, one of the index finger of the right hand, a tubercular nodule in the skin of the scrotum, an abscess near the apex of the left scapula and two on the lower jaw. The patient says that after the continued efforts of Dr. J., of Waverly, Ky., who had as consultants, Drs. H., of Henderson, Ky., and A. J., of Sturgis, Ky., to cure the patient had failed, it was decided to let nature take its course. He was without medical aid for two years. In the fall of 1894 he was put in care of Dr. Broome, St. Louis, who performed an operation to remove necrosed bone from the thigh and tibia, thinking that these openings would heal. This having failed he decided to try the serum treatment and was taken in charge by Dr. G. W. Cale, St. Louis, Mo. He began the treatment in March, 1895, at which time he had four abscesses discharging a characteristic tubercular pus and two others that afterward opened. He had daily injections of serum in doses of 20 to 30 ms. and at the close of six months' treatment five of these abscesses had closed, he had gained ten pounds and was without temperature. He is working steadily and is still gaining weight. The last and only opening, a very slight one, is on the thigh and dead bone (to be soon removed) has been located which is the cause of its remaining open. Up to the present date he has gained sixteen pounds, has a good appetite and is enjoying good general health.

In every one of these cases the diagnosis was based on careful physical examination and microscopic analysis and there was no mistake made. I may add to this record of good results:

Mr. K., pulmonary tuberculosis eight years, in last stage of the disease; cavity in one lung; contractions and infiltrations in tissue. Had been injected three months in vain with tuberculin; gained over twenty pounds with serum and all symptoms have so improved that he has returned, in part, to his work as insurance solicitor. He was treated eight months almost daily.

Miss H., stenographer, had been invalid two years; disease in second stage; regained ten pounds and about normal strength in four months and to day seems to be on the high road to recovery.

Mr. M., grain dealer; disease in third stage; increased eight pounds and in strength, and is enabled to keep to his work by continual treatment.

Mr. W., printer, disease in the second stage; increased over ten pounds and exhibits no bacilli and has exhibited none for three months.

Mr. O., stationary engineer, was ill several years; exposed to alternating heat and cold; disease in the third stage; treated seven months; regained his strength sufficiently to keep up his arduous duties, which he must have abandoned long ago.

Of the twenty-two City Hospital cases reported a year ago, I have been able to keep track of but two. Most of the others scattered after leaving the hospital improved. One with a cavity, extensive infiltrations, adhesions, displaced heart, was raised from bed, increased thirteen pounds and returned to work in six months during the exclusive use of serum. He then died suddenly at the City Hospital after a liquor debauch and I did not have the opportunity to see the post-mortem examination. The other, a case of over three years, Mr. H., with advanced tuberculosis, was likewise raised from a bed of sickness over a year ago and has almost ever since been working as a stable man and seems to be fairly healthy and strong.

I might add to this series of improvements a number of others in a more or less serious condition who are still under treatment by the exclusive use of serum, but besiring to report no case too early after positive improvement, I will abstain from mentioning them specifically until later. I might add, too, a number of desperate cases, among which a few were benefited temporarily. Probably all such cases, and the cases with large cavities, with a history of long standing tuberculosis will succumb. It is usually in the last stage that patients submit to new treatments for consumption, and it is often in the same stage that doctors are willing to try new remedies of this character. These unfortunates (with contracted lungs, large cavities, hopeless transformation of tissue, general infection, etc.) who grasp at this treatment as a last resort, can hardly be expected to recover permanently, although some of them do improve, and in a few the disease seems to be checked. In my practice, I do all in my power to prevent hopeless cases from using the serum, although it is not unfair to try and prolong their life with it, if at their own request, understanding fully the consequences, they demand a trial. The injustice of discrediting the value of serum on the results obtained in such cases is obvious to any unprejudiced and fair minded man.

In conclusion I will state that of one hundred cases of pulmonary tuberculosis treated from three to eight months, during a period of fifteen months, the following results have been obtained:

In the first stage, treated, recovered and discharged, 14	
In the second stage, improved, in statu quo, or still improving or checked (including thirteen who returned to their duties after having been considered hopelessly ill and near their demise)	26
Disappeared from observation in all stages	35
Died: treatment begun in second stage	5
Died in the third and fourth stage, including ten practically moribund, who insisted on trying the treatment	20
	100

Thus the recoveries in the early stages have amounted, so far, to 100 per cent.

Penalty for Criminal Malpractice. A new though practically amendatory section was introduced into the criminal law of Missouri in 1895 which provides that every person who, without intending necessary medical or surgical treatment, and without intending other injury than the destruction of pregnancy, shall kill any woman by administering to her any medicine, drug or substance whatever, or by using upon her any instrument, or other means for the purpose of destroying pregnancy, shall be guilty of manslaughter in the first degree.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

REPORT OF THE COMMITTEE ON SYLLABUS.

CHICAGO, Feb. 15, 1896.

A committee was appointed by the secretary of the Association, Dr. Perry Millard, on each of the branches of a medical curriculum in 1894. These several committees made reports which were presented at the meeting of the Association at Baltimore, May 7, 1895. The several reports were referred to a committee consisting of Drs. Perry Millard, Howard A. Kelly and Bayard Holmes, and ordered printed.¹ On account of the various standards used by the several committees, it was found impossible to coordinate this work so that a well-balanced course of study could be recommended. Therefore during the past year a plan was formed by the present secretary for the study of medical education in conferences. The work was laid out so that each conference would have a special part of the curriculum to consider.

In order to call together representative men and educators ten institutions were requested to send delegates to the first meeting. The call was addressed as follows:

My Dear Doctor.—The Association of American Medical Colleges has now arrived at practically the following condition of things: Nearly half of the medical schools in the United States are members of this Association, and more than half of the schools in which regular medicine is taught.

All members of this Association will hereafter require four years of attendance for graduation.

The minimum year of schools in this Association will consist of six months, the average year of eight months and the maximum probably of nine months of actual study.

The entrance requirement is now fixed at the minimum, equal to about the second year of the ordinary high school course, and that requirement will probably soon be equal to the average requirements for admission to the literary department of colleges and universities.

The amount of study which any student of a medical school can be reasonably expected to do is fixed by pedagogic experience, and is four recitation hours a day, requiring each about an hour and a half of study for preparation.

It is very desirable in this formative period of education that the discussion cover the most desirable course of study, the most desirable methods of presenting each branch and the most desirable methods of testing the attainments of the students and giving them credit for their work.

Therefore the secretary of the Association of American Medical Colleges, with the consent of the President and Judicial Council, hereby calls upon the colleges to furnish representatives to a number of committees, to meet at suitable points and on suitable occasions to discuss these subjects and present a combined report at Atlanta next May. On account of the number of subjects he proposes to divide the curriculum into three groups.

Group 1 will be composed of all those branches that treat most exclusively of the normal human body.

Group 2 will consist of all those branches which consider most exclusively the diseased human body.

Group 3 will consist of all those branches which deal with the treatment of the diseased human body and the prevention of disease.

Three committees will be appointed, each consisting of as nearly ten persons as possible, one committee for each of these groups. Each committee will discuss the following topics: 1, the amount of time and the amount of work for each branch in this group; 2, the place in the four year course in which each branch in this group should appear; 3, the particular work required in each branch and the amount of work allowed to be elective; the particular work suggested by the committee as most desirable out of which to fill up the elective portion; 4, the methods by means of which each of these branches should be presented to the students; 5, the methods and means by which each student should be tested and given credit on each branch.

In order to begin this work the committee of ten upon Group No. 1, in which will be found anatomy, physiology, histology and embryology, is hereby called to meet at the Palmer House upon Saturday, the 15th of February, 1896, at 9 A.M. The University of Minnesota, the University of Michigan, the University of Iowa, the University of Wooster, the Lake Forest University, the Northwestern University, Cincinnati College of Medicine and Surgery, Columbus Medical College, Detroit College of Medicine, Fort Wayne College of Medicine, are requested to send each a representative, to remain in the city three days at least, and hold a continuous meeting until the work is finished.

If your institution will cooperate in this work be kind enough to inform me by return mail and suggest the person whom you wish to represent your university upon the committee.

Trusting that I may hear from you by return mail, I am,
Very truly yours, BAYARD HOLMES.

The conference convened at the Palmer House at the hour mentioned with the following representatives present:

W. S. Hall, Northwestern University; W. E. Lewis, Cincinnati College of Medicine and Surgery; A. P. Ohlmacher, Wooster University; C. B. Stamen, Fort Wayne Medical College; Bayard Holmes, College of Physicians and Surgeons, Chicago; J. E. Brown, Ohio Medical University; W. D. Middleton, Iowa State University; H. O. Walker, Detroit College of Medicine; W. O. Gross, Fort Wayne Medical College; Thomas G. Lee, University of Minnesota.

The conference was called to order by the Secretary of the Association and the plan of conducting the business decided upon.

As a preliminary step to the arrangement of a curriculum the committee considered it expedient to recommend the use of certain terms in a more or less technical sense, thus avoiding misconceptions and facilitating the expression of ideas on the subject.

The Recitation Period.—A recitation period is the time occupied by the student in the preparation and recitation of one lesson. The time spent in a recitation is nominally one hour, and usually a topic assigned for a recitation requires about one and one-half hours of outside preparation. Let the expression "recitation period" be understood to mean two and a half hours' work. From this it is clear that a laboratory exercise requiring two hours of laboratory work and one-half hour of outside reading and preparation of notes is equivalent to a recitation period. Further, each didactic lecture involves, or at least should involve, a parallel course of supplementary reading assigned by the lecturer. In order to introduce uniformity into all the courses let it be understood that the assigned outside study accompanying a lecture course be equal to one and one-half hours for each one-hour lecture. In the same way a two-hour clinic should be made to consume in the aggregate an extra half-hour of work, either in reading up parallel cases, in taking and recording of histories or in the examination of pathologic material, for every two hours of actual work in the clinic.

By thus putting all work on the basis of the recitation period of two and one-half hours, the work of arranging a typical curriculum is much facilitated.

As to the number of recitation periods which should constitute a week's work, the discussion brought out many arguments. In the first place the medical colleges of to-day are for the most part the evolved product of those of yesterday when a year's work was crowded into five or six months, and a whole medical course into two or three of these short years. Under the earlier conditions as much as seventy-five hours of

¹ Report of the Committee on Syllabus, JOURNAL AMERICAN MEDICAL ASSOCIATION, June 29 and July 6, 1895.

mental work, 30 recitation periods, was accomplished by the diligent student in one week. But the extension of the course of study to more than three times its original length has not been accompanied by a sufficient relief of the tension of work to admit the student of average strength to carry the course without manifesting signs of overwork. Most literary and scientific colleges require from 14 to 16 recitation periods per week of each student. Most medical colleges require from 20 to 30 recitation periods per week. The committee agreed that because of the greater maturity of students in medical schools, and the fact that a larger proportion of the work is "low-pressure" work, in laboratories and clinics, medical schools are justified in requiring 20 recitation periods per week. This represents fifty hours of work per week for the student. It is recommended that as far as may be these 20 periods be assigned to five days with 4 periods each. Somewhat more work than this may be permitted in special cases.

What shall constitute a year of work? Most of the institutions belonging to the Association of American Medical Colleges have seven or eight months for a year's work, a few have only six, while others have as many as nine months. The committee agreed, that their work would be most useful if they based their recommendations upon a year of thirty weeks, of 20 recitation periods each, or an aggregate of 600 recitation periods. A college having only six months (twenty-five weeks) could attain about the same aggregate by requiring 24 recitation periods per week, while a college having nine months might well reduce the required number of recitation periods per week to 18. Such a reduction of quantity would naturally be accompanied by an improvement in the quality of the students' work.

Another very convenient expression is the term *year hour*, which is defined as *one recitation period per week throughout the year, or 30 recitation periods*. But the number of recitation periods would depend upon the length of the year in any particular institution and might be 25 or 36 according to the length of the year. In any case the number of year hours multiplied by the number of recitation periods per week should equal 600 recitation periods.

It was further concluded by the committee expedient to divide the year into a Winter semester and a Spring semester of 300 recitation periods each.

The committee then considered the division of the four years of study now required by all members of this Association among the branches of study which it considered should be contained in the medical curriculum. This necessitated the consideration of the preliminary education of the student and the required and elective work.

It was assumed that the students of our institutions are fully up to the requirements of the Association and possess a good knowledge of English, a thorough training in arithmetic and elementary algebra, a thorough training in elementary physics by the laboratory method, at least two years' work in Latin; but that they have had in a majority of cases no preliminary training in chemistry or biology.

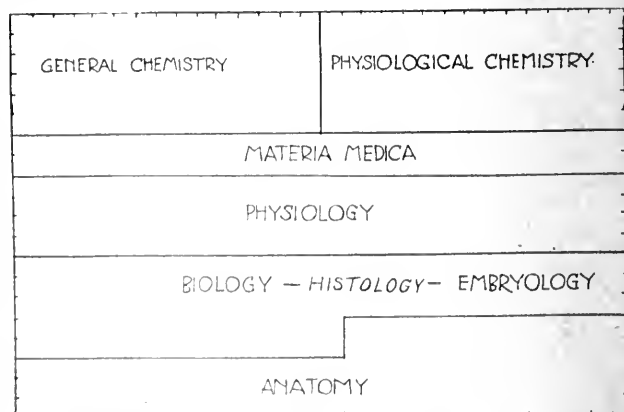
In preparing students for medical study teachers should aim at a serviceable knowledge of English and English literature and a definite command of the English language in composition. Thesis work on topics with which the student is engaged should be strongly insisted upon, and every attention should be paid to forms necessary for the guidance of the printer.

The work in arithmetic should be so thoroughly completed that it would become an unconscious tool in the mind of the student, and it should be combined with a thorough knowledge of the metric linear, square, cubic and liquid measure and with the metric weights. The algebra should be sufficient to cover simple and quadratic equations. The course in physics should be much more extensive and thorough than that proposed by the committee of ten on secondary school studies, and published by the Bureau of Education (pp. 25, 26 and 117-127). It should be a careful course in experimental physics in which the student should prepare his own apparatus, conduct his own experiments after such a plan as that outlined in John Trowbridge's "The New Physics," or in similar works in the same pedagogic line.

The Latin should be studied from the philologic rather than the literary side, as so little is expected.

In regard to electives, the committee urged that all colleges allow a small margin of electives to begin in the second year and that each college make this work cover such branches as it is able to offer in the best quality. The value of even a small proportion, say five one-hundredths, of elective work in increasing the quality and spirit of all other work, can not be over-estimated when the resources of the school are such as to permit. Properly conducted the electives allow a choice of work adapted to the needs or inclinations of the students, while at the same time a larger number of medical teachers are given opportunity to devise and offer work some of which may be found of the greatest educational or professional value. Teachers may thus be discovered and methods of teaching thus be made known and the quality of teaching in the whole school greatly improved.

The following diagrams express the ideas of the committee on the proportion and disposition of the curriculum for the four years of the medical course. It will be noticed that chemistry and medical chemistry are crowded into the first year. This expresses the sense of the committee after very careful discussion. The committee holds that chemistry should very soon be required by the members of this Association for admission. The same may be said of biology or comparative anatomy. The high schools, academies and colleges now teach chemistry and biology by the laboratory method, and it will not long be necessary for medical colleges of the first class to teach either chemistry or biology.



1.—Diagram showing the distribution of the 600 "recitation periods" of the first year. The lateral divisions represent thirty weeks, the vertical divisions the twenty "recitation periods" each week. The first half of the materia medica should be pharmacognosy and the other half pharmacology.

MATERIA MEDICA	THERAPEUTICS
HYGIENE	PHYSICAL DIAGNOSIS
BACTERIOLOGY AND PATHOLOGY	
ANTHROPOMETRY	ELECTIVE
ELECTIVE	HISTOLOGY
SPECIAL HISTOLOGY	PHYSIOLOGY
PHYSIOLOGY	
ANATOMY	

2.—Diagram showing the distribution of the 600 "recitation periods" of the second year.

PATHOLOGY	
CLINICS	
PHYSICAL DIAGNOSIS CLINICS	
LARYNGOLOGY	OPERATIVE SURGERY
DERMATOLOGY & SYPHILIS	
ELECTIVE	
SURGERY	
MEDICINE	
OBSTETRICS	

3.—Diagram showing the distribution of the 600 "recitation periods" of the third year.

CLINICS	
ELECTIVE	
SURGERY	
GYNAECOLOGY	
NERVOUS SYSTEM	
MEDICINE	
OPHTHALMOLOGY	OTOLOGY
CHILDREN	
OBSTETRICS	GENITO URINARY
	MEDICAL JURISPRUDENCE

4.—Diagram showing the distribution of the 600 "recitation periods" of the fourth year.

ANATOMY.

The ground now covered in the course in anatomy is in accordance with the ideas of the committee. The separation of regional and surgical anatomy does not seem necessary or desirable.

This branch was relatively well taught in the older medical colleges, but improvements have not been made as fast as the importance of the subject demands. The study of vertebrate morphology is a prerequisite to the proper study of human anatomy. The time which anatomy receives in the diagram above is three recitation periods a week during the first semester of the first year and five recitations a week during the second semester. Each of these recitation periods would consume two and a half hours of the students' time. The first semester may be devoted to the study of osteology. Every student should have the bones

for his own use. The simpler parts of the skeleton should be studied first. The study of any bone should consist in a thorough study of every aspect of the organ with every pedagogical appliance. Drawings should be required in the various positions necessary to bring out all the parts. These drawings should at first be made from the object and later from memory. Only such features of the bone should be studied as the bones themselves present. Muscular attachments and the relation of other structures can not ethically or pedagogically be considered until the student sees the parts in position in the anatomic laboratory. In every possible way the teacher should maintain in the minds of the students the proper anatomic perspective and lead them to a vivid and indelible idea of the essential points. There ought to be an opportunity in every class exercise for students to propose questions. The recitation between the teacher and the students should be familiar and unrestrained.

The second semester of the first year should be spent in the dissecting room. This should be so fitted up as to be light, clean and commodious. The character of the dissections and laboratory study will depend not only on the motive and method of the teacher, but upon, and essentially upon, the proper preservation of the cadaver, the proper furniture of the laboratory and the proper equipment of the student with thoroughly good dissecting instruments, drawing books, note books and laboratory garments. A good workman must have good tools. In the dissecting room the muscles, nerves and vessels and their relation to the bones should be most carefully studied during the first year and all the dissections should be made so that these organs may be studied together. The bones should be at hand and the relations of parts studied and recorded by drawings. The muscles, for example, should be studied on the body, their separate offices demonstrated and their attachment recorded on the bones previously used. The blood and nerve supply should also be discovered and recorded on the drawings and sketches which each student should be required to make. Incidentally and in a general way the viscera should be carefully studied during the first year.

During the first half of the second year the careful study of the viscera should be begun. In this work it will be necessary if not desirable to use the organs of vertebrates for each member of the class in his laboratory examinations while the instructor will demonstrate from the human cadaver. All the important viscera should first be demonstrated in situ, then the organs of animals should be studied as detached specimens, and last of all each student should carefully dissect during the second semester the whole human body, making drawings and notes just as in the dissections of the first year.

During all this anatomic study the perspective of the subject should be carefully maintained by the teacher through demonstrations, recitations, quizzes and written exercises. The actual contact of the parts is of the greatest educational value and the use of dissecting gloves by students should never be countenanced. The necessity for a name should be felt by the student before he is required to learn a name. Anatomy should be a synonym for familiarity with the human body. Much attention should be devoted to the comparative study of the organs in the living human body. For this purpose students should be encouraged to use one another as subjects in the

class. In this course, little place is left for didactic lectures and much attention is devoted to doing with hand and eye. Manual dexterity is acquired by the student on the dead body.

It must not be forgotten that any method of teaching which secures in the student a rational curiosity and provides a way for him to satisfy it is a success, while a much better method so used as to paralyze the student's curiosity while it secures ever so good a command of the anatomic nomenclature is a failure.

Any text-book is good enough if it follows or accompanies the careful dissection of a well preserved cadaver in a well furnished laboratory.

A library of anatomic works should be in the dissecting room. A list of very desirable literature will be found in the August, 1895, number of the *Bulletin* of the American Academy of Medicine, pp. 273-276.

BIOLOGY, EMBRYOLOGY, AND HISTOLOGY.

Inasmuch as biology is an essential introduction to the subjects comprehended in the usual medical curriculum, and since but a small proportion of students present themselves with the knowledge of this subject upon entering the medical school, this committee believes that it becomes the duty of the medical school to supply instruction in elementary biology until the entrance requirements are raised sufficiently high to include this branch. The object of this biologic work should be to serve as a natural introduction to the study of the normal and diseased human body, and not to make zoologists or botanists of medical students. Most of this work can be presented by the object method in the laboratory, and as an outline of the work the following plan is submitted.

Course A. Elementary General Biology.—This course will serve to introduce the student to the use of the microscope, to elementary microscopic and laboratory methods, and to acquaint him with a broadened idea of the phenomena of life in animals and plants. As types for study in this we recommend amoeba, paramecium, vorticella, hydra, and earthworm on the zoologic side; and protococcus, yeast, bacteria, spirogyra, and molds on the botanic side. It is hardly to be expected that the teacher will be able to present all of these types in a given period and substitutes will doubtless be found necessary in certain cases.

In the laboratory exercises each student should be supplied with a microscope, and with simple equipment sufficient to enable him to independently prosecute all the technical work demanded. The laboratory exercises should be guided by simple directions such as are found in the "Practical exercises" of Huxley and Martin's *Practical Elementary Biology*. Free hand drawing from the object should be systematically demanded of every student in the class. Simultaneously with the laboratory work a reading or recitation course should be provided in which Parker's *Elementary Biology* will serve as an excellent text.

Course B. Elementary Vertebrate Anatomy.—Following Course A, in natural order, and serving as an invaluable introduction to descriptive and practical human anatomy, comes a laboratory study of several typical vertebrates. An elaborate study of comparative anatomy is impossible in the limits of a medical college course and it is expected that this course will prove mainly useful to the student in perfecting him in methods of anatomic laboratory study, while it incidentally familiarizes him with the anatomy of the animals chosen as types.

This study should be pursued almost entirely in the laboratory by the aid of a suitable laboratory manual; and a comparatively thorough study of one or two types should be encouraged instead of the cursory examination of a number. By means of suitable equipment the student should make such preparations as wet and dry skeletons, vascular injections, and preserved specimens. Numerous free-hand drawings made directly from the objects are to be required. As types for the work we recommend the frog, as studied after the directions in Huxley and Martin's *Practical Elementary Biology*, and one mammal, the rat, the rabbit, the cat or the dog.

On account of the convenience with which each student can handle his material, and on account of the greater delicacy of the dissections we consider the smaller mammals preferable, and for this purpose the dissection of the rat as prescribed by Martin and Moale in Vol. III of their *Handbook of Vertebrate Dissection* is especially recommended.

Course C. Embryology.—During the spring months when eggs can be easily obtained, and upon completion of courses A and B, the study of embryology should be begun. The foundation for a study of this subject is furnished by practical laboratory exercises.

The most convenient type for introductory study is the embryo chick which should be studied after the plan outlined in the "Practical Suggestions for studying the Development of the Chick" given in the Appendix of Foster and Balfour's *Elements of Embryology*. A series of whole embryos of characteristic stages of development are to be studied by the student, in the egg, both as fresh transparent objects, and as opaque objects. A series of typical sections are now to be prepared by the student from the material which he has obtained and preserved, and at this time the technique of killing, hardening, imbedding and sectioning for microscopic study can be acquired. Mammalian embryology can be introduced by several laboratory exercises upon the embryo pig or sheep. These embryos can usually be obtained in abundance from slaughter houses.

In connection with the laboratory work in this course we would prescribe reading or recitation exercises from some text-book, for example, Marshall's *Vertebrate Embryology*, Minot's *Human Embryology*, or Hertwig's *Text-book of Embryology*. Marshall's work will be found especially adapted to the laboratory course just presented, while the works of Minot or of Hertwig more properly serve as reference books for advanced students.

Course D. Histology.—In connection with Course A the student acquires a familiarity with the use of the microscope, and an elementary knowledge of the animal and vegetable cell both in unicellular and multicellular organisms. At this time also an acquaintance with simple microscopic technique is obtained.

Following that portion of Course B in which the frog is dissected the special study of elementary histology may be introduced. With the aid of such methods as teasing, maceration, dissociation, and possibly with some free-hand sectioning, the student should study the simple histologic tissues. A few of the more easily applied reagents should be employed by the student in his work upon the material which he obtains from his frog. Great weight should be laid upon the thorough mastery of the technique involved in this work, which is a step higher than that employed in Course A. A great deal can be done in the

study of the blood, epithelium, connective tissue, muscle and nerve, and even of some of the organs with a very simple laboratory equipment and easily acquired methods, and we believe it the duty of the laboratory teacher to impress this upon the student. The directions for histologic study in connection with the laboratory work upon the frog in Huxley and Martin's Practical Elementary Biology may with certain modifications, be taken as a guide for this portion of histology.

The study of histology proper may be suspended in favor of Course C in which the more elaborate technical methods of microscopic anatomy are introduced, along with the subject of histogenesis.

Upon the completion of this elementary course in the first year's work, the study of special histology as applied particularly to the tissues and organs of the human body should be pursued. This is the work in histology which we would prescribe for the second year's course, and with students already trained in ordinary laboratory methods, it will be possible to include more of the special and advanced methods of histologic research.

Here also each student should be provided with a full working outfit and it is expected that *all of the preparations demanded in the course are to be made by the student from the raw material which he obtains himself* or which is furnished to him by the teacher. These laboratory exercises can best be guided by type-written or mimeograph syllabi prepared by the teacher to cover each given lesson, and in these syllabi brief technical instructions should be supplied together with a few hints as to the observations to be made by the student, and the prosecution of technical details and the detailed study of the object should be left to the student. Drawings directly from the preparations should be demanded throughout the course and full descriptive notes should be prepared by the students.

As a supplement to the laboratory exercises in histology the students may be referred to one or more of the standard text-books upon histology, and in some special subjects it may be found advisable to introduce a few lectures.

This department ought also to possess a working histologic library. Text-books ought not to be used at all. The student should be referred to the library for the further study of the problems presented to him in his laboratory work.

THE COURSE IN PHYSIOLOGY.

The course in physiology should be continued through two years and should be in a general way coördinated with the course in comparative anatomy and general biology and histology. By coördination in this connection is meant the arrangement of the courses in such a way that the student shall learn first the more fundamental and general and then the more special. To teach the student the physiology of the liver one year and the gross and minute anatomy of that organ the next year must be recognized by all as an inversion the logical order. To teach the anatomy of an organ one year and its physiology the next year puts the teachers of both these branches at considerable disadvantage, and the chances are great that the student will have a less clear comprehension of the subject presented in this way than he would if the interval elapsing between the study of the more general branch and the more special branch be a short one.

Examples of coördination will be found in the arrangement of the following course in physiology:

Every course in physiology should be accompanied by laboratory exercises in which the student may familiarize himself with the technique of the subject and may demonstrate for himself the more fundamental facts of this science. The laboratory exercises should be coördinated with the recitations and demonstrations as far as it is possible to do so.

The first half of the first semester (eight weeks) should be spent in a study of the physiology of the cell as illustrated in unicellular plants and animals. While the student is studying the morphology of the protococcus, the yeast cell, the ameba and the paramecium in the biologic course he may profitably study the physiology of these organisms from such a text as, "The Cell" (Hertwig), and should repeat in the laboratory the experiments mentioned in Hertwig's book. "Allgemeine Physiologie" (Max Verworn, Jena, 1895) is a valuable help to the instructor who is conducting such a course.

The second half of the first semester should be spent on muscle-nerve physiology. Having already studied the reaction of ameba and paramecium to electricity, and having studied, in general histology, the structure of muscle fibers and cells, and nerve fibers and cells; further having made careful dissections of frogs and other vertebrate animals the student is in a position to comprehend and appreciate the reaction of muscle-tissue in response to various direct stimuli and to indirect stimuli applied to the nerve. The frog-heart and the "muscle-nerve preparation" are most used for such experiments. A convenient text to follow in the laboratory exercises is "Sterling's Practical Physiology."

Beginning with the second semester or second half of the first year the general subject of nutrition should be begun. Whether one introduces this field of physiology with the study of the circulatory system or of the digestive system is a matter of little consequence. The problems of the circulation being, for the most part, physical problems, would seem to justify the consideration of that subject first, followed by the respiratory system, which presents simple problems in mechanics, physics and chemistry. The student, having in the meantime made some progress in physiologic chemistry, is able to comprehend the general features of the chemie problems involved in digestion, and should now enter upon a systematic consideration of the nutrition: 1, food and foodstuffs; 2, preparation of foods; 3, mastication; 4, deglutition; 5, salivary digestion; 6, gastric digestion; 7, intestinal digestion; 8, absorption; 9, distribution; 10, assimilation or anabolism; 11, katabolism and animal heat, and 12, excretion. This course will probably consume the second semester of the first year and a part or all of the first semester of the second year. The remaining time allotted to physiology should be devoted to the physiology of the nervous system, the physiology of the special senses, and the physiology of reproduction. All of these courses should be accompanied by laboratory work. The laboratory manual already mentioned has exercises in all of the above subdivisions of the subject (except in reproduction).

After the student has completed the above required courses he should be given an opportunity to elect special courses in physiology during the second semester of the second year and during the third year. Profitable elective courses would be, for example: 1,

physiology of intrauterine life, following Preyer's "Physiologie des Embryos;" 2, special problems in the physiology of digestion, following Brunton in "Handbook for the Physiologic Laboratory;" 3, physical examination of the blood, using hematokrit, hemometer, corpuscle counter, micrometer, and staining methods; 4, experimental physiology of the central nervous system, following Cyon; 5, physiologic psychology, following Wundt or Ladd. The instructor may get much help from such works as: Cyon's "Methodik der Physiol. Experimente;" Gscheidlen's "Physiologische Methodik;" Foster and Langley's "Practical Physiology;" Schenck's "Physiologisches Practicum;" Brunton and Burdon-Sanderson's "Handbook of the Physiological Laboratory;" McGregor-Robertson's "Physiological Physics;" and Langendorf's "Physiologische Graphik."

THE ORGANIZATION AND EQUIPMENT OF THE DEPARTMENT OF PHYSIOLOGY.

Inasmuch as many of the colleges of the Association have not yet established physiologic laboratories, it is thought well to give a few general hints on the subject. The imposing equipments which one sees in the physiologic institutes of Europe, equipments which, in the aggregate, have cost many thousands of dollars, overawe one and make one hesitate to advise the undertaking of so great a task, so we are letting the years slip by without establishing physiologic laboratories. We must not forget that the equipment of European laboratories is a growth which has covered many decades; and further, that it is really advisable to allow a department to grow, collecting, in the course of a few years, an equipment which is perfectly adapted to the wants of the institution and to the special methods of the head of the department. The committee strongly advises the early establishment of physiologic laboratories, even if an institution can not appropriate for the purpose more than \$1,000 to start with. If an institution can devote to this department a well-lighted general laboratory room 36 ft. to 40 ft. square, with two or three small rooms for instrument room, workshop and library, and can appropriate \$1,000 to \$1,500 for the first equipment, then a laboratory fee of \$5 annually from each student who works in the department will, in the course of a decade, produce a sufficiently full equipment for all practical purposes.

At this point it may be well to give a hint as to the organization of the department, as this determines largely the character of the equipment and the number of duplications of each instrument.

The amount of personal supervision required by the student in practical physiology is so great that it is inexpedient to attempt to conduct large classes. A demonstrator and one assistant demonstrator can not properly supervise the work of more than thirty students at one time, even though each student be provided with a laboratory manual. In the organization and equipment here planned let it be understood that the laboratory class work in *sections* of thirty students each, and that each section be subdivided into ten *divisions* of three students each. Now, experience in many laboratories has shown that a student will accomplish practically as much in one laboratory period of three hours as in two laboratory periods of two hours each. The three-hour laboratory period promotes economy both for the student and for the department. Following this arrangement, two instructors would be able to

supervise the work of 180 students, meeting one section of thirty students each day. With this allotment of time each student would have three hours of laboratory work each week during the year, which would enable him to demonstrate for himself all of the fundamental principles of physiology. In the question of the choice between, 1, the condensation of 180 hours of laboratory work in physiology into a period of sixty days with three hours per day, and 2, the distribution of the same number of hours over sixty weeks (two years) with three hours per week, and its coordination with the theoretic work in physiology and with the courses in gross anatomy and histology we would, without a moment's hesitation, decide in favor of the latter plan.

If this general plan of organization be adopted, and if the department wishes to provide for sections of thirty students, working in ten divisions of three students each, then the apparatus should be duplicated in tens. The following list of apparatus is suggested as a practical one with which to make a beginning:

EQUIPMENT FOR GENERAL LABORATORY WORK.

10 strong tables, 8 feet by 2½ feet, at \$7.50	\$75.00
10 kymographs, at \$30.	300.00
20 Daniell's cells, half gallon size, at \$3.	60.00
4 pounds of copper wire, No. 16, double cotton cover, at 60 cts.	2.40
½ pound copper wire, No. 26, double silk cover, at \$2.50	1.25
10 bichromate cells, medium size, at \$3.	30.00
10 simple compasses (for detectors) at 30 cts.	3.00
10 mercurial keys, at 50 cts.	5.00
10 contact keys, at 60 cts.	6.00
10 DuBois keys, at \$1.50.	15.00
40 Oxford rheochords, at \$2.50	25.00
10 Du Bois-Reymond, induction machines, at \$15.	150.00
10 Pohl's commutators with crossbars, at \$2.	20.00
10 pairs of muscle forceps, at 75 cts.	7.50
10 pairs of tambours, at \$4.	40.00
20 heavy-base stands, with fixtures, at \$2.	40.00
10 Bunsen burners, at 25 cts.	2.50
10 bell jars, at 80 cts.	8.00
10 double-valve rubber bulbs, large size, at 75 cts.	7.50
5 hemometers (Fleischel's), at \$15.	75.00
5 sphygmographs (Dudgeon's) at \$20.	100.00
5 blood corpuscle counters (Zeiss) at \$15.	75.00
General surgical appliances, forceps, shears, etc.	50.00
Assorted sizes of glass tubing	5.00
Assorted sizes of soft rubber tubing	5.00
Rubber stoppers, assorted sizes, perforated.	2.00
Corks and cork borers, sheet cork.	2.00
Files, "knife-blade" for cutting glass tubing.	2.00
Glassware, gas generators (2), graduated cylinders, pipettes, flasks, bottles, beakers, etc.	50.00
Granite iron troughs and basins, assorted sizes	10.00

\$1,174.15

NOTE.—About one-third of this outlay can be saved by having five divisions of the section work on one problem while the other five divisions work on a related problem which involves other instruments. That would reduce the absolutely necessary equipment to \$500.

INSTRUMENTS FOR SPECIAL USE AND DEMONSTRATIONS.

1 galvanometer	\$50.00
1 metronome	4.00
1 hematokrit	5.00
1 plethysmograph.	2.50
1 pair quantitative balances	30.00
1 pair dog scales	15.00
2 pairs medium scales for students' use.	10.00
2 mercurial manometers for blood pressure	10.00
2 Ludwig rheometers.	10.00
1 moist chamber.	20.00
1 capillary electrometer (Kühne's)	5.00
1 Du Bois-Reymond rheochord	25.00
1 contact clock.	40.00
2 chronographs.	20.00

\$266.00

This list might easily be extended to amount to several thousand dollars, but it is intended here to include only those instruments which seem necessary to start with.

THE WORK SHOP.

Demonstrators and students can easily construct, in a shop, many pieces of simple apparatus, which if purchased of some instrument house, would amount to many times the cost of the material and would deprive students of some very valuable experience. Frog, rat, rabbit and dog holders may be made, the tambour frames may be furnished with membranes and mounted as receiving or transmitting tambours, cardio-

graphs, or stethographs. All writing levers, electrodes, etc., should be made by the students. A room with bench and vice and \$25 for carpenter's and machinist's tools would be an ample start.

A FEW NECESSARY CHEMICALS.

20 pounds CuSO ₄	\$1.30
10 pounds H ₂ SO ₄.....	.70
5 pounds mercury.....	3.30
5 pounds bichromate of potassium.....	.75
5 pounds kaolin (for electrodes, etc.).....	.25
2 drams of curare.....	2.50
5 pounds gum damar.....	1.25
20 pounds benzol.....	4.00
[2 per cent. sol. of damar in benzol makes the best fluid for fixing tracings made on smoked paper.]	
10 pounds chloroform (imported duty free).....	5.00
30 pounds sulphuric ether (imported duty free).....	9.00
20 pounds surgical cotton at 25 cts.....	5.00
2 pounds sealing wax in sticks.....	1.00
1 pound mercuric chloride.....	.80
2 pounds carbolic acid.....	.70
5 gals. abs. alcohol.....	
2 pounds sodium hydrate.....	
2 pounds magnesium sulphate.....	
2 pounds sodium chlorid (pure).....	
10 pounds glycerin.....	
1 pound hydrochloric acid.....	
1 pound nitric acid.....	
1 pound ammonium hydrate.....	

About \$50.00

A WORKING LIBRARY OF PHYSIOLOGY.

Beside the laboratory manuals enumerated under the "Course in Physiology," we mention a few journals and general works that should be in every laboratory of physiology: Hermann's "Handbuch der Physiologie"; *Journal of Physiology*, ed., Michael Foster, Cambridge, England; Pflüger's *Archiv f. d. gesammte Physiologie*, Bonn, Germany; *Archiv für Anatomie und Physiologie*, [physiol. part] ed., Du Bois Reymond, Berlin, pub., Veit & Co., Leipzig; *Centralblatt für Physiologie*, pub., Franz Deuticke, Leipzig; *Journal of Experimental Medicine* [physiological part edited by Bowditch, Chittenden and Howell], D. Appleton & Co.; "Animal Physiology," Mills, D. Appleton & Co., 1889; "Text-book of Physiology," Michael Foster, Macmillan, 1888-93; "Human Physiology," Landois and Sterling, Blackiston, Philadelphia, last edition; "Refraction and Accommodation of the Eye," Landolt, Lippincott, Philadelphia, 1886; "The Frog," Marshall, London, 1894; "Anatomy of the Frog," Ecker, Oxford, 1889; "The Cat," Mivart, Scribner, 1881; "Dissection of the Dog," Howell, Holt & Co., 1888; "Anatomie des Hundes," Ellenberger & Baum, Berlin, 1891; "Dictionary of Medicine (4to), Gould, Blackiston, Philadelphia, 1895.

Beside these there should be recent representative manuals of histology, general biology, embryology, chemistry and physics.

PHYSIOLOGIC CHEMISTRY.

It has been taken for granted that the chemic problems of physiology will be assigned to the department of chemistry. The equipment of that department makes such a division of the subject highly advantageous. For years urine analysis has been taught, usually in the second year of the course in the department of chemistry. Many of the stronger institutions have long since expanded the second year course in chemistry into a very creditable course of physiologic chemistry, beginning with an investigation of food-stuffs, following this with qualitative and quantitative work on the chemistry of digestion, and devoting the last semester of the second year to the analysis of urine. The best laboratory manuals on this subject are: Sterling's "Practical Physiology" (first part); Long's "Laboratory Manual of Chemical Physiology," Colegrove & Co., Chicago, 1895; Halliburton's "Essentials of Chemical Physiology,"

Longmanns, Green & Co., 1893. The physiologic library should contain also: "Text-book of Chemical Physiology and Pathology," Halliburton, Longmanns, Green & Co. 1891; "Physiologische Chemie," Bunge, Vogel, Leipzig, 1894; "Lehrbuch d. physiologisch. Chemie," Neumeister, Gustav Fischer, Jena, 1893; "Physiological Chemistry," Hammarsten, Wiley & Sons, New York, 1893; "Physiological Chemistry of the Animal Body, Gamger, Macmillan, 1893; "Chemical Physiology and Pathology," Hoppe-Seyler.

(To be continued.)

REPORT OF A CASE OF GALLSTONES.

BY T. R. MOSS, M.D.

DYERSBURG, TENN.

My reason for presenting this report is the obscurity which enveloped the diagnosis as well as the long train of unpleasant symptoms in its history. I do not arrogate to myself the ability to teach this intelligent body, but hope to learn something from the discussion which will prove beneficial. Through the kindness of my friend, Dr. N. S. W., on May 24, 1895, I was called with him to see Mrs. J. M. B., who had been ill about two weeks. She was brought up to know nothing of the blightings of poverty, but had every want gratified, and moved in the topmost social circles. She weighed 230 pounds, and was 41 years of age. She lived a sedentary life and as a result was troubled with constipation. Aside from this her health had always been perfect, except that about eighteen months previous she had an attack lasting ten or twelve days with symptoms of biliary obstruction. She enjoyed to a high degree the good things with which she provided her table at all times and on the date the present attack began partook quite heartily of the midday meal, eating among other things freely of cold slaw. Two hours after this she was seized with an intense pain in the epigastro-hypochondriac region extending back under the right scapula, from which in some degree she was not free for several months. The pain did not continue severe all the time, but there was a constant burning as if a coal of fire had gotten into the stomach, which was very much intensified on taking food or drink of any description. This burning and pain was accompanied with vomiting, severe and persistent, made worse by irritation from ingesta, but coming on at intervals when nothing at all was swallowed. It consisted mainly of acid glairy mucus in which at long intervals were intermingled minute specks of blood. Dr. W. stated that prior to my first visit no elevation of temperature had been observed and on this occasion the mercury registered only 99½ degrees Fahrenheit. Examination revealed a very tender and painful spot on pressure just below and to the right of the ensiform cartilage. No tumor could be detected. The pain, tenderness and persistent vomiting suggested the possibility of gastritis, which Dr. W. had under consideration. Jaundice was present, but not nearly so marked as it became later on. The temperature began to range higher, the pain and vomiting persisted, no kind of treatment seeming to give even temporary relief. In the course of a few days Dr. S. of Memphis was called and after a very careful examination gave as a diagnosis, hepatitis. By this time the jaundice was more marked and deep palpation indicated engorgement and sensitiveness to pressure in the liver. While Dr. S. favored the idea of hepatitis which might become sup-

purative, yet he related an instance where a patient without symptoms to particularly indicate such result developed malignant disease. The symptoms continued without abatement, rigors occurring but no sweating except that which came as the result of antipyretics. A few days after Dr. S.'s visit he was communicated with by telephone, when he advised aspirating the liver for pus. His presence was desired but he could not come. The persistency of the pain in the same locality, the obstinate vomiting, the rapidly increasing jaundice of the conjunctivæ, skin and urine, clearly indicating the presence of bile in abundance, the pyrexia, rigors and absence of bile in feces, connected with the sudden onset suggested to Dr. W. and myself the possibility of biliary obstruction. Therefore on the morning of June 13, we administered six ounces of olive oil and in the afternoon of the 14th there were several alvine evacuations heavily charged with bile. We regret the discharges were thrown away before a careful search was made for calculi. The diagnosis still being unsettled Dr. Rogers of Memphis was telephoned for, but was sick. Dr. A. B. Holder, his worthy associate, came up on the morning of the 15th and after a most thorough and critical examination advised an exploratory operation for the purpose of ascertaining the cause of trouble. Accordingly preparations were made for operating instantaneously. An incision was made over the region of the gall bladder and that organ partially exposed. On account of the superabundance of adipose tissue it seemed almost like going down into a well in order to reach the point desired, and when the gall bladder was found, it was adherent to the surrounding parts and could not be brought well up into the wound. It was contracted and of semi-solid consistency. This semi-solidity in the doctor's opinion amounted to a "stony hardness." The sensation as given to my touch, however, was that as stated above.

The contracted condition of the gall bladder, the "stony hardness," its fixedness and the apparent absence within its cavity or in the ducts of calculi seemed to preclude the advisability of further operative interference. After palpation and inspection, and as a matter of precaution introducing the aspirator with negative result, the liver was thought to be normal, and therefore hepatic abscess eliminated. Considering the trouble irremediable and most probably malignant, Dr. Holder so announced and proceeded to close the opening. The patient bore the operation splendidly and re-acted well. There was at once a decided amelioration in the symptoms, the temperature ranging below 100 F., the pain not so severe, the vomiting more infrequent, the dejecta continuing to show the presence of bile, the urine rapidly losing its saffron hue, and the skin and conjunctivæ gradually assuming their normal appearance. At the time it was difficult to divine whether the change was due to the olive oil on the 13th followed by bilious discharges on the 14th, or the operation on the 15th with the manipulations necessary to the same. Competent observers say that aspiration of the liver, though no pus be found, is often followed by improvement, hence this might be the reason. On the other hand occasionally calculi are entirely liquefied and not discovered with the most careful search. The latter seemed the most plausible. After several back-sets attended with high fever in which quinin was freely and effectively used, she finally became able to sit up a short while each day. This was done with a great deal of distress as

the nausea was very much aggravated and a "stuffed feeling" and sense of heavy weight was much more pronounced on assuming the erect position. The desire for food became stronger so that on August 28 she ventured to indulge to a very limited extent at the midday meal. During the afternoon the pain returned, but radiated in every direction so that it was mistaken for ordinary colic and a simple remedy administered. It failed to give relief and as the pain grew more intense, an opiate by hypodermatic injection was resorted to. On the morning of the 29th a rigor occurred, and the temperature ran to 102. Later in the day another rigor, and the temperature rose to nearly 105 F. The urine became loaded with bile, the conjunctivæ and skin rapidly assumed a deep yellow, the lips and finger tips were cyanotic, the facial expression pinched, and the pulse 130. Dr. W. was sick and I was left alone. I gave antipyretics with baths and immediately began the rectal administration of quinin 100 grains in the twenty-four hours. This was kept up several days. In this way the temperature could be somewhat controlled. On lessening the amount of quinin the temperature would rapidly increase and upon its resumption would again subside. Hence this heroic dosing was justified. Saturday morning, August 30, I gave six ounces of olive oil by stomach, which was retained and in the afternoon of the 31st she passed a gallstone about the color and size of a hazel nut. This was like an oasis in the desert, and temporarily there was a change for the better. Everybody was inspired with hope, but the irritable stomach remained, great mouthfuls of mucus and saliva would collect, the vomiting persisted and it seemed beyond the ingenuity of man to suggest a form of nourishment which could be retained. To this was added an aching in the limbs, most prominent in the left arm and leg, with a burning in the bottom of the feet. These symptoms, with extreme hot weather, conspired to make our patient devoutly wish for death. This continued until hope was again nearly extinguished, when to our dismay the pain grew more intense, the stomach again became if possible more irritable, the vomiting of glairy mucus more frequent, and the skin, urine and conjunctivæ indicated the resaturation of the blood with bile. The bowels being constipated, I administered a C.C. pill improved, and the next afternoon was rewarded by finding a second gallstone, larger than the first. During the interval between the passage of these stones, a considerable quantity of inspissated bile was passed. From the passage of the last stone the improvement was slow but continuous until the feeling of fullness, pain and discomfort had entirely disappeared, and she could eat anything she desired with impunity. The skin, urine and eyes cleared—and flesh began rapidly to accumulate. The suffering in the limbs did not entirely cease, but with this exception perfect health seemed about restored, when March 18, 1896, she was again seized with pain and burning exactly as before with a temperature of 103, but no vomiting. Jaundice made its appearance within twelve or eighteen hours and every symptom pointed to a return of the original malady. Eight ounces of olive oil were given within a few hours and was followed by a whitish, pasty stool the next day. Several ineffectual efforts were made as manifested by pain for the stone to be forced through the duct. Full doses of calomel followed by salines, phosphate of soda, and C.C. pills improved, each were tried, but the

feces still showed an absence of bile. Evidently the cessation of each paroxysm was caused by the stone slipping back into the gall bladder as the burning and most of the tenderness disappeared with the pain. The attacks came from two to four hours after the midday meal, when more food was taken and hence a greater demand for bile to aid in its digestion. The tertian type of intermittency, which the paroxysms assumed, excited the suspicion that in some way a malarial element was a factor in the causation. Therefore I saturated the system with quinin and on the night of the 28th gave two C.C. pills improved. On the morning of the 29th a third stone was found, similar in size and color to the others.

Because of its effect on the catarrhal swelling as well as a relaxation of the duct walls, I suspect the quinin was an important factor in aiding the expulsion of the stone. I may be subject to criticism here as well as at other points in my paper. At the time of this writing the patient is again rapidly convalescing.

You can readily see the diagnosis in this case was not easily settled, and because of this the interest became very intense to those directly concerned. The history of perfect health with the exception mentioned, the free indulgence in cold slaw, and the sudden onset of pain a short while after, the vomiting, the burning so persistent and severe that an ice bag was kept over the epigastrium constantly for three weeks, the foul breath, the rapid, small pulse heretofore not mentioned, pointed with so much positiveness to gastritis that it was perfectly natural that this should be considered. There can be no doubt about the presence of an acute gastro-duodenal catarrh resulting from irritation to surrounding parts of the impacted gallstone. This catarrh came near costing our patient her life through its interference with the nutritive process. Hepatic abscess frequently forms in such an insidious manner as to deceive if possible the very elect. I remember a case occurring in Bellevue Hospital under the service of E. G. Janeway, which had been mistaken for a remittent form of malarial fever, and I call to memory just now a case in the practice of a country physician where an old man of 70 developed the history of abscess of the liver, but a diagnosis to that effect was not made. Finally rupture into the lungs took place, and death from apnea was the result. Again, in my own practice, as a sequel to an attack of dysentery an old man of 60 presented the symptoms of suppurative hepatitis with the exception that instead of bulging there seemed to be a retraction of the right hypochondrium. The aspirator was not introduced, and the patient died without rupture or a verification of the diagnosis. In the case under consideration the symptoms suggestive of inflammation and later suppuration in the liver were: 1, climate; 2, the free indulgence in rich, highly seasoned food; 3, sedentary life with constipation; 4, gastro-duodenal catarrh; 5, jaundice; 6, pain and tenderness; 7, fever and rigors. On the other hand, suppurative inflammation of the liver is rare in women, and the pyrexia and rigors are usually attended with profuse sweating. Jaundice, to a marked extent, is generally absent, and when present is *per se* not a valuable diagnostic symptom, depending as it does on a catarrhal swelling of the bile ducts or pressure on these ducts from accumulation of pus. Pain is not so acute or suddenly developed, as a rule, unless associated with a local peritonitis. The question of malignancy was the one which gave us most concern.

Bartholow says: "When at or after middle life, in a patient with a history of former attacks due to gallstones, there begins a fixed pain in the right hypochondrium and subsequently retention jaundice, the existence of a malignant growth in connection with the cicatricial tissue and ancient organized exudation should be suspected, and this suspicion will be confirmed if subsequently a tumor can be felt." Again, "and especially are organized exudations the favorite seats of cancer, new formations, those for example about the gall bladder and cystic duct resulting from repeated attacks of passage of calculi." The persistency of the pain, the history of a former attack, the contracted and adherent gall bladder, and the vomiting, age considered, presented an array of symptoms suggestive of malignant trouble, yet the slow development, the fawn or bronze color of the skin, prior digestive disturbances, a peculiar cachexia and the existence of a tumor were conspicuous by their absence. Having taken a running survey of the premises, what are the indications pointing to gallstones as the source of trouble? 1, climate; 2, gallstones are more frequent after 40 years of age; 3, women are especially liable to them, the ratio as compared to men, according to Thudicum, being three to two, and according to Cyr four to one; 4, sedentary life and indulgence in the pleasures of the table; 5, the history of a similar attack, though of shorter duration, preceded and followed by uninterrupted good health; 6, the abrupt onset with the characteristic pain, followed shortly by jaundice indicating biliary obstruction which had not the time to form outside and occlude by pressure, but must be inside the duct or ducts, preventing the transit of bile; 7, the passage of typical gallstones, though this may take place in connection with malignant disease; 8, the gradual return to health as indicated by cessation of all pain, vomiting or inconvenience of any description whatsoever in the regions of the stomach, gall bladder or liver, a clear, healthy skin and re-accumulation of flesh to nearly two hundred pounds.

I have reached the following conclusions:

1. The diagnosis of simple gallstones, especially when impacted in the common duct as these were is not always an easy matter.

2. Two of these stones were lodged in Vater's fossa for a period of two months in the case of the first and three months in that of the second.

3. The slight diminution in the severity of the symptoms after the passage of the first stone was due to the lessened distension in the duct by the one remaining.

4. Sweet oil probably has some virtue in biliary obstruction as evidenced by the copious discharges of bile following its first administration and the expulsion of a stone after the second; but the fact that it was given several times without result (which I did not mention in order to avoid details) and two of the three stones accompanying the purgative action of C.C. pills imp. lessens to some extent the confidence in oil, giving rise to the thought that any active cathartic might do as well and that the passage of the stones into the intestines was due to the combined influence of quinin and morphin.

This case is one fraught with considerable interest to me. I would be glad to have an expression from those of experience in this assembly. It would be interesting to know what per cent. of obstructed bile ducts take on malignant growth.

It is through the friendship existing between Dr. Walker and myself that I report this case. His absence during a part of the first attack, as well as all of the last, was due to ill health.

SOCIETY PROCEEDINGS

Tri-State Medical Society.

Abstract of the Proceedings of the Fourth Annual Meeting, held in Chicago, April 7, 8 and 9, 1896.

The Society met at the Great Northern Hotel, and was called to order by the President, Dr. R. H. BARCOCK, of Chicago.

After the reading of the minutes of the last meeting by the Secretary, the report of the Treasurer, and reports of standing committees, the President delivered his Address. He selected for his subject

ANTITOXIN OR SERUM THERAPY.

He said the crowning achievement in this line of work had come through the chemistry of bacteriology. Nuttall conclusively demonstrated in 1888 the power possessed by the blood serum of combatting the poisonous products of bacterial growth, but to Behring and Kitasato in 1891 belonged the credit of having found a practical means of utilizing antitoxins in the treatment of disease. To those who deery the antitoxin treatment of diphtheria as dangerous and its advantages as not yet proven, Dr. Babcock commended the criticism by Welch in the *Johns Hopkins Bulletin* of October, 1895. His (Welch's) analysis of cases treated and published up to that time, in the opinion of Dr. Babcock, sets at rest all doubt concerning the great reduction in mortality accomplished by this treatment, and renders the physician culpable who refuses this remedy to his patients. Sufficient experiments on lower animals and trials on human beings had already been recorded to warrant the belief that we shall soon possess an effectual weapon against tetanus. Attempts had been made to treat typhoid fever patients with serum obtained from dogs rendered immune and from convalescents, but as yet observations were too few to warrant a more extended discussion of serum therapy in this class of cases. Dr. Babcock then traced the efforts that had been made to combat tuberculosis by means of serum therapy, telling of the first discovery that certain animals possess comparative immunity from the disease. Detailing several experiments, he said a more intelligent use of tuberculin seemed to show that the early failures were due not solely to the inefficiency of the remedy, but to its injudicious employment in too large doses. He next passed on to a personal trial of the remedy, citing the case of a young woman of 21 years, whose sister had died of pulmonary tuberculosis, and in whom well-marked signs of inactive disease existed in the right apex. The administration of antiphtisin for two months was followed by a gratifying disappearance of the malaise, nervousness and occasional light cough. He also treated a male aged 34 with satisfactory results. Dr. von Ruck had furnished Dr. Babcock with advance sheets of a report, published in this *JOURNAL*, April 11, 1896, of 182 cases of consumption in all stages treated with tuberculin and antiphtisin, in which recovery was obtained in 32 per cent. of the cases, arrest or marked improvement in 30 per cent., and some improvement in 16 per cent. In closing, he said that whatever had been thus far accomplished, the field was broad and would repay painstaking investigation along the line of the antitoxin treatment of tuberculosis.

SPECIAL EDUCATION AS A MEANS OF TREATMENT IN CHRONIC NEURASTHENIA.

This paper was read by Dr. J. F. PERCY, of Galesburg, Ill. Neurasthenia was considered the result of an imperfectly used and therefore improperly developed nerve organization. His treatment is to take patients out of and away from themselves, so to speak, and he knows no better way of doing this than to educate them as to the real facts back of their morbid tendencies. In this city there is an ably conducted kindergarten normal school, and when he has a neurasthenic woman he sends her, if possible, to this school to take the normal course there. The result has been that every case so treated has recovered. Moreover, he believes he has lifted the life of his patient to a higher level of thought and action. In one case the right ovary was buried in a mass of exudate beneath the uterus. Electricity, and especially pelvic massage, were practiced for over a year with but little appreciable result. He stopped all treatment and insisted that the woman take a kindergarten normal

course, which she did, and the result is that to-day she is well, so far as any morbid mental phenomena are concerned. The course of instruction should be carried out by competent teachers, setting at rest the nervous system, so far as receiving and being influenced by morbid impressions. The teaching should be suggestive rather than direct. It is necessary to classify the patients and instruct them by degrees. This plan, which he had merely hinted at, would do more for cases of neurasthenia than anything else of which he was cognizant.

Dr. A. H. CORDIER, of Kansas City, Mo., followed with a paper entitled

CANCER OF THE UTERUS COMPLICATED BY PREGNANCY; INDICATIONS FOR OPERATION.

The author reported a successful case of vaginal hysterectomy in a woman 32 years of age, the uterus being three months pregnant. Of 27 cases tabulated by Dr. Vander Veer, of Albany, 5 died during labor undelivered, 9 died during the puerperal period, 3 results not mentioned, and 10 recovered, the mortality to mothers being 60 per cent. Another author reports 34 cases of cancer of the uterus, complicated by pregnancy, with a mortality of 52 per cent.

Dr. Cordier drew the following deductions:

1. Cancer of the cervix uteri, if left without surgical interference, always kills.
2. The disease, in most instances, is primarily a local process.
3. Early hysterectomy will cure quite a percentage of these cases.
4. The microscope, while a great diagnostic aid, is not infallible in its findings.
5. The experienced surgeon is warranted in resorting to hysterectomy, even in doubtful cases.
6. All malignant pregnant uteri should be removed when seen, before the disease has advanced beyond the period of a probable cure.

Dr. RYAN, of Galesburg, cited an uncomplicated case of cancer of the cervix which occurred in the hands of another practitioner, and in which the cervix was amputated, the patient being four months advanced in pregnancy. Following the operation she went on to full term and the child was delivered without difficulty.

Dr. L. H. DUNNING, of Indianapolis, said that if he should find hardening of the cervix and the development of a neoplasm with the presence of discharges, sanguineous or offensive in character, even though the microscope failed to reveal positively the existence of malignant disease, he should be inclined to pursue the course recommended by the essayist. Relative to the advisability of removing the cervix alone, it might be done if the surgeon is certain that the epitheliomatous variety exists; yet the woman's life was in peril after the neoplasm is removed because of the scar tissue which remains. A case corroborative of this point was cited.

Dr. RUFUS B. HALL, of Cincinnati, thought the whole matter hinged upon the diagnosis. When the diagnosis was accurately made, it is perfectly clear what should be done. He favors total extirpation, believing that high amputation should only be done in exceptional cases.

Dr. D. C. BROCKMAN, of Ottumwa, Iowa, emphasized the importance of early diagnosis. He believes the fault in these cases lies largely with the general practitioner, who does not understand the importance of irregular hemorrhages occurring in women approaching the menopause, and who prescribe a placebo at a time when a radical operation is needed.

Dr. BYRON ROBINSON, of Chicago, concurred with the essayist that the microscope alone was insufficient in many cases to enable the surgeon to make an accurate diagnosis of malignant disease of the cervix, and that more stress should be laid upon the clinical history of the case.

DIFFUSE PELVIC INFLAMMATION.

This was the title of a paper contributed by Dr. L. H. DUNNING, of Indianapolis. Five cases were reported in which vaginal hysterectomy was resorted to for inflammatory disease of the uterus and appendages, after which the author summarized as follows:

1. In all of his cases, except one, the uterus on removal was found to be markedly diseased beyond a glandular endometritis.
2. In the two cases in which the uterus and appendages were fixed the operation was most difficult. The uterus in either case was little diseased. The chief pathologic lesions were double pyosalpinx and pelvic peritonitis. The operation would have been easy and the results quite as good by the abdominal method.
3. In these cases the appendages were much more inaccessible and less open to ocular inspection than in the abdominal operation.

4. In his experience in clamp cases the pain after vaginal hysterectomy is greater the first two days than after celiotomy.

5. The systemic disturbances, as evidenced by the temperature after vaginal hysterectomy is lower the first three or four days, but is higher after six to ten days, when the sloughs begin to give way.

6. In two cases in which ligatures were employed instead of clamps, abscesses in the stumps of the broad ligament followed, retarding the recovery of the patients. Many cases of abdominal section were done in the hospital during the same time, and in none of them did abscess appear.

7. In one case of the five, prolapsus of the vaginal walls appeared a few weeks after the patient began to walk around. This was a ligature case. Such a prolapsus he had never witnessed in a forceps case.

8. In three of the cases the same pain and nervousness followed the recovery as sometimes witnessed in cases of abdominal section. In two of the cases the pain and nervousness passed off after several weeks, as it usually does after abdominal section.

DR. RUFUS B. HALL said that women should be educated up to the point of avoiding septic infection, suppurating tubes and ovaries. The young men likewise should be educated to avoid gonorrhea in order to prevent infecting their wives in future years. This being accomplished, gynecologists would have less pus tubes and diseased ovaries to remove.

DR. T. J. WATKINS, of Chicago, believes there are cases which should be operated on by vaginal incision and drainage, while there were others in which the abdominal route was preferable. All large pus collections in the pelvis that could be opened and efficiently drained without entering the peritoneal cavity should be treated by incision and drainage through the vagina or above Poupart's ligament. Vaginal hysterectomy should be the operation of election in old backward displacements where the uterine appendages are destroyed by suppurative disease.

DYSURIA IN WOMEN.

DR. O. B. WILL, of Peoria, read a paper on this subject. Acting upon the assumption of the zymotic origin of the trouble, his first thought was to neutralize the fermentative action taking place in the lower sections of the digestive tract. For this purpose he had used with great success charcoal and sulpho-carbolate of soda, the former administered in tablet form, 5 grains or more at a time and frequently repeated; the latter in half drachm or more doses, three times a day, before the taking of the respective meals. As to the local treatment, years ago he used with success in these cases of irritable bladder and urethra a strong solution of nitrate of silver, injected into the organ, the resulting pain being held in abeyance by the use of large doses of morphia. Coupled with this forcible dilatation of the urethra for fissure came into vogue, and in some cases seemed to answer a good purpose. Wherever a state of tissue tension exists and free drainage is desirable, the stretching process is an admirable therapeutic adjunct and is a preliminary measure to the treatment to which the author now resorts. The patient is placed in the elevated dorsal position advised by Kelly in exploring the bladder and catheterizing the ureters. After quickly mopping out the residual urine, if there is a hyperemic or analogous condition of the trigonal region, he applies at once on the most dependent portion of that region, from a long pointed syringe, a few drops of a 10 or 15 per cent. solution of potassa permanganate. Preliminary to this, however, he uses a 10 per cent. solution of cocain with which to dilate the urethra, a few drops of which introduced into the bladder serves to obtund in some measure the sensibility of its mucous lining. In cases where the whole tract from that point to the meatus is in an evident state of irritation, either with marked hyperemia or in an eruptive condition, he quickly swabs the pendent area of the bladder with cotton on a screw applicator, soaked in the permanganate solution, and, making sure that there is no sharp point to the applicator exposed, with it draws the charged cotton out through the distended urethra, following in the tract of the withdrawn speculum. After the application of the permanganate to the urethra it is generally advisable to introduce within a few minutes a large sized bougie, heavily coated with lanolin, especially on the end, so that the lubricant may adhere more abundantly and extensively to the urethral wall. Even in those cases of dysuria associated with eczematous and urticaria-like eruptions in urethra and bladder, he had recently found this treatment to be most effective.

DR. E. O. SISSON, of Keokuk, Iowa, read a paper entitled

ULCERATIVE INFLAMMATION OF THE CORNEA.

The author first dwelt upon the etiology, and then passed on to the subdivision of keratitis suppurativa. Symptomatology

and complications were next considered. With regard to the treatment of corneal ulcers, the author reiterated the methods laid down in the several text-books.

DR. ALEX. HUGH FERGUSON, of Chicago, read an interesting paper on

PYLORECTOMY IN AMERICA.

He said the literature up to date only shows thirteen resections of the pylorus in this country, and of this number eight died, and five recovered. The first successful pylorectomy performed in this country was by Dr. Wm. T. Bull, of New York. The proportion of deaths immediately following the operation places shock as the most prominent cause. In none of the cases reported is the nature of the shock stated, that is, whether it was manifested by marked cardiac inhibition nervous depression, or excitement. The author then reported a case upon which he had successfully operated. He is strongly in favor of encouraging pylorectomy for carcinoma of the pylorus, for the following reasons:

1. Medical treatment offers a mortality of 100 per cent. within twelve or eighteen months.

2. Pylorectomy promises a possible cure. In 19 per cent. of over nine hundred cases dying with cancer of the pylorus, no adhesions whatever were found after death; starvation took place before the carcinoma had reached the peritoneum. There would be good prospects of curing most of these. Recovery from the operation occurs in about 50 per cent. Death occurs in 43.7 per cent. while the disease is still local, *i.e.* no secondary deposits, or extension beyond the pylorus. Surely some of these could be saved. A still less mortality takes place with early operation. By timely interference many cases could be saved that now go on to secondary infection, and are doomed. To secure the best possible results shock must be anticipated and measures taken to prevent it. In addition to the hypodermic injection of strychnia before the operation is commenced, the author is convinced from a large experience in major work that when the patient is placed on a hot water bed during the operation that shock, which otherwise would have been pronounced, is in many cases altogether prevented. He feels certain that this precaution was a material contributing element to the success of his pylorectomy case. After opening the abdomen, he recommends the performance of pylorectomy thus:

1. Liberate the duodenum from the pylorus, unite its distal cut end to the posterior surface of the stomach with Murphy's button and invert the proximal cut end toward the pylorus and close with sutures. The great advantage of completing the gastroduodenostomy first, is that the operation can be safely stopped at this stage should the patient show signs of weakening, the abdomen at once closed, and the removal of the pylorus left for a second operation.

2. Separate the stomach from the pylorus and close it rapidly with sutures. Should the patient now present alarming symptoms, the surgeon should again cease operating and leave the pylorus *in situ* in the meantime. It would, of course, be necessary to fasten it in the abdominal wound and drain it externally, which, however, would only facilitate its extirpation at another time.

3. Remove the cancerous pylorus. Spend no time in trying to use interlocking ligatures, but apply forcep after forcep and cut the mass away. This done, the application of ligatures can be executed more expeditiously.

LOCAL TREATMENT OF THE EYE

was the title of a paper read by DR. DUDLEY S. REYNOLDS, of Louisville, in which he said that the local treatment of the eye was as much in need of reform and readjustment as in any other department of surgery, for there had been little change in prevailing customs for nearly a hundred years. It seems to him that it is rational for practitioners to get out of the nitrate of silver path of destruction and quit furnishing the aid of cauterization to the less destructive processes of a surface inflammation. Boric acid will protect abraded surfaces against the ordinary dangers of infection: will allay local irritation; and so these may be appropriately prescribed in every case of pain in the eye from foreign bodies. The yellow oxid of mercury he considers valuable as a local application in nearly all forms ulceration or abrasion of the cornea and conjunctiva. The tension of the eyeball must be noted in every case of injury, and if found slightly increased, a solution of eserin should be instilled, a saline purgative administered, and if the increased tension be accompanied by a sense of pain on pressure upon the globe, it is best to begin with salicylate of sodium or ammonium at once. Hot ablutions are often of great value in cases of irritation of the iris and ciliary body, whether due to constitutional or local causes. In cases of contusion, and in those cases of extravasation of blood from sneez-

ing, lifting heavy bodies, and from various causes of small blood tubes, a solution of pilocarpin promotes rapid absorption of effused fluids. This may be instilled into the eye or injected under the retrotarsal conjunctiva in doses too small to perceptibly affect the heart.

DR. FRANK ALLPORT, of Minneapolis, thought Dr. Reynolds had struck the keynote in certain phases of ophthalmic practice, in that he strenuously advocated the harmless treatment of the eye. He had seen so many instances of eyes that had been injured along the line indicated by Dr. Reynolds, that the paper appealed to him very strongly. The longer he practices ophthalmology, the more he feels the necessity of using mild and uninjurious remedies. He could not but believe that remedies such as the doctor had indicated in his paper that actually produced irritation of the conjunctival surface or of the epithelium of the cornea could be other than extremely injurious in cases of acute inflammation.

DR. WM. H. WILDER, of Chicago, could not agree with the essayist when he thinks that we should abolish the use of the stronger remedies in the treatment of diseases of the eye. They certainly have their use, and particularly in infectious cases, as gonorrheal ophthalmia, whether in the newborn or in the adult. The severer cases of trachoma should be handled without gloves. It is true, their treatment requires skill, but there is no reason why the general practitioner should not familiarize himself with the methods necessary for the treatment of all of these cases.

OBSERVATIONS ON SOME CRITICISMS OF SEROTHERAPY.

DR. PAUL PAQUIN, of St. Louis, Mo., read this paper. No department of therapeutics has called forth so much criticism as serotherapy. These criticisms have been of two kinds: Those based on scientific problems of biology, and secondly, those based on clinical effects and results. The author considered these separately at length. To show the most deleterious results of serotherapy, injudiciously applied, the author had conducted experiments in animals and man and analyzed the results. In a rabbit in good health the number of red blood corpuscles per cubic millimeter were 5,800,000. He injected 4 c.c. of pure horse-blood serum immunized, and three hours later the red blood corpuscles were counted again and they had dropped to an average of 3,900,000 per c.m., a loss of 1,100,000 per c.m. of blood. Eight hours later, 3 c.c. more of pure serum of another horse was injected, and within four hours the red blood corpuscles had been reduced to practically 2,800,000 per c.m., or 3,000,000 less than before any injection. At the same time the leucocytes had increased in large numbers. Practically, the same results were obtained in a man 35 years of age. The number of red blood corpuscles averaged 4,400,000 per c.m. before injecting pure horse-blood serum. Ten c.c. were injected in one dose, the patient never having received it before. Four hours later the red blood corpuscles averaged 3,800,000 per c.c. Six hours later they averaged 3,000,000. Again, in this instance, the white cells were enormously increased. In the experiments both in man and animal, in which the blood cells were diminished largely in number, the temperature declined slowly below the normal, and there were pronounced symptoms of depression. A phase of criticism is based on the idea that in using serum, some fatal or at least dangerous animal diseases, such as glanders and tuberculosis, may be transmitted to man. This is well founded. Glanders has thus been transmitted, if we are to believe the reports of the press, but this danger can be entirely avoided. As to the beneficial effects of serum, these depend unquestionably in a great measure upon increased phagocytosis. The serum increases the white cells whose duty it is in part to destroy microorganisms in tissues and their toxins, probably by a process of cellular digestion, or rather a diastatic neutralization. In a tuberculous man of 35 years, in which the white cells were less than 16,500 per c.m., they were increased to over 10,000 in seventeen days by the daily injection of 2 c.c. of antitubercle serum. The author obtained a similar result in a rabbit in which he had injected Roux antitubercle serum daily for three days, the dose being 1 c.c., also with other serums in other small animals.

DR. FRANK ALLPORT, of Minneapolis, read a paper in which he pointed out the relations which should exist between oculists and opticians. He advanced strong arguments in favor of licensing opticians to fit glasses. The fitting of glasses was not a trivial affair, but necessitated in many instances a thorough examination of the eyes by a properly equipped, specially trained medical practitioner.

DR. DUDLEY S. REYNOLDS, of Louisville, said it frequently happens that a neurotic person consults the ophthalmic surgeon with two or three, or perhaps half a dozen pair of spectacles in his possession, and on suspending the accommodating power of the eye and testing the state of refraction no glasses are needed.

DR. RYAN, of Galesburg, said that every practitioner who is doing more or less ophthalmic work had seen evidences of the injury done by traveling opticians and spectacle vendors. Every general practitioner should look at the eye, not as a machine, but an organ which performs a general physiologic function.

DR. R. HARVEY REED, of Columbus, Ohio, said that legal measures would soon be enacted in Ohio to prevent the optician from encroaching upon the field of the ophthalmologist. The instrument makers would also be included if the bill should become a law. The subject was further discussed by Drs. Wilder and Hale, of Chicago, and Dr. Balls, of St. Louis.

THE OPERATIVE TREATMENT OF JACKSONIAN AND FOCAL EPILEPSY, AS ILLUSTRATED BY SELECTED CASES.

DR. CHAS. B. NANCREDE, of Ann Arbor, Mich., read this paper. The cases reported by the author demonstrated what has been the experience of Horsley, Keen and other surgeons, namely, lack of permanency in results. The great difficulty is a reliable method of preventing adhesions. The removal of the lesion in cortical and Jacksonian epilepsy can only be regarded as palliative. The earlier the operation is done after the disease has become established, the longer the immunity. It is possible that if trephining is resorted to early, the operation in a few instances might prove curative, if a reliable method is devised to lessen the inevitable scar and to prevent adhesions between the membranes and brain. Operation is not dangerous in competent hands, especially when performed early.

A public address was delivered (by invitation) by DR. JOSEPH M. MATHEWS, of Louisville, Ky. Dr. Mathews selected for his subject

SOME NEEDED REFORMS IN MEDICINE.

He first dealt with specialism, according all honor to the specialist. Professors in medical colleges should educate students that the great object in medicine is to practice it; and yet we find blooming into special lines of work every day all over the Union, both in the cities and country, young men, without any special preparation either for surgery or for any other particular line of medical work, setting themselves up as learned men in special departments. The profession should call a halt. It should be impressed upon the minds of students that thorough preparation is necessary in order to be a specialist, and unless this is done specialism would be brought into disrepute. No man can be a specialist in any department who has not fitted himself and had experience in the general line of practice. Reform was needed in the appointment of medical men to fill places in medical institutions, such as asylums, etc. Too often petitions were circulated and signed in favor of this and that man, without taking into consideration professional qualifications.

Expert Testimony. This should be raised to a higher plane, and those who testify as experts should receive adequate compensation therefor.

Attendance at Medical Societies.—In the State of Kentucky there are 4,000 registered practicing physicians. Of this number about four hundred only belong to the State Medical Society. Dr. Mathews believes that this small membership obtained proportionately in the other States. The live, busy, energetic and most eminent practitioners attended medical societies.

Consultations. The old rule that applied to consultations does not hold good to-day. Specialism was not known until recent times. There has been a change in the order of things and practitioners of medicine have to meet the issue just as it is. To day a patient either belongs to the physician or to the specialist, and not to both alike. When a specialist recognizes that a patient does not require his special attention he should call a physician. Per contra, when a physician recognizes that a patient needs special attention he should give the patient to the specialist. Dr. Mathews then strongly condemned the endorsement by medical men of preparations, the composition of which they know comparatively nothing. A reform was absolutely indispensable in this regard.

Code of Ethics. This document needed no defence from him, as it stands open to the world. He did not believe there was a man or woman in the profession who could raise any objection to what is taught therein. The perfect gentleman, however, in his professional relations could control his actions without the Code and act with honesty toward his fellowmen, at the same time there is nothing in the Code to which honorable men could object.

Quacks. The State Board of Health of Kentucky had succeeded in driving out of the State within the last two years over eight hundred and fifty charlatans. How was this accomplished? By the concerted action of the medical profes-

sion and the representatives in the State Legislature. Dr. Mathews then paid an eloquent tribute to the good work that had been done by the former Illinois State Board of Health.

Dr. R. HARVEY REED, of Columbus, contributed a paper entitled

SOME PRACTICAL REASONS FOR EARLY OPERATION IN APPENDICITIS.

In an article on the "Surgical Treatment of Chronic Catarrhal Appendicitis," read by him before the Ohio State Medical Society in June, 1891, he referred to the practical uses of the vermiform appendix and expressed them by quoting the following couplet from an old poem:

"Everything can something do,
But, pray, of what use are you?"

At that time he drew the following conclusions, which he emphasized in this paper:

1. That the vermiform appendix is a useless rudiment.
2. That chronic catarrhal appendicitis is always dangerous and liable to be followed any time by hazardous and even fatal results.
3. That medical treatment is of little or no permanent value in this class of cases.
4. That the only safe and reliable method of treating chronic catarrhal appendicitis, and the only treatment that will promise permanent relief to the patient is the prompt amputation of the appendix.

It is the experience of Dr. Reed that delay increases the mortality record in these operations. Cases were then reported illustrating the importance of early operative interference, and the arguments of eminent surgeons advanced in its favor.

Dr. D. C. BROCKMAN, of Ottumwa, Iowa, followed with a paper entitled

OBSERVATIONS ON THE TREATMENT OF SURGICAL TUBERCULOSIS.

The author called attention to three remedies to be used in the treatment of tuberculosis, guaiacol internally, and iodine trichlorid and iodoform emulsion locally. While he does not believe guaiacol is a specific in tuberculosis, he thinks its judicious use will prove efficient against the septic condition which accompanies this disease. He next called attention to iodine trichlorid in vesical tuberculosis. In the management of tuberculous abscesses there was no treatment that could compare with the use of iodoform emulsion.

Dr. ELMER LEE, of Chicago, read a paper on the

TREATMENT OF PNEUMONIA WITHOUT DRUGS.

The principle which has guided the author in his experiments in the treatment of pneumonia is based upon a conclusion reached some years ago that the maintenance of the strength of the patient is the first requirement in the successful treatment of an acute disease. To preserve the resistance of the system against disease requires an understanding of two simple propositions: 1, how to support the embarrassed nutrition, and, 2, the proper force by which to aid in the removal of deleterious matter from the body. Following upon these two general principles we have confronting us fever to subdue, arterial pressure to overcome, congestion to remove and oxygen to provide for preserving the blood. The symptoms were next dwelt upon at length. As to the treatment of the disease, the author has recently instituted in his practice a sprinkle-bath, which he illustrated. A fountain syringe containing water of a temperature below the normal of the body is hung on the wall, the chandelier, or the bedpost, and by reason of a small sprinkler nozzle, fitted to the end of the tubing, the patient is watered as would be a bed of flowers in the summer time. First, the patient is placed upon a blanket or a rubber sheet and the front of the body sprinkled, then the patient is turned upon his face and the shower bath completed. Sprinkle-baths should be given to the patient every two or three hours during the day. Irrigation of the bowels constitutes the use of water in its third remedial capacity. The value of the irrigation is placed by the author in the second place of importance, as follows: 1, water introduced into the system through the mouth; 2, water introduced into the large bowel as an irrigation, and 3, water used upon the surface of the body. The use of water by the mouth as a remedy is accompanied with extremely small doses of medicine to meet the expectations of the patient and members of the family. Pneumonia cases treated by scientific hydratic measures are convalescent at the end of the first week. Complete recovery is proportionately shortened. It is the author's belief that this method of treatment is the quickest, surest and best management of pneumonia. This plan was only an outline of the general system of treating pneumonia by hydratics; each case must be managed and directed upon its individual merits.

CONSERVATIVE SURGERY IN THE TREATMENT OF HEMORRHOIDS.

By Dr. JOSEPH B. BACON, of Chicago. The author finds in looking over his records that but a very small per cent. of his operative cases have been purely internal or external hemorrhoids. Cases that are suffering or bleeding sufficiently to cause them to seek medical advice are those that have a mixed form of piles, where the anastomosing vessels connecting the external and internal hemorrhoidal veins have become varicose, and these dilated veins press upon the sensory nerve filaments over the inner border of the external sphincter muscle, causing pain and prolapse of the internal hemorrhoids. A segment of the varicose system of veins must be removed, one segment on each side of the anus being sufficient. If the larger tumors are removed, one at least on each side, the varicose system of veins is broken and the remaining varicosities are absorbed and disappear. Remove those hemorrhoids that are causing the discomfort together with the external or skin tags, and the patient is cured, and only a small surface of either skin or mucous membrane has been disturbed. The ligature, clamp and cautery, or crushing method, according to the choice of the surgeon, will answer the purpose. After the patient is convalescent, teach him the causes of his previous trouble and how to avoid congestion of the portal circulation, or overstraining of the general vascular system. This method of operating gives the best results, and if adopted generally would tend to restore the confidence of a much abused class of patients and give the general public greater respect for the science of surgery.

Dr. THOMAS O. SUMMERS, of St. Louis, read a paper on Leucocytosis—its Relation to Modern Therapy.

Dr. ALEXANDER C. WIENER, of Chicago, exhibited cases of spastic torticollis treated with extension apparatus combined with corsets.

Dr. GUSTAV FUETTERER, of Chicago, described a new method of treating gonorrhoeal infections of the knee-joint in which he had successfully used injections of oil of sandal wood. He employs the best preparation of this kind made.

CLINICS.

A clinic was given at the Postgraduate Medical School by Dr. J. B. Murphy before the members of the Society. Dr. Murphy did a cholecystostomy in one sitting.

At Rush Medical College, clinics were given by Dr. J. H. Etheridge and Dr. Fernand Henrotin. Dr. Etheridge did a laparotomy for hydrosalpinx on one side and pyosalpinx on the other; and Dr. Henrotin performed a vaginal hysterectomy for malignant disease.

Dr. Nicholas Senn, at his usual Thursday afternoon clinic in Rush Medical College, exhibited several patients upon whom he had previously operated for peritoneal tuberculosis. He next showed and expatiated upon the following cases upon which he had operated: Tubercular appendicitis; tubercular perichondritis; several cases of tuberculosis of the cervical glands; sarcoma of the breast; tubercular synovitis of the knee-joint; pyloric stenosis; pseudo-leukemia; a case of hernia operated on by the Bassini method; tubercular osteomyelitis implicating the phalanges of the toes; penetrating gunshot wound of the knee-joint, etc.

The following officers were elected for the ensuing year:

President, Dr. A. H. Cordier, Kansas City, Mo.

First Vice-President, Dr. Hugh T. Patrick, Chicago, Ill.

Second Vice-President, Dr. H. C. Eschbach, Albia, Ia.

Secretary, Dr. Geo. W. Cale, St. Louis, Mo.

Treasurer, Dr. C. S. Chase, Waterloo, Ia.

St. Louis was selected as the place of the next meeting.

SELECTIONS.

The Physiologic Effects of the Indulgence in Anger.—The *Medical Examiner* quotes from the *Journal of Hygiene* a vivid description of the results of bad temper. It says: We can readily understand the sentiment of the Latin line in our old copy-books, *Ira furor brevis est*, in the presence of this vivid portrayal.

The list of affections defined under "angina" in the dictionaries—for it has the same derivation as anger—and its modifications, as angina pectoris, is something startling, for it may be safely said that an uncontrollable, passionate disposition, individual or ancestral, is the seed from which most of these ugly conditions have sprung. Look for a moment at a man in a fierce rage: The muscles of his arms are tense, so that

his fists are instantly clinched, the muscles of the neck and chest so rigid that breathing becomes difficult and unnatural, and the circulatory system is temporarily congested. When such a mental state is frequently allowed unnatural sway over the body, it is not hard to see how the difficult breathing and inflammatory states of the various diseases which are grouped under the head of angina, and the constricting pain and spasm of angina pectoris have their origin. It sometimes happens that a man falls dead in a fit of rage, and it is said, perhaps, that he had a weak heart, which could not stand the strain imposed by his mental state. Nobody seems to think that this is but the culmination of a long series of such fits of madness, which have themselves caused the weakness in question. Another class of persons are slow to anger, but when aroused are so filled with resentment that they will brood over injury or injustice for months or years. They brood and brood over the occurrence until it becomes a mental canker, eating into the vitals, and this, if habitual in recurrence, will produce disastrous results. Still another class are fault finders. Perhaps they are seldom positively angry, but their minds are in a chronic state of turbulence in which they feel themselves injured. These people suffer from nervous diseases.

People of this description are not first-class selected lives. They become so-called cranks—abnormal creatures, and sooner or later do something or become victims of some condition which will cut short their life expectation.

Relapsing Sore Tongue.—Mr. Jonathan Hutchinson presented to his post-graduate class a case of the above named affection, as reported in the *Medical Press* for February 26. There were large abraded patches upon the surface of the organ, and these resembled a severe attack of herpes. Herpes of the tongue occurred chiefly along the margin and tip: herpes of the tip was exceedingly common. Sometimes these attacks supervened with such frequency that the patients were scarcely ever free from them. The history of the present case was that the disease had persisted off and on for twenty years. At intervals the tongue would be quite sound, but after some months a relapse would occur. The present attack, which had lasted for four months, was the most severe which the patient could remember. On examination of her teeth, one tooth was seen in which an amalgam stopping had been used. Mr. Hutchinson here remarked that he entertained great prejudice against amalgam stoppings in teeth, especially in mouths which were sore. In such cases he always insisted upon the amalgam being removed and gold inserted in its place. Dentists, he stated, would not believe that any harm arose from amalgam stoppings. But he was satisfied that in certain conditions some chemie solution of the amalgam took place. Most often the tongue became sore opposite the tooth in which the amalgam was present. Moreover, he had often found that patients could tell by means of a slight metallic taste in their mouths which tooth it was in which the amalgam had been placed. Again, he had often seen cases of sore mouth where all the symptoms had been relieved by replacing the amalgam with gold stopping. The pellicular condition of the patient's mouth was most interesting. In some respects the leucophakia somewhat resembled that seen in smoker's tongue, but more inflammation was present than was usually observed in the latter condition. It was worthy of note that the filiform papillae had disappeared over a large area. The patient, on being asked if any particular articles of diet caused irritation to her tongue, replied that anything "sharp" did so, and in this connection she instanced vinegar. She also avoided walnuts. Mr. Hutchinson was interested to find that she had herself discovered the irritating effect of walnuts. He pointed out that walnuts were especially harmful in these cases. The old, dry walnuts were possibly not much to be blamed in this connection, but the juice of the rind of the young, moist walnuts was especially irritating. He had seen many cases of sore mouths arising from this cause. Again, such patients should avoid all effervescent waters, and sugar in combination with vegetable acids was very harmful. The remedy for these cases was arsenic.

Extraordinary Longevity in a Family having an alleged Tuberculous Taint. The *Philadelphia Press* has the following item, which

we will be glad to have verified by the local medical faculty of Otsego County, N. Y.: "Probably the most remarkable case of longevity in Burlington, N. Y., is to be found in the Wilkinson family, the majority of the members being residents of Mount Holly. The ages of the eight persons now living are: Mrs. Martha Groom, 91 years; Priscilla Wilkinson, 88 years; Margaret F. Lamb, 84 years; Ann Curtis, 83 years; Mrs. Ruth B. Barton, 82 years; Lavinia Wilkinson, 79 years; Abel Wilkinson, 79 years; William E. Wilkinson, 77 years, their aggregate ages being 662 years, an average of 82 years. They are all well, active, possess the best of health, have sound minds, memory and understanding. There are many remarkable circumstances connected with the lives of these people, particularly the fact that both father and mother died at an early age, both parents being the victims of consumption. Abel Wilkinson, a Welshman, died in 1828, at the age of 48, and his wife Deborah, a German, died in 1832, at the age of 52. Not one of the children has had the slightest trace or symptom of that disease." The relation of tuberculosis to longevity form a vexed question with the life insurance leaders, and the latter as a rule steer clear of risks with a frank tuberculosis history. It is not sufficient that a "risk" is, at the time of examination, in a robust and assimilative frame of physique—if he have a frank history of tuberculosis—for it is by no means certain that some comparatively slight engrafted malady or accident may not before long overtake and demoralize the apparently robust physique. The pessimistic examiner will feel impelled to decline the risk. How the optimist may be expected to view the case may be judged from a report recently put forth by the capably and adroitly conducted New York Mutual Life Company. This report, which is in part at least the product of the pen of Dr. E. J. Marsh, a veteran medical director who has for years carried vast responsibilities for the mastodon companies, is addressed to the double question on the value (positive and relative) of family history and personal condition in estimating a liability to consumption. The closing remarks and conclusions of this report are as follows: While mindful that individuals with a very unfavorable family history have, as a rule, been rejected, and that, therefore, our experience has been to this extent limited, the statistics gathered by our later actuaries warrant the following conclusions:

1. That the history of consumption in any member of the immediate family increases the probability of its appearance in an applicant.
2. That consumption in a brother or sister is at least of equal importance as when it has occurred in a parent.
3. That persons who are under the standard or average of weight are much more liable to consumption than those above this standard. That the peculiarity of constitution which is indicated by the inability to take and assimilate a proper amount of nutriment indicates a susceptibility to phthisis, or at least is a reasonable suspicion of such predisposition.
4. That persons who exhibit a robust and well-developed body have little susceptibility to consumption.
5. That the personal condition of weight and robustness has far more value than the family history in diminishing the liability to consumption.
6. The evidence presented by a well-developed body may outweigh the suspicion attached to unfavorable family record.
7. That these influences of family history and personal weight are of the same grade for every age, and their importance is not lessened by the fact that the individual has reached middle life.
8. And as an eighth conclusion, and at the same, time *précis* of counsel to medical examiners, the report closes in saying: "In deciding upon the eligibility of an applicant for life insurance, in whose case there is a suspicion of future danger from consumption, his personal condition is of the first, and his family record of the second importance. Whenever he presents a robust physical appearance, with a weight at least equal to the standard or average as given in our tables, he may be accepted, notwithstanding any taint in the record of his family. In our experience such persons have a small liability to consumption, although not protected from it. If, however, his weight does not come up to the average, and he gives a history of consumption in brothers, sisters or parents, he is to be regarded as an unfavorable risk. This does not mean that all such persons are to be absolutely excluded from insurance, but each case must be carefully scrutinized, and the decision based upon the circumstances of occupation, character, past history, etc. When these are favorable, insurance should be given on terms most advantageous to the company, by limiting the amount or modifying the form of policy; when unfavorable, the applicant should be either postponed until he has gained sufficient weight, or else be absolutely rejected."

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SATURDAY, APRIL 18, 1896.

THE ANNUAL MEETING.

"the sweet South
 That breathes upon a bank of violets."

Without fear of successful contradiction we may confidently assert that no previous meeting has had a better program, or at this date given earnest of scientific work of higher grade. The plan adopted for the past few years of choosing section officers by each section for itself, has been productive of the highest benefit. Those responsible for the management of the section, are workers in that section, thoroughly acquainted with their colleagues and their respective capabilities. The consequence is that there are few misfits in the section programs. The subjects assigned have fallen into competent hands, as the Spanish proverb has it: "The drum is in hands that know how to beat it." We may with every reason expect our ASSOCIATION work to take even higher rank each year.

The general sessions will be attractive. An interesting address may be expected from our President, "the old man eloquent" of the Pacific Coast: and from those high authorities in medicine, surgery and hygiene respectively, WM. OSLER, NICHOLAS SENN and GEORGE H. ROHÉ. One would indeed go far to find abler representatives of their respective branches in medicine.

Nor will the outside features of this meeting be devoid of scientific interest. We may expect something important from the meeting of such influential bodies as the American Academy of Medicine, the Association of Medical Colleges, and the Conference of State Boards of Examiners and Licensing Boards.

Fifteen years ago the ASSOCIATION met in Atlanta, under the Presidency of PROFESSOR THEOPHILUS PARVIN; our present President, PROFESSOR BEVERLY COLE, was present as the only delegate from Califor-

nia. DRS. DAVIS, GROSS, BALDWIN, HOOPER and TONER, former Presidents, were there, and also DRS. BRODIE, MARCY, DAWSON, BRIGGS and HIBBERD, who each became President. DR. LOUIS A. SAYRE was elected President for the ensuing year, and DR. R. BEVERLY COLE First Vice President. On motion of DR. E. SEGUIN, of New York, the metric system of weights and measures was adopted by unanimous vote, and a resolution from the Section on State Medicine, prepared by DR. STANFORD E. CHAILLÉ, recommended the substitution of "a periodical Medical Journal for the present volume of Transactions." An amendment to the by-laws was offered by DR. JOHN H. RAUCH providing for the acceptance of one delegate from the U. S. Marine Hospital Service. Thus it will be seen that the former Atlanta meeting was a history maker. Let us trust that at the close of the next meeting in Atlanta the results may show an equal advance.

The profession of the State of Georgia, Atlanta and the South generally will be present to welcome their guests with that hospitality so ingrained in their nature as to have become a traditional trait of Southern character. The season will be the best, and the delicious mountain air will impart new vigor alike to the hurried city specialist, the general practitioner of city and country, and as well the sleepy Rip Van Winkle, Jr. M. D., who comes forth when "laylocks blow" to seek the society of his fellows and gain a renewal of professional life.

Finally, we urge our members to go, and if the discussions by the Sons of Science are too exacting for a weary brain, let them remember that Atlanta itself is well worth looking at, for was it not at Atlanta that

"Thickest there the spear-heads gleamed,
 And the scattered plumage streamed,
 And the broken shields were tossed,
 And the shivered lances crossed,
 And the mail-clad sleepers round
 Made the harvest of that ground?"

MEDICAL CONFIDENCES AND PROFESSIONAL HONOR.

A recent trial in England has again brought to the fore a legal question that has been already referred to in recent issues of the JOURNAL (March 31 and April 11), and which is still unsettled by statute in many parts of this country, and apparently also in Great Britain, viz., the obligation of secrecy on the part of the physician as to facts obtained by him in his professional relations with his patients. It seems to be the general opinion that this is obligatory, but there appears to have been a difference of opinion in this instance, an eminent physician stating it as his belief that the violation of confidence was under certain circumstances fully justifiable. The rather sarcastic comments of the Judge on this opinion probably show the tendency of the legal mind and have been quoted with commendation by the medical press.

There is no question but that it is, and should be, a point of professional honor under nearly all circumstances to keep sacred professional confidences. One might say *all* circumstances without any qualifications, but for the fact that the law itself interferes with medical secrecy in the case of certain formidable and frequent infectious diseases, and this requirement opens the way for casuistry in several directions. A physician might follow the course indicated by the eminent physician above referred to and plead as an answer the public interest required it; were there no law requiring reports of cases of contagious diseases, would not a physician, on humanitarian grounds alone, be justified in reporting a case of malignant diphtheria, for example in case it were possible to protect the community by no other means than its publication? It is easy to suppose such cases as this, and they belong to the class in regard to which the physician must act according to his conscience, and take the risks his action may involve. It is a curious fact, in this connection, that a certain class of contagious diseases, the spread of which is one of the most important social questions in several points of view, is just the one in regard to which medical secrecy is most imperatively demanded and in which its violation would probably be most disastrous. There have been some damage suits that have fully demonstrated these perils.

On the other hand, it is doubtful whether courts of justice would protect a physician under certain circumstances in following the dictates of professional honor and his own conscience. In such a case, as that of the assassin of PRESIDENT LINCOLN any reservation of facts or non-committal conduct might be disastrous, and it is a possible question whether DR. MUDD was not to some extent a martyr to his professional ethical standard. Such cases are, however, too exceptional perhaps to be worthy of consideration; they are referred to only as possibilities, and as illustrating certain risks of the medical profession.

It has been said that the physician stands in honor in exactly the same relation to his patients as the priest who may receive their confessions. This statement requires the qualification that the former alone has to do with honor; the priest should have an entirely different and more exacting standard as regards the question of abstract right. The physician is not specially a guardian of public or private morals, and the obligation to him to rectify or prevent their violation is infinitesimal compared to that of the priest, and while on broad humanitarian grounds there may be in very exceptional cases an excuse for revealing what has been learned professionally, it must be remembered that every breach of confidence is done at the violator's peril, and that this applies as well to any, even implied, confirmation of what may be common gossip or report. DR. PLAYFAIR can not obtain the sympathy of the medical profession in his misfor-

tune if the statements of the lay press as to his conduct are correct.

Such instances only emphasize the need of legislation on this subject, such as is now being pressed before Congress for the District of Columbia. Such a law is now in force in New York, and possibly in other States, and there should be some general legalization of what the ethics of our profession demand. The passage of the law for the seat of government would make an excellent precedent for its extension to all United States courts, and every reader of the JOURNAL is respectfully requested to use his influence with his representative for its success.

THE AMBITION OF THE OPTICIAN.

It is quite certain that we are entering upon a prolonged period of controversy and even warfare with the opticians. It is, however, rather with a portion of the general class, who are persuaded to throw in their lot with the jewelers and spectacle vendors. Their aim is to be recognized legally and commercially as official refractionists, the physician, specialist or ophthalmologist being relegated to the position of one who deals only with so-called diseases of, and operations upon, the eye. In the State of New York a determined attempt is being made to secure the passage of a law to this effect, and with the well-known and pronounced sympathy with quackery upon the part of legislators, newspapers and the general public, it becomes evident, as we have said, that this is only the first showing of the cloven foot. If, as seems likely, the opticians will not succeed in New York the first time, they will try it again and again, and in other States also.

The claim of recognition as the official refractionists of the community is based upon a tissue of misrepresentations, ignorance and errors easily seen to be such by medical men of any intelligence, but which bear considerable plausibility from the lay standpoint.

Let us first acknowledge that in one respect their reasoning is by no means shallow or foundationless. This is that many physicians (so-called) after taking a six weeks' course upon the eye at some post-graduate school, go off and set up as specialists, and pretend to be able to treat eye-strain and all the conditions that attend or cause it. This appears to us a most glaring abuse, and our post-graduate schools should look sharply at their work and the presumptions that they authorize by these courses. At present they are open to grave criticism. One who has been a general physician is but little better fitted after six weeks of special study to do refraction work, than is a layman-optician after the same "preparation." An expert ophthalmologist can have nothing but contempt for the impertinence that makes such a claim. Few physicians are competent to prescribe for eye-strain with less than two years of special and earnest study.

But even this admission by no means justifies the optician in his own claim. One abuse or wrong can not justify another and a greater one. It only makes us look a little sharper for the beam in the professional eye.

The fundamental argument upon which MR. PRENTICE and his associates rely in their raid upon the New York Legislature, is that the treatment of eye-strain is simply a matter of mechanic optics—that all one has to do is to learn the static and dynamic refractive and muscular anomalies of the patient's eyes, and then apply glasses by an invariable rule. This, as all ophthalmologists know, is downright error and falsehood. It is never in a single instance true. The ophthalmologist who should carry on his practice in that manner would soon find himself without patients. His more discerning competitors, by the inevitable results of his own stupidity, would soon get his patients. Every case of eye-strain has medical bearings and significance, either negatively or positively, and must be prescribed for with a physician's knowledge and judgment. That this is not entirely recognized by the medical profession is no argument. The experts in such matters should be consulted; only their opinion is valuable. We have before us a circular from an optician who claims that "above (sic) 170 physicians now send us their patients." If this were only nine-tenths lie it would be bad enough, and would only argue against insufficient education on the part of these physicians—or against the giving of commissions by opticians.

We have left out of the count a fact which is painfully evident to all oculists. There is hardly a day that they do not see instances of blindness or ruined eyes simply because the patient relied upon optician's glasses, and (of course) the optician failed to recognize the glaucoma, paralyses, pareses, organic diseases of the eye or of its innervating centers pointing to systemic disease. A few malpractice suits would perhaps set this matter right, as in such cases opticians are as certainly liable for damages before the law as are physicians, and they should be made to suffer for their temerity and impertinence.

Admitting, for the sake of argument, that—optically speaking—refraction and prescription is all that is required to treat eye-strain, it still does not follow—far from it—that opticians are capable of diagnosing and prescribing for errors of refraction. We have heard oculists of the most trustworthy judgment and long experience say that out of thousands of glasses prescribed by opticians they have never yet seen a single one that was correct.

The entire matter resolves itself into an attempt on the part of a certain class of men to arrogate to themselves functions and duties without education or ability. All the laws of optics in the world can not teach medicine. Eye-strain is a disease (or symptom of

disease), and to treat disease requires a medical education. It is over again the same essential controversy as was once waged and fought through as regards the druggist and the physician. Civilization has settled that controversy, and must in the same identical way settle the present one. The optician stands in the same precise relation to medicine as does the druggist. We are glad to know that the better class of opticians have nothing but scorn for the impertinent attempts of some of their unworthy fellows to arrogate to themselves a public function without proper preliminary education and qualifications. To them we may look, it is hoped, to aid the profession in its opposition to this latest attempt at legalizing quackery. They should unite as once did reputable and conscientious druggists to put the seal of their condemnation upon a plan that can only bring them disgrace. They have a noble and highly respectable calling, but it is as distinct from that of prescribing for diseases of the human organization as is that of the druggist. The profession is deeply cognizant of the debt owed to the intelligent coöperation of both professions, so far as pertains to their peculiar duties.

Medical men should be alert to oppose this subtle and ill-designed scheme which can, if possible, only result in more pernicious abuses and bring incalculable harm to the world.

AN ANTI-VACCINATION CENTER SEVERELY AFFLICTED BY SMALLPOX.

The town of Gloucester, England, and its vicinity has been the scene of much popular excitement on account of an epidemic of smallpox. A riotous demonstration took place at the Cottage Hospital, at Oakridge, used for the treatment of cases of that disease, and arson was committed, the hospital being damaged to the extent of \$600. Seven persons were convicted; and each were sentenced to a year's imprisonment.

In February last, the assizes for the Winter Term should normally have been held at Gloucester and JUSTICE GRANTHAM attended at that town for this purpose, but such was not carried out. In his charge to the grand jury he stated that he had received a communication from the authorities in Gloucester to the effect that smallpox was prevalent in the city and had been so for some little time past. Although every step had been taken to prevent any spread of the disease he had been asked to authorize an order to be issued closing all the public galleries in the court, so that no one should be allowed to attend the assizes save those on business. This he deemed was a very serious thing to do, and the question occurred to him, whether he was justified in bringing together into a town, where disease was prevalent, persons from all parts of the country, of all ages and both sexes, and in all states of health. The judge, therefore, took steps the

result of which were that the assizes were ordered to be removed to Cheltenham. Since, however, this decision has been arrived at the judge observed that he was informed that in Gloucester there were many people who, for the sake of a better name, called themselves anti-vaccinationists, that was, they resented the opinion that generally prevailed in the country, and by persons in authority, that all children should be vaccinated. When, therefore, he heard that the local authorities refused to compel persons to have their children vaccinated he thought it was more desirable than ever to take the step which had been taken because there were in the town many people—children and adults—who had not been vaccinated. It may be after this that the authorities will take these remarks of the judge into serious consideration.

The following paragraph in the *New York Times* comments upon the effects of the anti-vaccination craze upon the afflicted town:

"Anti-vaccinationists in this country may well ponder on the experience through which the citizens of Gloucester, England, are now going. For years that city has been a center of the anti-vaccination craze, and so prevalent there was this particular form of idiocy that the law in regard to the employment of this safest, and most certain of all the prophylactics known to medical science has long been a dead letter. The local authorities refused to enforce it, and as a result, not only has a vast proportion of adults gone without any other protection than luck from the attacks of a loathsome and fatal disease but a whole generation of helpless children was allowed to grow up unguarded, and every school became simply an invitation to pestilence. Now the invitation has been accepted, and such an epidemic of smallpox is raging at Gloucester as has been rarely equaled in modern times, except among the savage tribes of Africa or Greenland. It was only a few weeks ago that the first case was reported, and already the infection has swept through the whole city. The hospitals are crowded to overflowing, business is at a complete standstill, churches and schools are closed, and toward the cemeteries moves an almost continuous procession of wagons laden with the dead. And yet, in circumstances like these, the anti-vaccinationists of Gloucester are as vehement as ever in defense and propagation of their doctrines. They hold nightly meetings, and as all the local papers except one refuse to print their imbecile arguments, they are placarding the town with hideous and puerile pictures of Death, using his dart as a lancet and vaccinating a child who struggles in the grasp of a policeman."

An item in one of the English journals, also, states that an isolation hospital will presently be built for the use of Gloucester, in five pavilions, at a cost of nearly \$50,000, inclusive of \$10,000 to be spent for extra roads, water supply, sewerage and disinfection plant. The experience of the town, which is not a large one, has been costly and humiliating.

THE TRANSACTIONS OF THE FIRST PAN-AMERICAN MEDICAL CONGRESS.

We have received many inquiries concerning the Transactions of the Pan-American Medical Congress, which was held in Washington in September, 1893. Some of the correspondents have been inclined to hold the late Secretary-General responsible for the

delay. From a letter received from that gentleman we gather the following points:

1. The manuscript of the Proceedings of the Pan-American Medical Congress was compiled by DR. CHARLES A. L. REED, the Secretary-General, and was transmitted by him, in accordance with law, to the Secretary of State, Washington, under date of Nov. 25, 1893—but little more than *sixty days after the adjournment of the Washington meeting. This act ended, absolutely, DR. REED's custody of and control over the Proceedings.*

2. The Congress then in session, by concurrent resolution directed that the Proceedings be printed and bound in cloth and that 4,000 copies be delivered to the Department of State for distribution. The publication thus ordered was done by the Public Printer under the direction of an efficient editorial committee of which the Secretary-General was not a member.

3. Complete advance sets of the printed sheets, without illustrations, were furnished the President of the Congress, DR. PEPPER, in September, 1895.

4. The complete mailing list of the Congress, embracing all registered members and foreign correspondents, was compiled by DR. REED in 1893, and forwarded to the State Department at the earliest intimation of the probable delivery to the Department of the printed edition.

5. Information received in February, 1896, from the Public Printer announced the completion of the work and its delivery to the State Department, under the frank of which it is to be distributed to members residing in the United States, Mexico and Canada.

6. The delay in the distribution of the volumes probably depends upon some unavoidable exigency in the departmental service, the officers of which have at all times manifested a cordial interest in the promotion of the work. Further inquiries should be directed to the Department of State, Washington, D. C.

It is thus clear that the responsibility for the delay does not rest with any of the medical officers of the late Congress.

OUR JOURNAL.

The two-year lease by which the JOURNAL became a tenant of No. 86 Fifth Avenue, Chicago, will terminate April 30, 1896. Although the JOURNAL has prospered even in these troubled times of financial depression, far beyond our hopes, yet the work has been done under many difficulties and annoyances. The two changes in lessors, made it almost impossible to obtain the satisfaction of any complaint, the damages by fire and water, the breakage of machinery whereby we were many times deprived of power, the unpleasant surroundings of the hall and the utter failure of the management to perform any of their verbal promises, made a condition hard to bear with equanimity.

We have, by direction of the Trustees, concluded a lease with the owners of the Occidental Buildings, 61 Market Street, whereby we shall in a few days occupy the third floor in a new fire-proof building, now nearing completion. In this building there will be much more room, and new machinery will be added. We shall purchase an electric motor to run the machinery, so that we shall

no longer be subject to vexatious delays, on account of failure of power. We are happy to state that the JOURNAL was placed in the mails with absolute regularity during the past year, but it is an eloquent testimonial to the industry and zeal of the mechanical department, for several times "night runs" were made, and many days of over-time were expended on account of accidents which we trust may in the future be avoided. The increase in growth of the ASSOCIATION membership, larger than in any two previous years combined, shows that the work of professional organization is rapidly being accomplished.

The business necessity of a permanent home for the JOURNAL, is one that becomes more and more urgent each year. As the plant becomes more extensive, and the business increases, the bad policy of paying rent will be apparent. This item of rent will probably increase from year to year until the ASSOCIATION directs the purchase of a suitable property. Some talk has been in the air about a change of the place of publication, but it is evident that should the final home of the JOURNAL be in one city or another of our country, the policy of owning our own building is one that of right should prevail, and is a question entirely apart from that of location, which indeed might be settled once for all by the vote of each member without discussion. This question at rest, then the ASSOCIATION can easily take the necessary steps to provide a fund for the purchase of property, the payment of interest and the gradual extinguishment of the debt. The present move should be the last move into a rented building. Next time we should go into quarters owned by the ASSOCIATION.

THE JOURNAL SPECIAL TRAIN.

There is but one special train from Chicago to Atlanta operated by the authority of the Board of Trustees of the ASSOCIATION, all others are imitations. Reserved space on this train may be secured at this office or of MR. J. C. TUCKER, Big Four office, 234 Clark St.

CORRESPONDENCE.

Popular Lunacy.

CHICAGO, April 9, 1896.

To the Editor:—In a recent editorial entitled "Popular Lunacy," you refer to the highly educated young woman of London who suddenly asserted her conviction that marriage was immoral and her intention to live in concubinage with a workman. In the following paragraph you say, "whatever may have been the actual condition of the woman the moral of the decision (made by the Commissioners in Lunacy) is this: Insanity must be of a definite type, no new forms are to be discovered, our knowledge of it is exhaustive. This is an opinion, that, however satisfactory it may be to the legal mind, can have no medical standing whatever, its mere statement is a *reductio ad absurdum* in itself." Herein, it seems to me, you have touched the cause of much of the real trouble in regard to expert testi-

mony in our courts, especially in cases of insanity. That the present system is outrageously defective will scarcely be denied by anybody but that any very speedy change may be anticipated is almost as hopeless. The legal mind is trained to have great respect for precedent and authority: to it the old things are the best: antiquity confers upon a custom an almost sacred veneration. A lawyer and a judge hunt for precedents, so far as possible for their decisions: their guides are to be found in the past. This is undoubtedly as it should be. Our whole judiciary system rests upon and owes its dignity largely to the venerable antiquity of its forms. The medical mind being scientific on the other hand, has or should have little esteem for mere authority: it cares little or nothing for mere precedent; antiquity rather provokes suspicion in it. It looks forward for new things and new ideas: new discoveries are its goal and the old is quickly forgotten so soon as the new is established. In a word the science of medicine is continuously advancing. Law is conservative, medicine, like all science, is progressive.

The trial by jury is an old and venerable custom, probably the best that has ever been established for the administration of justice. Its object is to elicit *facts* in a case and to award a man a verdict found by his *peers*. At one time insanity was so little known as a disease that nothing but a few *facts* could be predicated of it. A man who did certain things beyond all reason, who acted entirely unlike the majority of his fellows, who distinctly did not recognize the difference between right and wrong, and who showed by word and deed that he was incapable of knowing that his acts were crimes in the sight of the law, even though he were able to distinguish right from wrong, was adjudged insane. He was the victim of a gross form of insanity, and of such any body of laymen might form a decision. That was in the early days of mental science and when mental phenomena were as little known to men of science as to any average layman. The trial of insanity by jury was not then so anomalous a proceeding. To-day, however, the jury system, the old legal tests of insanity and the popular conception of the disease remain about the same, whereas the science of psychology, the knowledge of mental phenomena and the physical causes of those phenomena both in health and in disease, have made a tremendous advance. The old legal tests are entirely inadequate to-day, for there are many varieties of mental disease, many manifestations of the same disease that can not be tested by the old legal standards. Moreover, certain forms of insanity as we know it to-day can not be decided upon the basis of one or more isolated *facts*, comprehensive to a jury of average laymen, but must be decided only by the *opinion* of one who has had long experience and observation in the study of similar cases. As a simple illustration, the delusion of grandeur often manifested early in general paralysis would produce but little impression upon the mind of an average jurymen, and in the absence of more prominent symptoms he would be apt to smile at the credulity of the expert who having seen many cases with similar delusions, should endeavor to impress him with the importance of such delusion as an early sign of serious mental breakdown. Many of the sexual psychopathias and finer grades of mental aberration, including the whole list of monomanias are absolutely outside of the comprehension of the inexperienced jurymen. To expect such a jurymen, after sitting many wearisome hours in a box listening to the confused examination and cross-examination of a couple of loquacious lawyers and a number of biased experts, to form a clear scientific opinion as to the sanity or insanity of of the prisoner, is ridiculous in the extreme. Were I the unfortunate prisoner I would infinitely prefer having my jury consist of a class of first year medical students, for these would, at least, have had some slight observation of the possibilities and probabilities of disease. Were the verdict to be one of life or death, I would pray to heaven that only those who had made

a life-long study of mental diseases and knew them in all their various forms should constitute the jury and not a set of men who are totally ignorant of the subject, whose minds are confused and wearied by the wordy conflicts of opposing counsels and experts, and who now for the first time have probably heard of such a mental trouble of which I was suspected to be the victim. It is a travesty upon justice itself in our very courts of justice, to allow a body of ignorant men to pronounce a verdict upon a condition of which only the most experienced and subtle minds are capable of forming an opinion.

The diagnosis of insanity does not depend upon the presence or absence of a few isolated *facts* but it is an *opinion* which can only be found by a genuine expert after long, close and serious study of the case. Hence experts, in my opinion, should not be classed as witnesses, but should occupy a judicial position in the court.

Insanity, as we know it to-day in its many and varied forms, with its subtle and singular symptoms, its frequent objective and subjective phenomena, is not a matter for the decision of any body of mere laymen, any more than certain problems of civil engineering, certain phenomena of chemistry, certain questions of mining are for the decision of a promiscuous body of men gathered in from the street. A man's sanity or insanity should be decided by a commission of genuine experts, from whom there should be no appeal unless it be to another commission of experts, this commission to consist of the most learned and experienced in mental diseases, to be appointed in such a way as to be free from politics and to be remunerated in accordance with the dignity and seriousness of their labors. If such a commission decides that the prisoner is insane there should be no further trial of the case; if they declare he is sane, then he should be submitted to the usual civil trial before a jury of his peers.

I know that the spirit of our judiciary system is that every man charged with a crime shall be confronted by his accusers and given an opportunity to examine them in open court. But I claim that the spirit of the system is grossly broken when a man, suspected of so serious a matter as mental disease or charged with the same, is confronted by partisan experts and is sentenced by an inexperienced, unintelligent set of jurymen. The prisoner is suspected of being insane; for the time being, therefore, he represents some one form of the many abstruse and subtle forms of insanity; on the other hand the jury consists of a set of plain ordinary business men, they represent no knowledge whatever of insanity or any of its various forms: therefore, in the abstract sense and metaphorically speaking, the prisoner is not being tried by his peers. As he stands for a certain form of insanity, being suspected of such, his peers in the abstract, are those experts who know more about and are capable of deciding best all questions in regard to that form of insanity. As cases of insanity are tried in our courts to-day, they seem to me to be illegal proceedings and contrary to the spirit of our great judiciary system. The advances made in mental science during the last few years have lifted it, it seems to me, outside of the jurisdiction of our courts. The latter are for the administration of *common justice*; their function is to ascertain *facts* and to pass *sentence* upon the strength of those facts. All this a jury is capable of doing. Insanity, however, is not a question of mere common justice, it is a physical and metaphysical aberration which must be *discovered, recognized and granted a certain amount of palliation*; it is not always a bald fact readily discernible by the average man, it is a most *subtle phenomenon* which only the most experienced can detect: the decision of it can only be justly made by those who are capable of forming the most accurate *opinion* in regard to it. This, only a special commission of learned experts is capable of doing.

L. HARRISON METTLER, M.D.

Poisoning by Acetanilid and Bismuth.

BRODNAX, LA., April 13, 1896.

To the Editor:—I note in the *Medical Brief*, April, 1896, an article taken from your splendid journal, written by Dr. C. W. Rook, in which he gives the details of these cases of poisoning, one death, from the use of equal parts of acetanilid and bismuth subnitrate. The infants were two and four days old. Without a doubt acetanilid is a powerful drug and should be used with care, but I think the doctor has hardly followed the formula given in the *Virginia Medical Monthly*. I think it is about as follows: acetanilid and boric acid equal parts. (This powder is named by Dr. Burgess of Tennessee, "boralid.") When used on tender skins, as infants, the formula recommended is a bulk of bismuth subnitrate equal to both the others, viz., boric acid and acetanilid each 1 part, bismuth subnitrate 2 parts. It will, no doubt, be noted that in dressing pustular eruptions twelve to twenty-four hours should elapse between dressings. In the cases either by the doctor the dressing in one was reported several times in twenty-four hours, this case died. In the other applied only once, it recovered. In the burn, "every four hours for twenty-four hours," supposable pure acetanilid. After several years experience with it in many ways I am convinced it is safe in 99 per cent. of cases. I have used it since its first appearance in aborting chills, then in the different skin diseases under my care. Given internally I have to record six cases of slight cyanosis in children under eighteen months.

Idiocyncrasy has much to do with its untoward effects. I have before me a report of an adult taking 5 grains, with "unpleasant cyanosis" following. In the *Medical Brief*, January, 1896, p. 86, I see "120 grains taken in six hours (8 doses of 15 grains each), recovery in sixteen hours." No treatment recorded.

Now, while acetanilid is set down as a heart depressant the writer in above article says "heart and respiration nearly normal."

With 120 grains ($\frac{1}{4}$ of an ounce) in a man 26 years old and "heart and respiration normal" there seems to me a screw loose as to the effects usually asserted, heart depressant.

Dr. Blackwood of Philadelphia in the October *Medical Summary*, warns against the use of the drug, within twenty-four hours of administering calomel. In subsequent numbers of same journal will be found letters from several physicians who have for several years used both drugs in conjunction or within a very few hours with no bad effects.

In isolated cases it might produce unpleasant effects, but what drug, potent for good, has not the same record? Cocain, chloroform, opium, even the "sheet anchor" quinin; the mild and ever present Dover's powder has in several instances in my practice produced most distressing urticaria. This is not intended as a "special pleading" for the use of the drug as a dry dressing. There are others which may be safer, but none which have so few faults or so many good qualities. One of these last, it seems to have an affinity for pus; cleaning and deodorizing foul ulcers as well as small pimples; the second application in many cases being all that is required to cure. One very severe case of pustular eruption covering half of the body of a woman came under my care. It more resembled smallpox than anything else. These were cleaned out by the first application of the powder and only two or three applications were needed to cure entirely.

Believing in my practice so far that the drug is a safe remedy, I would not apply it to a very large denuded surface pure or even half and half. I also believe that pitting in smallpox might be prevented, as also the distressing pain and smell of the disease, as well as its contagiousness controlled by "boralid." The backwoods doctor has not the opportunity of trying a new remedy on a number of cases at a time but has to go slowly, compare and study out effects. I have used acetanilid in various combinations in a variety of troubles in not less than 1,500

cases, and except the six above named have yet to see the first severe unpleasant effect.

At the same time it is not out of place to watch the effects of any new drug on a patient; in very young ones to *dilute* skin applications the same as those exhibited internally, and to be there to stop its use if trouble ensues. It is my common practice when administering any new drug, or to new patients, to stay with them from one to six or eight hours and watch its effects. This is perhaps rather "old timey" and does not show up the "busy doctor" exactly—but it is safe—and I find I lose nothing by it.

DR. BEN H. BRODNAX.

Bony Union in Fractures of Neck of Femur— A Question of Priority.

MINNEAPOLIS, MINN., APRIL 11, 1896.

To the Editor:—In Dr. Hamilton's Columbus address published in the *JOURNAL* of April 4, Dr. Mussey is stated to have been the first to demonstrate the possibility of bone union after inter-capsular fracture of the hip joint. I have for many years understood that this honor belonged to my dear old friend, Dr. Phineas Spalding of Haverhill, New Hampshire, who is now past 97 years of age, and whom I had the pleasure of visiting a month ago. While I was living at Haverhill fifteen years ago, Dr. S. related to me the circumstances of this first case, and as I find an account of it in the "The Spalding Memorial and Personal Reminiscences," which may interest the *JOURNAL* readers, I venture to transcribe and enclose it.

Very Respectfully, EDWARD J. BROWN M.D.

"During the sixteen years I remained at Lyndon (Vermont) I had a great amount of practice in the neighboring towns in all the branches that pertain to a physician's life. Being the principal surgeon and consulting physician I had a good opportunity not only to become acquainted with the most important cases of sickness, but also with the views and practice of my professional brethren. Very many cases came up of great responsibility, and I will relate one, because I believe that it was a benefit to the profession, being a new departure at that time from the established mode of treatment:

Governor Cahoon, of Lyndon, fell sixteen feet, in his mill, producing an intercapsular fracture of the hip joint. I had been taught by Professor Mussey, and from the writings of Sir Astley Cooper, of London, that fractures of this character would not admit of ossific, only ligamentous union, on account of the nature of the parts; and a person suffering such an accident must necessarily be a cripple. After being perfectly satisfied as to my diagnosis, I stated this to Mr. Cahoon, and read to him the different authorities on the subject. I then said to him, if I were injured in this manner, I should make appliances and try for a perfect cure, but that it would require ninety days to give the limb a fair chance for ossific union, and perfect rest, without which it would not take place. He replied, on account of a pulmonary difficulty he could not submit to such a confinement. I therefore fixed the limb as well as I could, and left him. After a few days the limb shortened three inches and the foot very much everted outward. Mr. Cahoon then sent for me and said he would rather die than remain a cripple for life, and he would submit to any treatment I thought best. I therefore made my appliances with an apparatus of my own invention, and watched the case with a great deal of care; and at the end of three months had the satisfaction of seeing a perfect cure. As this was so important a case in surgery, I felt it a duty I owed the profession and the world, to publish it, and therefore wrote an article in the *New England Medical Journal*, printed at Boston, October, 1827, giving a full history of the case, my mode of appliances, and my reason for disagreeing with former authorities. Mr. Cahoon lived about ten years longer and no one would have supposed by his walk that he ever had a fractured limb, and he afterward died of consumption. I made an examination of the joint, found the bone had been fractured according to my diagnosis and that there was a most perfect union. This examination I also published in the *Boston Medical and Surgical Journal*.

I am now of the opinion that if this case was not the first one where a cure of fracture within the capsular ligament was perfect, that it was the first case published, and the reasons given why under favorable circumstances we may hope for a perfect union of the bones. Several years after this Dr. Mussey carried a thigh-bone to Europe and showed it to Sir Astley Cooper,

who acknowledged his error in his former teaching, and now in all our hospitals in this and other countries, the doctrine is fully established."

Toxic Effect of Antitoxin.

SHULSBURG, WIS., April 11, 1896.

To the Editor:—The account of the death of a child from a prophylactic dose of antitoxin, in the *JOURNAL* of April 4, makes me desire to put on record a case similar in its action although death did not occur. The facts are as follows: February 4, I was called to see Henry Snyder. Found him and his five-year old daughter affected with a severe type of diphtheria. I injected the father with a 1500 units and the daughter with a 1000 units strength, Behring's antitoxin, with good results. Mrs. Snyder, who was nursing her husband and child, complained some of her throat and wanted me to examine it. I found the arches of the fauces a little red, nothing more, pulse and temperature both normal, appetite good. She was apparently in good health, except being fatigued from broken rest. As she was the only dependence for a nurse to take care of her husband and child, I advised her to take a prophylactic dose of antitoxin; she consented. Not having the prophylactic dose, I used No. 1, green label, 600 units strength, Behring's, Op. No. 253. A few moments after the injection she complained of feeling faint, her pulse went up to 100, almost imperceptible at the wrist. She became very pale, feet and hands cold, respiration hurried and shallow, pupils dilated. Face was covered with a cold perspiration. I laid her down with her head low and administered stimulants. It was six hours before she rallied so she could sit up and twenty-four hours before she felt herself again.

Place of injection was over right breast and every aseptic precaution was taken. I noticed symptoms of the same nature, not so severe, from the use of a prophylactic dose of antitoxin in a child of 9 years. It seems that antitoxin is apt to produce toxic symptoms in the well.

C. C. GRATIOT, M.D.

Association Badge.

NORTH MINNEAPOLIS, MINN., April 7, 1896.

To the Editor:—In the last number of our *JOURNAL* I notice a short article from Dr. Blaisdell on the "Association Badge." I have spoken of it a number of times during the last few years, asking myself and others of the ASSOCIATION members: What had become of our badge? It has been so long since it was decided and I think voted upon in the ASSOCIATION that we were to have it that I have really forgotten at what meeting it was acted upon, whether Detroit, Chicago, Washington, Richmond, or where. I think Dr. N. S. Davis, of Chicago, introduced the subject, but am not sure. I have grown old since that time, now nearly 74 years, and I feel as though if I am to see a badge it will have to be coming along very soon. A great many of our brethren have already "crossed the river" since the action was taken, and many more will go, I am afraid, before we get the "badge"; unless prompt action be taken. The Atlanta meeting will soon be in session, and some *more definite* action should be taken in the matter.

Very respectfully, A. A. NOYES, M.D.

Bone Grafting.

MILWAUKEE, WIS., April 11, 1896.

To the Editor:—In your issue of April 4, p. 692 is an extract from the *Medical Press and Circular*, in regard to "An Unusual Case of Bone Grafting. Permit me to say that this is another illustration of the old saw, "A prophet is not without honor, save in his own country" and to call your attention to an article on this subject by Professor Senn, in the *Am. Jour. Medical Sciences*, September, 1889.

Yours,

G. J. KAUMHEIMER, M.D.

"She Has Suffered Many Things." Another Case.

NEW YORK, April 13, 1896.

To the Editor: I can not allow Dr. Cory and Dr. Cutter to carry off all the honors in their rivalry over the possession of patients with multitudinous ills. An old bachelor from down East who comes to New York with a new ailment every few months asked me in despair how many diseases it was possible for a man to have. "About two thousand," I answered. "Oh, Lord!" said he, "then I have fifteen more to go."

Yours truly, ROBT. T. MORRIS, M.D.

BOOK NOTICES.

Diagnosis and Treatment of Diseases of the Rectum, Anus and Contiguous Textures. By S. G. GANT, M.D., Professor of Diseases of the Rectum and Anus, University and Woman's Medical Colleges; Rectal and Anal Surgeon to various Hospitals, etc. With two chapters on "Cancer" and "Colotomy" by HERBERT WILLIAM ALLINGHAM, F.R.C.S. Eng., Surgeon to the Great Northern Hospital; Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum, etc., London. One Volume, royal octavo, pp. 400. Illustrated with 16 Full-page Chromo-lithographic Plates and 115 Wood-engravings in the Text. Extra cloth, \$3.50 net; half Russia, gilt top, \$4.50 net. The F. A. Davis Co., Publishers, 1914 Cherry Street, Philadelphia: 117 W. Forty-second Street, New York: 9 Lakeside Building, Chicago.

The author is to be congratulated on his careful adherence to the accepted classification of his subject, the number of his original illustrations, and his book generally: for it is a really valuable contribution to the literature of the subject. The latest authorities are suitably mentioned, and the book is not burdened with antiquarian or historic matter.

The author is of opinion that railway employees are peculiarly liable to contract rectal diseases, and states that 75 per cent. or even a larger proportion of all railway employees who have been running on trains for a term of five years or more, suffer or have suffered from some disease about the rectum and anus. The percentage seems large, but Dr. Gant, without giving exact language, quotes several authorities who are said to hold the opinion that the percentage is much larger. But there is reason to believe that a great part of this alleged disease in railway employees is rather due to neglect and lack of proper facilities for bath and ordinary cleanliness than to any etiologic factor inherent in their occupation. To them even more than to "England's king" the injunction of the school of Salerno applies: *Ne mictum retine, nec comprime for-titer anum*.

The portion of the work contributed by Mr. Allingham constitutes a very valuable addition, and the whole will be a welcome addition to the library of the practitioner.

The Psychology of Attention. By TH. RIBOT, Professor of Comparative and Experimental Psychology in the College of France. Authorized Translation. Third revised edition, cl., pp. 115, price 75c. Published by the Open Court Publishing Co., Chicago, Ill.

This is an effort to present the subject in a more complete form than has been done anywhere else, although it is really little more than a suggestive sketch and far from complete at that. However, the renown of the author commends it to the respectful consideration of all interested in psychology, and while it is not free from weakness of style, such as obscurity and abruptness, it succeeds in directing the reader along lines of pertinent and fruitful observations and, on the whole, it gives a good general conception of the subject. It is divided into three chapters headed 1, spontaneous attention, 2, voluntary or artificial attention, and 3, morbid states of attention.

Summary: Attention is an exceptional abnormal fact which can not last a long time. It is a momentary provisional state of mind. It is not an even operation, but intermittent. Voluntary attention is the product of civilization and previously

did not exist or did so by flashes and for short intervals. It first began in women, as they were the first to do labor without immediate attraction. The whole problem is a question of inhibition. Bodily movements are indispensable, necessary factors not effects. Its physical concomitants are vaso-motor, respiratory and motor (expressions). It is accompanied by local hyperemia of certain parts of the brain and quickens circulation in the nervous substrata which minister to it. Work is the most manifest form of attention. Such are Ribot's views. Our own definition would be that attention is the act of specialization demanded by personal or self-interest in the presence of a multiplicity of interests, and is the *sine qua non* and prerequisite to progressive intellection. It equals knowledge directed *plus* incentive *plus* brain tone *plus* brain capacity *plus* form of environment. It is an exaction of civilization rather than a product.

The National Dispensatory, with Supplement embracing the New Edition of the National Formulary. The National Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopeias of the United States, Great Britain and Germany, with numerous references to the French Codex. By ALFRED STILLE, M.D., LL.D., Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania, JOHN M. MAISCH, Pharm.D., late Professor of Materia Medica and Botany in Philadelphia College of Pharmacy, Secretary to the American Pharmaceutical Association, CHAS. CASPARI, JR., Ph.G., Professor of Pharmacy in the Maryland College of Pharmacy, Baltimore, and HENRY C. C. MAISCH, Ph.G., Ph.D. Fifth edition, thoroughly revised in accordance with the new U. S. Pharmacopeia (seventh decennial revision) and embracing the new edition of the National Formulary. In one magnificent imperial octavo volume of 2025 pages, with 320 engravings. Cloth, \$7.25; leather, \$8. With Ready Reference Thumb-letter Index, cloth, \$7.75; leather, \$8.50. Lea Brothers & Co., Publishers, Philadelphia and New York. 1896.

Not long since, see JOURNAL (Feb. 17, 1894), we noticed the magnificent new edition of the National Dispensatory. We are now furnished the supplement to the volume, which consists of a national formulary of unofficial preparations. This is in the nature of a "companion" to the pharmacopeia, inasmuch as it gives the formulæ of many preparations once, but not now, official, many others not yet recognized, and still others that were originally private, but now in common use. It will be noticed that elixirs, fluid extracts and emulsions furnish a large portion of the work. We question the propriety of furnishing formulæ for artificial mineral salts and waters, while there is no question of their enormous consumption both in this country and in Europe, yet in the latter countries the imitation article must be sold as such.

This formulary contains many things of great use to the practitioner, such, for instance, as battery fluids for the various kinds of battery, kunyss, mucilages, etc.

No preceding revision of the Pharmacopeia was received with so little criticism as the pharmacopeia of 1890, but still there are many preparations in use which are not included. The "unofficial" formula is therefore a necessity to the practitioner and pharmacist.

Fear. By ANGELO MOSSO (of Turin). Translated from the fifth edition of the Italian by E. LOUGH and F. KIESOW. Authorized translation. 8vo, cl., pp. 278. London, New York and Bombay: Longmans, Greene & Co. 1896.

In this book we have an interesting physiologic or psychologic study of the emotion of fear. The contents are as follow:

"How the brain works; reflex actions and functions of the spinal cord; the brain; the circulation of the blood in the brain during emotion; pallor and blushing; the beating of the heart; respiration and oppression; trembling; the expression of the face; the expression of the forehead and eye; the physiognomy of pain; a few phenomena characteristic of fear; fear in children; dreams; fright and terror; maladies produced by fear; hereditary transmission; education." The

Italian style has been so faithfully preserved by the translators that it makes quaint though very elegant English. We quote a sample from page 213:

"A FEW PHENOMENA CHARACTERISTIC OF FEAR.—The edifice of the human body may be compared by those studying its chemical properties to a vast manufactory of which every corner and every door bears the inscription 'No Admittance.' The curiosity of the public could not be greater: fain would they force an entrance, for all know that the most marvelous things are fabricated therein—wonders which no human hand, no industry can produce.

"The workmen in this factory are very small—marvelously small—invisible to the naked eye, and so tightly pressed together that they sometimes resemble the cells of a beehive, and have on this account (perhaps) received the name of cells. Life proceeds entirely from these workmen, whose confederation is so perfect that not one can be touched without the others at once becoming aware of it.

"The edifice is somewhat weak in parts, and here one might easily force an entrance and make a wide breach; but this violence would avail us little, for when we break into the building the machines stop, causing such disorder and confusion that we are quite bewildered. We hear a whirring and throbbing, the pipes burst, the fluids are spilt, the pumps stop, the valves open—then all grows cold and still; and this is the strike which we call death."

The author has made his book thoroughly entertaining, and his clinical descriptions of fear as observed in various types and conditions are life-like. In conclusion he urges as *the* remedy above all, education.

PUBLIC HEALTH.

To Prevent Introduction of Communicable Diseases.—A law was passed in Michigan in 1895 which provided, under penalty, that no person sick with cholera, smallpox, diphtheria, scarlet fever or any [other communicable disease dangerous to the public health, no corpse of a person dead from one of the above named diseases, or from any other communicable disease dangerous to the public health, and no article which has been infected or is liable to propagate or convey any such disease, shall come or be brought into any township, city or village in Michigan, without the special permit of the board of health or of the health officer of any such township, city or village, and then only under the supervision of the health officer of such township, city or village.

Child Labor Certificates and Boards of Health.—In the lower house New York legislature a bill has been passed, by a practically unanimous vote, providing that no child under 16 years of age may be employed in any factory or store unless it holds a certificate from the Department of Health, accurately describing it, and the Health Commissioner is satisfied that such child is physically able to perform the work which it intends to do. Relating to the sweat shops, the bill provides that when any article is found by the inspector to be made under unclean or unhealthy conditions he may, with the consent of the local Board of Health, indelibly brand upon such articles the words "tenement made." A further section makes landlords responsible for the existence of sweat shops and allows them to dispossess tenants.

Aberdeen New Epidemic Hospital.—The Edinburgh correspondent of *Sanitary Record* writes that the extensive additions and improvements which have been carried out at the Aberdeen City Hospital are now completed, and the formal opening ceremony took place on December 21. In round figures, the new works have cost \$100,000. The administration block, which is situated in the center of the group of buildings, with two pavilions on each side, has undergone an entire rearrangement, including additional servants' accommodation and a kitchen fitted up with all the modern appliances for cooking and heating. The enlargement of the wards has been accomplished by extension of Nos. 2 and 3, so as to provide additional accom-

modation for 18 beds in each, and now making over 100 beds in the institution. The pavilions are of one flat, and each of the wards is 16 feet high, 18 feet long, and 24 feet wide. The whole of the original buildings were built in concrete, but the new additions are of granite. The extensions necessitated a complete rearrangement of the grounds, which now cover something like seven acres, and have been laid out attractively in flowers and shrubbery. The whole of the front of the grounds has been so planned as to front Urquhart-road on the north side, in place of the south, that thoroughfare having been laid out since the hospital was originally built. A new gateway and lodge to Urquhart-road has been constructed, and the execution of this portion of the scheme necessitated the knocking down of the old offices and substituting new premises to serve both the internal and outside requirements of the hospital. This block has been fitted up with all the latest appliances for washing, ironing and disinfecting.

Anti-alcoholic Teaching in the Public Schools of New York.—An effort is being made by the Department of Public Instruction of Brooklyn to obtain the repeal of certain objectionable features of legislation that compels the use of anti-alcoholic textbooks in the public schools. The following is a portion of the resolutions, recently adopted by that department, pointing out the doubtful utility of compulsory legislation in the interests of any class of social reformers: "The method of teaching is not sanctioned by experience, and many of the statements made in the books are of more than doubtful scientific character. The law was passed at the solicitation of persons who, without training, experience or teaching, assume to dictate to scientific men what they shall say in scientific works, and experienced teachers how they shall teach. This law is the entering wedge of a species of legislation that would turn the public school system of the State over to the advocates of schemes and reforms. The purpose of the public school system is not to promote the schemes of any class of social reformers, however admirable they may be, but to train up men and women of strong minds, firm wills and robust bodies, capable of forming their own rule of conduct. The law takes from local authorities, and from those who have had pedagogic training and experience, at least in part, the right to determine the studies, text-books and methods of teaching in the schools for whose administration they are responsible. The enforcement of this law in the schools of Brooklyn involves the expenditure of a large sum of money that is needed for useful purposes; will dissipate the mental energies of our children; will impair the forces that make for true education, and will in many cases promote the vice it is sought to discourage."

Alleged Fever Increase in Fully Sewered Districts Controverted.—The editor of the *Sanitary Record* points out the fallacy of the argument seeking to prove that the Metropolitan main drainage system of London is responsible for a large increase of fever. He says that there are those who accept the up-growth of special fever hospitals as a proof that in earlier times these hospitals were not found necessary, but that since the formation of the main sewerage scheme such institutions have sprung up, and are now overcrowded, appears startling. It would be impossible to dispute this statement, for statistics place the matter beyond controversy. Nevertheless, statistics are fallacious and require interpretation. "In the pre-main-sewer days, typhoid, scarlatina, and other fevers did not crowd our hospitals, or cause a direct drain on ratepayers' pockets, because ratepayers died of the disease in quiet obscurity. The diseases were rife, though not much was said about it in lay circles, simply because we had no compulsory notification laws. A great laxity prevailed as regards the signing of death certificates, so that the returns of the Registrar-General are of little real value in a question of this kind. Even after special legislation had been passed, matters were not greatly improved,

Those who have studied this phase of sanitation know well that in the early days of the new order of things notification was very imperfectly observed, it being but indifferently understood by many medical men, and much dreaded by the general public. Now, however, there is greater stringency on the one hand while, on the other, the people are beginning to understand the advantages of notification, and even of isolation. The net result is increase of recorded fevers subsequent to main sewerage, for statistics can only take account of registered facts. Then, again, since sewerage came in, we have had a steady augmentation of population coinciding with a phenomenal aggregation of the people within the metropolitan area, as with all other large towns. Need we wonder, then, at our crowded hospitals? All this seems very simple, yet it is as well to expose fallacies of statistics, for now that notification is being carried out with an approach to conscientious accuracy, and that the people are growing less afraid of hospitals, the want of accommodation is daily becoming more apparent. It is essential that the necessary demand for more and improved isolation hospitals should not be construed as indisputable evidence of the failure of modern sanitation. Statistics are, unfortunately, often pushed forward to bolster up wrong doctrines: it can not be too clearly pointed out that figures, however accurate they may be, are only of relative importance, and unless explained may prove exceedingly dangerous in the hands of ignorant people or interested individuals. Although it may at first seem contradictory, the fact that more and also larger isolation hospitals are required, is proof that the true value of hygiene is gradually becoming better perceived.

Sanitary Reforms Followed by Reduction in the Mortality by Fever and Tuberculosis.—Dr. Rabagliati, health officer for Bradford, England, addressed a large public meeting on the subject of "The Great Waste of Infant Life." In the course of his argument he adduced the statistics of his town to show the influence of the great public improvements that have been put in during the last fifty years over certain features of adult and infant mortality:

"Beginning with the year 1850," he said, "that between that year and 1855, the loss of life from fevers or zymotic diseases was 5,243 per 1,000,000 of the population per annum, while the rate was now 2,700, the decrease having gone on continuously with the development of sanitary reform and a very noticeable feature of the improvement was that the fevers of the earlier period having mostly stricken children of tender years, the chances of children reaching maturity had been greatly increased by the improvement. Strange to say, however, in men from the ages of 35 to 65 the mortality was rather greater than less than it was fifty years ago, and between these ages the expectation of continued life has not improved at all. The diminution in consumption was very striking. In 1868 or 1869 figures for an earlier date he had not been able to obtain—the deaths from consumption numbered 2,500 per 1,000,000 per annum, while the present rate of mortality from this cause was 1,400.

"But while there were improvements in these two important classes, the deaths from diseases of the respiratory organs were very considerably increased in proportion to the growth of the population, the deaths from cancer had doubled in one generation, and there had been a considerable increase in recent years in deaths from apoplexy. They might feel some alarm at the increase of cancer, but it was pleasant to find that the gain in the consumption rate alone was at least twice as much in total as the increased death from cancer. He would lay down that night the dogma that the question of illness or health depended upon three things—air, food and exercise. There were other matters to be considered, perhaps, but they were trivial by comparison with these three. Accidents were the cause of some deaths, but of the 173,000 which he had referred to, only 6,000 were due to accident, and it was worthy of note that, owing to the efforts of governments to protect the lives of the people, deaths from accidental injury were rather fewer proportionately now than they were forty years ago. Bronchitis had developed very much as a cause of death, although there

was no evidence to show that the climate was any worse. The only way to combat this development was by keeping the body in such a state of health that it would be able to resist the ordinary climatic variations."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Ohio: Dayton, March 1 to 31, 4 deaths.
Alabama: Mobile, March 28 to April 4, 1 case.
Arkansas: Fort Smith, March 28 to April 4, 1 case, 1 death.
Louisiana: New Orleans, March 28 to April 4, 85 cases, 21 deaths; Shreveport, March 28 to April 4, 16 cases, 2 deaths;
Tennessee: Memphis, March 1 to 31, 19 cases.

SMALLPOX—FOREIGN.

Dublin, March 21 to 28, 3 cases.
Rio de Janeiro, February 22 to 29, 12 cases, 7 deaths.
Birmingham, March 21 to 28, 1 case.
London, Eng., March 14 to 21, 43 cases.
Tuxpan, March 14 to 21, 1 death.
Paris, March 14 to 21, 1 death.
Odessa, March 14 to 21, 11 cases, 4 deaths.
Acapulco, March 21 to 28, 2 cases.
Calcutta, February 22 to March 7, 3 deaths.
Buenos Ayres, January 1 to 31, 33 deaths.
Madrid, March 17 to 24, 12 deaths.
Bombay, February 25 to March 19, 119 deaths.
Southampton, March 14 to 21, 1 case.
Alexandria, February 26 to March 4, 2 deaths.
Moscow, March 7 to 14, 1 case, 1 death.
Trieste, March 14 to 21, 4 cases.
Naples, March 19 to 23, 15 cases, 5 deaths.
Prague, March 15 to 21, 8 cases.
Buda Pesth, March 11 to 25, 6 cases, 1 death.
Montevideo, February 15 to 22, 4 cases.

YELLOW FEVER.

Rio de Janeiro, February 22 to 29, 298 cases, 199 deaths.

CHOLERA.

Calcutta, February 22 to 29, 71 deaths; March 1 to 7, 122 deaths.
Bombay, March 3 to 10, 4 deaths.
Alexandria, February 26 to March 4, 6 deaths.

CONSULATE-GENERAL OF THE UNITED STATES OF AMERICA,
RIO DE JANEIRO, March 3, 1896.
Dr. Walter Wyman, Supervising Surgeon-General, U. S. Marine Hospital Service, Washington, D. C.

Sir:—I have the honor to remit report for the week ended Feb. 29, 1896. There were 50 deaths from *accessio pernicioso*, an increase of 7; 199 from yellow fever, an increase of 4; 7 from smallpox, an increase of 1; 8 from beriberi, an increase of 4; 9 from enteric fever, a decrease of 2; 58 from tuberculosis, an increase of 4; and none from whooping cough, in the foregoing week. There were 643 deaths from all causes, the same as in the previous week.

Yellow Fever. There was an increase of only 4 in the number of deaths from this cause, but an increase of 80 in the number of cases reported, so that the disease is decidedly on the increase, though at this advanced stage of the season we may soon look for a favorable change. Although the temperature has been comparatively low, due to almost daily rains, we have had the increase above stated, which I can only attribute to the insane orgies of the carnival, which preceded the unfavorable change. The compact crowds, in all the principal streets, of individuals heavily clothed and masked, exposed to sun and rain, in numerous cases with uncovered heads, can only produce disease in the hottest season of the year, and during the reign of an epidemic disease in a tropical town. Indeed the authorities are well aware of this fact, and have tried to remove such a serious cause of deaths, but in vain, the populace will have the festa and that is all.

Smallpox. This disease is very slowly finishing, but it is unusual to have any but sporadic cases at this time of the year. The most ignorant classes avoid all sanitary rules as much as possible, hence the disease extends itself; only a few days ago a Portuguese who keeps a small and dirty restaurant for the laboring classes, nearly in front of my residence, was heavily fined and forced to remove, and his house thoroughly disinfected, because he had had a case of smallpox in a small, dark room adjoining the shop, hidden from the authorities, and from whom the contagion extended to others. I cite this case as one of many. Respectfully yours, R. CLEARY, M.D.,
Sanitary Inspector, M.-H. S.

ASSOCIATION NEWS.

Section on Surgery and Anatomy.

1. Subphrenic Abscess and Its Relation to Pyothorax, DR. CARL BECK, New York city.
2. Thoracoplasty in Anemia (Schede's) and Visceral Pleurectomy, with Report of Cases, DR. ALEX. HUGH FERGUSON, Chicago, Ill.
3. Enchondritis—Surgical Treatment—Report of Cases, DR. B. MERRITT RICKETTS, Cincinnati, Ohio.
4. The Rational Treatment of Carcinoma of the Cervix Uteri as viewed by the General Surgeon, DR. GEO. WILEY BROOME, St. Louis, Mo.
5. Extrauterine Pregnancy, DR. HOWARD KELLY, Baltimore, Md.
6. Experimental Surgery of the Spinal Column, DR. DEFOREST WILLARD, Philadelphia, Pa.
7. Traumatic Surgery of the Spinal Column, DR. W. B. OUTTEN, St. Louis, Mo.
8. Minor Injuries of the Spinal Column, DR. J. S. WIGHT, Brooklyn, N. Y.
9. Trephining for Traumatism of the Spine, DR. WEBB J. KELLY, Galion, Ohio.
10. Personal Experience in Spinal Surgery, DR. J. A. WYETH, New York city.
11. Exploration of the Cerebro-spinal Axis by Capillary Trephining of Its Bony Encasement for Diagnostic and Operative Purposes, DR. EDMOND SOUCHON, New Orleans, La.
12. Exploration and Treatment of Fissures from Skull Fracture, DR. H. H. BEACH, Boston, Mass.
13. Drainage of the Fourth Ventricle, DR. J. B. MURPHY, Chicago, Ill.
14. Some Cases of Cerebral Surgery, with Remarks, DR. J. C. OLIVER, Cincinnati, Ohio.
15. —, DR. L. MCC. TIFFANY, Baltimore, Md.
16. —, DR. HUNTER MCGUIRE, Richmond, Va.
17. The Operative Treatment of Idiocy and Insanity, DR. ERNEST LAPLACE, Philadelphia, Pa.
18. Ligation of the External Carotid Artery, Especially in Connection with Operations upon the Face, DR. WM. PERRIN NICOLSON, Atlanta, Ga.
19. McEwen's Method of Treating Aneurysms, DR. J. G. STEWART, Pitcairn, Pa.
20. Conservative Treatment of Large Vessels in the Abdomen and Extremities, DR. J. B. MURPHY, Chicago, Ill.
21. Surgical Shock. A New Treatment with Demonstrations, DR. FENTON B. TURCK, Chicago, Ill.
22. Surgical Sterilization and Sterilizers in Private Practice, DR. E. BOECKMANN, St. Paul, Minn.
23. Some Mechanical Causes of Interference with the Action of the Stomach, and Their Surgical Relief, DR. W. J. MAYO, Rochester, Minn.
24. Cholelithiasis and Cholelithotomy, DR. CHAS. H. DUNN, Minneapolis, Minn.
25. Who was the First to Illuminate the Sigmoid Cavity? DR. J. G. CARPENTER, Stanford, Ky.
26. —, DR. DONALD MCCLEAN, Detroit, Mich.
27. —, DR. FRED ESSIG, Spokane, Wash.
28. —, DR. CHAS. K. COLE, Helena, Mont.
29. Post-operative Insanity, DR. R. HARVEY REED, Columbus, Ohio.
30. The Abortion of Gonorrhea and Treatment of Other Urethral Diseases by Hydrostatic Irrigation, with Demonstration and New Apparatus, DR. FERD. C. VALENTINE, New-York city.
31. —, DR. LEWIS H. ALDER, Philadelphia, Pa.
32. Skin Surgery, DR. F. W. EPLEY, New Richmond, Wis.
33. Report of Cases Illustrating the Advantages of a New and Original Method of Obtaining Material for Skin Grafting, DR. Z. J. LUSK, Warsaw, N. Y.

Section on the Practice of Medicine.

- WM. D. QUINE, Chairman. DeLANCEY ROCHESTER, Secretary.
1. Address of the Chairman.
 2. Some General Considerations in Relation to the Nature and Treatment of Disease, L. B. BAKER, Pennsylvania.
 3. Some Thoughts on Medical Education, JOHN A. BENSON, Illinois.
 4. Hemorrhagic Influenza, J. J. M. ANGEAR, Illinois.
 5. On Pernicious Anemia Associated with or Caused by Disease of the Nervous System, JAMES B. HERRICK, Illinois.
 6. How to Cure Rheumatism, ELMER LEE, Illinois.
 7. Chromo-Analytic Studies of the Blood in Diabetes, Clinical and Experimental, LUDWIG BREMEN, Missouri.
 8. Precedent Causes of Pulmonary Tuberculosis and Their Treatment, J. WELLINGTON BYERS, South Carolina.

9. Pulsating Empyema, JAMES E. FREE, Montana.
10. Endocarditis as a Complication of Acute Articular Rheumatism, W. W. GRUBE, Ohio.
11. The Management of Valvular Heart Disease, GEO. L. COLE, California.
12. Reduplication of Cardiac Sounds, N. S. DAVIS, JR., Illinois.
13. The Diagnostic Value of the Pulmonic Second Sound, J. N. HALL, Colorado.
14. Nervous Heart, H. MORELL, Minnesota.
15. Cardiac Disease During the Quiescent Period, LOUIS F. BISHOP, New York.
16. Lycopersicum in Cardiopathia, W. T. ENGLISH, Pennsylvania.
17. Shock and Cardiac Thrombosis in Croupous Pneumonia, B. M. CUNNINGHAM, Alabama.
18. A Further Contribution to the Subject of Vaso-Motor Ataxia, SALOMON SOLIS-COHEN, Pennsylvania.
19. The Therapeutics of Vibration, FREDERICK PETERSON, New York.
20. The Action of Alcohol on the Organs of Special Sense, J. A. GROSVENOR, New York.
21. The Pathology and Treatment of Syphilitic Lesions of the Spinal Cord, GEORGE F. KOEHLER, Oregon.
22. Clinical Note on Spasmodic Torticollis with Especial Reference to Its Treatment, ASA F. PATTEE, Massachusetts.
23. Report of a Case of Traumatic Peri-hepatitis and Pleuritis, J. M. G. CARTER, Illinois.
24. The Frequent Dependence of Insomnia and Other Neurosthenic Symptoms on Chronic Disease of the Gastro-Intestinal Tract, BOARDMAN REED, New Jersey.
25. Report of a Case of Tubercular Peritonitis with Remarks on Treatment, H. W. McLAUTHLIN, Colorado.
26. Report of Five Hundred Cases of Gastritis, FENTON B. TURCK, Illinois.
27. Chemistry and Bacteriology of the Stomach in Relation to Therapeutics, J. H. KELLOGG, Michigan.
28. A. Experiments Concerning Gastric Peristalsis; B. The Pathology of Membranous Colitis, JOHN C. HEMMETER, Maryland.
29. Internal Secretion, J. B. MARVIN, Kentucky.
30. Early Diagnosis of Cancer of the Stomach by Means of Chemical Analysis of Gastric Contents, W. C. WEBER, Ohio.
31. Intestinal Antisepsis, Diet and Castration in Relation to the Treatment of Epilepsy, EVERETT FLOOD, Massachusetts.
32. Nephritis Without Albuminuria, ARTHUR R. EDWARDS, Illinois.
33. The Relation of Ascites to Diseases of the Kidneys, W. F. McNUTT, California.
34. Gout in Plants and in Man and Other Animals, WOODS HUTCHINSON, Iowa.

Section on Dental and Oral Surgery.

1. Chairman's Address, R. R. ANDREWS, Cambridge, Mass.
2. A Few of the Causes of Failures in the Dental and Medical Professions, B. B. SMITH, Pensacola, Fla.
3. Modern Methods of Treating the Antrum of Highmore, W. X. SUDDUTH, Chicago, Ill.
4. Further Investigations Upon the Antrum, M. H. FLETCHER, Cincinnati, Ohio.
5. Cataphoresis, H. W. GILLET, Newport, R. I.
6. The Technique and Pathology of the Peridental Membrane, VIDA A. LATHAM, Chicago, Ill.
7. Movements of the Mandibular Condyles and Dental Articulation, W. E. WALKER, Pass Christian, Miss.
8. Disease of the Oral Cavity, a Potent Factor of General Disease, S. W. FOSTER, Atlanta, Ga.
9. Treatment of Children During the Period of Dentition, H. H. JOHNSON, Macon, Ga.
10. Professional Congeniality, H. D. WILSON, Bainbridge, Ga.
11. The Replacement of the Superior Maxilla by a Mechanical Appliance, THOS. P. HIMMAN, Atlanta, Ga.
12. Practical Illustrations in Conservative Surgery, G. LENOX CURTIS, New York City.
13. —, G. V. I. BROWN, Duluth, Minn.
14. Pyorrhea Alveolaris, EUGENE S. TALBOT, Chicago.

Section on State Medicine.

ADDITIONAL PAPERS.

45. Arguments Favoring a Department of Public Health, LISTON H. MONTGOMERY, Chicago.
46. The American Medical Benevolent Fund, FREDERICK HORNER, Marshall, Va.
47. Alcohol in Therapeutics, T. D. CROTHERS, Hartford, Conn.
48. A Study in the Psychology of Inebriety, W. X. SUDDUTH, Chicago.

49. Teaching the Danger of Alcohol in Public Schools, CHARLES H. SHEPARD, Brooklyn.
 50. Alcohol in Emergency Cases in Hospital Practice, I. N. QUIMBY, Jersey City.
 51. Alcohol Anesthesia, L. D. MASON, Brooklyn.

Section on Obstetrics and Diseases of Women.

ADDITIONAL PAPERS.

19. Intrauterine Amputations, C. E. PADDOCK, Chicago.
 20. Selected Methods and Cases in the Electro-therapeutics of Fibroid Tumors, E. BETTON MASSEY, Philadelphia.
 21. A Plea for Complete Hysterectomy, A. M. CARTLEGE, Louisville, Ky.
 22. The Value of Oxygen Combined with Ether, Chloroform or the A. C. E. Mixture in producing Anesthesia during Gynecological Operations, J. N. DE HART, Brooklyn, N.Y.
 23. Drainage *versus* Radical Operation in Cases of Large Pelvic Abscesses, CHARLES P. NOBLE, Philadelphia.
 24. The Most Efficient Method for Rapid Delivery of the Child, with Undilated Os and the Child Viable, W. H. JOHNSTON, Birmingham, Ala.

SOCIETY NEWS.

The Association of American Medical Colleges.—The next regular meeting of the Association will be held at Hotel Aragon, Atlanta, Ga., May 4, 1896.

On invitation of the American Academy of Medicine, the Association will meet with that body to discuss several papers on medical education at 9 A.M. The regular official session will be held at 4 P.M., Monday, May 4, 1896.

The following program corresponding with the by-laws of the Association is proposed:

ORDER OF EXERCISES.

1. Reading of minutes of previous meeting by the Secretary. Adjournment of ten minutes.
2. (a) Roll call of membership. (b) President's Address. Prof. Wm. Osler.
3. (a) Report of committee on syllabus. Drs. Howard Kelly, Perry Millard, Bayard Holmes. (b) Report of committee on preliminary education. Dr. Fletcher Ingals, Chairman. (c) Reports of other committees. 1.) Relative to constitutional amendments. 2.) Relative to by-laws.
4. Financial report of Secretary-treasurer, Dr. Bayard Holmes.
5. Report of Judicial Council, Dr. Dudley S. Reynolds.
6. Reading of papers.

(The day of meeting of the Association was changed, at Baltimore in 1895, so that time might be given to the presentation of papers. Each paper will be limited to fifteen minutes. A syllabus must accompany the title and be in the hands of the Secretary not later than April 20. Only three papers can be read in full.)

7. New Business. (a) Constitution amendment relative to entrance requirement offered by the University of Colorado. Sec. 1, Article III. (b) Constitution amendment relative to Sec. 4, Article III. (c) Other amendments. (d) Other new business. (e) Election of officers. (f) Adjournment.

The University of Colorado proposes the following amendment to the Constitution, viz.:

"That Section 1, Article III, be amended to read, 'That the preliminary examination provided for shall be conducted by a Board of Examiners in no wise connected with a teaching body of a medical college.'"

Representatives of the Rush Medical College, the Woman's Medical School of the Northwestern University, and the College of Physicians and Surgeons, all of Chicago, propose the following amendment to the Constitution:

"That for the first paragraph of Section 4, Article III, the following be substituted:

"College members of this Association are free to honor credentials issued by colleges of equal requirements except in the case of branches embraced in the fourth year of their own curriculum."

This notice is sent to every regular medical college in the United States, and every college willing to conform to the requirements of the Association is requested to make application for membership and send a representative to the Atlanta meeting. Unless otherwise directed, the dean or president of a medical college will be considered its representative.

BAYARD HOLMES, Sec'y,
 Venetian Building, Chicago, Ill.

WM. OSLER, President, Baltimore.

NECROLOGY.

A. H. WILLIAMS, M.D., of Nashville, Tenn., April 10.—H. M. Fiske of San Francisco, Cal., April 3.—Robert Burnside, M.D., of Barboursville, Ky., April 2.—John I. Ellet of Kansas City, Mo., March 30, aged 85.—Dr. McCall, Wakenda, Mo., April 4.

DR. W. T. CARTER of Louisville, died on the 11th inst., at his residence of appendicitis. He was operated upon on the 6th and did well for two days but peritonitis developed and he died very soon after. Dr. Carter was born in Oldham County forty-seven years ago. He came to Louisville when quite young and deciding upon the study of medicine began his work at the Kentucky School of Medicine, from which he graduated in 1870. He has been connected with both the Kentucky and the Louisville Medical Colleges. He had a wide acquaintance and a large practice and his death is generally deplored. He leaves a wife and two children, one a daughter attending the Female High School, and the other a son who will graduate from the Louisville College of Dentistry in June. The funeral took place on the 12th inst., from his late residence, his remains being interred in Cave Hill, temporarily until they can be cremated, which was Dr. Carter's wish.

L. L. SASSER, M.D., of Smithfield, N. C., an alumnus of the University of Virginia of the class of 1883, and a sanitarian of more than local repute, is the subject of the following minute of respect in the State Board of Health's *Bulletin* for March, 1896: "It is with unfeigned regret that we chronicle the death of the late Superintendent of Health of Johnson County. Dr. Sasser was a gentleman of intelligence and education, well equipped for his profession, of pleasant address and deservedly popular. He will be greatly missed."

DR. JOSEPH A. MURPHY died on Easter Sunday at his home in Wilkes Barre, Pa., aged 54 years. He was one of the best known and most popular physicians in the Wyoming Valley, and was present at the Baltimore meeting last year. He was graduated in 1868 by the Medical Department of the University of Pennsylvania.

MISCELLANY.

Association of Life Insurance Medical Directors.—The annual meeting of this association will this year be held at Richmond, Va., on April 30 and May 1.

Prof. Behring's Gift to Science.—Our foreign exchanges announce that Behring has donated the 25,000 francs he received from the "Albert Levi" prize to establish a fund for sero-therapeutic research.

Concerning Exhibits, the following extract from by-laws of the Medical Society of the State of Pennsylvania is announced as governing the committee of arrangements of that society at the next annual meeting: "The committee of arrangements of each annual meeting shall grant the privilege of exhibition under the auspices of the society only to such pharmaceutical articles as are recognized by the United States Pharmacopeia, or are not protected by trade mark, secrecy of preparation or other exclusive proprietorship."

Female Physicians Wanted. The *Medical Examiner* says that the "New York State Civil Service Commission finds great difficulty in securing suitable candidates for the position of women physicians in the State Hospitals. These positions are desirable ones, paying from \$1,000 to \$1,500 per year, beside giving ample opportunity for practice and study in nervous and mental diseases, with pleasant home and associations. The examination advertised in January failed for lack of applicants. Application for this examination should be made to the Secretary of the State Commission, at Albany."

Sound Health in Insurance Law.—The appellate division of the supreme court of New York says, in its decision of *Robinson v. Metropolitan Life Insurance Co.*, Feb. 4, 1896, that the term "sound health" is capable of different meanings. An idiot may be in sound health physically, and the same is also true of a cripple. For this reason, it holds that if the defendant insurance company, at the time it issued the policy, was apprised of the actual condition of the insured, that she was an idiot and a cripple, the term "sound health" should be construed as referring only to her physical condition, apart from her mental imbecility or the fact that she was crippled, and a provision in the policy that no obligation was assumed by the defendant unless, at its date, the insured was alive and in sound health, did not void the policy.

Power to Remove Superintendent of Hospital.—The grant of power to appoint to public office, as for example to the office of superintendent of a State hospital for the insane where no term of office is fixed by law, the supreme court of North Dakota holds, in the case of *State v. Archibald*, decided Feb. 20, 1896, carries with it as an incident the absolute power of removal at any time, without notice or charges or a hearing, and without the cause for removal being inquired into by any court. Such power vested in a board can not be limited by any action taken by such board, whether by appointing the officer for a fixed term, or by by-laws restricting the power of removal to cases where cause for removal exists. The people, under such legislation, have a right to demand that whenever the board shall deem it for the public interests to remove the officer, its power of removal shall be the absolute power vested in it by the legislature, and shall not be fettered by any restriction whatever. *Mandamus* is the proper remedy to compel one who has no color of title to an office to surrender it to one who holds the *prima facie* title to it.

Duty of Telephone Companies.—A decision of interest to physicians and those who have occasion to call them by telephone is that of the appellate court of Indiana in the case of *Central Union Telephone Co. v. Swoveland*, rendered Feb. 12, 1896. It holds that it is the duty of a telephone company doing a toll service to send out a messenger from the receiving station and notify the person called for that he is wanted at the telephone, unless the distance is one such that it would be unreasonable to require it, and that the company is responsible for the acts and omissions of the messenger whom it employs, notwithstanding it has rules and regulations declaring him to be the agent of the person desiring to be placed in communication with the one called for. In this instance it was a veterinary surgeon who was wanted, and the court further holds that in computing the amount of damages recoverable by the owner of a fine horse on account of several hours being lost by the surgeon in reaching him through the negligence of the telephone company, that the value of the horse could not be taken into consideration because it was mere speculation whether the life of the horse would have been saved had the messenger delivered the call at once.

Rules as to Expert Testimony. Where a person has been educated as a physician and surgeon, the court of appeals of Kansas holds, in the case of *City of Wichita v. Coggs*, decided Feb. 6, 1896, he may give his opinion on questions pertaining to his profession, and may testify from his personal examination. When he does so his opinion must be derived from his examination, and not dependent upon the statements of others. If he does not speak from his personal examination, his opinions must be based on hypothetical questions propounded to him; the hypothesis must be based on the truth of all the evidence given in the case, and must be so framed that he can answer it intelligently; and his answer must be based on the hypothesis stated, and not from a consideration of what might or might not happen under certain conditions; it should be an

opinion of the witness predicated on the hypothesis containing the facts. Where a witness, in his answer to a hypothetical question, makes answer that is not responsive to the question, and states facts that are incompetent as evidence, the court should strike the answer out, and direct the jury not to consider it as any part of the evidence in the case.

A Special Patent Medicine Tax. Among the laws passed in Missouri in 1895 was one providing for the endowment of the State University, and for the establishment and endowment of free scholarships therein, the third section of which provides that every manufacturer of medicines or remedies commonly known as patent medicines shall pay a license tax of \$25, and every traveling vender of such medicines or remedies shall pay a license as now provided by law; and every such traveling vender shall take out a license in every county in which he vends such articles. Every manufacturer or traveling vender failing to pay the license tax provided by this section shall be guilty of a misdemeanor, and upon conviction be punished by a fine not to exceed \$100. The city of St. Louis is to be treated for the purposes of this act as if it were a county. The taxes or fees and fines are to be appropriated for the purposes of the act.

The Inventor of the Ophthalmoscope. Prof. T. C. Mendenhall, in a recent eulogium on the late lamented Helmholtz, refers to his beneficent contributions to ophthalmology, especially the working out of the ophthalmoscope, as having opened a new page in the history of medical optics. He refers to the rare combinations of expert knowledge in the intellect of Helmholtz tending to make possible the rich scientific contributions made to the world, but particularly to the fact that Helmholtz was at once an accomplished physiologist, mathematician and physicist. He says: "It was in 1851 that the Professor made known his invention of the ophthalmoscope, and a few years later that of the ophthalmometer that bears his name. Anxious to actually see what goes on in the eye, and especially on the retina, that wonderful screen on which the image of the visible world is focused, he invented the ophthalmoscope. The qualitative victory was followed by the quantitative, in the invention of the ophthalmometer, by means of which accurate measurements of the various curved surfaces in the eye could be made. These two instruments have been to ophthalmic surgery what the telescope and graduated circle have been to astronomy. So exact has the science of the eye become through their use that it is not great exaggeration to say that one may now have disordered eye repaired, corrected and set going with little more uncertainty than attends the performance of the same duty for an ill-conditioned chronometer. Had Helmholtz accomplished nothing except the invention of these instruments he would have been entitled to the thanks of all mankind, on account of the comfort they have added to life and the pain and suffering they have prevented."

Expert Testimony on Delusions, Illusions and Alcoholic Delirium.—Dr. Austin Flint, of New York city, recently testified in an important will case, on trial at Hartford, Conn. He is reported to have said, when speaking of the effects of alcoholic liquor taken to excess, that in the first instance, it "interferes with the digestion and appetite. Such persons are likely to have a development of flabby fat. They are likely to have cirrhosis of the liver, trouble in the kidneys and in the nervous system. As a rule the trouble begins at the ends of the nervous system. It may lead to disturbances in motion, owing to the effect on the brain. The immediate effect of alcohol is that the person may do extravagant things. He may be brilliant and witty; others stupid; others lachrymose. It is very rare that an ordinary drunk terminates in delirium tremens. He would place the line of demarcation between an ordinary drunk and the drunk that terminates in delirium tremens at the time when a person becomes markedly delirious and has illusions that

develop into hallucinations, and when he begins to see small objects, as flies, first, and gradually begins to see snakes and devils. A hallucination is consistent with a sound mind: an illusion is a faulty perception of sight, hearing or other sense. A delusion is false reasoning, believing something that has no logical existence. There is a distinction between a delusion and an insane delusion. A delusion may be consistent with a sound mental condition. An insane delusion is a false reasoning of which it is impossible to disabuse the mind. With very few qualifications, there is no such thing as insanity without delusions. A patient suffering from delirium tremens usually recovers in a few days and goes back to his normal condition. When alcoholic persons become insane there are pains in the extremities of the nerves and the speech becomes slow. So long as no delusion existed the person could not be considered insane.

Hermetic Sealing not Indispensable.—Objection was made in the case of *State v. Thompson*, decided by the supreme court of Missouri Feb. 4, 1896, to certain testimony relating to the chemic analysis of some cheese and the contents of a jar containing the stomach, kidneys, etc., of the deceased, based solely upon the proposition that the jar in which the physician who made the post-mortem placed the stomach, kidneys, etc., was not hermetically sealed. Wharton and Stille's Medical Jurisprudence was cited as authority for this; but the court says that the text does not support the contention. It needs no argument or authority, says the court, to establish that the burden is upon the party relying upon a chemic analysis to detect poison to satisfy the court and jury of the identity of the body examined with that which he asserts was poisoned. This fact, like any other, must depend upon the precautions taken. Certainly, the court continues, the physician making the post-mortem can not be too careful in seeing that the parts he desires analyzed should be carefully separated to themselves, and so kept as to silence any suspicion or doubt; but it may often happen that the proof is entirely satisfactory that the part or parts reserved for the analysis have never been tampered with by anyone whose interest might lead him to destroy or alter them, and, though not hermetically sealed, the analysis would not for this reason be rejected. In this case, there being no evidence to create a suspicion that the parts received by the analyst for his analysis were other than those preserved by the physician who made the post-mortem, the court holds that the analyst's testimony was not rendered inadmissible because the jar in question was not hermetically sealed.

Insane Prisoners to be Transferred to Asylums.—In Indiana a law was passed in 1895 requiring the wardens of the State prisons to report all cases of insanity that may occur in such prisons to the Governor of the State. The latter shall then order the warden to convene a lunacy commission to be composed of prison physician, one resident physician and two justices of the peace, of the township in which the prison is located, whose duty it shall be to investigate and examine into the mental condition of the person alleged to be insane, and report in detail, in writing, to the warden who shall transmit the report to the governor. Upon receipt of the report it shall be the duty of the governor to determine if the person shall be transferred to an insane asylum, and if so, to what asylum, and the conditions upon which the transfer shall be made. The governor may pardon the person and order the transfer made. He may parole the person and order the transfer made. He may order the person transferred to the insane asylum to be returned to the prison when cured of the mental disease to serve out the residue of his term: provided that such person shall have the benefit of the time spent in the insane asylum: and provided further, that if not reported cured of his mental disease by the time his sentence would have expired in prison, he shall be dis-

charged from the prison rolls, and that fact shall be reported by the warden to the superintendent of the insane hospital. It shall be the duty of the superintendent of the insane asylum in all cases where the person is cured of his mental disease, prior to the expiration of his prison term, to report that fact to the governor, who shall then order the warden of the prison from which he was transferred to proceed to the asylum and return the person to the prison, there to serve the residue of his term. In all other cases the person shall be subject to dismissal in compliance with the laws governing the dismissal of persons from insane asylums.

Practical Notes.

Guaiacol Anesthetic Injections.—The European Edition of the *Herald* states that the *Figaro* has a despatch from Dr. Pize of Montelimar that he has discovered that by injecting guaiacol under the skin in small doses, operations can be performed without pain. The committee of the Academy of Medicine appointed to inquire into the value of this discovery has sent its congratulations to Dr. Pize.

Diagnostic Importance of Uric Acid and the Xanthin Bases in the Urine.—Brandenburg reports in the *Berl. klin. Wochenschr.*, 6-8, the results of the study of a number of wasting diseases to determine the effect of extensive karyolysis on the nitrogenous substances in the urine. He found that diminished nutrition as well as pernicious anemia and mild gastric troubles were accompanied by a diminished elimination of nitrogen in the urine, and also by a diminished amount of alloxanthin substances. In acute infective diseases like scarlet fever, typhoid, etc., the amount of nitrogen and xanthin nitrogen was increased, corresponding to the increased amount of destruction of the albumin of the body. Most interesting was the investigation of these substances in the cachexia accompanying carcinoma. The total of nitrogen was exceedingly small, while the amount of alloxanthin substances was exceedingly large. Brandenburg is inclined to think that this fact may be found valuable in diagnosing carcinoma.—*Wien. klin. Rundschau*, March 8.

A New Method of Estimating Albumin in Urine.—According to the *British Medical Journal*, Riegler of Vienna has brought forward a new and rapid method of estimating albumin by means of the refractometer. It depends upon the power of his new reagent, asaprol, to precipitate all albuminous substances in acid solution: the precipitate is soluble in weak caustic soda or potash, and the refractive index of the solution bears a direct relation to the amount of albumin present. In practice the asaprol (10 per cent.) is made up with 10 per cent. hydrochloric acid. Exactly 25 c.c. of decinormal potash solution are used, and added to the precipitate resulting from the mixture of 5 c.c. of asaprol solution with 50 c.c. of urine. The refractive indices of the resulting fluid (after filtration) and of the potash solution are determined by Pulfrich's refractometer, and their difference divided by 270 gives the exact percentage of albumin present. The coefficient 270 was determined by Riegler as the result of experiments on measured quantities of albumin.

Diagnostic Value of Tuberculin.—Grasset and Vidal have been studying this subject and announce that tuberculin has been administered in too large doses for this purpose, hitherto. They made subcutaneous injections of 5-10 milligram after patient had been kept in bed three days. The reaction is sometimes tardy in appearing, or very feeble, and it must be borne in mind that leprosy, actinomycosis and syphilis also react, so that the test is only certain in the absence of these troubles. But it discloses tuberculosis in cases impossible to diagnose in any other way. In the case of animals, the committee appointed to report on tuberculin stated that it is a very valuable means to detect tuberculosis in cattle, and they warmly recommended its use. All the animals are inoculated and those who react are separated from the rest, and the barns disinfected. Thirty to fifty

centigrams will raise the temperature from one and a half to two and a half degrees C. The test requires twelve to fourteen hours.—*Bulletin de l'Académie de Médecine*, February 25.

The Six Groups of Antithermic Analgesics.—The *British Medical Journal* gives a review, chiefly clinical, of these remedies. They may be classed as follows: 1. Phenol group, with phenic acid as its chief. The chief action of these is antiseptic; their analgesic powers are feeble. The objections are that they are protoplasmic poisons, they paralyze or destroy the blood corpuscles and depress or paralyze the nervous system. Their antithermic action is energetic but transitory. More permanent reduction of temperature can be obtained only at the risk of dangerously toxic doses, or at that of inducing cachexia and profound anemia by frequently repeated small doses. 2. The aromatic acid group, chief of which is salicylic acid. The chief characteristic is a still predominant antiseptic action, less toxicity than group 1, owing to the substitution of COOH for OH. Apart from rheumatism their analgesic power is weak. The large doses required to lower temperature cause digestive troubles, buzzings in the ears, and even cardiac enfeeblement and renal irritation. But with undamaged kidneys they increase diuresis and depurate the blood of extractives and nutritive residue. 3. The anilid group. Its antiseptic properties, though strong, are less than those of phenol and salicylic acid. The fall of temperature caused is rapid, but transitory, with abundant sweats, shiverings, cyanosis, and often hemoglobinuria. 4. The phenylhydrazin group, which are even less satisfactory than the anilids. Like the latter, they are eliminated as amidophenol derivatives. 5. The chinolin group possess considerable antifebrile and antiseptic properties, but are liable to disorder the digestive tract and to give rise to severe nervous symptoms. Their antithermic power is fugacious, attended by profuse sweating, collapse, etc., and attended by too severe corpuscular destruction. Hence, as a group, they are not satisfactory. 6. Pyrrol group, the most important and almost the sole representative of which is antipyrin. Endued with a real antifermentative and microbicidal action, almost inoffensive as regards the blood, it possesses antithermic and analgesic properties second to none. A few derivatives of antipyrin must be mentioned, salipyrin, tolpyrin, tolalsal, which do not present any special advantages.

Philadelphia.

A CORRECTION.—The preparation of iron used by Prof. Da Costa for hypodermic use in anemia, is the citrate of iron and manganese (not *magnesia* as given on page 747 of last week's issue). It makes a clear and permanent solution with distilled water, in the strength of three grains of the salt to fifteen minims of water, which is the usual dose, given once daily.

JEFFERSON MEDICAL COLLEGE.—The property adjoining the College on Tenth Street, extending south from Medical Street to Walnut Street, has just been purchased by the trustees, it being the design to erect a modern structure adapted to laboratory and clinical teaching, on the corner of Tenth and Walnut. This will afford facilities for the large classes at Jefferson, the need of which becomes greater every year. The Alumni Association is actively engaged in collecting the funds to fit up the new laboratory.

Louisville.

CLINICAL SOCIETY.—Dr. Aug. Schachner entertained the Clinical Society on the 7th inst., the subject of his essay being "Transfusion, Infusion and Autofusion."

DR. SIMON FLEXNER, Fellow in Pathology at the Johns Hopkins Hospital, delivered an entertaining and well prepared lecture, under the auspices of the Louisville Female High School Alumni, on the 6th inst., at the Female High School. Its title was "Infectious Diseases in the Light of Modern Investigation," and was a learned discussion of the subject, though a little too scientific for the audience which listened to him. The

lecture was well illustrated by specially prepared charts which added much to the interest.

M. H. GWINN, who was indicted at the December term of the circuit court of Bardstown for empiricism, has been convicted of false swearing and practicing with a license and sentenced to two years in the penitentiary. He is under indictment by the circuit court, of Lawrenceburg, and will be tried there upon the expiration of his term in the prison. This ends rather a famous case, the defendant in the case having been convicted and fined on several occasions for practicing without a license. He is uneducated and illiterate, his great claim being that he could cure typhoid fever in a week. Not having a diploma and no license, an opportunity was given him to appear before the State Board of Health and undergo the examination which was held under the new law. He refused to take the examination if he had to tell his treatment for typhoid fever, was finally persuaded to try it by his attorney, and the papers which he handed in and upon which a license was refused him by the board are marvels, although he did not say anything about his typhoid fever treatment. It is a great source of gratification to the members of the State Board that he has at last met with his just deserts.

HEALTH OFFICER'S REPORT.—The report for the past week shows a total number of deaths of 69. Consumption heads the list with 16 deaths; 8 were caused by pneumonia. There were 6 stillbirths. There were 2 diphtheria cases placarded and 5 cases of scarlet fever.

Detroit.

THE DETROIT MEDICAL and Library Association at its regular meeting Monday, April 6, had a paper by Dr. George Thomas Jackson, of New York, entitled "Too Much and too Little Hair." The paper brought forth discussions from Drs. A. E. Carrier and Andrew P. Biddle. Dr. Carrier said that he could remove from thirty to sixty hairs at a sitting, but not more, and that he found that the upper lip was the most difficult part of the face to remove superfluous hair from, on account of the pain: that he was in the habit of telling patients that about 30 per cent. of the hairs would return, so as to protect himself and not cause too much disappointment to patients. Had not had much trouble with scars after the electrolysis. He had ladies consult him for the removal of hairs from other parts of the body as well as from the face, and said that it was not always the masculine female who was the one who was troubled, and cited a case of a woman with quite a growth not only upon the face, but upon the chest and other parts of the body. The Doctor thought that loss of hair in early age was always due to seborrhea, and when applying medicines to the hair, he instructed his patients to part the hair and use a tooth brush, as in this manner it could be done systematically and thoroughly. Frequent washing and wetting the hair was another cause of alopecia. He also said that he was in the habit of using resorcin in a lotion as an application to the hair and head. The prognosis is unfavorable, as the alopecia will return. The Doctor related the case of a lady who was quite bald and under treatment. Some of the hair bulbs responded with the result that she had some hair, but it was thin and long. Dr. Andrew P. Biddle said that he thought heredity played an important part in this trouble, and related a case where the grandfather, father and son had no hair upon face or other parts of the body, and where the brother of the youngest patient had an undescended testicle. The Doctor thought that there was some relation between the genital system and the hairy portions of the body. He said that he was not able to remove the number of hairs that the essayist had said he removed at a sitting. Dr. Biddle gave his reasons why women were not bald, as a rule. The condition of the scalp, he said, was thicker than in man, which allowed a greater number of blood vessels and a greater number of sebaceous glands: the scalp being thicker was more movable. In applying medicine, the Doctor

did not think that it was always the medicine that did the good, but rather the systematic manner in which it was applied; that, in other words, it was the massage from which the benefit arose, and not the stimulating effect of the medicine always. Dr. Jackson, in replying, said that in a sitting of forty-five minutes he expected to remove about sixty hairs, and that he differed with Dr. Carrier as to the upper lip being a particularly difficult place about the face from which to remove hairs; that he himself had found it quite easy to remove the hairs from this locality, on account of the straight direction of the bulbs. He told his patients that from 15 to 20 per cent. of the hairs would return, but with electrolysis all hairs could be removed, also small tumors, moles, etc. The Doctor also spoke of the calcium hydrosulphid for the removal of small hairs (lanugo), especially for surgical purposes.

THE WAYNE COUNTY MEDICAL SOCIETY, at its meeting April 9, listened to a paper by Dr. Wm. R. Scurr, entitled "Yellow Atrophy of the Liver." In his paper the Doctor reported a case that he had had some two months ago, in which all the symptoms of this disease were present, and by which he made his diagnosis, as no post-mortem was made.

WEEKLY HEALTH REPORT for week ending April 11. The weekly report at the Health Office shows that there were 96 deaths the preceding week, of which 35 were children under 5 years of age. At present there are 7 cases of diphtheria and 25 cases of scarlet fever. Three deaths were caused by diphtheria. During the week 88 births were recorded, of which 47 were males.

Washington.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer for the week ended April 4 is as follows: Number of death (stillbirths not included), 98; death rate per 1,000 per annum, 18.50; death rate per 1,000 per annum corresponding week last year, 17.33.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—The 244th meeting of the Society was held on the 3d inst. Dr. W. W. Sprigg reported a case of pregnancy complicated with intestinal obstruction followed by accidental hemorrhage and miscarriage. Dr. F. S. Nash reported a case of post-partum mania.

MEDICAL SOCIETY.—At the meeting of the Society held on the 8th inst., Dr. Clark read a paper on infantile paralysis. Dr. Lamb reported a case of rupture of the aorta and presented the specimen.

ANNUAL MEETING OF THE MEDICAL ASSOCIATION.—At the regular meeting of the Medical Association of the District held on the 7th inst., the following officers for the ensuing year were elected: President, Dr. W. P. Carr; Vice-Presidents, Drs. Hawkes and Scott; Secretary, Dr. J. R. Wellington; Treasurer, Dr. H. M. Deetle; Counsellors, Drs. Crook, McLain, Ober, Holden, Acker, Kober, T. R. Stone, Yarnell, and D. O. Leech; Censors, Drs. Woodward, Ruffin and Mayfield; delegates to the meeting of the American Medical Association to be held in Atlanta, Ga., May 5, 6, 7, and 8, 1896, Drs. J. T. Johnson, Kleinschmidt, Belt, Sothoron, Heiberger, Franzoni, L. Eliot Rich, Woodward, Nordhoff, I. S. Stone, S. Muncester, Magruder, Acker, Kober, Bowen, Nash, Scott, Wellington, C. G. Stone, Cook, Fry, E. L. Morgan, W. W. Johnston, Van Rensselaer, Busey, F. Leech, J. F. Thompson, S. S. Adams, Lincoln, Hunt, McLaughlin, J. D. Morgan, Mayfield, Peter, Suter and Carr.

GARBAGE REGULATIONS: VIOLATIONS. The police regulations of the city require that every premise from which garbage is to be collected shall be provided with water tight receptacles, not smaller than three gallons nor larger than ten gallons, to be provided with a tight-fitting cover. Disregard of these regulations is punishable by a fine of from \$5 to \$10. The law is not generally observed by householders and a number of cases of violation are soon to be punished.

THE VENTILATION OF THE HOUSE.—The House Committee on Ventilation and Acoustics has devoted another session to the examination of experts concerning a proposed new scheme for the better ventilation of the House wing of the Capitol building. The committee has about come to the conclusion that the downward system of ventilation is preferable to the one now in vogue, viz. the upward system, and a bill providing for a change may be reported. The estimated expense necessary to make the change is \$100,000.

CENTRAL DISPENSARY AND EMERGENCY HOSPITAL.—At the regular monthly meeting of the Board of Directors of the Hospital the following report of its staff for the past month was received: Number of new patients, 843, number of visits 3,396, operations 121, prescriptions 4,318, ambulance calls 32, emergency cases 182, redressings 280, ward patients 41. Drs. Blanche Greaves and Ella M. S. Marble were appointed assistants on the service of Dr. H. L. E. Johnson.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 4 to 10, 1896.

Capt. Paul Shillock, Asst. Surgeon (Madison Bks. N. Y.), is granted leave of absence for four months, to take effect on or about May 1, 1896.

Capt. Ashton B. Heyl, Asst. Surgeon U. S. A. (Ft. Thomas, Ky.), is hereby granted leave of absence for one month, to take effect on or about April 20, 1896.

First Lieut. George J. Newgarden, Asst. Surgeon, will be relieved from duty at Fort Wayne, Mich., and ordered to Ft. Yates, N. Dak., for duty at that post.

Capt. Benjamin Munday, Asst. Surgeon, is relieved from duty at Ft. Niobrara, Neb., to take effect upon the expiration of his present sick leave, and ordered to Fort Wayne, Mich., for duty at that post.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending April 11, 1896.

P. A. Surgeon L. L. Young, detached from the naval hospital, Norfolk, and ordered to the "Albatross."

P. A. Surgeon E. S. Bogert, detached from the "Albatross," ordered home and granted three months' leave.

Asst. Surgeon J. M. Moore, detached from the "Vermont" and ordered to the naval hospital, Norfolk.

Change of Address.

Brener, Chas. H., from 1726 So. 9th St. to 1411 So. 13th St., Omaha, Neb.

Blakely, T. J., from St. Louis to Avalon, Mo.

Coppage, W. E., from St. Louis to Oak Hill, Mo.

Farnum, C. E., 703 Market St. to 661 Market St., San Francisco, Cal.

Green, T. S., from 61st and Halsted St. to 39th and Cottage Grove Ave., Chicago, Ill.

Gunn, Janet, from 618 W. Monroe St. to 5127 Cornell Ave., Chicago, Ill.

Gudex, V. A., from 793 3d St. to 819 3d St., Milwaukee, Wis.

Hamblin, J. M., from Chicago, Ill. to Westboro, Mo.

King, F. R., from Anita to Wiota, Iowa.

Lincoln, D. T., from 73 Pluckney St. to care of C. J. Blake, 226 Marlborough St., Boston, Mass.

Malone, L. A., Jacksonville, Ill. to 427 Senate Ave., N. Indianapolis, Ind.

McKown, T. D., from Chickamauga, Ga. to Cripple Creek, Colo.

Smith, S. L., from 610 W. North Ave. to 350 Webster Ave., Chicago, Ill.

Van Hook, Weller, from 858 W. Monroe St. to 4043 Grand Boul., Chicago, Ill.

LETTERS RECEIVED.

American Cutlery Co., Chicago, Ill.; Alta Pharmaceutical Co., St. Louis, Mo.; Ash, E. E. Goshen, Ind.; Anderson, Albert A., (2) Des Moines, Iowa.

Bogress, J. W. Catlin, Ill.; Beardsley, W. E., Brooklyn, N. Y.

Colvin, Darwin, Rochester, N. Y.; Christison, J. S., Chicago, Ill.

Denn, G. S., San Francisco, Cal.; Doliber-Goodale Co., (2) Boston, Mass.; Day, Frank L., Providence, R. I.; Dillard, H. T., Argenta, Ark.

English, W. T., Pittsburg, Pa.; Editor Domestic Engineering, Chicago, Ill.

Farrington, John M., Binghamton, N. Y.

Greene, F. M., Lexington, Ky.; Gordon, W. Frank, Danbury, Conn.

Haldenstein, L., New York, N. Y.; Houston, James, Detroit, Mich.;

Hotel Aragon Co., Atlanta, Ga.; Hummel, A. L., Adv. Agency, New York, N. Y.; Haines, W. D., (2) Cincinnati, Ohio.

Ingals, E. Fletcher, Chicago, Ill.

Kansas City Adv. Agency, Kansas City, Mo.; Kerlick, H. C., Brocton, Ill.; Kane, H. H., New York, N. Y.

Lawbaugh, A. L., Opechee, Mich.; Lord, J. P., Omaha, Neb.; Ludwig, Henry, C., New York, N. Y.

Mariani & Co., New York, N. Y.; Malsbury, L. O., Peru, Ind.; Mumaw, H. A., Elkhart, Ind.; McDonald, C. E., New York, N. Y.

Northwestern University, Chicago, Ill.

Pearse, Herman E., Kansas City, Mo.; Paquin, Paul, St. Louis, Mo.

Reade & Chasell, (2) Le Mars, Iowa; Rhodes, John Edwin, Chicago, Ill.; Reed & Carnick, New York, N. Y.

Scherling & Glutz, New York, N. Y.; Schieffelin & Co., New York, N. Y.;

Savage, G. C., Nashville, Tenn.

Tieste, L. E., Brooklyn, N. Y.; Tuley, Henry E., Louisville, Ky.; Turck, Fenton B., Chicago, Ill.

Williams, J. O., Houston, Texas; Woody, Samuel E., Louisville, Ky.;

Wilbur, C. T., Lansing, Mich.; Woodbury, Frank, Philadelphia, Pa.

Yager, J. William, W. Lafayette, Ind.

Zumo Pharmaceutical Co., St. Louis, Mo.

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ADDRESS.

MEDICAL PROGRESS, ITS HELPS AND HINDRANCES.

Delivered before the Sixty-third Annual Session of the Tennessee State Medical Society, at Chattanooga, April 14, 1896.

BY G. C. SAVAGE, M.D.

PRESIDENT OF TENNESSEE STATE MEDICAL SOCIETY.
NASHVILLE, TENN.

Medicine, like all other things terrestrial, had its beginning. When disease entered the world, medicine must have been born to meet it. Who first concocted a cooling draught to quench a fevered thirst must forever remain unknown. What the first surgical operation, and by whom performed, is likewise shrouded by the impenetrable gloom of the past. While I would not rob Hippocrates of the honor of being the father of medicine, in that he probably was first to reduce it to a science, nevertheless the generations who preceded him must have been blessed with men skilled to heal in that they must have been cursed by disease. The depth and extent of their knowledge, measured by the aids they had, must have been little; their skill to use the crude means for cure, at their command, could not have surpassed their knowledge of disease. It may be that anciently inspiration more than investigation made men strong in ability to cure. This generation may learn lessons in hygiene from inspired Moses, who lived and taught before Hygieia was deified.

But it is not my purpose to trace the progress of medicine from its small beginning, in the very remote past, to its present proud position among the great sciences and arts. It is yet an unfinished science, and as an art still imperfect, notwithstanding our multitude of remedies and our surgical appliances by the thousands. Medicine progressed, hindered as she was through many centuries by ignorance and superstition, her chiefest enemies. Within the present century the greatest progress has been made. That the march of medicine will go on until she shall stand a perfected science, I can believe, though this end may not be attained for many centuries to come.

I believe that the time is coming when the world will be redeemed from ignorance, degradation and disease. Teachers, preachers, lawyers and doctors will all have much to do in ushering in the millennium.

The reason medicine has advanced most within the century now about to close, is that she has had fewer hindrances and more helps. Superstition, which was an incubus on the chariot of progress in past centuries, dwindled almost to naught before the present century dawned. Ignorance, the mother of superstition, failing in her power to fully nourish her offspring, began to pass into her decline, her power to prevent progress greatly lessened. While the darkness of ignorance and superstition has not entirely disappeared, it has been rendered less potent for harm

because of the accumulated light of knowledge with which the world is now flooded.

The conditions which hindered progress in the past, if existing, could hinder now. Unfortunately, some of them do exist, and it is equally certain that they have their retarding influence.

HINDRANCES.

Bigotry, whether characterizing an individual or a class of individuals, in matters medical never had other than a harmful effect. It would be well if this ill-shaped monster could be forever buried, without hope of resurrection. Men who are not willing to accept facts presented by others, and will not weigh the conclusions that have been based upon them, are not the men who will make advances themselves, nor will they be helpful to others who would. Destroy bigotry and there will be no "pathies," but in their stead would stand one grand brotherhood of physicians. A medical bigot knows not enough to know that he does not know it all, and therefore always stands ready to destroy anything that does not emanate from a source peculiarly his own. Such an one would say, "I will not use this instrument because it was invented by a homeopath; I will not administer that drug because it was introduced by an eclectic; I will not bathe my fevered patients nor give them cooling draughts because this is the method of the hydropath; I will not listen to suggestions coming from common people." The man who would attain to the greatest wisdom must gather grains of thought from all fields, must use his judgment in separating the good from the bad, and must be willing to feed his fellow men from his well-filled granary. If Jenner had not listened to the stories of the milkmaids, vaccination would not have been discovered, and the era of immunization, inaugurated by Pasteur, but founded on Jenner's discovery, would have been longer delayed. We should not forget that all people are God's people, and that He may use one or another in bringing into the world the good which comes alone from Him. Away with bigotry and send bigots with it!

Jealousy, although a personal property, can do a general harm. It is always a sign of weakness and is usually directed against one who is stronger, or gives promise of becoming so. Medical jealousy is a medical cur that rarely faces the one whom he would frighten, but watches for his opportunity to slip up from behind, and always with more bark than bite. A timid though talented man, just entering the field of investigation, may become so frightened by the bark of jealousy as to flee the field and forever fear to enter it again. Thus to the world may be lost results that otherwise would have followed. The medical man who is afraid of jealousy deserves pity: the jealous man merits only contempt.

Laziness, an inherited tired feeling, afflicts some men to such an extent that they neither accomplish anything themselves nor do they help others who would

do something. This is a sort of passive hindrance to progress, and is harmful chiefly when it engages in idle conversation one who would be better employed. Of all professions and callings, the lazy man is least at home in medicine.

Carelessness, in more ways than one, may be the means of preventing progress. A careless reader can not get all that may be in the printed page: a careless observer can not properly interpret symptoms, and therefore may miss the mark in prescribing remedies. A careless man may have thoughts but he does not note them and they fly away, like a beautiful bird, to return his way no more. Such a thought noted within the pages of a little book, recalled at a more leisure time by a glance of the eye, and amplified by the reasoning powers, might bring strength to the person and progress to the profession.

Indifference about medical matters and medical men is not calculated to give speed to the car of progress. One thus affected may answer promptly all calls from the sick and may relieve them from their sufferings. Every page he reads may bring him profit; every patient may be an open book from whose leaves he gathers useful lessons. He is content with these two sources of information and what he gets he appropriates to his individual and exclusive use. He counts himself wise without knowing that he is foolish. He is of few words and therefore appears to be full of wisdom. He meets not with his brethren in medical societies for mutual improvement. His own thoughts he hoards as a miser does his gold. He is conscious of his strength but he is only too careful not to impart it to others, either by word of mouth or in the printed page. When he dies the good he has done is buried with him.

Exclusive medical organizations are not promotive of progress in the fullest sense. In a science so broad and with aims so high, narrowness in organization is an abnormality. The few who compose such a society may be the salt of the earth, but their savor is not so likely to be of service as if it were not thus enclosed. A holier-than-thou air emanates from a room containing such a coterie, and that is calculated to cripple the influence of the organization. To be *one of one hundred* has in it more sound than sense, and to be proud of such a distinction is more likely to hinder than he is to help the general progress. Such organizations tend toward becoming mutual admiration societies, and the members sometimes may imagine that the great body of physicians on the outside look upon them with admiration and awe. An exclusive organization with a national name is a travesty. It would be far better to say the "*best one hundred*" or "*the one hundred*," which would be a more modest way of putting it.

Vanity in a medical man is not usually well-founded and often is unregulated. Such a vanity always harms the possessor and is continually in the way of both personal and general progress. Competition is hateful to such an one, and without competition there can be no progress. If a man, by chance, has one thing that might excite his vanity, he doubtless has something else that should humiliate him. The peacock is proud of his feathers as he spreads them in the sunshine, but is humbled when he sees his feet; yet his feet are more useful to him than his gaudy tail. But prudent, well-governed vanity is a good thing, for with it competition is wedded and the legitimate offspring of this union is progress.

Common prejudice of all times and *laws* of some civilized countries have been hindrances. Dissection, vivisection and experimentation, against which the multitude are prejudiced, are as essential to advance in medical knowledge and skill as light, heat and moisture are to the growth of vegetation. If there is any excuse for medical men in politics it lies in the line of their preventing the enactment of laws that would lock the wheels of medical progress. At this moment the Congress of these United States is being urged by some who think more of the lower animals than they do of mankind, to enact laws against vivisection in the District of Columbia. If they are successful in this, they will conclude that it is just as wrong to cut up a dead man as it is to cut on a live rabbit, and they will ask for laws against dissection. It would be but one step further for them to ask for the enactment of laws against administering medicines to the poor in hospitals, whose virtues had not already been proved on millionaires. Thus encouraged they would leave Congress and go into our State legislatures and plead for the enactment of similar laws. If such laws should ever find their way into our statutes a strict enforcement of them would put an end to medical progress in this country. Let us hope that the men who make the laws for us will not be so barren of brains.

The public (not all the public), of whom *preachers* (not all the preachers) form a part, may be the means of hampering medical progress by encouraging quackery, using vile nostrums, and endorsing quack appliances which bear high-sounding names. Serious ailments lead people to think only of men skilled in healing; slight ills, or imaginary afflictions, afford the opportunity to quacks and nostrum dealers to deceive the people, and while under the pall of this deceit they forthwith "certify." If there is a man whom the people deify it is the family physician, and yet they degrade him when they buy a bottled nostrum, visit a quack for free consultation, or wear about them a device that has more name and price than power to do good. Let the people frown on quackery and refuse to buy, then quacks will vanish and the nostrum trade will die.

HELPS.

Some of the specific aids to the medical advancement of the century now about to close may be mentioned:

Anesthesia, local and general, has been given us, making painless surgery not only a possibility but a reality. While the hint for painless surgery was given more than six thousand years ago, when "the Lord God caused a deep sleep to fall upon Adam, and he slept," while the rib was taken from his side, it will always be a matter of pride to physicians of the South that Long, of Georgia, in 1842, was the first man to produce general anesthesia, and to do a painless surgical operation on sensitive human structure. It will likewise always be a matter of regret, on our part, that his modest nature and retiring disposition prevented his making public, except to a few medical friends, his great discovery, until, after a lapse of four years, Morton, of Massachusetts, announced his independent discovery of anesthesia. It will always be our pride as American medical men, to proclaim that our country gave anesthesia to the world. Without this boon surgery would have continued painful, and the great progress which has since been made would have been impossible.

Koeler, not then an American citizen, gave us cocaine as a local anesthetic, in 1884. In paying homage to him now, in recognition of the good he has conferred by his discovery, we honor an American citizen, for he resides in Greater New York.

Antisepsis, the introduction of Lister, and its legitimate outgrowth, *asepsis*, have so lessened the former disastrous results of surgery that the surgeon has been made bold in his operative work. Because of these gains untold suffering has been relieved; and, in innumerable instances, life has been prolonged. The greatest progress that surgery has ever known has been made within the last half of the nineteenth century, and the two factors that have had the most to do with this progress are anesthesia and asepsis. A closer study of pathology and symptomatology have aided greatly in the march of surgery.

Electricity, once known only by its riding the storm, leaping from cloud to cloud, and occasionally sending its shivering lance to the earth through some giant oak, a thing of superstition and dread, has been tamed to serve the well and heal the diseased. When Franklin tapped the cloud with his kite and brought the fiery fluid in a gentle stream down the slender cord to the key in his hand, he dreamed not that, in the nineteenth century, it would be made to light our streets and drive our cars. When Galvani saw the muscles of the dead frog contract and relax under the influence of this subtle agent, he had no thought to what uses it would be put by medicine and surgery ere the dawn of the twentieth century. When Crookes invented his tube only a few years ago, he did not foresee that, by means of it, Roentgen would be able to make shadow-graphs of things hidden from the light of day. Electricity is to-day one of the invisible forces giving speed and effectiveness to the progress of medicine.

Specialism had its birth in modern times, and has been a most important factor in the advance that our science and art have made. Neurology became a possibility with Wilson's study of the brain in the seventeenth century; but she did not grow to her present beautiful proportions until men of the nineteenth century devoted their time and talents to perfecting the work begun so long ago. McDowell's boldness in opening the abdomen of his Kentucky patient, led men to a more careful study of the pelvic and abdominal organs, and made gynecology and abdominal surgery a possibility. Who does not admire the men in this specialty for their boldness in operative procedure and their daring in the coinage of terms.

Helmholtz's invention of the ophthalmoscope, in 1851, created modern ophthalmology, and gave to medicine one of its most useful branches. It bears to-day the proud distinction of being more nearly founded on a purely scientific basis, than any other department of medicine. Proud of her progress and position, she is humiliated only by the fact that gynecology, her younger sister, has far surpassed her in adding long and high-sounding names to the medical vocabulary. Other specialties might be mentioned that have done much in advancing medicine.

The Drug Supply of this century, has had much to do with therapeutic progress. The mineral and vegetable kingdoms have been free in their gifts of remedies for human ills. Coal taken from the bosom of the earth has yielded her products for easing pain and reducing temperature. The cinchona tree wrapped in her medicated bark, stood for centuries ready

to give her antidote for malaria; but this power was unknown and unused until modern times. The oils and juices of a thousand plants have given to medicine their powers to destroy germs or neutralize their ptomaines. While much has been given for the asking, much more remains to yield disease-preventing and health-restoring power to the earnest, active searcher into nature's secret resources. On the mountain tops, on the sloping hills and in the valleys of Tennessee there may be plants growing whose properties, if known and used, would surpass, in power to prevent or cure disease, anything that has ever been brought from any clime. How these secret forces may be extorted from nature's hidden grasp, and by whom they shall be given to medicine, remains to be seen. Some of our young men within the coming year may woo the forest and the field and win therefrom something new that will be of service to the suffering world.

Rivalry in investigation is one factor in the march of progress. One possessed of this quality, like the mastiff, is conscious of his strength and faces him whom he opposes. He imparts some of his own courage to his contestant. At the end of the contest right wins and the late contestants should enjoy the results together.

Energy and industry are more powerful in the life work of a physician than are the circumstance of high birth and the environment of great wealth. The story of the lives of America's most noted medical men tell to us too plainly that they were not born into the proud positions that they attained; and they were not wafted there by some gentle, uplifting breeze. At least one of the most noted medical men the South ever produced, spent his earlier days on the old farm among the pines of South Carolina. Fired with the thought that there was a greater work in a broader field awaiting him, he left the old home with only a few dollars in his pocket and walked the weary miles that intervened between that home and the city of Charleston, that he might there commence his medical education. A less promising outlook could have hardly presented itself. His inborn capacity for work was not allowed by him to remain dormant; but his acquired habits of industry made of him the power which he became. Couple industry and capacity together, no mountain is so high that it may not be climbed; no plain so wide that it may not be traversed. By such an one every opportunity is transformed into utility; every obstacle is brushed aside with the broom of determination.

If all the latent energy—the inborn capacity—of medical men could be transformed into manifest power, by the magic touch of the hand of industry, no known cyclometer could record the revolutions of the wheels of medical progress.

The Medical Society is one of the most powerful factors in both personal and general progress. Its existence presupposes that the members have accomplished all that is required of them, in the prescribed courses of a medical college. There may be ever so much fire in a flint, yet without friction it can not be called forth. The Medical Society is designed to bring out the fire of thought from the reasoning centers.

The ideal medical association probably does not exist, and yet is a possibility. It is not my purpose to depict a perfect organization. The chief design of every medical society should be the advancement of

knowledge and the enhancement of skill. Its doors should be wide open to all honorable members of the profession, in the territory it covers. Bigotry and envy should not only not be placed to guard these portals, but they themselves should be prevented from entering, because both are enemies to progress. Fraternal feeling and professional propriety would be a sufficient safe-guard. The password should be "honorable medicine;" and the motto: "We will walk together in the pathway of progress." A rightly organized and properly conducted local society contains the germ of power. Each member, like the children of one family, feels at home, and basks in all the freedom and ease that the word home implies. They get training in this school that fits them for the college of the State society where they may find even broader and better opportunities for advancement. The smaller organization should bear a definite relationship to the larger; and their workings should harmonize. Both should be governed by laws having in them the same spirit of progress. Continuously in training in the local and State societies, every member should unite his powers with those of his fellow in perfecting the national organization. What a power these several organizations would become if only their full importance was appreciated by all members of the profession and by the laity. Some good but misguided men will not attend medical meetings. One does not often read in the obituary of such a man that he invented a lever for lifting the world of medicine to a higher plane. The immediate duty a physician owes to the public may often prevent his attendance at medical meetings; but when he can attend, and does not, he fails in the performance of a duty he owes to the public, to the profession and to himself. May the day speedily come when medicine can claim an organization in every city and county; when State societies shall have on their roll the names of all members of every local organization; when that grand ASSOCIATION, the AMERICAN MEDICAL, shall be constituted of all the members of all the State societies.

Medical Colleges have aided in the progress of the past, are doing better work in the present and will accomplish still greater good in the years to come. The medical schools of to-day are greatly in advance of those of even a decade ago; and the best schools of one hundred years ago are as nothing in comparison with the most advanced schools of to-day. If the medical colleges of the past, with their limited facilities for imparting instruction, turned out men who grew to be giants, what ought the schools of to-day do? Men towering above their fellows in medicine in past centuries, were few, and because of their fewness they attracted the greater attention. Larger medical giants, but more of them, are found in modern medicine. They attract less attention than in the past because they are so much more numerous. Our great men of to-day far surpass the greatest of other centuries, both in the depth and extent of their knowledge and in their power to apply it. Graduates of a few weeks ago know more of medicine than Galen ever dreamed of.

While medical colleges are still not perfect and should be further improved, on many lines, a greater care should be exercised in scrutinizing applicants for admission. A man to enter on the study of medicine should have much of the quality known as "mother wit," or common sense; he should be trained in literature and in the sciences, at least up to the point of development of his thinking powers; not only should

he be mentally sound but he should also be morally pure; and he should feel toward medicine somewhat as Paul felt when contemplating the ministry: Woe is me if I practice not medicine. No young man should be encouraged to wield the surgeon's knife or dole out doses for disease who is better fitted by nature and acquirements to tend sheep on the hillside or herd cattle on the plains; to build houses for the people to live in or make clothes for them to wear; to construct cars for commerce or man ocean steamers. There are a thousand and one callings in life ready to honor men, and from which men can get honor if they faithfully follow them.

Medical journals are streams of water for irrigating the garden of thought. The vitalizing fluid of the profession is continually coursing through the pages of our periodic literature. Sometimes this stream is poisoned by the plasmodium of egotism which now and then gives the reader a chill; sometimes it is made to lose its strength-giving power by the germs of the envious or the spores of one gifted in ridiculing. With all their faults journals are a necessary factor in the progress of medicine. If they were fewer in number they might be better. If those who imagine themselves gifted with editorial powers were really thus endowed, journalism would be on a higher plane. Fortunately the law of the survival of the fittest is continually doing its work. While a man is expected to buy the journal he reads he is not compelled to read all that he buys. The wise reader separates the trash from the treasure and appropriates only the latter. One of the duties of the editor, which is too often neglected, is to refuse the bad and infuse the good. He must read all that he would publish and should always have the courage to endorse the true and condemn the false. This he can do in editorial or in head-line. At a feast, the host can not equally commend all the viands he may place before his guests; but his action would be condemned should he set before them a dish he might know to be dangerous. But after all, the mental pabulum offered in medical periodicals is made up largely of contributions from subscribers. How much better these contributions would be if the prime object in presenting them was the making of leaves in medical literature for the healing of the people. The mission of the medical journal will not be brought to an end until medicine shall stand a perfected science.

Books are as essential to medical life and activity as bread is to physical force. Books may be poor in matter and style, as bread may be bad in quality and kind. As bad bread brings physical discomfort and predisposes to physical inactivity, so a poor book depresses mental power. Discretion in the buying of books is a necessity; the buying and the reading of good books tend only toward advancement. A good book is a storehouse from which all may draw without danger of exhausting. Of the making of books there is no end. Even one's enemy may write a book, if so to him, of course, the book would be a bad one. While the profession can not limit the making of books it is fortunate that it can control, to a large extent, the sale. Unprofitable books die with the first edition unexhausted, bequeathing to their authors no estate. The truths contained in good books will endure while time lasts. An individual book may not reach many editions, but their contents in some other form will extend across the stretch of time, and will always add to the speed of progress.

Enthusiasm has always been and will always be the spirit of progress. Its correct meaning is not always in the mind of the man who uses the word. The term crank or maniac would aptly apply to some who are miscalled enthusiasts. If we mean what we say when we call a man an enthusiast, we should have a feeling when before him, akin to that which possessed Moses when he stood before the burning bush, for he knew that God was in it. Not less certain is God in the genuine enthusiast, burning within him but not consuming him, a marvel to angels and men. It was in the power of Moses to have laughed at the bush ablaze, and to have walked from it with covered feet, but if he had so acted he would never have learned the lessons that made him the leader of his people, and the framer of laws for the nations of all subsequent time. The wisest as well as the humblest may learn lessons from the enthusiast that will be both helpful and enduring. Deliver medicine from cranks and maniacs who can but retard her progress, but give her more men who believe that God is the author of all truth; and, that for the general good of mankind, he sometimes takes up his abode in a man, firing him with an almost consuming zeal. When studying the firmament of medicine would that we could all cry out with the astronomer, as he gazes upon the stars, "O God! I am reading thy thoughts after thee." The plan of redeeming the people from disease is of Divinity, as is the saving of their souls from damnation.

The general progress in medicine is only the sum total of progress of individual medical men. Throughout the history of medicine there have been men who have created epochs and inaugurated eras. Harvey's discovery of the circulation of the blood was an epoch, prior to which medical thought groped in an uncertain light. The era of rational medicine dawned when Harvey enunciated the result of his investigation. The wonder has never ceased that the circulation of the blood remained so long unknown. Jenner's discovery of vaccination marked an epoch; but the era of immunization starting with it, continued in its morning twilight until the work of Pasteur caused it to break forth into the brightness of day. The noon-day of this era has not yet arrived. Throughout the coming centuries men imbued with the spirit of Pasteur's work, will go on investigating with the microscope and the test tube, and experimenting on the lower animals, until in due time, the people who will, may become immune from disease. The medical world stood still when told the story of McDowell's daring, and she has not yet recovered from the astonishment excited by the brilliancy of the era of abdominal surgery, which he inaugurated. The wonder will never cease that, for so many centuries, appendicitis and ovarian growths were permitted to send their victims trooping to an untimely grave, because of the unfounded fear that a puncture of the peritoneum meant death to the victim.

Thus we might speak of scores of epochs and the eras that have followed them. The men who moved in these matters simply uncovered principles as old as creation. The streams which they tapped when opening these well-springs, had always been connected with the great ocean of truth, and were only just beneath the surface. Thirsting for these waters, God-guided they digged deep enough to find them. Medicine and the world have been made richer by their labors.

Not all the hidden streams of truth have yet been

found. May it be the happy fortune of some who hear me to open up new fountains for refreshing the world.

Do we look longingly to the proud position of men who have attained eminence in medicine, without a thought of the rugged pathway they had to travel? We could not enjoy the one, if we would shrink from the other. Men must labor to climb, and wait to reach, the mountain tops of greatest usefulness.

Throughout the centuries medicine has been building her own monument. Before Harvey the work done only served to clear the ground and prepare the foundation. The corner stone of the superstructure is Harvey's discovery. Stone after stone has been added as discoveries have been made. As each tier stands completed, there is room for fewer stones in the one to follow. Some unenduring stones have been placed, but these have served to let the building go on. The rain of observation, clinical experience and legitimate criticism will cause the inscriptions on unsound stones to fade away and the stones themselves to crumble. Other workmen will be ready to remove these and in their places put material that will be more enduring. Some inscriptions will grow dim from the accumulated dust of neglect; but some one will come along and, with the breath of enquiry, will blow the dust away and make the reading clear and sharp again. The work of building goes on, some of the workmen preparing stones to place in the superstructure, but the great majority furnishing the uplifting power of encouragement and the cement of coöperation. The time will come when this monument will be ready for the placing of the capstone. This ceremony commemorating the final discovery necessary for making the science of medicine complete, will be performed as the millenium dawns, amid the applause of a world redeemed from disease.

ORIGINAL ARTICLES.

SPLENECTOMY STATISTICALLY CONSIDERED, WITH REPORT OF CASE.

Read before the Southern Surgical and Gynecological Association,
at Washington, D. C., November, 1895.

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Assuming that the Association is deeply interested in the evolution of abdominal surgery, I presume to trace the history of splenectomy which will reveal forgotten facts established by the surgeons of old, which challenge the criticism and shame the technique of the most modern.

Physiologists are yet discussing the rule that the spleen plays in the animal economy, a question that was practically settled by Viard about the middle of the sixteenth century, he having removed the spleen from three patients, all of whom made perfect recoveries. Some twenty years before, Zacarelli appears as the first surgeon who successfully removed the spleen. These cases were not generally published and but few had the temerity to follow such brilliant leaders. As a consequence in the next two hundred years we find but twelve splenectomies. A large percentage of these were for wound with a protrusion of the organ. From 1800 to 1876 I find 28 splenectomies recorded with wide intervals. The next decade

yielded about seven per year. In 1888 it was the fad of the day, 21 operations being reported in that year, the work chiefly of Italian, German and French surgeons. Their mortality, over 50 per cent., was not encouraging, and since that date we have had only 45 operations, a very small number when we consider the rapid progress of abdominal surgery and the immense amount of work done in this special field. We must conclude then that splenectomy is not a popular operation, at least with those surgeons who operate for statistics. The consensus of surgical opinion seems somewhat adverse to this operation. I hold that such a position is erroneous as it is based upon statistics considered in the aggregate. If the proper analysis of these statistics be made and due consideration be given to the associate general condition, we can establish the fact that under certain circumstances the operation is justifiable.

Gathered from all sources I can find on record 194 splenectomies. Of these 126 were females, 57 males and in 11 cases the sex was given. Furthermore we find that in 46 cases the operation was undertaken for wounds or injuries. Of this number 26 were males, and 14 females. If we deduct these we find that the ratio of splenectomies for disease is 31 males to 112 females, showing the latter sex to be much more predisposed to disease of the organ.

Recalling that the weight of the adult spleen is only about seven ounces, we are awed by the pathology that so perverts nature as to magnify it into 8½ pounds, the largest spleen ever removed. The operator was H. S. Brown of England; the condition was leukemic hypertrophy. The patient died five hours after the operation, probably from hemorrhage. The largest spleen ever removed successfully weighed 11 pounds; the operator was Franzolini.

The size of the diseased organ has an important bearing upon the prognosis. In 41 cases in which the spleen weighed 2 pounds, or more, the mortality was 68 per cent. We should at least consider these figures in advising operation. Of the 194 cases eight are not entitled to be ranked as splenectomies, the operation in these cases being partial splenotomy for the removal of the protruding portion after wounds and hernia. This reduces the total number of splenectomies to 187.

We may make a pathologic classification of these cases as follows: Leukemia, 36 cases; 31 deaths, 5 recoveries. In only 7 of these cases do the data show a microscopic examination of the blood. Doubtless this investigation was made in many others but it is not so recorded and I am forced to accept such statements as "leukemia," "leucocythemia" and "leukemic spleen" for the diagnosis and classification. In this class we are at once confronted with a mortality of 86 per cent, which unless we can discern something radically wrong in the technique, places the leukemic spleen out of the pale of operative possibilities, and we dare not charge this when such masters as Péan, Czerny, Wells and our distinguished American, Roswell Park, were the operators. Of the 31 deaths 16 were positively stated to be secondary hemorrhage, 9 others died from shock, and we all know that in abdominal work this term is only too often synonymous with hemorrhage. Should not this establish the fact that leukemia is a general blood disease of which the hypertrophied spleen is an effect and not the cause? These patients are hemophiliacs and leukemic spleen should be eliminated from the field of operative inter-

ference. Since we have only 5 successful cases of removal of leukemic spleen, their paucity entitles them to detail record.

Case 1. Operator, Franzolini; date 1881; time of operation, twenty minutes. Patient, female, laborer, aged 22.

Diagnosis: Abdominal tumor from childhood, suffered from gastralgia, from 12 to 14 ascites and edema in lower extremities. Menstruated at 17, scarce and irregular. Symptoms of jaundice, no intermittent fever. At the beginning of 1879 dull pain in upper quadrant to left of stomach. Tumor hard, very little or not at all movable, obstinate vomiting, acute pain prevented rising to feet. Blood rich in leucocytes five times to normal. No albumin in urine.

Operation: Prepared by purgative pills; diet exclusively flesh for three days. Incision in linea alba 22 c. long leaving umbilicus to right, one half above, one half below. Splenic artery size of index finger, could introduce thumb into splenic vein. Ligation with phenicated silk: little blood lost; suture. Complete recovery.

Remarks: First successful operation in Italy. Spleen normal in color, quintuple in size. Removing 200 gr. of blood it weighed 1,526 gr.: 26 c. long, 16½ c. wide, 7 c. thick. There occurred forty hours after operation small dripping of blood from vulva: one year later blood almost normal.

Case 2. Operator, Assaky; date, 1888; time of operation, 1¼ hours. Patient, female, age 26, married at 18, several children.

Diagnosis: Abscess of breast after first delivery, edema of limbs after last. Malarial fever at 12, inflated abdomen after the disease. Tumor in the splenic region, constitution weak, mucous surfaces pallid. Both pupils dilated, temperature normal, no edema except varicose veins. Mammæ voluminous. Intestinal functions normal. Linea alba pigmented, superficial veins dilated.

Operation: Incision on the median lines of the umbilicus to near pubis, 12 c. long, hemostasis. Incision prolonged above the umbilicus 4 c., catgut, chlorid of zinc, cautery. There were 18 superficial ligatures, 14 more profound, 9 in the peritoneum. Recovery.

Remarks: Blood, 5,000,000 corpuscles in cubic mm. White to red in proportion 3 to 100; weight 2,410 gr., size 35 c. long, 42 c. wide; measure on concave side 28 c. long, 17 c. wide; 7 c., 1½ c., 5½ c. thick.

Case 3. Operator, Ceci; date, 1893; time of operation, one-half hour. Patient, female, age 13 years.

Diagnosis: Tumefaction of the stomach from infancy. At three years put on milk diet until stomach became normal. The malady began two years back, attributed to a fall. She became pale, gums bled easily. Ossa normal, muscles weak, but little developed, adipose tissue thin, aspect meagre, senses normal. Abdominal tumor hard, smooth, roundish, oblique. Lower temperature over tumor.

Operation: Chloroform anesthetic, median incision to left of umbilicus 28 c. from xiphoid appendix to three fingers of pubis; a second 14 c. transverse and oblique parallel to left costal arch: distance 6 c.; ligation of splenic artery, excision of much splenic substance so as not to injure stomach; catgut ligature. Liver normal. That part of the capsule that was in contact with the stomach was left intact so as to avoid hemorrhage. Recovery.

Remarks: Weight of spleen without blood 1,300 gr., 25 c. long, 15 c. wide, 6 c. thick. Blood before operation, red corpuscles 3,592,000, white 15,000, hemoglobin 60. Blood after operation, red 4,250,000, white 15,000, hemoglobin 65. Removal of pus after operation by puncture, hemorrhage, fever, 300 gr. purulent fluid removed from splenic cavity.

Case 4. Operator, Lindfors; date, 1892. Patient, female, age 20, peasant.

Diagnosis: Constitution weak, temperament lymphatic, five years before noticed increase of abdomen, specially of left side. Very round, acute pain, left part of abdomen occupied by tumor. Elastic, ovoid, very movable, 29 to 17 c.; circumference 25 c. Blood, 1 white to 250 red.

Operation: Chloroform, afterward ether. Incision 18 c. above umbilicus from right to left, a vertical incision from upper angle 6 c. to left side of angle. Abdominal walls divided successfully, hemostasis with care before opening peritoneum. Single adhesion to omentum. Omentum, etc., retained by sterilized gauze. Ligation of pedicle with aseptic silk in six divisions. Almost no loss of blood; suture completed. Recovery.

Remarks: Treatment four weeks previous to operation fortifying and stimulating. Weight without blood 116 gr.; length 25 c., breadth 15 c., thickness 7 c. Histologic examination: hypertrophy of fibrous element and diminution of pulp. Result:

augmentation of white globules, diminution of red, especially hemoglobin. No augmentation of thyroid and lymphatic glands.

Case 5.—Operator, Hartman: date, 1894. Patient, female, age 40, two miscarriages, no children.

Diagnosis: In iliac fossa and ascending to within one-half inch of costal arch, tumor flaccid, movable transversely from one fossa to the other. No area of dullness of normal position of spleen. Swelling of abdomen, continual vomiting. Was suddenly seized with meteorism. Headache of frontal type and so severe as to prevent sleep.

Operation: A sub-umbilical incision was made in median line, no attachment of spleen was found except by pedicle. It was lamelliform. The splenic artery was ligated, and then three other threads were passed, the last one constricting the whole pedicle en masse. The distal end of the pedicle was then tied near the spleen and cut between the last ligature and the others.

Remarks: April 7, hemoglobin 108, leucocytes 1 p. to 150, red 4,850,000; April 9, hemoglobin 90, leucocytes 1 p. to 137, red 4,400,000; May 20, hemoglobin 105, leucocytes 1 p. to 200.

The fortunate operators of these were Franzolini, Assaky, Ceci, Landfois and Hartman. That you may form some idea of the hemotaxis demanded in these cases chlorid of zinc, actual cautery and 41 ligatures were required to control the hemorrhage, from the pedicle alone. In Assaky's case there were no adhesions.

In forming the second class, that of malarial hypertrophy, I accent the diagnosis as given in the report and if it is not expressed I have relied upon the history and symptomatology. In none of these cases was the plasmodium malarie found. Under this head we have 40 cases, 24 recoveries and 16 deaths. To these I wish to add my own case which I trust I may be permitted to report in detail.

Mrs. J. S., age 33, housewife, multipara; native of Tennessee, family history good, has suffered occasionally with menorrhagia, but more recently from amenorrhoea. She had malarial fever when 12 years of age, for the last three years she has lived in the western portion of the State on the banks of the Mississippi. She has suffered during this time with frequent attacks of intermittent malaria. In July, 1895, she had remittent fever lasting five weeks, from which she apparently recovered. About August 1. last, she suffered from acute pain in the left side. A tumor was then discovered in that region about the size of the fist. The tumor grew rapidly, and on October 8 she consulted me. Physical examination revealed a smooth, elastic, movable tumor, filling the left lateral region of the abdomen. Edges sharp and notched. It frequently changed its form: at times it appeared flat and smooth; again it would rise up into a sharp ridge extending from ribs to symphysis pubis. There was absolute dullness over the tumor. Vaginal examination revealed the uterus forward, the pelvis filled with a smooth hard mass, which upon change disappeared from the pelvis and occupied the left iliac fossa. She suffered with paroxysmal pain, a sense of weight and dragging in the left side, flatulency, nausea and occasional vomiting. There was some emaciation and slight anemia. There was no adhesion, ascites, vertigo or insomnia. The blood examination was conducted by Prof. W. M. L. Coplin in the laboratories of Vanderbilt University, and appears as follows: Blood examination case of Mrs. S. by Prof. Coplin: Date of examination, Oct. 9, 1895; number of red corpuscles, 3,800,000; number of white corpuscles, 31,000; ratio, 1 to 123; per cent. of hemoglobin, 65. The red cells normal in configuration: no large or irregular cells; leucocytes almost exclusively of the large polynuclear type, only a few mononuclear white cells being present.

The diagnosis was malarial hypertrophy of the spleen, and after due preparation the abdomen was opened by lateral incision at outer border of left rectus. The incision was about six inches long. The spleen was found displaced and free from adhesions, its pedicle was secured by interlocking ligatures. The pedicle was severed close to the organ. As additional security against hemorrhage ligatures *en masse* were employed, also individual deligature of splenic artery. After removal of the spleen bleeding from the abdominal incision, which before was insignificant, now became very profuse and required several ligatures. The peritoneum was closed by separate silk sutures, the abdominal wall coapted by the usual interrupted silkworm gut sutures. The post-operative history is a very

stormy one. For the first twenty-four hours after operation the behavior of the patient was very satisfactory, pulse 122, temperature 100, respiration normal. The stomach quiet, urine secreted, 9 ozs. During the second day the patient restless, occasional vomiting, pulse 130, temperature 99, respiration 28, abdomen flat; urine secreted, 16 ozs. On the third day the patient became very weak, extremities cold, pulse 150, temperature 100, respiration rapid, 40, very shallow with attacks of dyspnea. During the twenty-four hours of the third day, only 2 ozs. of urine secreted. Some pain in the lumbar region, slight tympanitic distension of the abdomen. This was very peculiar, being entirely subumbilical. On the fourth day patient very dull, sleepy and slightly delirious, pulse improved, 120, temperature 100, respiration 36, but no dyspnea. Complained of severe pain in right side of abdomen and chest, depression and vertigo. Urine secreted 12 ozs. Fifth day general condition much improved, pulse 92 and full, temperature normal, respiration still rapid. Peculiar subumbilical sausage tympany marked. Bowels acted copiously. Urine secreted, 30 ozs. in twenty-four hours.

During the succeeding ten days patient suffered intensely with pain in left hypochondric region and adjacent area of the thorax; uncontrollable diarrhea, was drowsy and occasional vomiting. Tongue became dry and red, sordes appeared and rapid emaciation occurred, picturing in every way the closing scene of typhoid fever.

On the 14th and 15th days she passed a number of large, bloody and fluid stools, her pulse and temperature remained the same. The pain was relieved, tympany subsided and the brain symptoms disappeared. She expressed herself as much better. Marked and rapid improvement in general condition followed. All functions become normal.

One month after operation she was out of bed and looked ruddy and well and was in infinitely better condition than before the operation. Aseptic union of the wound throughout. Seven months later the patient is in good health.

The blood of Mrs. S. was examined by Professor Coplin and gave the following results:

Oct. 9, 1895, red corpuscles, 3,600,000; white corpuscles, 31,000; per cent. of hemoglobin, 65. The red cells normal in configuration, no large or irregular cells. The leucocytes are almost exclusively of the large polynuclear type, only a few mononuclear white cells being present.

October 13, operation.

October 19, red corpuscles 3,000,000; white corpuscles, 6,000; per cent. of hemoglobin, 60. Red cells somewhat irregular; a few microcytes and megalocytes and many of the normal-sized red cells pale, a few almost phantom. While the leucocytes are almost diminished in number their character is also changed; instead of the large polynuclear cell of the previous examination, the white cells are mostly of the lymphocyte type.

November 2, red corpuscles, 2,500,000; white corpuscles, 16,000; per cent. of hemoglobin, 50. Red cells more nearly normal in type; very few irregular cells. Leucocytes mostly of the large polynuclear type, and very much as they appeared before operation.

November 9, red corpuscles, 2,640,000; white corpuscles, 18,000; per cent. of hemoglobin, 50. Same corpuscular condition to be noted as that recorded in examination of November 2.

The third series of cases which I find it difficult to classify, for want of a better name, I designate as simple hypertrophy. In these cases there is no associate blood diseases, yet I would suggest that sufficient attention has not been given to the condition of the other viscera, especially the pancreas and the liver. In an investigation upon anatomic conditions alone we could assume that splenic hypertrophy would follow disease obstructing circulation in this organ. In a careful analysis of the recorded cases of simple hypertrophy, I can find allusion to the liver in only three. I question if this organ is not entirely overlooked in the diagnosis. In seeking to discover a

cause for this so-called simple hypertrophy we note that the organ is found to be "displaced," "wandering," "movable," "ectopic." At once the question arises: Is this displacement the result of the increased weight, traction and elongation of the pedicle, or have we in some instances, a congenitally long pedicle whose vessels are constricted by the mobility and changed position of the spleen, leading to pulp engorgement. Of 59 cases of splenectomy for simple hypertrophy 34 recovered, 25 died, a mortality of 42 per cent.; 9 of the deaths were due to hemorrhage, a preventable accident. With due precaution the mortality should have been 28 per cent.

Neoplasms from the fourth group: As primary growths they are rarely met with in the spleen. I can collect only five cases of sarcoma which may be thus tabulated: Billroth, female 43, primary sarcoma, recovery; Wagner, female 27, primary sarcoma, recovery; Helmouth, child, primary sarcoma, death; Frisch, female 31, primary sarcoma, death; Flothman, male 44, primary sarcoma of mesentery and spleen, death.

In all of these cases the diagnosis was corroborated by microscopic examination and can not be questioned. We note that four of the patients were in middle life, only one a child. Billroth in recording his case remarks upon the infrequency of primary sarcoma in the spleen.

The next pathologic condition demanding splenectomy is echinococcal cystoma of which there are six cases, four recoveries and two deaths. Simple cystoma of the spleen has been met with by three operators. Péan, Wells and Gussenbough. Péan's and Wells' patients were women. The tumor was diagnosed as ovarian. Gussenbough's patient was a boy of 14. All these cases recovered.

In 1581 Viard is reported to have removed three displaced degenerate and dried-out spleens; just what that pathology is I leave you to imagine. All these cases recovered and were the second series on record. Of primary abscess and sloughing of the spleen, not due to traumatism, there are three cases with three recoveries. I found throughout the literature of this subject, one case each of syphilis, primary tuberculosis and fibroid degeneration of the spleen. Death occurred in each case.

Two cases of floating spleen, normal in size, are reported: one death and one recovery followed their removal.

One of the most frequent conditions demanding splenectomy is injuries to the organ by contusions or stab wound. After wounds of the abdominal wall, the spleen often herniates. The protruding part quickly becomes gangrenous. Under the head of wounds we have 43 cases, 32 recoveries and 11 deaths. While these cases appear in literature as splenectomies, in 8 of these the protruding part was removed; all of this number recovered.

Clinical memoranda are not always as clear as one would like upon the question of diagnosis. In many records the reporters are most artful in their phraseology, not declaring a diagnosis nor confessing error nor ignorance. In a summary of cases extending over a period of three and a half centuries it is a little difficult to gather exact data. I find only 99 cases recorded sufficiently in detail from which we may draw conclusions as to a diagnosis. Of this number it appears that a diagnosis of splenic enlargement was fully determined in only 57 cases. In 24 cases it is questionable if a diagnosis was made, in the remain-

ing 19 cases there was absolute error of diagnosis. I can gather only 15 records of blood examination. In these the investigator seems to confine his work to estimating the relation of white and red corpuscles, without considering the character of the corpuscles or the amount of the hemoglobin. From this table we note that in three cases there was decided increase in white corpuscles after operation, with a diminution of the red. In three other cases there was a gradual decrease in the number of white, while the red remained as before operation. These data in part accord with the conclusion of Vulpins, who claims that after the removal of the spleen there is a leucocytosis, a temporary increase of white corpuscles.

It is held by physiologists that the spleen in the adult in conjunction with the red marrow of the bones plays an important role in the formation of red blood cells, yet in the few cases analyzed in which an accurate account of the blood was made before and after operation, in two there was slight increase in the number of red cells, in two others there was decided diminution. Concerning the function of the spleen with relation to the red blood cells, Emelianoff, in a recent number of the Archives of Biology of St. Petersburg, asserts that in the fetus the function of the spleen is the production of red cells, which function at birth is transferred to the marrow of the long bones. The change in function takes place gradually, that is through several weeks. But it is very doubtful if the organ in the adult, even after copious hemorrhage, takes part in the formation of red cells. One never sees red cells in the process of formation in the spleen. "It is very probable," says the same authority, "that the spleen takes an active part in the formation of hemoglobin." Vault and Jolyet, speaking from experiments upon animals, say that the removal of that organ is never productive of any derangement and therefore its function can be assumed by other organs, probably by the lymphoid glands. A careful examination of all cases recorded fails to yield a single case in which there was lymphatic enlargement following splenectomy. Upon like grounds I am prepared to accept the conclusions of Vulpins which is "The thyroid gland is not vicarious to the spleen." Exactly what division of extra labor is made among the various glands after removal of the spleen one cannot say; yet a few autopsies held upon the patients from one to three years after they have been deprived of their spleen, give us this information. Accessory spleens which at the time of operation were too small to attract attention have grown to the size of a walnut. Furthermore, fragments of the splenic tissue left upon the stomach and other viscera grew and preserved their normal characteristics. Schiff and Heitzen have endeavored to point out relationship between the pancreatic digestion and the function of the spleen. The pancreas of an animal deprived of its spleen loses its digestive properties. In contemplating splenectomies the surgeon must now feel he is sacrificing two organs. Since, however, beyond the cavil of the physiologist one can do fairly well without the spleen we are not likely to be deterred by their experiments. How well one's functions can be conducted without spleen is excellently illustrated in Tanton's case in 1700 (Morgani, De Sedibus et Caus. Morb. 111 ep. LXV), in which the spleen was removed from a child. She grew to womanhood and bore children. It does not appear in this case that the splenectomy in any way influenced the anatomic and physiologic develop-

ment of the endometrium or Johnson's lymphoid structure; yet ample evidence is obtainable that endometrial diseases frequently occur in the history of splenic disease.

The symptoms of splenic hypertrophy are divided into two classes, first constant and second occasional. Of the first we have progressively enlarging abdomen, pain, weight and dragging sensation, anorexia, nausea and frequently most obstinate vomiting, vertigo, insomnia, dyspnea, emaciation and anemia. The occasional symptoms are hematuria, epistaxis and hematemesis. I wish in this connection to remark upon the constancy of insomnia as a symptom. In almost every detailed report it is mentioned and may be explained, I think, by the existing anemia.

I do not think it necessary to discuss here the physical diagnosis of splenic tumors and hypertrophy.

Our acquaintance with intra-abdominal disorders is so much more intimate than formerly that in the future errors in diagnosis will be quite the exception. There are two complications which occur in the life history of enlarged spleen deserving special mention, torsion of the pedicle and ascites. I am able to gather altogether eight cases of torsion of the pedicles. To these if it were proper I would add a case reported by me in the *Medical News*, April 1890, of splenic hypertrophy with torsion of the pedicle, diagnosed as uterine fibroma with torsion of the pedicle. The woman died while preparations were being made for operation, the autopsy revealed the true nature of the case. Of the eight cases I reported all were women, six were multiparæ, two may have been though were not so stated. In four cases symptoms of torsion became quite manifest after labor or abortion. The symptoms of rotation of the spleen briefly stated are the following: Acute paroxysmal pain of the twisting character, more or less sharp; nausea, vomiting, frequently obstinate constipation so much so as to suggest intestinal obstruction; sausage tympany; tumor enlarges rapidly, becomes hard, tense and very tender. These symptoms remarkably simulate hemorrhagic pancreatitis.

The second complication to which I would call your attention is that of accumulation of ascitic fluid. It was present in eleven cases; nine of these patients died. Death was due to hemorrhage no doubt, though it is not so stated. The splenic hypertrophy in these cases was associated with, if not due to, hepatic cirrhosis, and after removal of the spleen by reason of the obstruction offered to the portal circulation there were double causes for increased vascular tension. Therefore a patient presenting this complication is predisposed to hemorrhage, a fact that should have due weight in determining the propriety of an operation. The first operation done in America was performed by Alston. Subsequently there were 28 additional operations performed, resulting in 11 deaths and 17 recoveries. Our honored fellow, Prof. E. S. Lewis of New Orleans, appears as the most successful American operator, he having removed the spleen in two cases of malarial hypertrophy. In one case the physical signs warranted the diagnosis of uterine fibroma. When the abdomen was opened he quickly discovered his error, but drew up the spleen, ligated its long pedicle and removed it. The second case was correctly diagnosed as an enlarged and displaced spleen. Both patients recovered.

Our honorable president Dr. Louis McLean Tiffany kindly gives me the following notes of his case:

Mrs. —, age 45, came into my care December, 1893, suffering from a tumor in the left side of the abdomen. It was freely movable from side to side as well as up and down, but always extended six inches below the left ribs. When standing the tumor presented below the navel in the middle line; toward the linea alba the finger could be pressed underneath the tumor recognizing a more or less sharp border, broken in two places by depressions which suggested that the tumor was an enlarged spleen. The history of the patient showed that she had suffered for years from irregular attacks of malarial fever and that the tumor had grown for seven or eight years slowly. It was thought at first that the attacks of malarial fever were accompanied by pain in the tumor. At present not only is discomfort complained of, but inability to eat and digest food also. Examination of the blood showed slight relative increase in white blood cells. The spleen was removed Dec. 29, 1893. An incision sufficiently long was made from the umbilicus downward to the left of the linea alba, and from the umbilicus upward and outward as far as necessary. The spleen at once came into view with a long pedicle. The omentum was adherent to the under surface and was tied off in segments. The vessels entering the spleen at the hilum were separately uncovered and tied. Two small spleens not larger than walnuts were left. All went well, the patient recovered without trouble. Examination of the tumor showed that it was 25 c. long, 14½ c. wide, 7 c. thick and weighed 11,000 gr. It was hard and inelastic: the capsule tense and much thickened. In places it was very opaque, apparently by fibrous deposit. On section it was of a dark red color, nearly black; the pulp could easily be pressed out leaving large and prominent trabeculae which crossed in all directions. Microscopic sections were stained with eosin and hematoxylin. They showed enlarged blood vessels, the spaces between the trabeculae contained large numbers of red corpuscles and a good many white ones. The sections looked like hemorrhagic infarctions, the walls of the blood vessels were thickened and infiltrated with small round cells. The capsule was thickened and infiltrated similarly, the glomeruli were seen with difficulty. Trabeculae were increased in size and number and infiltrated with round cells. There was much coloring matter present and there appeared to be a general increase in connective tissue throughout the whole organ. The appearance justified the diagnosis of subacute indurated splenitis. The blood was normal when the patient left the hospital.

AMERICAN OPERATORS.

Goodell, leukemia, death; Markoe, simple hypertrophy, recovery; Miner, simple hypertrophy, death; Powell, wound and hernia, recovery; Alston, wound and hernia, recovery; Myers, malarial hypertrophy, recovery; Markham, wound and hernia, recovery; Markoe, malarial hypertrophy, recovery; Strong, leukemia, death; Willien, wound, death; McGraw, malarial hypertrophy, recovery; McGraw, simple hypertrophy, death; Nilsen, simple hypertrophy, recovery; Deaver, traumatism, death; Simmons, malarial hypertrophy, death; Rod-dick, traumatism, death; McCann, simple hypertrophy, recovery; Conklin, simple hypertrophy with torsion, recovery; Bond, simple hypertrophy with torsion, death; Pane, malarial hypertrophy, recovery; Bark, leukemia, death; Saurason, malarial hypertrophy, recovery; Penrose, simple hypertrophy, death; Yourkin, simple hypertrophy, recovery; Stephen, simple hypertrophy, recovery; Lewis, malarial hypertrophy, recovery; Lewis, malarial hypertrophy, recovery; Tiffany, malarial hypertrophy, recovery; Douglas, malarial hypertrophy, recovery; total number 29, deaths 11, recoveries 18.

THE EXTENSION CORSET AND ITS INDICATIONS.

BY ALEX. C. WIENER, M.D.

CHICAGO.

Lewis A. Sayre revolutionized the treatment of tubercular processes of the spinal column by the propagation of absolute immobilization and freedom from pressure of the diseased portion. That the results obtained by his method were unprecedented is amply evidenced by the fact that his principles have made a triumphal tour around the civilized world and that the use of the plaster of paris corset has come to be considered indispensable in the treatment of Pott's disease.

The symptoms of tubercular infection of the spinal

column, first described by Perceval Pott in 1783, have been dilated upon by Sayre in so clear and scholarly a manner that every physician ought to memorize his words, so as to always have them at command; for how many beginners in practice fail to diagnose properly the early stages of Pott's disease and owing to their lack of skill expose themselves to the serious charge of perpetuating for life in a fellow creature a deformity which is the constant source of physical and mental agony? We are still further indebted to Lewis A. Sayre when we observe that his principles are now being applied to the treatment of tubercular diseases of the hip and knee joint, thus constantly lessening the indications for operative interference, so that the young patient may be spared an extensive operation, painful treatment and a tedious sickbed.

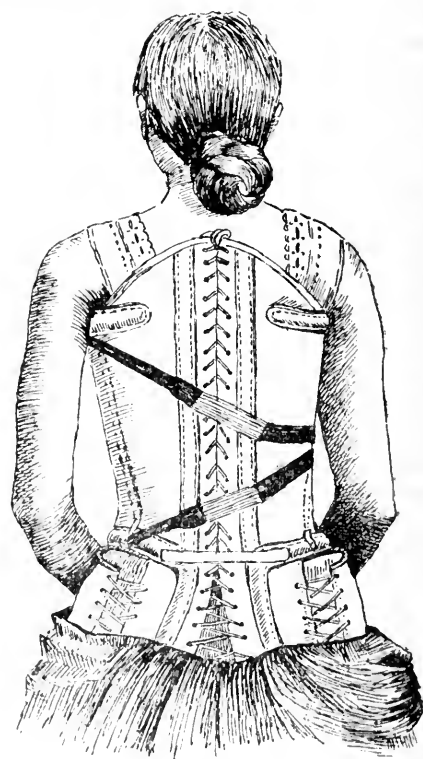
Although Sayre, Phelps and others have clearly demonstrated the utter uselessness of the Taylor brace, these bandages are nevertheless sold in large quantities to the public by truss makers, who apparently have faith in the suggestive value of such a support, as it is impossible for them to demonstrate that a real extension and support is exercised by an apparatus which slips down upon the pelvis or excoriates the skin when charged with the weight of the head and trunk. But unfortunately, unlike hysteria, Pott's disease is caused by infection with the tubercle bacillus and precious time is wasted in using worthless instruments, the serious consequences of which are not slow to make themselves felt.

A. M. Phelps in his valuable paper on Spinal Supports, makes the following remarks on this important subject. "Previous to Sayre's investigations the Taylor brace has been exclusively used for the extension and fixation of the vertebrae, but many disadvantages resulted from its use, in that a mother or nurse being able to remove it at any time often handled the child in such a manner as to produce traumatism and injury to the diseased vertebrae. Further, the steel bars had to be frequently removed or excoriations would occur. When they do give support, they are uncomfortable, which is one of the strongest arguments against their use in Pott's disease of the spine. In place of this troublesome instrument, which is devised in a hundred different forms, Lewis Sayre introduced the plaster of paris corset to be applied while the patient is hanging in Sayre's suspension apparatus.

"We all agreed," continues Phelps, "that the best orthopedic instrument ever devised is the human hand. Guided by intelligence it applies forces for the correction of deformity more delicately and perfectly than any inanimate object ever invented. Plaster of paris is applied to the deformity. While it is yet in a plastic state the hand molds it to the correct position and holds it there until it becomes hardened or set. Can you not see that now the plaster of paris is effective as a brace or support only in proportion to the amount of cerebral matter concerned in its use? In the absence of the latter it is worthless."

Phelps' specific statement of the requirements of a brace brings us to the leading principle of the extension corset, which was first made by Hensing. Every inch of the bars used in the construction of the corset must be fitted to the figure, so that when the various parts are put together no pressure will be felt anywhere on the underlying soft parts. The work of fitting and correcting must be prosecuted with untiring exactness, until every part fits the body snugly, rest-

ing upon it without pressure. Herein lies the chief objection. The vast amount of labor which every corset involves is the principal reason why these corsets will never supplant the plaster of paris corsets in the clinical practice. A mechanic can prepare the steel bars according to given measurements, but the real work, that of fitting inch by inch, must be done by the orthopedic surgeon himself with hammer and rule in hand and the anvil at his side. These instruments are of equal importance in the operating room of the orthopedic surgeon as are those which are used in operations. In this method in adjusting steel bars the requirements made by Phelps are complied with. Just as the plaster of paris is molded by the hand of the surgeon in applying the Sayre corset, so the surgeon guided by a thorough anatomic knowledge fits the steel bars to the configuration of the body, making ample use of his "cerebral matter," Phelps' paraphrase of common sense, for which a substitute never was and never will be found.

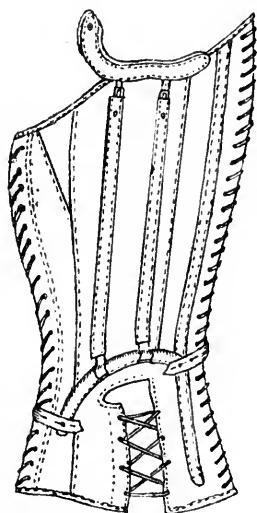


Extension Corset for lateral curvature of the spine.

A plaster of paris cast is taken of the patient while hanging in Sayre's apparatus. This cast filled with plaster represents the figure of the patient. A corset is cut according to measurements from French coutil, which should fit accurately but somewhat loosely, to leave room for the braces. The hip part consists of a steel bar which, starting backward from the os coccygis, runs upward to the spina posterior superior, and crossing the crest of the iliac bone laps over the anterior abdominal wall, terminating one inch above the Poupart ligament, thus riding, as it were, and resting on the crest of the iliac bone, with both shanks clasping the whole iliac region. A steel ring is then fitted in the arm-pit, upon which the shoulder rests firmly, as upon a crutch. After both these parts have been connected by steel bars, which must also closely follow the outlines of the body, so that their combined length will be greater than that of the spinal column, it is evident that, since the whole weight of the

shoulder and head rests upon the lower part of the corset, the deformed spinal column will first be relieved and then extended. After the spinal column has been raised so far that the given length of the side bars has been reached and no further extension can take place, the screws in the longitudinal slit of the bars must then be loosened, the space between the pelvis and the arm rest enlarged and fastened in this position. Thus, the correction conforms with the growth of the body as well as the improved condition of the diseased spine. The corset should always be drawn tight, fitting the body closely and if possible, should be worn at night. Elastic bands properly placed enhance the efficiency of the steel bars in the correction of the deformity.

At the end of his article Phelps gives the following indications for the different devices: 1, plaster of paris corsets for acute Pott's disease; 2, wooden corset for lateral curvature and cured or convalescent cases of Pott's disease; 3, the Beely corset for mild forms of lateral curvature, especially in girls; 4, the aluminum (Phelps) corset for permanent bracing; 5, the celluloid corset (Lorenz) in a way takes the place of aluminum.



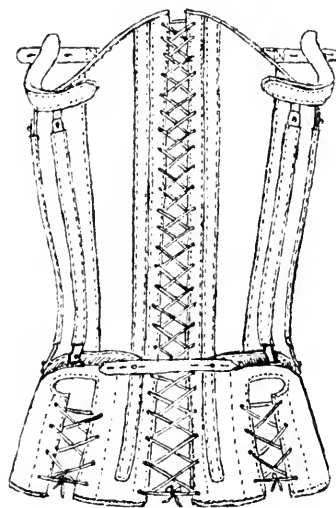
Extension Corset, side view.

While fully recognizing the value of these various apparatus, more especially on account of the simplicity of their construction, still the superiority of the extension corset for permanent extension must be acknowledged, because the effected spine is equally relieved from pressure and immobilized. This is evident from the instantaneous cessation of the reflex muscular spasms and pain. The length of the side bars can be readily adjusted. The corset may be taken off for constitutional treatment with ease (baths, etc.). Above all, it does not in any way interfere with extensive open air exercise which is essential in the treatment of these affections. Hoffa and Heusner are the most enthusiastic advocates of the extension corset in Germany, while Lorenz, too, uses the Hessing device in the construction of his corset, excepting only that the pelvis bar is replaced by a capsule of celluloid. The Lorenz corset, however, is too heavy and inflexible and the celluloid casting does not conform to the subsequent changes in the trunk during the course of treatment, as does the elastic French coutil. If the seat of disease be at the thoracic or cervical vertebrae, a collar should be added which is wider at the back of the head and finds its support on the mastoid process

and forward under the lower jaw. Exactly in the center of the mastoid process a steel bar projects from each side which conforms accurately to the depressions between the muscles of the neck and the protruding collar-bone and reaches downward to the middle of the trunk. Here the bar is attached to the shoulder brace by means of an elastic band. The head may be immobilized or kept movable, according as the screws are drawn.

Admission to a hospital is desirable in having the corset prepared, so that the patient may be always on hand. Even after the corset is finished it is better for the patient to remain a few weeks longer, so that any defect may be noted and remedied and instruction may be given the mother or nurse as to the exact manner of fitting the corset.

It is easy to understand that at first patients, especially if children, feel uncomfortable in the corset. In the beginning, therefore, it is advisable to leave the corset on for only a few hours and to draw the string gradually until the maximum is reached. Care must be taken to distinguish between the feeling of discomfort which is common to almost every new garment and the actual pressure of a steel bar, which is indi-



Extension Corset, back view.

cated by a redening and soreness of the skin and must be relieved at once.

Constitutional treatment should go hand in hand with local treatment. The majority of children suffering from tuberculosis of the bones are afflicted with anemia, lack of appetite, a tendency to nervousness and weakness of the heart. They have a pronounced dislike of nitrogenous foods, *i.e.*, meat and eggs and frequently milk also. Obedient to this hint of nature I have for a number of years prescribed a vegetarian diet with strict exclusion of beverages and of medicines, containing alcohol and have had the satisfaction of observing an increase in appetite and subsequent gain in weight. Beginning with milk, rice and apple sauce we change to heavier foods as the children are allowed freedom of movement, such as buckwheat, oatmeal, barley, sago, spinach, peas, beans, potatoes, the fruits of the season raw and cooked, etc. Small quantities of rich unskimmed and freshly cooked milk may be given and raised by degrees until a quart a day is reached. Often Horlick's malted milk proves useful for a change. Cod liver oil combined with phosphorus, lactophosphate of lime (Merck's) and extract of malt or iodids should only be given after

the children have gained in strength and their use should be discontinued if nausea or loss of appetite result. An effective means of improving the appetite and general health is warm sea-salt baths. It is advisable to begin with washing the whole body with sea-salt solution in a well warmed room, the water being lukewarm in the morning and warm in the evening. The whole procedure should not last more than three minutes and the skin should be dried, not by rubbing with a towel, but by gentle touching, so as not to wipe off the salt crystals which are precipitated in the pores of the skin. When the baths are found to agree with the patients, full baths should be taken three times a week, the duration not to exceed five minutes and the temperature of the water being about 98 degrees. In proportion as the patient grows stronger the temperature of the water may be gradually lowered. In the beginning the baths should be warmer, about 98 degrees, and should not last longer than five minutes, especially if there is any complication of the heart. By degrees the temperature may be lowered to 90 degrees and the duration may be increased to thirty minutes. It is difficult to give any special rules in this connection. The frequency, duration and temperature of the baths are regulated by the condition of the patient and the good judgment of the physician. In general, baths should not be given more than four times a week and the temperature should not be under 90 degrees. The loss of calories from the system is not excessive. The stimulation of the peripheral nerves is so much greater in cooler water, which is of importance, first, on account of the strong irritation of the sensible nerve ends on the surface of the skin, as well as an irritation of the cerebral centers of sensibility, and, second, on account of hardening the system. By hardening we mean the accustoming of the nerves of the skin and of the mucous membrane of the upper air passages to exposure to cold, which leads to an increased generation of warmth with increase of appetite and stimulated metabolism in the organism and also stimulation of breathing. The salt contained in the water exercises a merely mechanical action, since after drying, the crystals of salt remain in the pores of the skin, where they act as an irritant on the nerve ends and blood vessels of the skin. For feverish patients there is no more reliable and gentle means of lowering the temperature and relieving the tormenting thirst as well as the debilitating night sweats. After the bath the patient should remain in bed for one hour and be careful to prevent perspiration, so that the pressure of the blood is not lowered to too great an extent and the heart's action weakened. Special care should be taken in the case of patients with complications of the heart and lungs. When possible visits should be made to the seashore during the season, where bathing in the surf, and the sea breezes exercise very salutary effects. The excellent results I have observed from the sea-salt baths makes me an enthusiastic advocate of this treatment in every case where there are evidences of constitutional disturbances either of tubercular or rachitic origin. But many mothers anxious that their children be restored to health as quickly as possible overdo the bathing to such an extent as to counteract the good effects. The physician, therefore, should insist on seeing the patient at least twice a month and should not allow the baths to be given longer than two months in succession.

In the natural course of tubercular infection of the

spine a cold abscess will be formed surrounded by spongy granulations which penetrating into the spinal channel press on the spinal cord. It is very rarely the case, however, that pressure symptoms alone attend degenerated and sunken vertebrae. In these serious cases, in which paraplegia and total paralysis of the lower extremities have developed, the immediate application of an extension corset is necessary, which must be worn day and night, or for which a weight extension on the head may be substituted at night. Laminectomy is justified only when the pressure of the tuberculous pus and granulated tissue has become so great as to paralyze the bladder and rectum, and the patient's life is threatened by septicemia due to bed sores.

Although a discussion of the operative treatment of Pott's disease is beyond the scope of the present paper, still it may not be irrelevant to state that from a critical review of the literature in this connection the ultimate results of this operation are not such as to warrant the procedure without positive indications. Beside septic infection, hemorrhage and the difficulty of access to the diseased part, a miliary infection has been observed in some and a return of the paralysis in others, although all pathologic symptoms may have disappeared with surprising rapidity immediately after the operation. Another fact which has not received proper attention is, that an edematous swelling has been observed at that portion of the spinal cord which corresponds in the diseased portion of the vertebrae, and this continued after the removal of the pressure and eventually resulted in a return of the paralysis of the extremities. This edema lasts about two years. As yet its anatomic cause is not demonstrated. It is not improbable that iodid of potassium may reduce this edema and in this way the mysterious specific effect of this remedy on paralysis in Pott's disease may be explained.

In so far as the spinal cord is relieved from pressure, there is certainly a promising future in store for the operative treatment of Pott's disease. Judging from the effects of operative procedure on the more accessible joints, however, one is inclined to doubt that such procedure will ever bring the process to a standstill, and, for the present, conservative orthopedic treatment will have the better results to show as its methods are perfected. The universal introduction of the extension corset together with Sayre's plaster of paris corset will mark a most important advance.

I will restrict myself to a few typical instances. The following case was referred to me by Dr. E. W. Lee in the accompanying letter:

Dear Doctor:—I herewith send you a boy ten years of age, whom I saw for the first time only a few days ago. I found him with a temperature of 102.5 degrees, pulse 140 weak and irregular, vomiting and constant nausea, so that he could not keep anything on his stomach. A tenderness was found in the upper cervical region. The head was turned to the right like a torticollis, almost resting on the right shoulder; loud bruit on the mitral valve. I suspected a local meningitis starting from a tuberculosis of the upper cervical vertebrae.

Yours etc.

E. W. LEE.

Passive and active motion of the head was impossible. No swelling was to be found. Digital percussio of the occiput and the subsequent rapid improvement fortunately failed to substantiate Dr. Lee's well founded suspicions. From the symptoms, I concluded that the process was seated in the atlo-axoid articula-

tion, and this was confirmed by the great tenderness in the region extending from the first to the third vertebra on the right side.

The boy was admitted to St. Joseph's Hospital and an extension with weights applied. The weights were gradually increased from one to seven pounds. Sea salt baths were prescribed and gave immediate comfort and relief. As soon as the vomiting had subsided vegetarian diet with plenty of milk was instituted. The corset was at once prepared. The boy was discharged at the end of four weeks, looking bright and well, with a gain in weight of eight pounds and wearing a tight but comfortably fitting corset with a leather collar attached, which held his head corrected to the left side. Without support the head had an inclination to turn to the right, but could be moved without pain, the tenderness of the upper cervical vertebrae on palpation having entirely disappeared. The apparatus he wears is almost entirely concealed under his clothes.



Karl B., Case 2.

How serious would have been the consequences had this boy been compelled to stay in bed or even wear a jury mast! With this strange-looking instrument he would have confined himself to the house frightened away through the taunts of his comrades, thus wanting the stimulus of outdoor exercise and cheerfulness, whose importance can not be overestimated in restoring metabolism and augmenting the vital forces in chronic diseases.

Through the kindness of Dr. Fischer I had an opportunity in Buda Pesth last September to examine a remarkable case of tubercular caries of the thoracic portion of the spinal column involving the second to the seventh vertebrae. Karl B., 28 years of age, has the following history: Both parents died of tuberculosis of the lungs. He had a kyphosis since his seventh year, which gradually and imperceptibly increased in size without causing him any pain. In the beginning of January 1891 suddenly without any apparent cause pain set in in the middle of the kyphotic part, which was soon followed by paralysis

of the lower extremities, the legs ceasing to act almost instantly. The reflex action in the legs increased, the sensibility decreased. When seated the patient held his shoulders so high that they were on a level with the tops of his ears. The kyphotic part formed an angle of 90 degrees. A lateral deviation was not noticeable. About one centimeter below the most prominent part of the kyphosis there was a painful spot, and from this point emanated the paralytic feeling above mentioned. The action of the bladder and of the bowels was not disturbed. Diagnosis: Tubercular kyphosis of the thoracic vertebrae, complicated with compression of the spinal cord. Every other means of treatment having failed he was admitted to



Karl B., with corset and collar.

Fischer's orthopedic hospital in Buda Pesth to be treated with an extension corset. Suspension of but a few minutes' duration relieved him very much and enabled him to lift his feet with ease, the kyphotic part becoming stretched about one centimeter and the spinal cord being relieved from pressure. At first the patient could hardly wear the corset, but he gradually became accustomed to it. After ten days the constant reflex contractions of the legs ceased and he made his first step in a frame support. To make the extension of the spine as effective as possible the patient was provided with a leather collar embracing the posterior part of the head and chin, by means of which the head was supported and the vertebrae stretched still more. When the writer saw the patient two years later, he walked about without a corset, only using two canes on the street. The pain in the back had left him and the reflex action and sensibility in the lower extremities were normal. His general health was very good.

In cases of lateral curvature of the spine in the sec-

ond and third stage, the extension corset has proven indispensable. In these cases the spinal column is only supported in order to prevent the muscles, which have been greatly strengthened by daily gymnastic exercises and massage, from again losing their tone through over-exertion. Special care must be taken to construct the corset so as to conform to the rapid changes in configuration. From the foregoing it is apparent that all patients suffering from injury to the spine and in need of temporary relief are enabled to walk about by the wearing of these corsets, whereas without this support they would have been compelled to remain in the extension bed. In this connection I would refer to my paper, "Ambulatory Treatment of Fractures of the Lower Extremities," published in the *Railway Surgeon* in February, 1896, in which the same principles were discussed.

So far we have been considering only diseases of the spinal column, whereas the universal character of the extension corset is still more in evidence in the successful treatment of an affection of the spinal cord, in the therapy of which even neurologists have achieved but indifferent success, that much investigated disease, locomotor ataxia.

Recent research has shed but little light on the nature of this malady of the posterior column, which in its first stages is characterized by symptoms so vague and baffling that only a neurologist is in a position to make an accurate diagnosis. Under these circumstances Leyden acknowledged that no plausible theory has yet been advanced for the progressive degeneration of the nervous system and that we must for the present be content to consider them as peculiar processes. Even the strenuous efforts of Charcot and his pupils to classify locomotor ataxia among the systemic diseases were futile. In the therapy of the disease, too, but little little progress has been made within the last decade, although it would have seemed, that the fact, that in about 80 per cent. of the cases the disease was preceded by syphilitic infection would have given rise to better results by the institution of an antisiphilistic treatment. The suspension method is the only original innovation, which has been made in the treatment of locomotor ataxia. Added to the electric treatment, which is imperative, it is a mechanical means of great value, although it is by no means all that can be desired. This mechanical treatment of locomotor ataxia was first employed by Dr. Motschukowsky, of Odessa, with great success, and his results were published in the *Wratsch* in 1883. Dr. Motschukowsky reached the following conclusions:

1. For two or three hours after suspension walking becomes easier and steadier. After eight or ten sittings it becomes permanently firm and steady.

2. The shooting pains cease entirely and do not recur even during thunder storms and changes in the atmospheric pressure. Some patients who had previously experienced much pain during north and northwest winds became entirely indifferent to the changes of wind.

3. The retarded pain current is considerably hastened, while the parasthetic feelings, such as chills, formication and girdle sensation subsided.

4. After twenty to thirty sittings there is a gradual subsiding of the ataxic symptoms. The Romberg symptom disappears, the tactile sense improves and the atrophied muscles increase in size.

5. Urination and defecation are once more under

the control of the patient. The quantity of indican in the urine decreases, the sexual functions are restored, the gastric pains become milder and less frequent.

6. In some cases the eyesight is improved; the pupils become more movable and dilated; there is a gain in weight. In no case has a return of the knee phenomena been observed, and no improvement has been noticed in the dilatory skin and muscle reflexions.

Motschukowsky has ascertained by exact measurements, that the length of the spinal column increases from one to three centimeters while suspended in Sayre's apparatus, in consequence of which the relation of the spinal cord to the spinal channel is undoubtedly altered, so that the nerve roots assume a more vertical position, though without being perceptibly stretched. Suspension also increases the pressure of the blood, the breathing becomes costal and the vital capacity of the lungs grows larger. Motschukowsky is of the opinion that the white substance not yet infected may preserve its physiologic functions for some time by favoring the establishment of collateral circulation. What Motschukowsky especially commends in his method is its mildness as compared with operative and mechanical stretching of the nervi ischii, which succeed in reaching but one part at a time and the first of which is frequently followed by trophic disorders, the second being annoying and painful to the patients.

As contra-indications to his method Motschukowsky enumerates the following:

1. Disease of the heart and compensative derangements.

2. Sclerosis of the arteries and aneurysms, anemia in a high degree and a tendency to faint.

3. Pulmonary cavities and emphysema.

4. Previous apoplectic, epileptic or epileptoid attacks.

The success of the treatment is less apparent in the first stages than in the secondary.

Charcot, in the *Progrès Méd.*, 1889, fully confirmed the statements made by Motschukowsky. Out of fourteen cases he had observed eight that were considerably improved by suspension. Wm. J. Morton concurs with him in the following words: "My experience leads me to confirm in every particular the results observed in the eight cases at Salpêtrière. We shall have to admit that the aggregate of improvements and cures, whether temporary or permanent, is far beyond that which has been attained by any other means, and for that reason this method must be regarded as the most signal advance yet made in the treatment of this hitherto intractable disease."

Weir Mitchell has modified Sayre's apparatus for this special case so ingeniously that even those seriously ill may be safely treated with it. Yet notwithstanding these indisputable facts the suspension treatment has of late years been entirely discarded, chiefly, in my opinion, because the majority of patients growing tired of frequent suspension even in the most comfortable apparatus, would not allow the physician to carry the treatment to a satisfactory end. Only recently, however, Dr. Brower, in an elaborate article published in *The Corpusele* in 1895, refers to the abandoned treatment in the following words: "My experience has taught me that suspension is of value in the stage of incoördination. I would recommend suspension treatment three times a week, lasting from

five to fifteen minutes, according to the effect on the patient. I think it should be continued as long as possible."

Bechterew is convinced that even where no anatomic changes are found in the eye the power of vision is materially increased by suspension. (*Neurolog. Centralblatt*, 1893; On the Influences of Suspension on Visual Derangements in Affections of the Spinal Cord.)

It is impossible to assert that the statements of men like Charcot, Brower and Morton are erroneous. Why is it, then, that the treatment of locomotor ataxia by suspension has been abandoned? When we consider that, although suspension should last but half a minute at first, and should only gradually be increased to thirty minutes, and further that the patient should be treated only every other day, the salutary effects of this method are nevertheless apparent in the extension of the vertebræ as well as in the probable stretching of the nerve roots, the question involuntarily arises: Why are not the vertebræ kept permanently stretched and the good effects perpetuated? No instrument is better adapted to this purpose than the extension corset, the application of which removes the contra-indications mentioned by Motschukowsky and does away with the disadvantages of the suspension apparatus. The corset should, therefore, be regarded as a permanent suspension apparatus, the object of which is to check the degenerative process in the spinal cord without interfering with the electric, medical and hydropathic treatment of the patient. In other words, the patient should continue under the specialist's care while wearing the corset, just as the treatment remains in the hands of the physician while the bloody nerve extension is made by the surgeon. In both cases the surgeon's skill is at the command of the neurologist.

The following case of locomotor ataxia is reported by Prof. Dr. von Jürgensen, Tübingen, Germany, who personally observed its progress with great care.

History: While taking the waters at Kissingen in 1884 the patient was suddenly afflicted with constipation and want of appetite. Later on a heaviness in the legs set in, the power of locomotion decreased and the carriage became stooping. In March, 1885, after having attended a dancing party he suddenly experienced a feeling of contraction and numbness in different parts of the skin, especially about the breast and arms, and at times the sexual functions were weakened. Evacuation was effected only by artificial means. Nervous pains were frequent. Treatment with massage and electricity and the use of the waters of Wiesbaden resulted in an improvement in the general health, but the above mentioned symptoms did not entirely disappear. In March, 1888, there was a severe relapse. He experienced a sensation of contraction at the throat, which made speaking and swallowing of food very difficult. He suffered from frequent and violent nervous spells. There was a rapid loss in weight. Professor Mendel, of Berlin, finding his treatment of little avail, recommended the wearing of an extension corset, which Hessing himself constructed. The neuralgic pains, the girdle sensation and the numbness of the skin rapidly disappeared. The appetite increased and digestion became normal. His gait became firmer. Although he had resumed his business vocations, it did not in any way retard improvement, and the patient could walk five miles without being fatigued. With the exception of a slight uneasiness when walking in the dark, he felt

perfectly well. His finger nails, which had previously been distorted, resumed their normal shape.

Equal success is not likely to be experienced in every case of locomotor ataxia, as 25 per cent. of the cases are not in any way, even temporarily, influenced by artificial stretching. In the remaining 75 per cent. of the cases which react more or less after a suspension of so short duration, permanent extension may be expected to effect a definite improvement in coördination.

The remaining diseases of the spinal cord—sclerosis of the lateral cords, diffuse chronic myelitis and chronic meningo-myelitis—will not be influenced by suspension at all, and permanent extension will also prove ineffectual. On the other hand, suspension will cause a material improvement in defective functions of the nervi erigentes which originate in the first to third sacral nerves and the center of erection, which is located in the lumbar part. In cases of paralysis after poliomyelitis acuta, it is necessary to use the corset in combination with supporting apparatus for the lower extremities, a description of which, however, would take up too much space for insertion in this article.

CONCLUSIONS.

1. The essential requirements for the successful treatment of Pott's disease, viz., extension and immobilization of the spinal column, are met in an ideal manner by Sayre's plaster of paris corset.

2. The Taylor brace does not meet either of these two requirements. It is therefore of no value in treating Pott's disease and for this reason should be discarded.

3. The extension corset acts like the plaster corset which is constructed according to Sayre's method, except that steel bars and French coutil are used instead of plaster. It fits as snug to the body as a plaster corset, and both form an outer skeleton, to the inner side of which the muscles of the trunk adhere closely. *a.* The plaster corset is preferable to the extension corset in the first stages of Pott's disease for children under 6 years of age, and its cheapness adapts it to clinical practice. *b.* The extension corset, on the other hand, can be readily adapted to the changes in configuration by readjusting the steel bars. It can be taken off with ease for constitutional treatment and at night, and it does not interfere with extensive outdoor exercise.

4. To insure the ultimate success of the treatment it is of the utmost importance that the surgeon himself adjusts the steel bars and exercises a general supervision, occasionally making such alterations in the fit as are deemed advisable.

5. The value of the discovery of Motschukowsky in the treatment of locomotor ataxia will not be appreciated to its full extent by the profession at large until permanent suspension by means of the extension corset has replaced temporary suspension.

Venetian Building.

FROM THE *Washington Star*:—"You feel very sluggish, do you not?" said the physician. "Doc," said the patient confidentially, "bein' ez yer me physician, I'll tell ye somethin'. I've been a professional pugilist in me time, an' between me an' you, that sluggish feelin' ye hear 'em talkin' so much about is gin'rally a complete bluff."

CONTINUOUS SUBMERSION IN THE TREATMENT OF INFECTED WOUNDS OF THE EXTREMITIES.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY FRED. J. HODGES, B.Sc., M.D.

CHIEF SURGEON C. & S. E. RAILWAY.

ANDERSON, IND.

Within the sound of my voice to-day are not a few of the men who have been conspicuous in their efforts to place surgery upon a rational basis; to earn for it a place among the true sciences. To such there can be no name so illustrious that its glamour can blind them to the defects of any surgical proposition or procedure, nor can I believe they will fail to consider and weigh the suggestions of even the humblest within the ranks.

Before such a body, not easily influenced by sentiment or selfish considerations, but zealous always for the best interests of our profession, I appear to briefly submit and support the proposition, that in continuous submersion we have the most rapid, thorough and reliable treatment for infected wounds of the extremities yet devised.

We are told that continuous submersion, by which I mean the submersion of a part for any considerable length of time from twelve or twenty-four hours up to as many days, has for years been very considerably practiced by German hospital surgeons and that it was introduced by them into this country at the St. Francis Hospital some time prior to 1872.

Such is undoubtedly the case, but the procedure has failed to impress itself upon the surgical literature of either country, as the only direct specific references to the practice which I have been able to find are articles by Frank Hamilton in the *Medical Record* for May 15, 1874, and in the January, 1873, number of the old Richmond and Louisville *Medical Journal*.

So far as the writer is concerned the treatment about to be advocated is original.

There came into my service in Cook County Hospital during 1888, a case which had originally been an infected (packing house) wound of the hand that had been poulticed, incised and drained. Later the forearm had been incised and through and through drainage practiced without improvement, so that when it came into my care the hand and forearm were everywhere infiltrated, swollen and sodden. The wrist joint was broken down, passive motion promptly eliciting the crepitus of denuded bone. The patient was by turns delirious from temperature, and maniacal from sepsis. He refused food and was sleepless, and exhausted to such a degree that seemingly death could not be postponed many hours. The nurses of one watch were stimulating him over to the next to escape having to lay him out. What was to be done? Amputation had been considered and dismissed by my predecessors, as necessarily fatal in his weakened condition. Every pocket and recess in the sloughing tissues had been reached and drained. The dressing had been changed from two to six times each twenty-four hours. Clearly no improvement was to be looked for in that direction. The condition seemed so desperate that I placed the arm in a continuous bath of dilute boric acid solution. In twelve hours the man's temperature had fallen from 104 to 99.5, and in twelve more he was perfectly rational and eating well. His further improvement was rapid and uneventful.

In what is known surgically as "infected wounds,"

there is usually present a "mixed infection." That is to say, there are present besides the pus organism, the common putrefactive germs which, working in the field prepared for them by the pus organism, add sapremia to the septicemia already existing. In either event the germs themselves are only the starting point, the seeds of the harm which the host suffers. It is only in rare instances that the bacteria in and of themselves directly harm the host, but in their growth, as the result of their life processes—their eating and drinking, we might say—they create and liberate, in the tissues of the host, a number of complex chemie substances, many of them poisonous to their host and all, at least in a degree, poisonous to themselves. Being poisonous to themselves it might be remarked, why interfere, let them stifle in their own excreta. Here the blood stream becomes an important factor. These substances acting under natural laws familiar to you all, pass readily and quickly by osmosis into the blood mass and thus not only influence the adjacent cells but those of remoter tissues, such as the heart muscle, brain, spinal cord and various nerve centers and ganglia, the integrity of which are absolutely essential to life.

The rational treatment then, of infected wounds must have as its ultimate object, 1, the prevention of bacterial growth; 2, prevention of osmosis of the ptomaines into the blood mass, commonly spoken of as absorption, and 3, such general treatment as shall counteract the pernicious effects of the ptomaines upon the vital tissues. In the past it has been attempted to secure the first results by the use in and about wounds of substances known or imagined to have a destructive or inhibitory action upon the growth of the bacteria. In the very nature of things this course could be but partially successful. Had it accomplished the desired results nothing more would have been necessary, but in point of fact, in the treatment of this class of cases in the past, the greatest dependence has been placed upon drainage and irrigation, which seek to limit or prevent ptomaine absorption. That these measures fail in a good proportion of cases, even when reinforced by stimulants and tonics, is attested by the number of deaths from infected wounds of fingers, hands, arms, feet and legs which occur in the practice of able surgeons; and the number of cases that drag on and on until, should death not occur, the patient is finally dismissed broken down in body and mind. It may seem that no one but an overconfident optimist would dare present a line of treatment with the claim that it would practically always succeed in such a dismal field, but after an experience embracing scores of cases extending over several years of hospital and private practice I come before you to-day to affirm in the most emphatic manner that continuous submersion, intelligently carried out, will in the vast majority of cases, save both the life and the limb. That submersion is a prompt and reliable measure in these cases is attested by the experience of every surgeon that has been induced to try it. How the result is produced I will attempt to explain by presenting the line of reasoning which first led to its use.

1. Many forms of bacteria will not develop at the temperature of an ordinary living room. Such as do so, develop less vigorously than at a higher temperature.

2. Many bacteria will not develop in a dilute watery medium.

3. Many have not the power of developing in strong healthy tissue but readily do so only after its vitality has been impaired by ptomaines.

4. The group of bacterial products collectively known as ptomaines are mostly crystalloids and all are capable of being influenced by osmosis.

5. Serum and substances dissolved in it, if not already within the blood vessel, will, as the result of a fundamental physical law, seek the "direction of least resistance," which in the case of a part that has been freely incised and submerged in a bland fluid is towards the fluid and away from the blood mass.

To these propositions personal experiment and experience have added the following:

6. Avoiding extremes, the temperature of the bath is immaterial.

7. The utility of the bath depends upon the fundamental physical properties of fluids rather than upon any "drug effects," hence pure water is the best fluid for submersion.

To give even the briefest synopsis of the cases treated by this method would be tedious and uninteresting, but I can not pass without relating the salient points of two histories that well illustrate points I wish particularly to impress upon the Fellows of this Academy.

An employe of our straw-board plant "infected" a slight wound upon the index finger of the left hand. The finger was industriously poulticed for two weeks so that at the end of that time, I found him with hand and forearm immensely swollen, temperature over 104, pulse 120, soft and easily compressible. Much of the time for a week he had been delirious but was at the time of my visit more rational. His physician, his friends and even he himself, considered his case hopeless. I had him conveyed at once to the hospital where, with the assistance of my friend and associate of the Academy, Dr. W. J. Fairfield, the brawny skin and subcutaneous tissues were freely incised and the arm submerged in plain water. Within four hours from the time I first saw him, I left him resting comfortably and painlessly with a temperature under 100. In two weeks he was back at work.

Early in 1891 I was called to take charge of a man that had sustained, nine days previously, a compound fracture (Pott's) and dislocation of the ankle. I found the wound full of maggots and the leg gangrenous to the knee. His temperature was 106 and pulse 130. The gangrene, of an emphysematous type, was extending with great rapidity and wishing to check its advance, improve the patient's general condition and gain time, I freely incised the necrosed tissues and placed the leg in a dilute boric acid bath. In six hours the patient was free from fever, resting well and able to take all sorts of nourishment. After keeping the leg in the bath for twenty-four hours, I amputated through discolored and emphysematous tissue, to save the knee joint, and got primary union.

In conclusion I beg to again formally submit these propositions.

1. Continuous submersion is harmless.

2. Continuous submersion will almost instantly limit infectious gangrene and control septicemia and sapremia.

3. Continuous submersion will quickly relieve the pain and discomfort of phlegmonous inflammation or cellulitis.

4. Continuous submersion will speedily reduce temperature and pulse and overcome the consequent depression of the patient's vital forces.

DISCUSSION.

DR. H. HATCH—I want to say to the Doctor that submersion is not a new thing. It is thirty years old. When I was a boy I was accustomed, in the neighborhood where I lived, to wait on the sick whenever they would give me an opportunity. At that time there was a doctor, who is now dead, by the name of Moses Wilson, living in the same neighborhood, a graduate of Harvard, who had a boy run over by a stock cutter. This was before the time of asepsis and antisepsis, but I remember distinctly the doctor had me there for three days with a pan with the boy's foot in water all the time. He kept me pouring fresh water in and letting it run out at the other end of the pan. The boy made a good recovery. A physician wanted to amputate the leg, but the boy's father would not allow it, saying that a boy without a leg had better be dead, and the doctor pursued this plan of treatment of submerging the leg in water constantly so as to keep it fresh and clean.

DR. WEBB J. KELLY—I wish to call attention to the fact that Dr. Merz, of Sandusky, Ohio, a fellow of this Academy, has published an extensive article upon this subject and in which he illustrates his method of submersion.

DR. L. E. LEMEN—These pictures are very familiar to me in one sense of the word. They remind me of the wards of my own hospital. For fifteen years or more I have practiced submersion in all infected wounds of the character mentioned. I have had three or four tin pans made, and have one in each surgical ward in my hospital. They are about twelve to fourteen inches deep and long enough to take a leg up to the knee. In pre-antiseptic days I used to apply bichlorid or some other solution, but for the last four or five years I have used nothing but simple water, and I am satisfied that I have saved many a limb by submersion. I recall to mind a recent case. A man working in one of our smelters wounded his wrist with a piece of slag, which is brittle and sharp. He ran the slag into the wrist through the ligaments and evidently severed the palmar arch. How long he stood letting cold water run on the wrist no one knew. He could not speak English. He finally fainted from loss of blood. Some good Samaritan, a physician visiting the hospital at the time, took a piece of waste material, white cotton, and bound the wrist up with a handkerchief, and when I saw the case the bleeding had ceased. He had packed the wound with some of this waste material. I dressed the wrist. I use considerable cement in my minor surgery, but I do not want to advocate it. A few days afterward I was called to see this man and found his temperature 105.5 F. He was delirious and his arm swollen to the shoulder fully as large as his leg. Realizing that his case was a serious one as he would not go to a hospital, I sent one of my assistants to the hospital to move one of my pans to the man's residence and had his wife change the water freely. The next morning the patient's temperature was normal. We could find no pus, but subsequently two incisions were made which let out a small amount of pus mixed with lymph. If the case had been allowed to go on two or three days longer the man would have had a cellulitis, which would have involved most of the tissue of the arm. Submersion is certainly rational treatment for these wounds.

DR. C. M. DANIELS—I wish to commend the paper. I have had ten years' experience with this method of treatment. In the hospital I have charge of in the city of Buffalo, my method is identically the one mentioned by Dr. Lemen. The pans are made of tin, and I find I could not get along in a hospital without resorting to this treatment, because there are many cases of infected wounds which come to us, and it is one of the best adjuncts to our armamentarium in the hospital.

DR. HODGES, closing the discussion—I am in no wise jealous of priority as is shown by the fact that I referred to its ancient use in the German hospitals, but considering that it was successfully used in St. Francis' Hospital in New York City, by Dr. Frank Hamilton, over twenty-three years ago, it is truly

remarkable that so valuable a method of treatment should so long have remained out of general surgical literature. That is one point that I want to bring out. I believe that each year a great many wounded people lose lives that might be saved by this procedure, and it was to bring this phase of the matter to the notice of the Fellows of the Academy that this paper was presented. I have preached submersion and recommended it for the last eight years and have made many converts. I certainly overlooked the reference Dr. Kelly made, but I have repeatedly gone over the *Index Medicus* since its foundation, as well as such other indices at my disposal, without finding other than the references I have given. This article is briefly referred to in that work on *material medica* which forms one of the volumes of Wood's Library.

If through the presentation or discussion of this paper a single member of this organization who has not previously done so, can be induced to employ submersion, I shall feel that my time has been well spent.

METHOD OF OBTAINING THE BEST POSSIBLE ASEPTIC CONDITION DURING OPERATIONS DONE AT PLACES OTHER THAN HOSPITALS.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons held at Chicago, Ill., Sept. 25-27, 1895.

BY J. F. REGER, M.D.

SURGEON R. & O. RY., LITTLETON, W. VA.

Pregnant with glory as are the annals of surgery from its earliest history to the middle of the nineteenth century, illuminated as it has been through the darkness of its endless struggles by the wisdom of such men as Hippocrates, Harvey, Jenner and the two Hunters in the old world, and Physic, Mott, Morton and Gross of the new, it was left to the closing years of this century to furnish such a revolution in surgery as was never dreamed of by its most brilliant and ambitious votaries, as it was thought and taught by the most eminent authorities that ulcerating stumps, sloughing flaps, and discharging sinuses, excessive rises in temperature, gangrene, etc., were due entirely to vicious conditions of the system, humors, imperfect ventilation and poisons that were inhaled; when cleanliness was urged it was as much for cosmetic reasons as any other. When Sir Joseph Lister startled the medical world with the declaration that wounds purified or made aseptic by the use of antiseptics or germicides which destroyed microorganisms or prevented their entrance, or both, and were well drained and covered with dressings containing antiseptics and impervious to the air, would almost always, if not invariably, heal by primary intention with but little rise in temperature and with but little, if any, danger of sepsis or gangrene, he met with a storm of opposition and derision, as did Jenner when he announced that vaccination would stay the progress of smallpox, and as did Morton when he announced that ether would obtund all pain during the progress of a surgical operation. Notwithstanding all opposition the proofs were so indisputable that within a remarkably short period Listerism became an accepted fact, errors and all. The grand results obtained from operations everywhere, after his methods, were ascribed to the beneficent effects of the antiseptics used, more than to the aseptic condition obtained by the use of them. But the road once marked out, it was not long until there were numerous able reviewers each accepting the principle, but each striving to improve the methods. Operations done strictly after Lister's methods were done under a continuous spray of strong carbolic acid solutions

and the frequent sponging of the open wound with the same solutions. Reports were soon published of patients who had been dangerously poisoned by the absorption of antiseptic solutions, and methods were sought by which to make instruments, wounds, and the dressings aseptic without the use of antiseptic solutions in the wound where the parts were not already affected. This is the great desideratum we hope for. The hospitals practically have it, but what of the surgeon who does 90 per cent. more operations outside of hospital than in them, who has to deal with floors, ceilings, walls and beds which are decidedly far from clean. I think that this is a wide and useful field for discussion—a field in which there is yet much to be developed, there being, so far as I have seen, no special lines or rules laid down in regard to such operations. This is why I offer to the Academy for their criticism the method I have used with slight variation for several years. I have three satchels, one large one containing instruments, basins for solutions for sterilizing the hands and a pan for sterilizing instruments by boiling. The other two satchels are of medium size, one containing sterilized dressings, ligatures, sutures, etc., the other operating gown, aprons, towels, table covers and sheets all sterilized with steam. I keep my satchel always packed ready for instant transportation and use. I wrap my dressing gowns, sheets, ligatures, towels and table cover in pieces of canton flannel, securely pinned and keep the packages in a steam sterilizer two hours. They are never opened until the instant they are to be used. Having arrived at the house where the operation is to be done I first have the floor of the operating room well scrubbed with boiling water, some scalded jars filled with boiling water, covered with pieces of canton flannel and set aside to cool; then while some of the bystanders are scrubbing the table to be used as an operating table and a stand or two for holding instruments, I select the instruments to be used including needles and place them in my pan with a weak solution of bi-carbonate or soda and set them to boiling. I then turn my attention to preparing the patient. I have his clothing changed and have him well washed with soap and water; I then have the field of operation thoroughly scrubbed and shaved. After shaving I scrub the parts with soap suds and solution of bi-chlorid 1 to 1,000 and rinse with alcohol; then wrap the parts with a sterilized towel wrung out of a solution of bi-chlorid 1 to 1,000 until ready to operate. I then select the place in the room having the best light and immediately over the spot where the table is to stand, I have a large sterilized sheet tacked by the four corners to the ceiling; I then place the table on which is a folded quilt freshly washed, if possible to obtain one, and over all spread a sterilized sheet. My assistant after thoroughly sterilizing his hands by first scrubbing them with soap and water, next with a strong solution of permanganate of potash, then with a saturated solution of oxalic acid and rinsing with alcohol, administers the anesthetic, while myself and attendants I have chosen, sterilize our hands and put on our gowns and aprons. The stand is now covered with a sterilized stand-cover upon which is laid the unopened packages of dressings, some sterilized towels and the sterilized instruments still in the boiling solution. The patient now anesthetized is removed to the table and covered with a sterilized sheet. If it be an amputation, the injured or deceased part is wrapped in a sterilized towel wrung out of 1 to 1,000 bi-chlorid

solution, the limb is elevated and stroked toward the trunk, and the Esmarch bandage applied. The needles having been threaded and placed in a vessel containing a boiling solution of carbolic acid 10 per cent., the operation is proceeded with in the usual manner, except that I do not use sponges or irrigate or wash the wound inside. I simply sponge clean and dry with pieces of sterilized absorbent gauze. After the vessels are tied and the ligatures cut off close to the knot, I pack the wound with gauze while I place the stitches; I then withdraw the gauze and bring the edges neatly into opposition and tie. If the flaps are sound I do not use drainage. After dusting with iodoform I cover the approximated edges of the wound with a strip of iodoform gauze, then a few layers of absorbent cotton and a roller bandage firmly applied finishes the dressing. The patient is then placed in a clean bed and the dressing not removed until the eighth or ninth day. The stitches are then removed and the wound dressed as before. I have done a number of operations as described, among them a double synchronous amputation of both legs below the knee. All have healed rapidly and without suppuration, and it is seldom that I apply more than three dressings.

Gentlemen, I thank you for your attention and if my paper evoke discussion which will develop something new and useful in this field it will have served its purpose well.

DISCUSSION.

DR. HENRY W. COE—In the couple of weeks I spent about the hospitals in Chicago, I found that the permanganate of potash solution was quite frequently used at one time, but I notice now that its use has largely passed away.

DR. WM. T. DALBY—The paper read is one of considerable importance, bearing as it does on a topic of this character. As Dr. Coe has just remarked, the permanganate of potash solution has largely died out, and the promiscuous use of the bichlorid solution is not near so frequent as it has been. In cases where we operate outside of hospitals, particularly in emergency cases, it is not only handy but more convenient for the railway surgeon to carry the things mentioned by the Doctor. Boiled water is an aseptic solution without anything being added to it, and I do not know of anything better. I do not know whether it is best or not sometimes to add to our solutions bichlorid of mercury, carbolic acid, or any of the other agents. The subject of aseptic surgery and aseptic conditions, to be practiced by the railway surgeon in conditions of emergency, is certainly entitled to careful consideration, for we may be called upon at any time to treat accidental injuries where we can not have things as we want them, and we must make the best of the existing conditions and circumstances. The Doctor's paper is a good one, and he has written on a timely subject.

DR. L. E. LEMEN—I was much pleased with the paper, and in regard to antiseptics, I presume it is simply the principle of making assurance doubly sure. Aseptic surgery is what we should practice up to the point when any wound becomes septic. Then, antiseptics come in. I have not for over two years in any of my surgery, abdominal or otherwise, used anything but boiled water and neutral salt solution, and my results have been good. In a case upon which I operated not long ago, an amputation in the upper third of the thigh, I used neither a sponge nor irrigator, simply pouring my salt solution over the stump, and doing it up. On the eleventh day I changed the dressing, and on the thirteenth day the patient was declared well. I did not use an antiseptic during the whole time. I have not for a long time used iodoform, and I will tell you why. A few years ago I used iodoform in my dressings very thickly, and instead

of riding home in my carriage I took a street car. Sitting at the opposite end were two well dressed ladies, and one remarked to the other: "He has not taken a bath for a month." Aseptic surgery is what we desire to practice until such time as necessity requires antiseptic surgery.

DR. F. J. HODGES—In the class of cases we have to deal with in railway practice the environment of the patient and the surroundings are of the greatest importance in considering what is absolutely necessary to do in any given case. In an open country, where the railway surgeon is often called upon to practice his vocation, very little attention to these details will secure perfect surgical results, and cases have come to the notice of all of you in which the most important and careful operations have been performed with seemingly no attention having been paid to asepsis, and yet typical results have followed. I do not say this in a way to disparage the practice of aseptic surgery, or that aseptic precautions should not be taken, but if the loss of time is too great it is better to give the patient the advantage of the operation with such surroundings and means as you can secure, particularly in very closely and thickly populated sections of the country.

DR. C. M. DANIELS—I think the subject is one to which we ought to pay a great deal of attention. It is simply the final closing up of the wound, especially in amputations, and it means more attention than the primary preparation. The Doctor has very well outlined the method of preparing the room, the instruments and the patient, but I think previous to the application of the dressings that the last thing done in the way of thoroughly closing the stump is the most important of all, so far as the avoidance of sepsis is concerned. I quite thoroughly agree with Dr. Lemen in regard to the use of chemicals upon open surfaces, and I have abandoned their use. I do not believe it is necessary to use a chemical, not even bichlorid, iodoform, or anything else when you can secure thoroughly sterilized water, water that has been boiled in a clean receptacle with which the wound may be flushed at the last moment. I have a stream of water pouring into the wound the last thing before applying the dressing, when everything is aseptized. We close up the stump with such means as we always have at hand. Boiled water in a clean receptacle is the most important thing in the whole operation so far as avoiding sepsis is concerned.

DR. L. E. LEMEN—I would like to call attention to the use of the irrigator. I have found since I have abandoned the use of the irrigator that I have union by first intention a great deal oftener—in fact, it is exceptional that I do not have it. At an elevation of four feet, the water coming through the ordinary syringe, striking the cut surfaces of our muscles, the irrigator does far more damage than we have any idea of, and instead of using it I use a large mouthed pitcher, gently pouring from it over all the surface. I do not daub my wound with sponges, lint, or anything else. With proper hemostatic forceps bleeding can be easily controlled. I rarely use them in major operations. I know where the location of my bleeding points is, and I ligate them before I remove my tourniquet. I have had much better results since I have abandoned the old fashioned fountain syringe, as I believe that we do violence to the cut muscular fiber by forcibly ejecting water against it.

DR. C. M. DANIELS—That is my method of irrigating wounds. In amputations of the thigh, I turn the thigh up and merely flush it out, instead of making pressure.

DR. WM. T. DALBY—While we are on the subject of antiseptics I would like to ask whether or not any member has used acetanilid in dressing surgical wounds.

DR. ELISHA GRISWOLD—At the meeting of the AMERICAN MEDICAL ASSOCIATION, held in San Francisco last year, I heard a paper read by an assistant surgeon in the Army, whose name I can not at present recall, on acetanilid as a local application, or as a substitute for iodoform, and which he recom-

mended very highly. Shortly after the meeting I had occasion to dress a contused wound of the hand with it. The patient was a workman in a blast furnace. I washed the wound carefully at first in order to remove all of the septic matter, and I thought I had gotten it all out of the wound. I then sprinkled the acetanilid over it according to the directions given by the gentleman referred to. The result in that case was the development of an erysipelatous inflammation. I converted the wound into an ugly condition, so that it took the patient three or four times as long to get well as it would have done if the wound had been dressed with gauze, iodoform, or subcarbonate of bismuth. The latter has no odor and is as good as iodoform in its results. After adopting the method suggested by this gentleman I was discouraged, and I have not since applied it on a wound. I have tried it on small wounds, and I find that it acts as an irritant.

A MEMBER—Was the wound very much contused?

DR. GRISWOLD—It was not very much contused. It was a lacerated wound on the back of the hand and not a very large one, but an erysipelatous inflammation developed over the back of the hand as a result of the use of the acetanilid. After using it several times subsequently in smaller wounds, I thought the doctor who recommended it had made a mistake.

DR. REGER (closing the discussion)—I believe there is no difference between myself and my critics. I have not for several years applied antiseptics to the inside of a wound, as the paper alleges. A man is brought to you, we will say, with his limbs crushed and covered with cinders, dirt and grease, and the only place where I would use an antiseptic is in preparing the part for amputation. In crushed wounds you will always find to a greater or less distance from the wound that the tissues are entirely devitalized, and consequently with a few exceptions the surgeon can make his amputation through sound tissue. I do not irrigate. I use sterilized gauze sponges and if there is any oozing of blood after the surface is closed it must be aseptic and must absorb harmlessly. I use all my antiseptics prior to the operation. I take everything along with me to make my operation as nearly aseptic as I can. The sheet is for the purpose of preventing any particle from falling into the wound.

VAGINAL LIGATION OF THE BROAD LIGAMENTS FOR FIBROIDS OF THE UTERUS AND OTHER MINOR SURGICAL TREATMENT.

BY FRANKLIN H. MARTIN, M.D.

PROFESSOR OF GYNECOLOGY POST-GRADUATE MEDICAL SCHOOL, SURGEON TO WOMAN'S HOSPITAL, CHICAGO.

Vaginal ligation of the contents of the base of the broad ligaments, for the cure of fibroids of the uterus, was devised and performed by me as a new and original operation Nov. 15, 1892, and was described and published in the April number of the *American Journal of Obstetrics* in 1893. In the January number of the *American Journal of Obstetrics*, 1894, I reported six cases treated by the new operation.

The operation as originally described by me is as follows: The ligation of more or less of the broad ligament of the uterus, with its vessels and nerves, the extent of the ligation depending upon the result sought, from a simple ligation of the base of the ligament, including the uterine arteries and branches of both sides without opening the peritoneum to a complete ligation of the ligament of one side, including both uterine and ovarian arteries, with partial ligation of the opposite ligament without opening the peritoneal cavity, if possible, but by doing so if necessary.

The results sought in the operation are, first to check uterine hemorrhages by cutting off blood channels, and secondly to produce atrophy of the fibroid by, 1, depriving it of nourishment through the blood vessels and, 2, by changing the nutrition of the uterus by interfering with its nerve supply.

Immediately after publishing my first article on this operation there were two claimants for priority; Dr. Walter B. Dorsett, of St. Louis, and Prof. S. Gottschalk, of Berlin, Germany. Dr. Dorsett, in a letter to the *American Journal of Obstetrics*, claimed that he had suggested a similar procedure to my operation in an article he published in the *St. Louis Courier of Medicine* in 1890, the article bearing title of "A Case of Atrophy of the Female Genitalia following Pregnancy and remarks." In this article he made the following observation: "I believe that in the treatment of uterine fibroid . . . to ligate the uterine artery would not be an unscientific procedure. On the contrary the more I have thought of it the more I am inclined to believe that it would be the most certain mode of treatment." Dr. Dorsett, while advancing the theory, had not at that time carried it out on a living woman.

Prof. Gottschalk based his claim of priority on an article read by him at the Brussels Congress, Sept. 16, 1892, with the following title: "Die Histogenese und Aetiologie der Uterusmyome." In the latter paragraphs of this article he casually suggested ligation of the uterine arteries and stated that he had performed the operation twice. This is what he said: "The bilateral ligation of the uterine arteries appears to be the therapeutic measure in this regard for the earliest incipient stages of myoma. This offers no difficulties in its technique; it is easily performed in a few minutes. . . I have already performed this ligation in two cases in which I was able to early diagnose the development of multiple myoma with best results."

Thus these two men both suggested tying the uterine arteries for the cure of fibroids and at least one of them (Gottschalk) performed the operation twice before I described my operation. This would definitely decide the question of priority in their favor if the operation they suggested was identical with mine. Their operation is not identical in theory, in execution, or in description with mine, and therefore their claim of priority for my operation can not be substantiated.

The operation suggested by these men simply includes the ligating of the uterine artery from the vagina, while, 1, I ligate in all cases, the whole base of the broad ligament, in order, *a*, to occlude not only the main channel of the uterine artery, but all collateral branches; *b*, in order to destroy the function of the nerves as well as the arteries of nutrition; *c*, in order to diminish nerve reflexes. 2. I include, in desperate cases, not only the base of the broad ligament with the uterine artery and branches in my ligatures, but when practicable ligate high enough on one side to take in the ovarian artery. 3. I advise accomplishing this result, if possible, without opening the peritoneal cavity, but by doing so, if necessary.

TECHNIQUE OF OPERATION.

The preparation of a patient for vaginal ligation of the broad ligaments of the uterus should be similar to that demanded for vaginal hysterectomy, as

described in my article last week. Ether is used as an anesthetic and the patient is placed on the operating table in the exaggerated lithotomy position with buttocks brought to end of the table, with an assistant on either side to support the limbs and hold the vaginal retractors. A broad, short vaginal retractor above and below exposes the cervix, which is trans-fixed with a strong silk ligature to be employed in handling the uterus. The uterine canal is dilated and the uterine cavity curetted with a dull curette and thoroughly irrigated with 1:1000 bichlorid solution and then loosely packed with iodoform gauze. This procedure cleans the uterus and makes it impossible for the vaginal wounds to become infected by a septic uterine discharge. The uterus is now drawn down in order to put the broad ligaments on the stretch and then drawn to the right side so as to expose the left vaginal vault. The mucous membrane of the vagina at the utero-vaginal fold on the left side is then caught with a tenaculum and incised with a pair of curved scissors. One blade is allowed to enter beneath

trunk of the uterine artery and occasionally several branches. The curved pedicle needle is then passed, armed with No. 10 silk, strong pyoktaninized catgut or kangaroo tendon, and guided by the index finger of the left hand (Fig. 4) is made to penetrate through the broad ligament. The ligature is drawn through, the needle removed and the base of the broad ligament is thoroughly ligated at a distance of one inch or more from the uterus. The ligature is cut short, leaving it buried in the tissues of the ligament. The other broad ligament is treated in the same manner; the vagina is well sterilized with bichlorid solution and the vaginal incision accurately approximated with fine antiseptic catgut so as to completely bury the broad ligament ligatures (Fig. 5). The handling string is now removed from the cervix, and the end of the gauze strip packed in the uterus is tied to another strip and the vagina is filled loosely with a gauze drain.

The after treatment of these cases is very simple. The vaginal and uterine gauze is removed the second

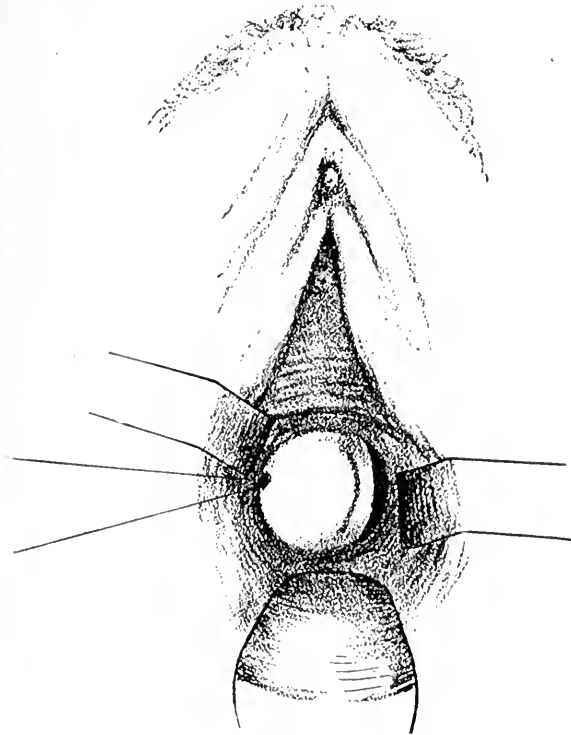


FIGURE 1.

the mucous membrane and a curved incision one and one-half to two inches long is made over the broad ligament and at right angles to it (Fig. 1). By means of the index fingers of the two hands the operator now separates the vaginal tissue from the broad ligament and carefully separates the broad ligament in front from the bladder for a height of two inches and laterally for nearly the same distance (Fig. 2). The bladder should be carefully separated in this way in order to avoid the danger of wounding the organ, and by pushing the separation laterally the ureter is forced out of danger. One then carefully separates the broad ligament posteriorly to the same height as in front, without, if possible, penetrating the peritoneum. Now, by passing one finger behind the other in front, the whole base of the broad ligament, representing two-thirds of its bulk, can be grasped (Fig. 3) for a distance of an inch to an inch and a half from the uterus. In this grasp one can easily feel the throb of the main



FIGURE 2.

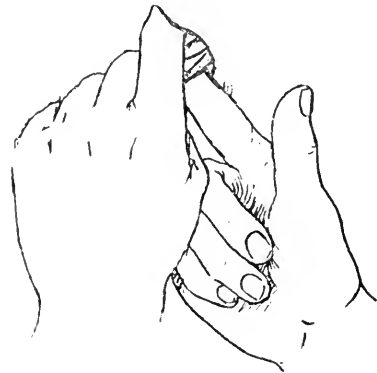


FIGURE 3.

or third day, and twice a day thereafter a bichlorid vaginal douche 1:2000 followed by plain douche are given. Figure 6 shows the position of ligatures when only the base of the broad ligament is ligated.

SELECTION OF CASES.

Interstitial fibroids of the uterus of moderate size are the cases in which the best results will be obtained by this operation. Subperitoneal fibroids springing from the fundus of the uterus especially would scarcely be benefited to any great extent by depriving the lower part of the uterus of its nourishment. Neither would one expect to obtain any lasting benefit from this operation in cases of pedunculated submucous fibroids. On the other hand, in true interstitial growths depending upon the whole uterus for their nourishment, cases where the tumor is the uterus, and these represent 75 per cent. of all fibroids of the uterus, wherever it is possible to tie the base of

the broad ligament from the vagina, this operation may be expected to accomplish prompt and decided relief of symptoms and a rapid reduction of the tumor. The cases in which the most satisfactory results must be expected are incipient or small fibroids of the interstitial variety which show themselves late in the menstrual life. Here, we have a uterus which is small enough so that it has not risen above the brim of the pelvis, one which can be easily reached from the vagina so that its broad ligaments are accessible from below. Such a fibroid, too, from the age of the patient will reach a state of quiescence as soon as the menopause is established. In such cases, then, a major operation is particularly undesirable, because it is not imperatively demanded and because of a reasonable chance of relief at the approaching change; on the other hand the symptoms (with severe hemorrhage usually as the principal one) are such that immediate relief is earnestly sought, if one can be reasonably certain of obtaining it without submitting to a dangerous and radical procedure. These are ideal cases for this operation.

Another class of cases in which this operation has been employed with gratifying success and in which it will probably find favor with the most radical operators, are those of continuous and profuse hemorrhage in which the desperateness of the drain is such

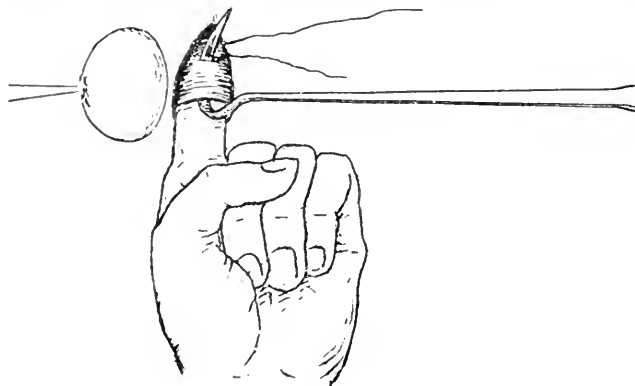


FIGURE 4.

that the patients are depleted to such a degree, that no radical procedure can be thought of, until a minor operative procedure has checked blood waste and recuperation is accomplished. My fourth and sixth cases were like the above. In the fourth case hemorrhage was very profuse and the patient was completely exsanguinated and so weak that she had not been out of bed for several months. Some time before I determined to submit her to my operation an attempt had been made to remove the appendages, or, if possible, when the laparotomy was in progress, the uterus. From complicated adhesions and the weakness of the subject neither operation was possible after the abdomen had been opened. The tumor was large and the elevation of the uterus in consequence was great, and it was with the utmost difficulty with the aid of the most competent assistants, that I finally succeeded in ligating thoroughly the base of each broad ligament. Both ligaments contained several arteries, some of them as large as the normal radial artery. They were all tied in mass. Hemorrhage stopped from the instant of tying the last ligature and it has never recurred. It has now been over three years since I operated on this case. The uterus has reduced until it is but slightly larger than normal. The woman (I examined her but a few months ago) is perfectly well.

She has a slight menstrual flow each month, and is free from pain.

Case six was of a severe hemorrhagic nature in a typical interstitial fibroid of three by five inches in diameter. The woman was too weak and depleted for a radical operation. I did my operation on her and the result was marvelous. In three months' time she had recuperated so that any radical operation might have been done without danger.

Dr. Humiston, of Cleveland, reported to me a case in which he used my operation as a procedure of last resort, in a patient nearly moribund from hemorrhage. She was so weak that he only attempted ligation on one side. The woman stopped bleeding instantly and eventually recovered. Hence, the operation may with propriety be employed as a rational temporary expedient in desperate cases of whatever variety, where uterine blood loss is conspicuous.

CASES.

In selecting cases for this operation I have been very careful. In the majority of them I have operated on, there seemed no alternative. All were desperate ones, like cases 1, 2, 3, 6 and 8, or they would not submit to a more radical procedure, and milder means, as electricity, ergot, etc., would not accomplish satisfactory results. I have been more conservative in adopting the operation, I am afraid, than the results in the few cases I have operated on would justify. One reason for not adopting the operation in a larger number of cases is that I wished first to learn of the remote results. It is now over three years since my first operation and most of the operations which I have performed were during the first year. I have,

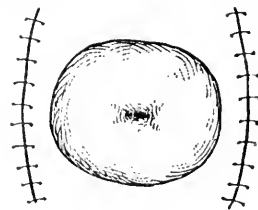


FIGURE 5.

therefore, a three years' history to analyze in the majority of my cases. In the following report there are no instances in which, at least, a year has not elapsed since the operation.

Case 1. This was an interstitial fibroid in a maiden lady 36 years old, in size extending above the umbilicus. The hemorrhage was exhaustive and the patient greatly reduced in consequence. Her heart was hypertrophied and her condition was such that no surgeon with a proper care for his statistics or his patient's life would have ventured a hysterectomy. She was operated on by my operation Nov. 15, 1892. The hemorrhage decreased about one-half for several months after the operation. The tumor in the first four months materially decreased in size. In May, 1894, the hemorrhage is reported much modified, and no longer a source of alarm. The patient at that date considered her condition greatly improved, hemorrhage cured, tumor materially reduced and pressure symptoms subsided. March 12, 1896, four years and three months after the operation the patient reports herself well. The original fullness produced by the tumor she can no longer feel. No pain. The last flowing of any consequence was November, 1894. Since then the flow has been very slight until last July, when it practically ceased. "I have color in my lips and cheeks. I walk two miles or more every day," she writes. This report is certainly very gratifying.

Case 2. The second case was a married woman 40 years of age who had been under electrical treatment for a hemorrhagic myofibroma of the uterus. The galvanism decreased the size of the growth but did not materially lessen the exhaustive hemorrhage. The tumor was of the interstitial variety and

the uterus appeared the size of a three months' pregnant uterus. When the patient entered the Woman's Hospital for operation December, 1892, she had been having almost continuous hemorrhage for several months. Upon exposing the uterus with the retractors at the time of the operation, the cervix was large, blue and vascular. As the vagina was large the operation was very easily executed. The ligature on the left side included fully two inches in width of the broad ligament at a distance of at least an inch from the uterus. When I tightened this first ligature one of the spectators, a well known gynecologist, called my attention to the fact that the cervix had perceptibly paled in appearance. The broad ligament was easily exposed on the right side, and fully as much of it ligated as on the left. If there had been any doubt of the procedure affecting the vascularity of the uterus, it vanished when the second ligature was tied. The cervix immediately paled until it was nearly as white as a piece of cartilage.

The covering of the broad ligament was so loosely attached in this case that I could easily feel the main channel of the ovarian artery, and it would have been an easy matter to have included it in the ligature.

After over three years I can promise this case a perfect cure. The uterus has reduced to normal size. The hemorrhage has ceased completely. All pain has disappeared. A slight menstruation, normal in quantity, occurs each month. The patient's health has improved so that from a state of almost complete invalidism she is transformed into to a strong healthy

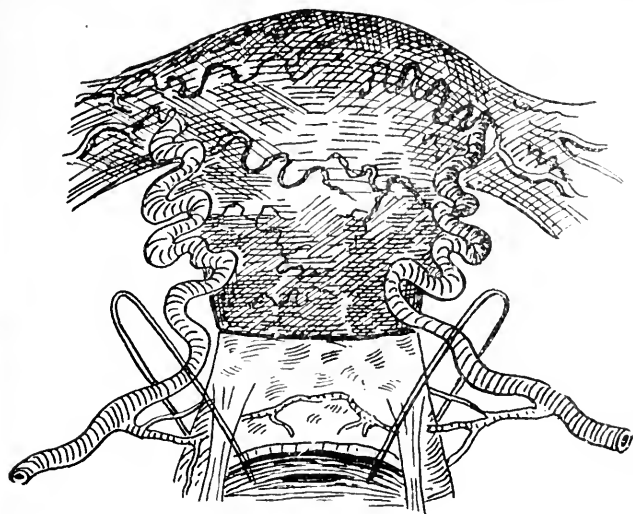


FIGURE 6.

woman. The improvement has been progressive from the day of the operation. I have seen this case within the month (March 1896).

Case 3.—This patient was operated on in January, 1893. She had an incipient interstitial fibroid of two years' standing which was profusely hemorrhagic in nature. I tied the base of both broad ligaments including the uterine arteries and their branches. The relief was immediate. The menstruation for the next four months was scanty. The patient gained in health and strength rapidly. The tumor, which was the size of a four months' pregnancy at the time of the operation decreased markedly in size within three months. Four months after the operation I lost track of this case, as she lived in a distant State and neglected to keep me posted. Her last letter gave a report of perfect health.

Case 4.—This patient had a large, bleeding fibroid filling the pelvis, which extended to the umbilicus. The uterus and appendages were firmly adherent and immovable. Laparotomy had been attempted on the case, with the object of removing the appendages or the tumor. The abdomen was opened, but the adhesions and unusual complications rendered it impossible to remove the tumor or even accomplish the oblation of the appendages. The patient was so unusually reduced from loss of blood at the time of my operation that she had not been able to be out of bed for three months.

I operated on the patient in January, 1893, at the Post-Graduate Medical School of Chicago. The operation was accomplished with great difficulty because of the large size and immovability of the uterus. Finally, however, after consum-

ing more than an hour in time I succeeded in ligating thoroughly the two broad ligaments well above the uterine arteries and their branches.

In June following I made the following report on the case: "The flowing ceased immediately and the patient was relieved of her drain for over two weeks. She then had a few days' flowing, which resembled an ordinary menstruation. She has rapidly and steadily improved since that time. She has menstruated regularly but scantily, and without pain. She can at this time (June, 1893), five months after the operation, attend to her duties as a housewife, and considers herself cured. The tumor has become reduced in size until it is no longer noticeable as a deformity, and so that the patient herself is no longer conscious of its presence."

Since the foregoing report was written in June, I have seen this patient several times, the last time within the month. The patient was then examined by several physicians, one or two of whom on independent examinations, failed to notice any abnormal enlargement. The uterus is still somewhat larger than normal, but is not more than three or four inches in diameter, while the testimony of at least three experienced diagnosticians will bear me out in the estimate that its former diameters were not less than four and a half by eight inches. The patient is in good health now, Jan. 1, 1895; menstruation is regular but scanty, and she is free from pain. The patient, so far as I know, has remained well.

Case 5.—This case was a woman with an interstitial fibroid about three by five inches. She was about 30 years of age, and the growth had been noticed for three years. Her principle symptoms were profuse menorrhagia with severe menstrual pain. The case was referred to me by Dr. F. H. Greer, of Columbus, Neb. I did my operation on the woman Jan. 8, 1893. She had a little subsequent temperature, and one month after the operation the ligature sloughed from the left broad ligament. Four months after the operation Dr. Greer reports the woman well. "Menstruation scanty, no pain. Fibroid diminished in size until the uterus is about normal. Patient claims that she is cured." This report was made in June, 1893. I have been unable to get any history subsequent to that date.

Case 6.—This was the wife of a physician of more than ordinary ability and reputation. The patient was about 36 years of age, slightly above the average height, with well-proportioned frame, but poor in flesh, with a skin blanched and a body almost exsanguinated. The uterus was about the size of a three months' gravid uterus. The tumor was uniform and evidently interstitial. The uterus was in normal position. The cervix was nearly two inches in diameter, the os patulous.

The history of the growth dated back, undoubtedly, several years. The patient had borne no children. The menstruation had for nearly two years increased in quantity and duration, until now, while coming with absolute regularity, it lasted fifteen days, and that in spite of vaginal and uterine tampons, the recumbent position, ergot, hydrastis and the rest. She flowed each month until she was completely exhausted, scarcely recovering in the next thirteen days sufficiently so that she could assume the upright position without fainting. Accompanying this unusual discharge was uterine pain, which in its severity brought the patient to the point of unconsciousness. During the four days in which the woman could drag herself around in the latter part of each intermenstrual period she did so with the greatest discomfort on account of the pressure and neuralgic pains of the pelvis. Upon examination of the broad ligament from the vagina the finger could detect on either side the large, pulsating artery as it fed the tumor. The latter was movable, the appendages apparently normal, the broad ligaments accessible. In fine, here was an ideally typical case—a hemorrhagic fibroid of the uterus, a bed-ridden patient, an authentic diagnosis, an unusually interested physician to carefully watch and estimate the result, and one who enthusiastically demanded a trial of the new operation. Under the circumstances it seemed to me that much depended upon this case, as though the fate of this operation must necessarily be more than usually linked with this particular patient.

I operated on this case Aug. 2, 1894, at the Chicago Hospital, with Dr. Robert Dodds and Dr. Oksschet as assistants. The left broad ligament was carefully dissected from the peritoneal covering behind, and from the bladder in front, until fully two-thirds of it could be grasped by placing one finger behind it and another finger or instrument in front of it. When grasped in this manner several beating branches of the uterine

artery, together with the main artery itself could be detected. This entire mass was then ligated in two sections with No. 12 braided silk, the silk cut short, the parts irrigated and the vaginal wound closed with catgut. After treating the opposite side in the same manner, the vagina was cleansed and loosely packed with iodoform gauze. When the operation was finished the throbbing arteries, which could be distinctly felt before, could no longer be found. The cervix, which was large and purple previous to the operation, became pale and cartilaginous in appearance as soon as the ligaments were secured.

The patient remained in the hospital three weeks. The first menstruation was due the day following the operation. It began the next morning, but was so slight and painless that the patient would not believe that it was her menstruation until several days had elapsed and no other flow appeared. It lasted about three days and was barely perceptible; absolutely no pain. The after treatment consisted in vaginal douches after removing the gauze, light diet and the recumbent position for two weeks.

August 30, the second menstruation reappeared: there was a little of the old pain, but not sufficient to require anodyne of any kind: the flow was half the usual amount and lasted six days. September 28, the third menstruation appeared: the amount was normal in quantity, lasting but four days; the pain was slight. October 26, the fourth menstruation appeared: the amount normal in quantity, lasting but four days: the pain was slight. The patient was seen and examined by me just before the last menstruation. She had gained several pounds in flesh, her cheeks and lips were red and she was a picture of health and robustness. Her feelings were in accord with her appearance, as she enthusiastically assured me that she felt perfectly well. On examination I found the uterus was reduced in size. It was little, if any, larger than normal. Its bulk had decreased one-half. The cervix was small and normal. No arterial pulsation could be felt in either broad ligament or around the vault of the vagina.

The next report I received was in January, 1894: "I have to report," the husband says, "that Mrs. X. menstruated from December 19 to 24. That the amount was above the same as before, *i. e.*, slightly above the normal. Pain rather excessive for two days (possibly due to rheumatism and neuralgia). After flow had ceased I examined and found ligature in vagina and also small sinous opening to left side of cervix. Since then there has been slight discharge from same. She had been suffering some pain at that point, no pain since ligature came away." He adds enthusiastically: "Taken all in all, the result so far is a grand success." Jan. 17, 1894, he writes: "Mrs. X. is up to-day (the fifth day) after the easiest menstruation she has had in her life; pain moderate and on one day. This in face of the right side still discharging. In the next two months I expect to have a well woman. The uterus is now practically normal."

I have lost track of this patient entirely, and I regret that I am unable to complete so interesting a history. If the husband of this patient should read this report I hope that he will communicate with me.

Case 7. Mrs. S., Denver, Colo., aged 35, uterus about double the normal proportions, containing two or more centers of development and an extremely hemorrhagic tendency, was the seventh case operated on. The case had been treated unsuccessfully by curettement, electricity and the ordinary remedies for checking uterine hemorrhages. The uterus was retroverted but free from adhesions. The patient was prepared carefully, and at the Woman's Hospital, on Nov. 11, 1893, I ligated the base of both broad ligaments, and shortened the round liga-

ments. The uterus was drawn well down, and each broad ligament, after incising the mucous membrane covering them in the vault of the vagina, was dissected free from the bladder and rectal attachments and then ligated with two strong ligatures. These ligatures were placed high enough to include the uterine artery, all its branches, and all of the contents of the base of each broad ligament. The ligatures were cut short after they were tied, the mucous membrane of the vagina was reunited with a running catgut ligature, and the vagina packed with iodoform gauze. The round ligaments were then shortened and the uterus left in a position of anteversion. Three days later the gauze was removed from the vagina, an antiseptic douche was given and a Smith-Hodge pessary was inserted. The antiseptic douches were then continued daily. The first menstruation was due four days after the operation. It did not appear. The second menstruation also failed to appear, notwithstanding the fact that menstruation had ordinarily been exhaustive.

One of the wounds caused in the operation for shortening the round ligament suppurred, and obliged the patient to remain in the hospital until the latter part of January. Dizziness was complained of about the time when the menstruation was due. This symptom continued with different degrees of severity for some time, gradually disappearing. February 13, three months after the operation, the first flow appeared. The patient writes: "First menstruation came on the 13th of this month, without pain, but quite profuse for first two days. Since then has continued, including to-day (the 18th). Discharge light."

March 19, 1894, the patient reports: "Am feeling fairly well this month. Had pain in back with last menstruation, which commenced March 13. First three days quite profuse; last four days very little. No dizziness this month." April 18, she writes: "Menstruation came on four days in advance of schedule time; continued one week. Am in fairly good health."

December 14, 1895, two years after the operation, the husband writes that his wife suffers considerably with vertigo, especially severe immediately before menstruation. "The operation performed by you has in a measure been successful, as the menstrual discharge is much less than before the operation and the womb is in much better position."

March 26, 1896, the husband writes: "Her menstruation is not profuse and she has less pain; her general health about the same" (as in her last letter). "I think the riding of the bicycle improves her general health and strengthens her in those parts wherein she is weak."

Case 8. — Mrs. Z., Muscatine, Iowa. About 35 years of age. No children. Multiple fibroid of the uterus approximating in size a four months' pregnancy. Hemorrhage profuse, followed for a week by excruciating pain. Patient became extremely exsanguinated at each menstrual period. Frequently the flowing would last for two weeks. The uterus had been curetted. Electricity failed to control the hemorrhage and only partially modified the pain. The irregularity of the uterine canal undoubtedly accounted for the failure of the electricity. Nov. 28, 1893, the patient submitted to my operation for ligation of the broad ligament. The tumor was developed more to the left side into the left broad ligament. I succeeded in separating the broad ligament for a height of two inches. On the right side a large double ligature was employed, while on the left side first a double and finally a second one higher and farther away from the uterus was applied. The ligatures were cut short, the vaginal vault closed with catgut and the vagina packed with iodoform drain. The first menstruation was due three days following the operation. A slight watery discharge occurred instead of blood. Two days following the operation the patient complained of pain similar to that which ordinarily occurred after menstruation. Feb. 1, 1894, the patient's husband writes: "She commenced her menstruation January 25, and it was continued until to-day, February 1, one day less than last time. Had one day of some pain; not bad. She is getting stronger and can get around the house without being very tired, although

she has not yet ventured out." February 26, the report is: "Mrs. Z. was sick this time six days, the same as last time. Had considerable pain two days which was very severe, the same as she complained of before the operation. She is getting along very nicely. She is now able to go out, and takes a walk every day." March 26, the husband writes: "I am ready to make another report, but not as good a one as I would like. Mrs. Z. was sick on time and the flow was very little compared to what it has been, lasting but three days, but she had a great deal of pain—some before she was sick, and it was quite bad for two days after the menstruation. . . . Everything seems to be working very well if she could only get rid of that pain." April, menstruation still decreasing in quantity; the pain decreasing. "There was one day of pain," the husband writes, "and the flow amounted to but very little." May 6, he writes: "Mrs. Z. has been feeling splendidly all this last month. Last week was her time to be sick again. The flow did not amount to anything, just enough to show. . . . In regard to her general health, it is excellent. Eats well, sleeps well and goes out every day the same as other women. Has gained her natural amount of flesh and a little more." I examined the patient May 19. The uterus was reduced in size one-half. Patient in perfect health.

March 13, 1896, two years and four months after this woman's operation, I received the following report from this patient: "Since the operation I have gained twenty pounds or a little more up to date. My menstruation period is about one-half the time and amount it was before the operation. The pain is very much less than I had before the operation, but it has not left me altogether. . . . I have the strength of the average woman now, while before the operation I was compelled to be in bed over half the time. Between my menstruations I enjoy as good health as any one could ask. . . ."

Case 9.—Mrs. C., aged 41, a resident of Iowa, consulted me for a bleeding painful fibroid of the uterus in May, 1894. The tumor was interstitial, uniform in contour, enlarging the uterus to the size of a four months' pregnancy. The hemorrhage at menstruation was profuse and lasted six or eight days at a time. The menstrual periods were accompanied with considerable uterine contractive pains. The patient complained of a great deal of heaviness in the pelvis and pains caused by the pressure of the tumor. The patient was weak, rather exsanguinated and nervous. I concluded that the case was a suitable one for my operation. The operation was done May 19, 1894. The lower portion of the uterus was so large and filled the pelvis so completely that it was with a great deal of difficulty that I accomplished the satisfactory ligation of both broad ligaments. However, when the operation was finished I was well satisfied that both uterine arteries had been thoroughly shut off.

The patient improved from the first. There have been no more hemorrhages. I have examined the patient two or three times since the operation, once within six months. The tumor has decreased in size, but has not disappeared. The pains and pressure symptoms are much better. The woman is apparently a healthy woman and does very much as other healthy women. In reply to my letter of inquiry she said March 12, 1896, one year and six months after her operation: "Since the operation I have had but few hemorrhages, while previous to that I had them very frequently. I am now quite regular, though I never go to my full time—about three weeks. I have less pain, but the heaviness still remains. I am better in health and strength than before the operation."

Judging from my other cases I expect this woman to gradually recover. My fear was, when I adopted this operation, that collateral circulation would speedily overcome the result of ligating of the blood supply. Experience, however, shows that the results of the operation are greater the farther away from the operation we get.

Case 10.—Mrs. S., aged 35, a resident of the central portion of the State, came to the Woman's Hospital in August, 1894, to

consult me about an interstitial fibroid. She had borne no children. The uterus was large, regular in contour, hard, and about four by six inches in diameter. It was freely movable in the pelvis. The woman gave a history of severe monthly hemorrhages which lasted anywhere from six days to two weeks at a time. Accompanying the flooding were severe contraction pains. The woman was bloodless, pale, weak and extremely nervous. In all other respects she was normal.

I did my operation on the case in August, 1894, with the assistance of the house staff of the Woman's Hospital. It was easily performed on account of the movability of the tumor and the looseness of the broad ligaments.

September, 1894, the patient wrote: "It is now six weeks since I have menstruated. The previous pains are not any better. My bladder trouble (pressure) is much relieved." October, 1894: "I have menstruated since my last letter. The quantity and length of time was small. Had a good deal of pain the first two days."

November 13, 1894. "Menstruation three weeks apart. I flowed more than usual."

December 17, 1894. "Pains some less. My changes came at the correct date, but was greater in quantity than it should have been."

January 29, 1895. "I flow a great deal more than I think I ought. I have to change my napkins six or seven times a day."

March 25, 1895. "I was a little better my sick week this month. The flowing did not last so long as it did before my operation, but more than is right. My pains are gradually improving."

May 27, 1895. "I flowed very freely and had a great deal of pain this month."

Case 11.—Mrs. Y., the wife of a very intelligent physician of Indiana, consulted me in November, 1894. She had an interstitial fibroid about the size of a four months' pregnancy. She was 43 years of age. I operated on her Nov. 7, 1894. Both broad ligaments were tied, so as to include two-thirds of their bulk. This occluded the uterine arteries on both sides with all their anomalous branches. I have seen this patient several times since her operation and the uterus is gradually lessening in size and the patient's symptoms are subsiding. I expect this case to prove successful with a little more time. In reply to a request from me for a statement of progress, the husband writes March 12, 1894, a year and four months after the operation, as follows: "My Dear Doctor:—In reply to yours of yesterday, I have to say that my wife, on whom you operated Nov. 7, 1894, is doing very well as far as the fibroid is concerned. It has decreased in size some, not a great deal. The menstrual flow on two occasions was quite profuse, but the last two periods have been very scanty only lasting three days, and only using one or two napkins in a day, whereas before the operation she used eight and ten each day for four or five days. She suffers very little pain, in fact none for the last month. Before her operation she suffered constantly. Her general health has greatly improved, and she has gained ten pounds in flesh, is much more cheerful, and in fact improved in every way. . . . My wife is now past 45 years of age, and I believe if the tumor does not increase in size until after the menopause, she will entirely recover."

Case 12.—Miss V., single, age 40, consulted me in November, 1894, on account of a painful bleeding fibroid. She was depleted to an unusual state, and her nervous system was a wreck. She had an interstitial fibroid with the canal of the uterus measuring four inches in depth. The uterus measured approximately three by six inches in diameter. The organ was movable. Hemorrhage occurred only at regular menstruation periods. At this time it lasted a week or ten days and was very profuse. Accompanying the flow was great prostration of the patient and also most excruciating pelvic pressure symptoms. This condition of affairs had been going on for months until the patient from blood drain and harassment of pain had been brought to a deplorable state of health.

March 5, 1894, I ligated the base of both broad ligaments. The operation was accomplished with ease because the uterus was movable and the broad ligaments loose. The patient recovered nicely from the operation. The next two or three menstruations were much more normal, the quantity of flow being very small and the pain scarcely perceptible. The woman was placed on tonics and urged in every way to increase her blood supply. Her nervous system reacted slowly. Her menstruations later became more profuse and was accompanied on several occasions by quite severe pain. While but a short time has elapsed since the operation the patient is gradually improving.

March 12, 1896, one year and three months after the operation, she writes: "The amount of menstrual flow averages

about one-half the amount it was before the operation. Have gained a little in flesh. Have considerable pain. Still have nerves although under better control than formerly."

This patient has improved in many ways. During her intra-menstrual periods she is comparatively well and is able to go about and to do more work than she should attempt, whereas previous to her operation she was unable to do much. While she had been neglected for a long time and her health had reached a low ebb, I can not but believe that she will gradually improve as a direct result of the diminished flow. Her tumor decreased in the first four weeks fully one-third. It has not increased perceptibly to the patient since she left my care.

Case 13. Miss B., age 26, consulted me in January, 1895, for a bleeding intramural fibroid. The uterus was about five inches long and had a canal three and three-quarter inches in depth. The canal was a little irregular. In the fundus of the uterus could be felt two distinct centers of development, one on the interior surface about two and one-half inches in diameter, and projecting from the main body of the uterus one and one-half inches. It was hard and had the unmistakable firm consistency of a fibroid mass. On the posterior surface of the fundus at its junction with the neck was a second center projecting from the uterus about one and a half inches. This mass was irregular and was fully two inches in diameter. The symptoms which brought this patient to me were prolonged and exhaustive hemorrhages and uterine pains. The lady is a vocalist of unusual talent and these symptoms interfered seriously with her profession. The case was a typical one for hysterectomy, especially as the left ovary was enlarged and cystic, but as that would involve the removal of the ovaries the patient objected to this because of the popular but unfounded fear that removal of the ovaries impairs the voice. I therefore decided to perform my operation on the case. When the patient was under the anesthetic I confirmed absolutely by bimanual manipulation my diagnosis as given above. February 1, 1895, I operated on this patient. She left the hospital in two weeks. She did not have an unfavorable symptom. Menstruation practically ceased from the date of the operation. There was but the slightest show each month. No pain whatever. In less than a month she was able to attend to her professional duties and was stronger than she had ever been. This perfect condition of affairs continued until about Dec. 8, 1895, ten months after her operation. At this time I was called because of a sudden attack of severe pain she had experienced in the left side of the pelvic region. The pain was accompanied with profound prostration and shock. I diagnosed ruptured cyst of the left side and advised a laparotomy. In making my examination I was surprised to find a perfectly normal uterus. I performed laparotomy on this patient Dec. 28, 1895, and removed a ruptured ovarian cyst of the left side and punctured a small cyst in the ovary of the right side. This gave me an opportunity to examine the uterus which I had treated by my operation a little over ten months before. On the anterior portion of the organ corresponding to the location of the anterior fibroid described above I found buried in the wall and projecting a half inch, a fibroid center one-half inch in diameter. On the posterior surface, corresponding to the other center which I palpated at the previous operation, was another center distinct but even smaller than the anterior one. These were both exhibited to the house staff and physicians present at the operation. The behavior of this case was most gratifying until the complication of the ruptured cyst arose. This fortunately gave me an opportunity of examining by direct sight the results accomplished by the first operation.

I have no doubt but that those two fibroid centers would have been starved out eventually and the case actually cured without any further interference.

General Summary: Thirteen cases operated on in which more than a year has elapsed since the operation:

Case 1. Age 40. Operation Nov. 15, 1892. Very large bleeding fibroid. Present condition: Tumor much reduced. Hemorrhages ceased. Patient well.

Case 2. Age 40. Operation December, 1892. Fibroid interstitial, size of three months' pregnancy. Profusely hemorrhagic. Present condition: Tumor disappeared. Absolute cure.

Case 3. Operation January, 1893. Interstitial bleeding fibroid of two years standing. Four months after operation. Last report: Tumor reduced, patient much improved.

Case 4. Age 38. Operation January, 1893. Very large adherent interstitial fibroid. Excessively hemorrhagic. Patient bed-ridden. Two years afterward: Uterus reduced almost to normal size. Hemorrhage ceased. Patient well and strong.

Case 5. Age 30. Operation Jan. 8, 1893. Interstitial fibroid three by five inches in diameter. Profuse hemorrhage. Report four months after operation: Uterus normal; hemorrhage ceased.

Case 6. Age 36. Operation Aug. 2, 1894. Interstitial fibroid. Profusely hemorrhagic and painful. Patient much reduced. Tumor three by five inches in diameter. Six months after operation much improved. No later report.

Case 7.—Age 35. Operation Nov. 11, 1893. Incipient interstitial bleeding fibroid. Two years after operation: Tumor reduced; hemorrhage ceased.

Case 8.—Age 35. Operation Nov. 28, 1893. Painful, hemorrhagic interstitial fibroid, size of four months' pregnancy. Two years and four months after operation: Tumor much diminished; hemorrhage ceased; pain less but not entirely relieved.

Case 9.—Operation May 19, 1894. Interstitial, painful, hemorrhagic fibroid. Tumor size of four months' pregnancy. One year and ten months after operation: Tumor slightly diminished; hemorrhage materially reduced.

Case 10.—Age 35. Operation August 1894. Tumor interstitial four by six inches in diameter. Hemorrhage and pain excessive. Not much improved eight months after operation.

Case 11.—Operation November 7, 1894. Tumor interstitial, hemorrhagic, painful and size of four months pregnancy. One year and four months after operation: Tumor decreased in size and hemorrhage ceased.

Case 12.—Operation Nov., 1894. Tumor interstitial, profusely hemorrhagic, painful, and three by six inches in diameter. One year and three months after operation: Tumor reduced; hemorrhage less; pain not improved.

Case 13.—Operation Feb. 1, 1895. Tumor intramural, two centers of development two inches in diameter each. Profusely hemorrhagic and excessively painful; hemorrhage and pain ceased; tumor disappeared, as demonstrated by a laparotomy ten months later.

MINOR SURGERY FOR SUBMUCOUS FIBROIDS.

Pedunculated submucous fibroids may frequently be completely removed through the dilated cervix without interfering materially with the uterus. Unless the tendency to pedunculate is well established however, and the center of development comprising the tumor is the only center of fibroid development to be discovered in the walls of the uterus as shown by careful bimanual palpation, it should be treated by hysterectomy either vaginal or abdominal. An exception to this general rule would be when a pedunculated fibroid is discoverable either in the cavity of the uterus or hanging from the cervix with a long thin pedicle. In such a case the polypus should be carefully removed from the uterus, even though there were other centers of development to be discovered. The uterus as a whole, here, could be dealt with in a later operation if the removal of the pedunculated mass did not sufficiently relieve the symptoms.

The removal of an intrauterine pedunculated fibroid is usually a simple procedure. If the pedicle is small and long and the tumor is in a position where it can be easily reached with forceps, it may be grasped in a strong vulsellum and the tumor twisted until the pedicle is actually twisted in two. This can only be done with thin pedicles. If the pedicle is broad the uterus should be sufficiently dilated (the patient under an anesthetic) to expose the pedicle, if it is necessary to accomplish this the cervix may be divided as high as the vaginal junction. The mucous membrane of the pedicle should next be cut in its entire circumference. Then the remaining portion of the pedicle composed of the blood vessels, connective and muscular tissue should be twisted in the same way that one proceeds to twist off a small pedicle. If

the remaining portion of the pedicle is small it will give way by that treatment. If it is rather large and fleshy, after it has been twisted into a small bulk it may be grasped by a strong pair of curved pedicle forceps and the pedicle severed with scissors or a knife outside of the forceps. If the pedicle is very vascular the forceps may be left in place for six or twelve hours. If this does not seem necessary the forceps are removed and the uterus packed with iodoform gauze. If the forceps are left on the pedicle, gauze should be packed around them. The forceps may be removed in six or twelve hours without disturbing the gauze.

I do not favor attempting to enucleate a submucous fibroid of any considerable size if its principal bulk is buried in the walls of the uterus. Such a procedure is attended with considerable mechanical difficulty because of the position of the tumor in the cavity of the uterus: it is a difficult matter to secure hemostasis in such a location and finally one seldom reaches in such a procedure more than one of several centers of developments of the tumors which are situated in the uterus. In these cases a hysterectomy is more satisfactory.

A cervical fibroid developing toward the mucous membrane, if pedunculated, should be removed in the same manner as that described for removing a pedunculated intrauterine fibroid. A cervical fibroid of small size may be enucleated by incising its capsule, grasping the tumor with a vulsellum, and dissecting it from its bed. The cavity may be closed with buried antiseptic catgut sutures or it may be packed with iodoform gauze.

CURETTEMENT.

In many cases of hemorrhagic fibroids much of the hemorrhage and leucorrhea is caused by endometritis. A safe and oftentimes beneficial treatment for such cases is thorough dilatation of the uterine canal and curettement of its mucous membrane. While it will not ordinarily have a direct curative effect it will frequently relieve disagreeable symptoms for a long period of time. The dilatation should be gradual beginning with Goodell's dilators and afterward exploring the anterior of the uterus with the index finger to discover whether there are any projecting masses into the interior of the cavity. After thorough dilatation with the cervix exposed and grasped with small vulsellum forceps in order to steady the whole organ, a sharp curette should be made to traverse all portions of the endometrium. This should be accompanied with some form of antiseptic irrigation. The whole mucous membrane should be gone over at least three times with the curette, the canal then loosely packed with iodoform gauze, the vagina filled with the same and the patient put to bed for several days. The gauze should be removed in forty-eight hours. After that antiseptic vaginal douches must be given for several days.

THE LATIN PART OF THE BODY.—Medico Lecks: The deceased was shot between the hyoid bone and the insertion of the sterno-cleido-mastoid muscle.

District Attorney Rockaway: Do I understand you to say that wounds in this Latin part of the body are generally fatal?

TWO EXPERIMENTS IN RESTORING LOST SPEECH, OR PARTIAL RESTORATION OF SPEECH BY SYSTEMATIC EDUCATION.

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While reading one of Professor Sully's articles on Childhood, the thought occurred to me that, in many cases of aphasia in people suffering from apoplexy of the brain and also in the allied disorders of softening and actual breaking down of different portions of the brain, there existed a striking analogy between such attempting to acquire the language anew and the child's attempts in learning to speak for the first time.

I recall two cases that give interesting and peculiar illustrations of this analogy. The first, a subject of right side paralysis, had been unable to speak at all, with the exception of the words, "gully" and "damn." The former she uses at all times and the latter only at periods when she becomes very much excited. This word "gully" she repeats three or four times in varying degrees of tone and pitch, as though each repetition of the word had a distinct and separate meaning and the whole represented some phrase or thought as in normal expression of ideas. The word "gully" is generally accompanied by a knowing look, a gesture of the hand, elevation of the eyebrows and tossing of the head from side to side. These accessories of gesture and modulations of voice are evidently very necessary to herself for proper expression, because when the hand and head movements are interfered with, she becomes very angry and will take no notice of anyone speaking to her, but when released will chatter on in her one word vocabulary, not at all reluctant to engage in conversation with any one upon any subject. When she becomes extremely angry, which she does upon slight provocation, she explosively emits the single word "damn" and covers her face with her hands in apparent shame because of such exhibition of anger. She readily understands most things said to her, as indicated by her quick compliance with one's commands. Her paralysis hinders her from taking an active part in any heavy work, but she is able to keep her own immediate surroundings in perfect order and cleanliness. Of late she has become quite fond of her nurse and, strange to relate, by the persistent endeavor and painstaking care of her instructress, the patient has been induced to copy the word sounds as given to her by her nurse. She keeps close watch of the nurse's lip movements and imitates them closely. It is needless to say that her progress in regaining the language has been exceedingly slow and only by the exhibition on the part of the nurse of those cardinal virtues of the true teacher, patience and tact, has she been able to keep the patient interested. The unfortunate woman can now make known some of her wants and desires quite intelligently, such as "I want a drink of water," and "Let me go out," to say nothing of the disconnected ideas as expressed by single and salient words combined with the appropriate sign language. By this peculiar method, saying "soap—water—towel," and again "crutches—walk—door—air," these phrases are quite readily interpreted into sentences expressing the desire that she wishes to have soap, water and towel, in order that she may cleanse her face and hands, and that she would like her crutches in order

that she may walk out of door to get the air. Although her speech impairment has been very severe, yet the noteworthy fact remains that she is able to sing most of the "airs of the day" that were popular prior to her attack of paralysis; yet this statement should be modified by saying that she remembered the words of only two, but the tune of all. It seems probable that the lesion in her left brain, causing paralysis and loss of speech, has almost completely destroyed the speech center of that side and, while it may be doing some of the work laid upon it by the act of speech regained, yet it seems more probable that the corresponding center on the right side is now being educated.

She is about 44 years old and her already severe speech disorder is rendered much more difficult to be recovered from, because of her advanced years and their natural hindrance to the acquiring of any language. Nevertheless, this case illustrates how long the destructive lesion may last and yet we may hope for improvement if great care and diligence are exercised in their reëducation.

The points of analogy between this case and the child's seem to be as follows: The single word "gully, gully" doing duty for a number of other words and even sentences, as the child says "ha-a, ha-a, do-da, or ka-ke," so she says, "gully, gully," and looks at you in a distressed way, as if to say, "you don't understand my language." Again, it is interesting to note the much earlier return of the noun substantives long before the use of verbs becomes common. Indeed, it seems similar to some system of shorthand where the vowels are dropped from words, only here the verbs are omitted, thus rendering the apparent analogy less complete.

This patient has an interesting way of gaining her object like the child: for instance, as night approaches she will look imploringly at the nurse and gently smooth the coverlet with her hands while repeating the single word "bed" many times or until some one prepares it for her night's rest.

The second case is also a case of right side paralysis. This paralysis has been nearly recovered from, but the aphasic symptoms still persist in a marked degree, although nearly three years have intervened. I endeavored to teach him the language by word lessons.

When asked what he did in the line of work, his reply was "dishes cups plates and saucers, towels, dining room." The next morning, after he had been carefully drilled to pronounce the whole sentence correctly, he replied, "L. McC. (patient's name) wipes ze dishes in ze dining room." When inquiry was made as to whom he referred by the name L. McC., he replied, at first in an uncertain way, "m-e" and emphasized his words by clapping his hands to his breast. The use of his hands so frequently in expressing his disconnected thoughts, is very childlike.

After several weeks of study on his part, he was taught to say "I" instead of "me," as he invariably did at first. Although he refers to himself as "I" most of the time, yet, when he endeavors to speak rapidly or when he grows excited in conversation, he is sure to speak of himself as "me." He grasps the present participle much more readily than the verb itself. Like the child and the very ignorant adult, he very readily falls into the error of forming all his nouns in the plural with final s. He is an audist in the full sense of Professor Charcot's classification, and instead

of watching the lips of the instructor, as the first mentioned case did, he is solely concerned with the sounds of words.

In spelling small words, he quite often reverses the literal order. He always spells phonetically and in spelling some of our Anglo-Saxon words, he makes sad havoc of them. An illustration of his reversing the literal order of word construction is shown in his early effort to spell dog, viz: g-o-d, and cat, t-a-c. He has been gradually taught to spell in the popular way, but on coming to new words, he quite as often as formerly forgets and spells in reversed order. If words be pronounced several times for him prior to his spelling, he is much more likely to spell correctly.¹ He will repeat several times the word he intends to spell before actually doing so, in order to get the sounds of the letters and syllables. Illustration: "house," "scared." This act reminds one quite forcibly of the vocalist's endeavor to get the proper pitch of the note before commencing the piece of music.

In searching for the reason of his spelling in the reversed order, I noticed that he began with the letter sound heard last: this, on account of its being last uttered, was most prominent in his mind. When he spelled nose it became s-o-n-e. The final e was probably not put on the first of the word because it is not sounded in pronouncing. Why he did not place it somewhere within the word instead of at the end, or leave it out altogether, I am unable to state, unless it be for the reason that it does not give as smooth a sound to the word, when completed in any other way.

I am fully aware that, in some respects, he does not follow the child order of acquiring language. This, I think, is due mostly to the retention of his former knowledge of things or at least the skeleton framework of those lost ideas, the islets yet remaining after that general hemorrhagic submersion.

He was asked to name the objects in a picture as shown him (this was done by pointing to some birds and saying "What are they?"). After a moment's study, he replied, "robins." This child-like mistake he is constantly making, using the specific for the generic and vice versa.

It was interesting to note, in the ten months in which I was giving him instruction, the ear out-running the eye in education, when the auditory education would be discontinued, until he was equally educated by ear and eye. It did not occur to me until I had been giving him instruction for eight months, that his hand needed training too. When I asked him one day to write out the lesson, he could do none of it. For weeks he labored to gain control of written language, but he never learned it as well as auditory or visual impressions. I think the partial paralysis of his arm restricted the use of the hand in writing, to some extent.

An example of his wrong phonetic spelling is given in the following words, such being in his orthography: -ben(ch), (ch)air, (sl)eep. His quick ear led me to think that he could be taught to say many things occurring in every day life, in an orderly and connected manner, thus making fairly smooth sentences expressive of his wants. In this I have not been disappointed, as he has acquired the count of money and

¹ Two autopsies have shown me the great difference between the speech center in a deaf mute and in a man who spoke seven languages. Not only was there great dissimilarity of the convoluntary folds, the one being simple and rudimentary in construction, the other being well developed, but there was also marked difference in the cell outline (under high power microscopic lens), thickness of different cortical layers and complexity of cell arrangement.

from such simple words as am, an and man, he is now able to spell and use words like scared, velvet, rabbit, basket, sing, dances, etc.

It will undoubtedly be much more difficult to get him to take up new ideas than it would be for a child, because if his speech center is not entirely destroyed by disease, it is at least damaged to such an extent that education of the opposite side must take place before he will regain much of his lost speech. The destructive lesion has probably abolished the association fibers connecting the word hearing centers in the brain with the word memory center or has interfered with the telegraphic communications to such an extent as to render memory impressions indefinite and imperfect.

This education of the right side of the brain is so rare in man that there is but little precedence or racial predisposition to its development, and, consequently its growth, to meet the exigencies thus suddenly thrust upon it, must be at best very slow and imperfect. For ages children have been taught to use the right hand and develop that side of the body in preference to the left, yet, notwithstanding all this, we occasionally see children using the left hand instead of the right for a long time. I have seen many children in whom the use of the left hand could not be stopped. The most that could be done was to allow them to become ambidextrous, which I am convinced is the best thing that could happen, not only to this but to all classes. I believe that, in these cases, the tracts leading to either side of the brain are equally as easy at first to transmit impressions, but after a few corrections, the nerve impulses become accustomed to traveling along the left side tract to the left center. If it were not for the fact that the left speech center in the child's brain at birth possesses the hereditarily acquired potentiality for development, it seems to me that the right side would take up the task of speech equally as well.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

REPORT OF THE COMMITTEE ON SYLLABUS.

(Concluded from page 775.)

BACTERIOLOGY.

On account of its intimate bearing upon the problems of disease, bacteriology, as presented in the medical school, should be studied closely in connection with pathology. The laboratory method should be employed in introducing the student to this subject, and progress is much facilitated when the student possesses an elementary knowledge of practical biology and some training in the methods of laboratory work. It therefore seems desirable to assign bacteriology a place in the first half (semester) of the second year's course, immediately preceding practical pathology which is begun in the second semester of this year. At least three laboratory exercises of two (calendar) hours each a week for fifteen weeks should be spent in the work. Two lectures, or conferences, weekly, may also be employed during the semester. Instead of the usual lecture it would seem advisable to devote the two weekly lecture hours to conferences in which the teacher discusses with his classes the various phases of the problems which naturally have suggested themselves in the course of the laboratory work. Later in the course, when a good store of observations have been made by the class, a few sys-

tematic lectures may be employed to discuss problems which are of a purely theoretical nature, or which are too difficult to be worked out in the class-room.

No single text-book fulfills the requirements of a course of this kind, and while the student may be encouraged to purchase one or more of the standard text-books, a laboratory library with various text-books, and including especially a file of the leading bacteriologic journals, should be provided for the use of the students.

The most important thing to teach the student in the bacteriologic laboratory is *how to work*. He should be instructed in bacteriologic technique so that he masters the various methods and can put them into independent practice. Instead of flooding the student with a great variety of imperfectly studied specimens in a frantic effort to illustrate all the disease-producing bacteria described in the text-book, teach him the technique of the bacteriologic laboratory and the use of the library so that he has the means for working out the problems which will present themselves when he sets out to work for himself.

Each student should be supplied with a full equipment of apparatus and material of a *simple kind* so that individual practice may be obtained in all of the methods demanded in the course. Everything in the student's equipment should be as simple and inexpensive as possible. Cheap tin stew pans and spoons, and tin funnels are more economical than corresponding pieces in glass. Instead of one or two large and complicated steam sterilizers for general class use, a small-sized Arnold sterilizer or a cheap tin apparatus on the principle of the steamer used in cooking should be given to each student. Salmonsens's cracker-box is a better dry sterilizing oven for the beginner in bacteriology than the elaborate ovens of Rohrbeck or Muencke. A simple, double-walled drying oven claims the advantage over an elaborate and expensive thermostat for the purpose in hand.

Every detail in the manufacture of the various kinds of culture media should be carried out by the student. He cultivates his own bacteria; makes all the temporary and permanent preparations; inoculates animals and recovers the bacteria; all by his own handiwork. Instead of depending on the stock of pure cultures with which most bacteriologic laboratories are provided, the teacher should require the student to obtain his own pure cultures of both non-pathogenic and pathogenic bacteria from the *raw material*. The hay bacillus should be obtained from the hay, the potato bacillus from the potato, the *staphylococcus aureus* from a boil or pimple, the colon bacillus from feces, and so on as far as possible.

The pathogenic microbes are naturally of the greatest importance to the student of medicine, and in a short course like the present one it will be found necessary to confine the work pretty closely upon those bacteria which are associated with human pathology. On the other hand, the time spent upon the non-pathogenic bacteria must be short. For the preliminary technical training, however, the non-pathogenic bacteria must be chosen instead of the pathogenic species, which would be unsafe to place in untrained hands. By exposing a slice of sterilized potato to the air the student can usually obtain several varieties of harmless bacteria, together with yeast and mold. Several of these accidental species may be studied in detail upon various culture media, by the hanging-drop, and in stained preparations the separation of

bacteria can be learned by practice on samples of tap-water, while the methods of bacteriologic analysis of water, ice, milk and soil are at the same time illustrated. In this introductory work the general principle of morphology and physiology of bacteria will be acquired by the student and the way opened for the study of classification. With the data obtained in this work the student should now attempt to classify one or more of his unknown species, making use of the keys in some such work as Eisenberg's Bacteriological Diagnosis or Sternberg's Manual of Bacteriology.

When this introductory work is completed the study of some of the disease-producing bacteria may be commenced. A few of the more readily obtained types, like the pyogenic cocci from acne pustules and the *bacillus coli* from the feces of man or the domestic animals, should first be chosen by the student, and the species should be isolated, studied in detail and identified by each member of the class. No rule can be made for the order of this portion of the work, for much will depend upon the supply of material. Aside from those ever-present harbors of pathogenic bacteria, like the skin and mucous membranes, which may be called upon to furnish the student with specimens, material from a variety of pathologic conditions like the pus of appendicitis, the membrane of diphtheria, the spleen of typhoid, the lung of pneumonia, which constantly find their way into the bacteriologic laboratory may be utilized for further class-room study. Here the technique of the smear preparation, alike of secretions, exudates and of tissue can be learned. Suppose, for example, that the surgeon sends to the laboratory a sterilized test tube full of appendicitis pus. Each student in the class makes plate cultures from the pus, and then studies it microscopically as a fresh preparation and finally makes smears which he fixes and stains in various ways. When the cultures develop they are studied in detail and compared with the bacteria found in the fresh and stained pus. Thus the student obtains a good picture of the relation of the bacteria to the morbid process, and incidentally he learns how to work independently. Only a few examples like this need be given to a student to furnish him with the proper foundation for future independent work.

Somewhere in connection with the foregoing work the technique of blood, pus, sputum examination, and the culture test for diphtheria can be introduced and duly emphasized.

The final step in the identification of a pathogenic bacterial species, that is, the experimental inoculation of a susceptible animal and the recovery of the bacterium in the blood and tissues by smears, sections and cultures, may be acquired by the study of a mouse or a guinea pig which the student inoculates with anthrax. Here, also, the technique of a bacteriologic autopsy in all its details can be learned. Once having learned this method the student may test the pathogenic activity of some of the species which he has isolated, as for example, the *bacillus* of diphtheria.

Only when the student has learned to work and has learned from his own experience the relation of bacteria in their various habitats, should he be furnished with cultures out of the laboratory stock. There is then no objection to furnishing him with examples of the more important pathogenic bacteria which he would not be likely to encounter in his class room work, such as the spirillum of cholera and the *bacillus* of tetanus, for instance.

The laboratory study of the bacterial products, of immunity, of bacteriologic therapy, and many other advanced lines of work must be left for elective courses.

The application of the knowledge gained in the above mentioned course should be made in the third and fourth years' courses. In the third year's course, when special pathology is studied, a bacteriologic examination of the morbid material brought into the class room should go hand in hand with the study of the gross and microscopic lesions in all diseases of infectious origin. In the fourth year's course, also, the student should be given the facilities for making bacteriologic examinations of the material obtained in the medical and surgical clinics and at the bedside. In this way the practical bearings of his knowledge of bacteriology will be indelibly impressed upon the student, and constant practice will keep the technique fresh so that, upon leaving the medical school, he can at once apply his knowledge in private practice or in his hospital course.

It must be evident that no laboratory text-book will meet the requirements of a course of this kind. The teacher must supply his students with syllabi prepared to cover the particular work in hand, especially in the early part of the work. In these syllabi careful technique directions should be given, along with suggestions as to the observations which the student is to make and to record, along with appropriate drawings. The slip system of taking notes and drawings has much to recommend it, and it should find its way into all lines of laboratory work. A convenient size of slip for laboratory work is $5\frac{1}{2} \times 8\frac{1}{2}$ inches with portfolio to correspond.¹

LABORATORY EQUIPMENT.

The efficiency of the laboratory depends in a large measure upon the care devoted to the enormous amount of detail required to obtain the proper kind and amount of apparatus and material, to care for it when obtained, and to properly distribute it for the use of students and teachers. This can not possibly be left to the teachers in the various departments, but must be concentrated in the hands of one man who will attend to it impartially for all the laboratories in the institution. This should be the duty of the curator. The person selected to fill this important office must be possessed of peculiar abilities and command the entire confidence of the management of the institution. He should be given general instructions regarding the policy of the management toward the laboratories and complete information as to the resources at his command. Beyond this he should be allowed to work out the details without interference.

The curator must be provided with ample store rooms and a laboratory in which to prepare reagents and fit apparatus. This room should have a table with lead-covered top gently sloping to a drain at one end, water and gas pipes tapped at short intervals with attachment for rubber hose. The curator should be competent to prepare all reagents used in the microscopic laboratories and the ordinary solutions used in chemistry, which means that he should have a good general knowledge of chemistry.

He must first procure for himself all apparatus and material for a manufacturing laboratory, beakers, evaporating dishes and flasks, from the small sizes issued

¹ Teachers unfamiliar with the slip system of taking notes will find a detailed description in Wilder and Gage's *Anatomical Technology*, 1882, pp. 45-52.

to students up to those of several liters' capacity. Graduates, measuring flasks, pipettes, a druggist's balance, a counterpoise balance for weighing liquids, and by all odds let all weights and measures be in the metric system. Bunsen and dental burners, retort stands, tripods, an assortment of corks, xx, from number 1 to 24, rubber tubing, bottles in abundance, from one-eighth ounce morphin up to five gallon seltzer; a list so long that a day or two will be required to make it out. Then in a book he must set down everything that is to be manufactured, adding to this list as new requirements arise, checking off each item as it is finished, making a record of the amount made, when made, indicating the formula used and referring to the place where the formula may be found. Only a small part of his duties can be outlined here, but where special instructions are necessary they will be given under their appropriate heads. Everything issued to students in the shape of material and reagents must be labeled. For this purpose order from the druggist's label printer gummed strip labels the size of a druggist's shake label. A large number of these will be required, but they are inexpensive, about thirty cents per thousand. The following list will do for a basis and may be modified to suit:

LIST OF LABELS.

—% acetic acid.	Fehling's solution,
—% chromic acid.	quantitative.
—% hydrochloric acid.	Flemming's solution.
—% nitric acid.	FeS.
Sulphuric acid.	Grape sugar.
Agar agar.	Guaiac.
AgNO ₃ .	Glycerin.
Albumin fixative.	Gelatin.
Absolute alcohol.	Gentian violet.
—% alcohol.	—Hematoxylin.
Alum carmine.	K ₂ Cr ₂ O ₇ .
Ammonia.	KClO ₃ .
Analín.	Labels.
Analín water.	—Methyl blue.
Baryta mixture.	Miller's fluid.
Benzine.	Methyl violet.
Bismarck brown.	Molybdic acid sol.
Borax carmine.	NaNO ₃ .
Bromin Water.	Oil bergamot.
Canada balsam.	Oil cloves.
Carnoy's solution.	Oil cedar.
Carbol-fuchsin.	Peptone.
— Carmine.	Paraffin, hard.
Chloroform.	Paraffin, soft.
Chlorin water.	Phenylhydrazin chlorid.
Colloidin.	Rubrin.
Congo red.	Salt.
CS ₂ .	—Safranin.
Cupric acetate solution.	Sulphur.
Distilled water.	Sodic carbonate sol.
Dahlia.	Turpentine.
Eosin, aqueous.	Uranic acetate.
Eosin, alcoholic.	Ultramarine blue.
Eosin in glycerin.	Weigert's deodorizing sol.
Fehling's solution,	Xylol.
qualitative.	

A week or ten days will be required to get these out.

IMPORTATION OF APPARATUS AND MATERIAL FREE OF DUTY.

The import duty on apparatus and material used in the laboratories averages about 40 per cent. Provision is made in the law whereby institutions of learning may have these duties remitted.

Each laboratory teacher should be required to make out a list of things he wishes to use and an estimate of the probable quantity. From these the curator makes his list which will include but once the name of every article used in all the laboratories of the entire institution, he can then make his own estimate

of the quantity needed. The curator should familiarize himself with the work being done in all the laboratories so that he may judiciously trim the order to fit the appropriation, so that if economy is necessary it may be applied where it can best be borne. An order was once given including five orders for nitrate of silver, a pound package, a half pound, a quarter pound and two ounce packages. The price varied from \$8 for the pound to a rate of \$16 per pound for the ounces. In a \$2000 order where one teacher's quota was about \$200 he called for 100 grams of an organic preparation the price on which varied from \$1250 to \$1600. This list with price was "o.k.'d" by the purchasing committee and would have been ordered had it not been cut out by the curator. Of the curator's list half a dozen or more copies should be made and sent to as many importing houses with a request for quotations. Ordinarily the price should include delivery at the laboratory.

All material so obtained must be used in the institution and heavy penalties may be exacted should any of it be given away or sold. Two to five months are absolutely necessary to get goods from Europe. Experience, however, teaches that six months is not too much time to allow and if this time is allowed there will be fewer disappointments.

The number of different kinds of apparatus should be kept as low as possible. For instance, have but one style of beaker, one style of flask and one style of evaporating dish.

Five sizes of each will be ample. Each size must have a separate place in the store room and it will be easier to provide places for five sizes of one style of beaker than for five sizes of each of five different styles. A little judicious consulting with demonstrators will make this feasible. It is difficult to detail the annoyance and expense caused by a disregard of this rule. Ten different teachers will call for ten different kinds or makes of the same thing and it will require the services of half a dozen men to take care of the supplies which one might otherwise easily do. When the goods arrive some representative of the institution must go before the collector of customs and make oath that they are intended for use in the institution and that they will not be sold or otherwise disposed of. The goods must be examined by the customs authorities either in the customhouse or at the college when they are unpacked. The latter is preferable and should be requested.

TAX-FREE ALCOHOL.

Alcohol intended for scientific purposes may be withdrawn from bond without payment of internal revenue taxes. Instead of its costing \$2.75 per gallon it may be obtained for about 50 cents, a saving of \$80 or \$90 on a barrel. To accomplish this the curator must make out a bond which is to be signed by two persons who are not officers of the institution, and who are citizens of the United States. This bond must be for an amount at least twice as great as the tax on the quantity of alcohol to be withdrawn at any one time. Thus a two hundred dollar bond will only allow one barrel to be withdrawn at one time, therefore the bond should be for at least \$500 in which case a second barrel may be withdrawn before the first is entirely used up and the bond released. He must now go to a bonded warehouse and get the "description" of a barrel of alcohol and have the barrel set aside, he must take this description together with the bond to the

collector of internal revenue for the district in which the institution is located. These papers are sent to Washington and in a week or ten days a permit to withdraw for scientific purposes, the described alcohol will be received by the curator from the office of the Secretary of the Treasury. Some time and annoyance to all parties to the transaction will be saved if the application be made early in the month so that the alcohol may be delivered before the last day of the calendar month, otherwise it must be rebounded. The curator will now be required to sign a receipt which says he has *already received* the alcohol; this is to be sent to the collector who will then issue an order on the manufacturer or storekeeper to deliver it to the college. A page in the curator's record should be devoted to alcohol. Here is entered the description of every barrel of alcohol, just as in the application, with space for the date of receipt and date of release.

In the bond a time is mentioned when proof that it has been used according to law must be submitted to the collector. This time is usually six months or a year. At the expiration of this time or when application is made for more, the curator must present to the collector this proof, which is simply his affidavit to that effect.

LABORATORY TABLES.

A convenient laboratory table for microscopic work may be of the following dimensions:

Top, 7 ft. 3 in. x 2 ft. 2 in.: from the floor to top of table 2 ft. 6 in. It will have four cupboards 18 inches wide, 12 inches high and about 2 feet deep.

The upper part of the cupboard is occupied by a drawer 3 inches deep. The box containing the student's kit of apparatus just fits in under the drawer. The stools for the students to sit upon while at work should be 22 inches high. This table will accommodate two students at a time and afford accommodation for two classes. Two desks are to be placed with their backs together one inch apart and the space between bridged over by a board 3 inches wide. A gas pipe comes up in this place and runs the length of the table 3 inches above it. A four-way T opposite each place is fitted with a gas tap for each student.

The gas pillars instead of brass should be cast iron with the slit cut larger; these being much more convenient for slipping the rubber tube on and off. These double tables are placed with their ends to the windows if daylight is to be used. If gas is to be used for illumination, burners having chimneys are necessary, as an open gas flame is too unsteady for microscopic work. Some of the patented incandescent gas lamps furnish a white light which is very serviceable. Incandescent electric lights are said to be unsatisfactory owing to the yellow color. Perhaps kerosene lamps are best though somewhat troublesome to keep in order.

This gives each student $3\frac{1}{2}$ x 2 feet of table space which is ample for most of the work but not too much. The door on this cupboard should be fitted on the *outside* where the hinges are placed so that it will swing round through three-fourths of a circle and thus be where it will not be broken.

If it is hinged to the left instead of to the right it will swing under the student's own table and thus not interfere with his neighbor.

LOCKS AND KEYS.

This is rather a large item of expense but it will

not do to get a poor lock. Ability to settle with students satisfactorily depends in a large measure on the integrity of the lock. A Yale lock with corrugated key is not too good. Stipulate with the manufacturer that he mark each key (*but not the lock*) with a consecutive number and this number must be continuous for all the locks, having a similar key in the institution. Each laboratory must be designated by a number or letter, and all the doors having a lock in each laboratory must be numbered consecutively.

Each lock and its two keys will come wrapped in a separate paper or box; take these at random, or better still, mix them up with some care; now take a book ruled as follows with horizontal lines and three vertical columns.

	KEY.	LAB.	DOOR.	
	1	A	24	
	2	B	36	
	3	C	48	
	4	D	91	

In the first column the numbers are consecutive and there are as many lines as you have locks. The first column is headed KEY, the second is headed LABORATORY and the third is the DESK or DOOR in that particular laboratory. After the desks are all in place and numbers on, take the locks and key list, go into the laboratory, begin at one end, select a lock at random, place it in the cupboard or drawer it is to be put on, mark the laboratory and door in their appropriate columns and on the line corresponding to the number as the key. Follow this up till every door has its lock and every line and column on your key chest is full. The curator must do this himself and never trust it to workmen. A carpenter follows, puts on the locks and leaves the key in each one. When this is done the curator takes a portable key board and gathers up the keys. The keys are to be kept in a drawer where they are protected from moisture, dust and the fumes of chemicals. Such a drawer may be fitted up in the following manner:

The drawer selected should be three inches deep. Set in a loose false bottom three-fourths inch from the top. Rule this off in squares one inch each way and where the lines intersect bore holes just large enough to allow the keys to drop down to the shoulder. Number the holes with the gummed paper numbers made by Dennison and varnish the whole drawer. A drawer eleven by twenty-one inches will contain 200 holes. Each hole will contain the two keys of the lock whose number corresponds to the number on the hole.

When desks are to be assigned, one key for each lock in that laboratory is taken on a portable key board and issued as places are assigned. The duplicate key is never allowed to go out of the hands of the curator and taken out of the drawer only to unlock the desks for the purpose of examining the contents, or when first key is lost. If a student loses a key he is charged the full price of the lock. The lock is removed and replaced by another. If a key is broken it is replaced for 25 cents. This prevents students from carrying the keys away and then "going through" that desk the next term when occupied by some one else. A key picked up anywhere can be at once loca-

ted by reference to the chart, while without the chart it is useless to anyone finding it.

MICROSCOPES.

The microscopes should be kept in a special room or cabinet where they are protected from injurious influences. This place should be fitted with shelves and these shelves spaced off with cleats and each space numbered to correspond with the number on a microscope. If the microscopes are of different quality, or not enough so that each student in the class can have one, they may be satisfactorily issued in the following manner: A large sheet of paper (one for each class) is prepared with as many horizontal lines as there are students in the class and with a vertical column for each laboratory day during the term. The names are arranged on this chart alphabetically. Then if there are seven students and only five microscopes they will be issued from day to day according to the accompanying chart.

PATHOLOGY 1892-1893.

	Sept. 21.	Sept. 23.	Sept. 25.	Oct. 1.	
Bennett, G. L.	1	3	5		2
Hamilton, A. C.	2	4		1	3
Mellon, J. S.	3	5		2	4
Smith, C. J.	4		1	3	5
Thomas, A. L.	5		2	4	
Wilson, M. S.		1	3	5	
Williams, H. L.		2	4		1

The numbers being filled in before class time, then no matter who comes first he will get the microscope allotted to him for that day. There will thus be no incentive to crowding. As they are returned at the close of the lesson each is returned to its appropriate place and the curator can see at once when all are in. In case a microscope is injured or any of its parts missing the responsibility can be instantly located by reference to the chart. Lamps, dissecting microscopes, micrometers, oil immersion objectives, drawing apparatus, etc., can be kept and issued in the same way and at the same time. Microscopes should not be allowed to go into the chemical laboratory except with the most careful precautions to protect them from injury. The evolution of injurious gases in the rooms where they are kept or are in use must not be tolerated for a moment. If a large class is to begin the study of the microscope (and every class should study the microscope before studying microscopy), a number of students with some experience should be invited to assist the teacher at first lesson, at least, so that there will, if practicable, be an instructor to each microscope. This will be of real advantage to both the beginner and the student who assists.

STUDENTS' KITS OF APPARATUS AND MATERIAL.

Order from a box factory as many boxes as there are students expected. A good quality of packing box will do, made of dressed lumber, seven-eighth inch ends and one-quarter inch sides and bottom, without covers, of such dimensions that they will fit into the cupboards in the laboratory tables. Boxes 18 inches wide, 24 inches long and 8 inches deep will about fit the tables described, and will cost not to exceed \$12 to \$15 per hundred. Printed lists of the apparatus and material to be furnished each student are provided where laboratory courses in two or more subjects are conducted in the same room and with the same students the outfit for them all may conveniently be combined into one kit. These kits are best fitted

up by arranging the boxes in a row on a table, then taking a tray containing a sufficient number of the first item on the list, walking down the row and putting in each box the number called for. Then follow with a tray of the next article, and so on till all are filled, and lastly put in one of the printed lists. The boxes are then piled up out of the way and are ready for distribution to the students on the day in which classes in the laboratory are assigned. When the box is delivered to the student he is required to take it to his place in the laboratory, check up the kit with the printed list, sign his name and desk number to the latter and return it to the curator as a receipt. These lists are now put separately into envelopes bearing across the end the name of the student to whom it belongs. The envelopes are arranged alphabetically and placed on end in a drawer prepared for the purpose. Each student is furnished with a small tablet of order blanks, plain pieces of paper 2½x5 inches, and henceforth every order on the curator for anything must be written on one of these slips and bear the name and desk number of the student. No orders on other paper will be honored. As these orders are filled, they are checked with a blue pencil and put into a convenient box. As the close of the term approaches these slips are assorted by an assistant and put in the envelopes with the printed slips. When the kits are returned to the store-room at the close of the term the curator and his assistant checks them up with the contents of the respective envelopes, puts a price on each item missing, dirty or damaged, marks the amount on the outside of the envelope and returns to each envelope its contents. Each envelope now contains the complete itemized account of a student and is preserved until a final settlement is made and the student receipts for settlement, when it is to be burned.

The amounts on the outside of the envelopes are entered in the curator's record book in the proper column and the total charged against each student is found by adding together the various charges on his line. The diagram of a page in the Curator's Laboratory Record will explain this more fully.

Everything possible should be issued to the student individually and charged up to him, then if he wishes to be wasteful and extravagant it will be at his own expense. Nothing should be "on tap" except gas and water. Each laboratory should have a gas meter and the gas charged to the class, and the cost divided equally among the members of that class. Slides, cover-glasses and other material are often prepared by the demonstrators for distribution to this class; but this is a faulty, pedagogic method and should not be permitted. Students must obtain everything from the store-room on their personal order and there should be no bottles "on the side" from which they can help themselves. Every one should be required to leave his desk clean and in perfect order on quitting the room. Habits of cleanliness and order should be insisted upon, and any indication of rowdiness repressed. Smoking should not be allowed in any of the laboratories. Young men who believe that it is the student's prerogative to smoke while at work, chew tobacco and spit upon the floors of laboratories or lecture rooms, mark up walls, whittle and break up furniture and otherwise bring into the school the habits of the hoodlum should be promptly advised to become sewer builders, street pavers or enter some other occupation where their habits will not be an

offense to all decent people. The medical profession is surely not in need of such material.

The following lists represent kits which have been found suitable for the work in the laboratories named.

NAME DESK No.
LABORATORY OF BACTERIOLOGY.

See that your apparatus and material is all here and in perfect order, then sign your name at the top and return this slip to the curator.

Check here.

\$ cts.

Agar agar	
Apple corer	
Blotting paper	
Bunsen burner and tube	
Cotton	
Cheese cloth	
Droppers, 3	
Forceps, cover glass	
Filter papers, 1 doz., 25 cm	
Flasks, 1,000 c.c., 3	
Funnels, 2	
Gelatin, 40 grams	
Grape sugar, 5 grams	

Note book, peptone 15 gm., 6 petrie dishes, Pillsbury box, platinum needle, potato knife, granite-ware pan, tripod, salt, slide concave center, sponges for cleaning desk, test paper, 100 test tubes, test tube brush, towel, wash bottle, 2 wire baskets.

STAINS AND REAGENTS IN BOTTLES.

Aniline water, balsam, nitric acid, sodic carbonate solution, glycerin, carbol-fuchsin, gentian violet, methyl blue aqueous.

LABORATORY OF EMBRYOLOGY, HISTOLOGY AND PHARMACOLOGY.

Alcohol, 3 camel's hair pencils, cheese cloth, oblong cover glasses 2 sizes, cover glasses, circles, drawing paper, 3 droppers, eraser and brush, filter paper in strips 1 package, cover glass forceps, fine pointed forceps, 2 glass rods, 1 box labels, tripod magnifier, 12 morphin bottles and corks, 2 teasing needles, 1 box hard paraffin, 1 box soft paraffin, 2 pencils hard and soft, 6 French drawing pens, 2 Pillsbury boxes, 2 porcelain dishes, $\frac{1}{2}$ gross plain glass slides, concave center glass slide, section lifter, 2 pairs scissors fine and coarse, sponge for cleaning desk, towel, tin pan, 5 test tubes, 6 watch glasses, 1 solid watch glass.

STAINS AND REAGENTS IN BOTTLES.

Alum carmine, balsam, borax carmine, eosin aqueous, Carnoy's solution, colloidin and clove oil, chloroform, chromic acid solution, gentian violet, hematoxylon Delafield, hydrochloric acid, Mueller's fluid, oil of cloves, oil of cedar, safranin, 1 per cent. solution silver nitrate, xylol and carbolic acid.

LABORATORY OF BIOLOGY, HISTOLOGY AND PHARMACOGNOSY.

Alcohol, beaker, benzine, blotting paper, glass blowpipe, 1 oz. q. s. bottle, 3 camel's hair pencils, cheese cloth, colloidin, $\frac{5}{8}$ inch No. 2 box cover glasses, cork sheet, drawing paper, 6 drawing pens, 2 drawing pencils, india ink, eraser and brush, dissecting pans, 3 droppers, 12 filters, 2 forceps, funnel, 2 glass rods, 6 4 oz. screw cap jars, one 16 oz. screw cap jar, 1 box labels, tripod magnifier, notebook, 2 needles, paraffin hard and soft, Pillsbury box, box black pins, 2 porcelain dishes, 1 retort stand, 3 retort rings, scissors, scalpel, $\frac{1}{2}$ gross glass slides, sponge, 5 test tubes, test tube brush, towel, wash bottle, 6 watch glasses, 1 solid watch glass.

STAINS AND REAGENTS IN BOTTLES.

Alum carmine, albumin fixative, balsam, borax carmine, chromic acid sol., eosin aqueous, gentian violet, hydrochloric acid, hematoxylon, Delafield Müller's fluid, oil of cloves, oil of cedar, safranin, silver nitrate sol., ultramarine blue.

LABORATORY OF EMBRYOLOGY, PATHOLOGY AND SURGICAL PATHOLOGY.

Alcohol, absolute alcohol, quart tin basin, blotting paper, 3 camel's hair pencils, cheese cloth, cover glass circles, cover glass oblong (18 large, 18 small), drawing paper, drawing pencils, 6 droppers, eraser and brush, fine pointed forceps, coarse straight forceps, weight forceps, box labels, tripod magnifier, 12 morphin bottles and corks, 2 needles, paraffin hard and soft, scissors, $\frac{1}{2}$ gross glass slides, concave center slide, sponge, 3 test tubes, test tube brush, towel, solid watch glass, 6 watch glasses.

STAINS AND REAGENTS IN BOTTLES.

Acetic acid, alum carmine, ammonia, albumin fixative, balsam, Bismarck brown, Carnoy's sol., colloidin, chloroform,

cupric acetate sol., eosin in glycerin, eosin in alcohol, hydrochloric acid, hematoxylon Weigert, hematoxylon Delafield, methyl blue, oil bergamot, oil of cloves, Weigert's decolorizing sol., rubin, xylol and carbolic acid.

LABORATORY OF CHEMISTRY.—A.

Burette, 5 beakers, Bunsen burner and hose, file, 2 packages filter paper, filter stand, 2 flasks, 2 funnels, funnel tube, 2 feet glass tubing, 2 glass rods, hydrogen sulphid tube, mortar and pestle, pincers, platinum needle, 2 porcelain dishes, retort stand, 3 retort rings, sand bath, 10 test tubes, test tube rack, test tube brush, pipe stem triangle, urinometer, wash bottle, water bath, 3 watch glasses, wire gauze.

REAGENTS.

Anilin blue, baryta mixture, congo red, eosin, Fehling's solution quantitative, Fehling's solution qualitative, gentian violet, tr. guaiac, phenylhydrazin chlorid, sulphuric acid, potassium dichromate, sodium nitrite, sodium chlorid, sulphur, ether, alcohol, iodic acid, bromin water, chloroform, hydrogen peroxid.

LABORATORY OF CHEMISTRY.—B.

Aluminum wire, 5 beakers, blow pipe, Bunsen burner and hose, file, filter paper, 4 and 6 oz. flasks, 2 funnels, funnel tube, 2 feet glass tubing, 2 glass rods, hydrogen sulphid tube, pincers, platinum foil, platinum needle, porcelain dish, retort stand, 3 retort rings, sand bath, sponge, test paper, 10 test tubes, test tube rack, test tube brush, towel, pipe stem triangle, wash bottle, 3 watch glasses, wire gauze.

REAGENTS.

Red lead, ferrous sulphid, potassic chlorate, carbon disulphid.

CURATOR'S RECORD BOOK.

In order to reduce book-keeping to practical limits a special book is required. It may be of any convenient size, but where there are a number of laboratories and many students the following is a good size. The page is seventeen and one-half inches high and the double page twenty-three inches wide. It is check-ruled so that there are one hundred horizontal and about one hundred and forty vertical lines on a page. Every other horizontal line is heavier than the rest. The account of each student is placed on one of the heavy horizontal lines, making fifty on a page. Five vertical columns are allowed for the account in each laboratory. The heavy lines are numbered both at the left and right of the double page. The names of the students are written on the left, their accounts in the respective laboratories filled in the proper column and when settlement is made the student signs his name at the extreme right of the same line. Thus each student's account occupies but one double line and is a matter of permanent record. This book must also contain a complete inventory of all the microscopes and other permanent apparatus, with description, manufacturer's and private marks to be used for purposes of identification. Also, alphabetically arranged a list of *everything* in the original purchase, with columns for the amounts purchased each year, and the price paid. This is necessary as a basis for the price to be charged students and for future orders.

WM. OSLER, Pres't, Baltimore.

BAYARD HOLMES, Sec'y, Chicago.

Ohio Cigarette Law. The Ohio law with regard to selling cigarettes has been very materially amended in several respects, and now is, that whosoever sells, gives or furnishes to any minor under 16 years of age any cigarette, cigarette wrapper, or any substitute for either, or any cigar or tobacco, upon conviction thereof, shall be fined not less than \$25 nor more than \$100, or imprisoned not less than two nor more than thirty days, or both, for the first offense; and fined not less than \$50 nor more than \$300, and imprisoned not less than five nor more than sixty days for the second or any subsequent offense.

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SATURDAY, APRIL 25, 1896.

VIVISECTION AND LEGISLATION BY CONGRESS.

The anti-vivisectionists, mainly through the societies to prevent cruelty to animals, usually known as Humane Societies, are actively at work coöperating with the society in Washington to secure by Congress such legislation as will prohibit all laboratory experiments on animals in the District of Columbia. If they succeed in obtaining the enactment of the bill now pending, it will close the biologic laboratories attached to the Surgeon General's Department, the Bureau of Animal Industry of the Department of Agriculture, and Marine Hospital Service, and stop the investigations now in progress which promise important contributions to the science of medicine.

These efforts consist in personal solicitations of members of Congress, the distribution of literature setting forth in startling language the cruelties of medical men in general, and especially of the experimenters, petitions to Congress from the allied organizations throughout the country, and personal letters to members of Congress from their constituents, who are engaged in this crusade against investigation and science.

The medical profession throughout the country does not seem to take much interest in the contest at Washington. A few remonstrances have been presented to Congress, but there has not been any general expression of opinion on the part of the profession either in individual or organized opposition. An act of Congress limited in its operation to the District of Columbia, may seem to be a very trivial matter, but it will give such an impetus to the efforts of the propagandists that every State, city and medical college in the country will soon realize the disastrous results of such inactivity on the part of the

profession. The time has surely come when the medical profession of this country should assert itself with spirit, force and determination.

The medical profession is not the only class of citizens interested in this question. The discoveries of the causes and prevention of the diseases of animals by the Bureau of Animal Industry have, perhaps, saved several of the live stock industries from total destruction, certainly so in some of the States.

The Cuban imbroglio in the Senate and the A. P. A. complications in the House seem to have completely arrested the progress of local medical legislation. Senator GALLINGER, in charge of the Medical Practice bill, and Senator BACON, in charge of the Medical Testimony bill, have not been able to secure the consideration of either of these bills by the Senate. The House Committee continues to timidly tinker with the Medical Testimony bill. It seems to be afraid somebody will get hurt by reporting a bill which everybody admits is just and wise. The Hon. JOHN W. BABCOCK, of Wisconsin, is the most efficient chairman of the committee of the House on the District of Columbia it has had for many years and is anxious to promote the progress of scientific medicine by such legislation as the profession may demand, but he lacks the support of the profession throughout the country. If the medical journals could be induced to present the important subjects of legislation before the profession at large and invite attention to the necessity of united action and effort, much good might be accomplished.

The Medical Society of the District of Columbia is the largest and most active medical society in Washington. It has a membership of nearly three hundred, with an average weekly attendance at its regular meetings of about one-third of its membership. It is the body from which all proposed legislation relating to local medical and sanitary matters emanates. Through its committee on Public Health, its members are kept advised of all necessary sanitary reforms, conducive to the healthfulness of that city. For several years past it has been very active in its efforts to secure legislation by Congress to improve the sanitation of the city, but the progress of success has been very slow, because of the lack of interest of the majority of the members of Congress in all matters relating to the District of Columbia.

THE NEGATIVE ETHICS OF SURGERY.

The forthcoming seventh annual report of the Boston City Hospital will contain an essay by DR. DAVID W. CHEEVER, emeritus professor of surgery in Harvard University, upon the morals of surgery. According to the *Boston Medical and Surgical Journal*, this essay will touch upon some of the times and scenes when the surgeon refrains or turns back. One branch of his subject, DR. CHEEVER opens with the reflection: What is more distressing than a death upon the table?

What injures our art more than a fatal operation, which pathology proves to have been useless, or even more, unnecessary?

When to operate: If we confine our selection of cases to those which clearly come under the cardinal rule for operation, namely, to relieve suffering, or to prolong life, or both, we shall have little difficulty in the choice. Is life imperiled? should be the first question. Can we probably relieve the suffering? the second. But when asked to operate, shall we accept only good risks, and refuse the doubtful or hopeless cases?

When not to operate: When to decline is the real difficulty of decision to be met. Do not operate without the full consent of the patient and friends, if possible. See that some responsible party understands what operation you intend to do, and what may be reasonably expected from it.

Do not operate in a state of shock, unless hemorrhage, apnea, or obstruction of the bowels, as in hernia, is going on. If you have time, consider fully the systemic condition of the patient—the integrity of the heart, arteries, kidneys. In a case of no emergency, the age and prospect of life of the patient are to be taken into account. A person of seventy years, having an expectation of life of five or six years, is in a very different category from a youth of sixteen, who has a reasonable expectation of life of sixty years. You would take a risk with the latter which you would not with the former.

Do not operate in glandular infiltrations so extensive as to preclude perfect removal. Do not operate where you can not remove the whole disease, as in a tuberculous organ, if you excise a part; or a sarcoma of the antrum where you can not extirpate the sphenoid cells. To these rules we would make two important exceptions:

1. To relieve agonizing pain operate on any slight chance; for unless the suffering can be palliated, the patient had better die than live.

2. In a "forlorn hope" so called, after you have fairly stated the risk, the patient is entitled to an operation if he wishes, and if he takes the responsibility: but even here you must limit yourself to cases where there is a single, or some, chance of success.

During an operation when must we stop? When the patient fails? Not always. That failure may be due to ether, or even to simple nausea. Pause, stimulate, consider maturely, before abandoning your task.

Stop when you have reached the end of all you can take out, in a malignant tumor, for instance.

Stop in an operation in the abdominal cavity when a glance or touch reveals that the tumor is not removable, and has grown into vital parts. Do not explore it farther, or you will get where you can not stop.

Stop in an operation on the surface of the body when stopping will not imperil life as much as going on: in syncope, with a weak pulse, with sighing respiration, with a colliquative sweat.

"THE THOUGHT MACHINE."

Those who confine themselves to the regular types of literature or science miss a great deal of pleasure. The most perfect illustrations of humor are most solemnly and seriously meant. There can, for example be nothing more provocative of mirth than some of

the publications to-day being issued by the homeopathic press. The *Medical News* a year or more ago gave some selections from one such book that would have warmed every cockle of Mark Twain's heart if that excellent authority in humor, though not in medical science, were not a homeopathist himself. Likewise in the many periodicals, books and leaflets devoted to faith-cure and such delusions there is hardly a page that does not delight the lover of fun.

We have before us a number of one such periodical labeled *Freedom*, in which is a full-page description of "A Wonderful Machine." It is put forth in all seriousness—an added element of the ludicrous—and we only regret our inability to make more lengthy quotation than we have permitted ourselves. This truly wonderful machine is said to have been devised by JULIUS EMMNER of Washington, D. C. If the machine could do what is suggested by the name and description, one should at least be placed on the desk of every member of Congress, and its uses would seem of marvelous applicability in many walks of social and professional life.

From the description given it would appear that the machine bears much resemblance to the phonograph, but there is this marked difference, instead of talking into it, one only thinks hard at it. Fearing that we may misunderstand or misreport the account we are compelled to quote:

"The 'Thought-Machine,' continued the inventor, 'effects the tangible coupling of material and immaterial forces, with electricity as my motive power and chemistry as my recorder. The chemically sensitized surface of a cylinder, while undergoing decomposition by the electric current, receives the magnetic thought-waves which stream from the physical brain of the operator, and portrays them—vibration upon vibration, form upon form—with microscopic fidelity, in an imperishable message. Now, the separate actions of all these forces—electricity, the chemical sensorium, and the magnetic currents of the human brain—have long been thoroughly understood. But the Thought-Machine combines the actions of these three distinct forces in an apparatus where such faultless electrical, chemical and mechanical conditions are subject to the operator's will that the delicate mind-currents, conveying his thoughts, are engraved upon the sensitized surface as a continuous, unerring registration.'

"MR. EMMNER then requested silence for a moment seated himself before the Thought-Machine, adjusted it for recording and opened the electric circuit. The mechanism began its smooth, noiseless motion, the cylinder revolving on its axis, pressed softly by the electric pencil passing along its face. Then, as the inventor brought his head within a foot of the recorder, directing his mind upon the machine, a thin, cloud-like thread wound spirally about the glistening film, from left to right. This was the thought record, which after several minutes of silent work, had overspread the entire film with its smoky tinted coils. The record finished, MR. EMMNER released a circuit button, the mechanism stopping as noisily as it began, and invited a test of the record, no better idea

of whose accuracy can be given than to state that by arrangement with the inventor, a number of thoughts forming the descriptions in this article have been thought into and received from the Thought-Machine, in perfectly logical sequence. The wizard of thought then continued to chat pleasantly to the correspondents.

"Some notable developments from experimenting with thought-records," said he, 'are that languages, as well as words, have each their distinct, intelligible records; that emotions of like kind have like vibratory records, while superimposed records of violently different emotions tend to produce temporary insanity in the re-thinker; that animal 'sagacity' so-called has likewise a characteristic vibratory record, well nigh amounting to a language, but also deleterious to the human re-thinker; that thought is the explosion of the mind as vocality is the explosion of the mouth; that a captive human being, held forcibly against his will within recording distance of the machine, involuntarily registers his thoughts; that thought has color as well as vibration, and that it is conveyed, with varying distinctness, to all the ganglionic and nervous-vital centers of the body.

"The uses of the Thought-Machine will be more extensive than can possibly be predicted,' continued MR. EMMNER. 'To the law it will be invaluable for the involuntary conviction of criminals by the automatic registration of the thoughts of their crimes. The last wishes if the dying can also be given an irrefutable record, of vital importance in the settlement of estates. In medicine it must prove equally indispensable for treating the insane, whose condition can be unerringly found by this delicate but unsympathetic examiner; while, in connection with the electroscope, it will prove an inestimable help for diagnosing nervous mental diseases. In fact, a broad area for experiment in chemical electricity and psycho-physiology is opened by the new machine.

"To the business man in the intricacies of commerce, and to the author in the niceties of higher composition, it will prove alike a boon, and to inquirers in every field of science, it will furnish a new and reliable means of verification. So that the practical effect of the Thought Machine in our daily life will thus be to save much of the most valuable thought of the world which now goes to waste, and to lighten labor by facilitating its transmission to mankind."

It will be noticed that there is a complete omission to reproduce some of these records—these "thin cloud-like threads wound spirally about the glistening film, from left to right," and no hint is given as to the interpretation or nature of this new language which is to take the place of "vocality, the explosion of the mouth," of the rest of us ordinary mortals. Why should the "wizard of thought" much longer continue to "chat pleasantly, etc.?" Why shouldn't he look hard at his hearers and work his thoughts by will power directly into their minds, without the aid of any vocality or crude thought-machine. The professional reader will at once notice the medical suggestiveness of this new kind of X-rays. RÖNTGEN is certainly outdone. Why should not the machine be brought before an abnormally acting stomach, or hidden tumor, and by extraordinary "sensitization" make the

viscus or neoplasm think hard at the apparatus, and thus learn *its* thoughts—for according to the theory it must have, nay, *be* "thought."

What an opening is disclosed to medico-legal science! We suspect BERTILLOX must look to his laurels as well as RÖNTGEN, and that our police bureaus and courts of justice will soon be outfitted with Thought-Machines. What a great saving in all legal trials! All the judge and jury will have to do will be to arm themselves with a machine like a "kodak," and go pointing it at the criminal, witnesses, and lawyers, and, lo! on the revolving cylinder will be the record of every hidden thought divulged in "thin cloud-like threads, wound spirally, etc."

The editor of *Freedom* is able to go the inventor "one better," and appends an editorial footnote as follows:

["A simpler explanation of this apparently marvelous thing is that thought is a substantial entity, and is capable of being photographed. And the Thought Machine is nothing more than a camera adapted to this purpose. I have known for many years that thoughts are things, and that they can be charged with a purpose and sent anywhere, no matter how far, in order to fulfill their mission. I have *seen* thought myself. I have seen it pass as a fine, silvery, shimmering stream from me to a patient when I have been treating him. It could have been photographed I am sure; and then by the process of enlargement, which photographers employ, I have no doubt but its meaning could have been made to appear—if not in words, then in unmistakable symbols, or perhaps harmonious musical chords, or softly blended colors—something anyhow that would have meant harmony and strength and beauty.—ED.]

Verbum sap.!

THE DESPISED OFFICE OF MOTHERHOOD.

"You dear sweet baby! Mother feels perfectly drefful 'cause you didn't win first prize." In these terms, a handsome young woman, fashionably and expensively clad, at a recent exhibition in the city of New York, addressed—*her cat!* A crowd of other anxious "mammias" and "muzzers" washed and combed and beribboned their "blessed darlings" before each day's opening of the cat-show.

These are the women, daughters of wealthy parents, who announce before their marriage that they do not intend to have any children, who declare that a rosy infant nursing at its mother's breast is a vulgar, indecent spectacle, and who consign to a menial the task of dressing and feeding the little babe whose conception they strove by syringe, sponge or baudruche to prevent, and these failing sought to forestall by other means of which their knowledge is a fearfully suggestive fact. The naked South Sea Islander, who intuitively worships the unknown God of Nature, or the pagan of the churches, who calls his God Buddha or Allah and his Savior Saddartha or Mahomet, has far less need of Christian missionary endeavor than these

bejeweled creatures of fashionable society, who are defying the precepts of the Jesus they profess to revere and the sweet example of the blessed Mary, who sanctified the office of motherhood in her own person. Physicians will do well to ponder on this aversion to child-bearing, which ought to be the ambition of every healthy, happily married wife.

A new word from the prolific Greek—*anerotic*—has come in vogue in the course of the discussion as to the causes of the admitted unfruitfulness of the better classes of American women. That the majority of the women of this day are endowed with only a moderate degree of sexual propensity is undoubtedly the fact, and by many this may be regarded as a providential provision against immoral indulgence by the unmarried and a restraint upon conjugal excesses, but apart from the extinction of a normal physiological function, which can not be commended, the unproductive effects upon the community are deplorable. The deficiency of children in modern well-to-do families and the consequent diminution of paternal, filial and fraternal bonds are aiding to destroy that most charming institution of our grandsires, the ideal American home. The new woman craze is the natural outcome of the weakening of home duties, ties and demands. Having no longer the absorbing occupations of the nursery, play-room and domestic schooling, to engage time and thought, the epicene woman mounts her bicycle, joins her club and fondles cats and dogs instead of children.

A careful inquiry into the ultimate causes, which have made maternity unattractive will probably find that reprehensible social customs are first responsible for the physical deterioration and the latter the proximate cause of unfruitful union. The demands of modern fashionable life and its pseudo-fashionable imitators are so largely in the direction of public entertainments where display is the feature, that domestic reunions and harmless diversions have fallen into disuse and the daughters of plain folk, like those of the wealthy, are only interested in meretricious theatrical doings and the insanitary indulgences of the ball-room. Intemperate dancing by adolescent girls is more to blame for genital disturbances than any one other cause. The homely dances which began and ended early have been supplanted by those which do not commence until after the hour when the young girl should be asleep in bed, and continue until daylight, the jaded creature having to overcome her exhaustion by stimulation with beef tea, strong coffee, champagne, or the latest maintainer of energy, kola. It requires no profound knowledge of female anatomy and physiology to realize that an immature menstruating girl can not sit up until midnight and then undergo the physical exertion of a ball-room belle for hours on successive nights without establishing a train of symptoms indicating serious impairment of her normal

sexual development, especially when that girl super-adds a vicious style of dress, which aims to diminish the diameter of her waist beyond the possibility of the contained organs remaining in situ. Though mothers and daughters do not heed, is the family adviser any the less derelict, who does not show them how pressure upon the mammae results in their atrophy and unfits them for their prime purpose and how displacement of the pelvic viscera induces painful strains, which are so common that the XXth century woman without a backache ought to be the envied of her sex. The normal function of the sexual period has come to be so abhorrent, that the interference of the menstrual recurrence with prospective gaieties only incenses the pleasure-seeker who attempts to retard or prevent it at any hazard. Whether lack of the development of the erotic sites of the female sexual apparatus is a progressive degenerative incident due to these and other concurrent causes and is a primary reason for the avoidance of conjugal duties, the fact is that such a condition is becoming a frequent topic in medical discussions. Inquirers as to the causes of prostitutions agree that sensual gratification is an inconsiderable factor in the recruitment of the class of public women. The love of dress, thirst for excitement, acquiescence for the sake of the professing lover, evil example, curiosity, poverty, unwillingness to work, all these have their victims, and ruin hundreds where the mere gratification of passion allures individuals. Sociologists may look for the explanation of the frequency of divorces in the dissatisfaction of husbands, who find themselves bound to women to whom sexual relations are repugnant, whose horror of maternity is overpowering, and whose unwelcome offspring are denied their natural sustenance through maternal incapacity or selfish disinclination. The surviving daughter is sure to be trained in her mother's violation of all the laws of female hygiene and to become in turn even more indisposed and less fitted for maternity.

The remedy for the unnatural aversion to motherhood, whatever its cause, while within the province of the medical adviser, is not to be found in aphrodisiac medication. "Give him bromid; don't dose me with damiana," significantly protested a wife in whom an injudicious physician was trying to arouse the sleeping venery. The removal of physical impediments, such as preputial adhesions, must be supplemented by instruction as to conjugal duties and responsibilities and by reform in social customs, which latter, however, it is perhaps idle to expect in this generation.

THE JOURNAL SPECIAL.

Take the JOURNAL special train for Atlanta. Stop over tickets allowed, on return trip, at Chattanooga and other points. Leaves Chicago, Sunday, May 3, 12 M.; Big Four Route, Illinois Central Station.

EXCRETORY MATTER IN EXPIRED AIR.

An interesting series of observations is being carried on under the direction of PROFESSOR ATWATER of the Wesleyan University at Middletown, Conn., on the respiratory excretion and the animal heat in the human subject. PROFESSOR ATWATER and a colleague have for several years been perfecting the apparatus and have now probably as perfect a respiration calorimeter as is possible at the present time, and have, moreover, found among their associates intelligent and willing subjects for experiment; one of them, PROFESSOR TOWER, of the Wesleyan University, having already served for one series of observations covering five days, and a colleague, MR. A. W. SMITH, for a still longer series. This is a kind of physiologic experimentation to which not everyone would be willing to submit, and yet one that can not be objected to by any anti-vivisectionist.

The earlier experiments of PETTENKOFER with this method of determining the respiratory products were necessarily imperfect and his results as regards the measurement of the heat given off still more so, and at best only coarse approximations to the facts. By enlisting in the experiments the intelligence of the subjects and securing an especially high grade of this requisite the value of the investigation ought to be materially augmented, and altogether the conditions in these experiments appear to be particularly favorable for the attainment of valuable results. Their theoretical importance in elucidating the questions of physiologic conservation of energy is very great, but more interest will probably be generally taken in their practical applications in demonstrating the value of different diets as favoring work in general or in employment of various kinds. In this way they can throw light on many economic problems and be of direct service to the world.

PROFESSOR TOWER has published an account of his five days' seclusion in the calorimeter chamber, which is of interest as showing the easy practicability of such experiments. When the results are fully worked out and given to the world one can better judge as to their success and value, which last can hardly fail to be considerable. With the continuation of the observations it is to be hoped that many important questions will be solved, and that the more or less imperfect data obtained from PETTENKOFER's observations which have been so long one of the chief sources of our information on this subject, will be very extensively and adequately supplemented.

CORRESPONDENCE.

"A Question of Priority in the Abortive Treatment of Typhoid Fever."

To the Editor:—"La politesse ne coûte rien." In the issue of the JOURNAL of March 21, 1896, under the caption "A Question of Priority in the Abortive Treatment of Typhoid

Fever," there appears over the signature of Arthur J. Hall, a remarkable criticism of the paper on typhoid fever which I read before the Mississippi Valley Medical Association at Hot Springs, Ark., on Nov. 21, 1894. From this critique I make the following quotations: "Dr. Woodbridge expounded his so-called abortive treatment of typhoid fever, giving three polypharmic formulæ, with instructions for their use, and claimed he had had twelve years' experience with this treatment. The formulæ contain guaiacol carbonate to the extent of 33 $\frac{1}{3}$ per cent. This claim of twelve years' experience with guaiacol carbonate is at variance with a statement of the manufacturers of the drug." Now it is not true that I did in this paper or in any other written or oral communication, claim to have had twelve years' experience with any one drug or any single combination of remedies. On the contrary, I have on several occasions denied having been guilty of any routinism in the treatment of typhoid fever, until forced to it by the necessity of simplifying (that it might be published in an intelligible form) the somewhat complex course of medication which constitutes my method of managing the disease, and later by the results which I have invariably obtained from the use of the tablets and soft capsules which are prepared for me by Messrs. Parke, Davis & Co.

Moreover, I have outlined in several of my articles the whole series of investigations in the fruitful field of the application of antiseptic medicine to the cure of diseases, which finally culminated in a choice (for the abortive treatment of typhoid fever) of the three formulæ mentioned.

If Dr. Hall will turn to page 210 of my book, "Typhoid Fever and its Abortive Treatment," he will find this explanation: "The narration of my failures and partial successes with all of the various agents from turpentine and the sulphites to iodine, which were one after another used and abandoned, would be a waste of time and space and would, I fear, exhaust the reader's and hearer's patience, although it might save future explorers the trouble of testing unreliable antiseptics. The only one of these earlier remedies which I still occasionally use is turpentine. Creasote has been displaced by its active principle, guaiacol, and that by the more potent and non-toxic guaiacol carbonate."

Thus the evolution was a natural one from creasote to guaiacol absolute and from guaiacol absolute to guaiacol carbonate: just as eucalyptol was suggested to my mind by the use and beneficial effects of turpentine.

If Dr. Hall had taken the trouble to inform himself he would have learned that the whole subject has been discussed until it has become so trite that there is nothing new to say upon it, and if he will give the matter that careful consideration which its importance merits, he will discover that something more than the "excellent results" which he has observed from the "so-called Woodbridge treatment" may be expected if it is intelligently applied, and that the "amelioration of symptoms" which may be obtained alike from carbonate of guaiacol and many other intestinal antiseptics does not constitute all of the results of the "abortive treatment" for typhoid fever, "the claims" of which are "well-founded."

The article closes with: "Dr. Woodbridge may be entitled to credit for introducing the drug to the profession in the United States, but I believe it would have redounded more to his credit had he told us to begin with that he imbibed his inspiration from the experiments of Dr. Hoelscher, of Mühlheim on the Rhine."

I regret having left anything unsaid or unwritten which could have "redounded to his (my) credit," but I had advised an abortive treatment for typhoid fever more than ten years before Dr. Hoelscher published or made his experiments, and had used carbonate of guaiacol long before I ever heard of Dr. Hoelscher and long before Messrs. Schering and Glatz (in 1894) issued the little advertising circular from which it appears that

Dr. Hall extracts the learned quotation which he evidently wishes us to accept as coming from the *Allgemeine Medicinische Central-Zeitung*.

For comparison I reproduce Dr. Arthur J. Hall's quotation and beside it the original, which the advertisers do not mark as a quotation.

FROM DR. ARTHUR J. HALL'S
LETTER.

In the *Allgemeine Medicinische Central-Zeitung*, 1893, Nos. 45 and 46, Dr. Fritz Hölscher gives an interesting account of his experiences with guaiacol carbonate as an intestinal antiseptic, more especially in typhoid fever.

I am at a loss to understand by what peculiar process of cerebration Dr. Hall creates evidence that Dr. F. von Heyden's successors at Radebeul, Germany, had never heard of my having treated typhoid fever with guaiacol carbonate because Messrs. Schering and Glatz of New York have mentioned the fact that Dr. Hoelscher had done so, and while I have no means of knowing that Dr. Heyden's successors had then or have yet heard of me, I protest against Dr. Hall making public declaration to the contrary unless he has some better source of information than an advertising circular issued by a New York drug house.

I protest, too, against Dr. Hall taking it upon himself to fix so high a standard of morality for me, while he has himself garbled my language, misstated my claims, and accused me of an offense of which I am *not*, and he *is*, guilty.

Can it be that he is endeavoring to pose as a reader of a standard German medical periodical which he seems not to have seen? Does he wish to palm off a quotation from a little advertising circular of an American drug house, as coming from a German publication of recognized standing, without giving the credit which is justly due the advertiser, while criticising me for failing to mention the partial success of Hoelscher in the treatment of typhoid fever, which I had so completely mastered so many years before?

I am, etc., JOHN ELIOT WOODBRIDGE, M.D.

A Wisconsin Diploma Mill.

SEATTLE, WASH., April 10, 1896.

To the Editor: Knowing that the JOURNAL as well as its many readers will give its help to discourage frauds in the profession, and especially in regard to "Bogus and Cheap (so-called) Medical Schools and Colleges," I therefore send you the following "interesting" correspondence:

A few weeks ago my attention was attracted to the following advertisement which appeared in the *Pharmaceutical Era* bearing the date of March 12, 1896:

"WANTED Pharmacists who desire legally to append M.D. to their name. Address Medico, 1809 Fond du Lac Ave., Milwaukee, Wis."

I at once wrote to the "Medicus" and in due time received the stock printed letter marked I. This last letter I also answered stating that I was very desirous to practice in the interior and for him to forward the questions. In due time letter marked II came to hand and the questions to be answered. With these I also enclose marked III.

Is it possible that the Wisconsin legislature granted a charter to such an institution? Can it be possible that a city has such an array of eminent medical men as she contains to day, will permit such an *ulcer* to live and thrive in their midst? Can not something be done to prevent the traffic of medical diploma vending? There is no telling how many of these bogus sheepskins have been sold. Medical men of repute and standing should by all honorable means stamp this Hydra out of existence.

FROM SCHERING & GLATZ'S
ADVERTISEMENT.

In the *Allgemeine Medicinische Central-Zeitung*, 1893, Nos. 45 and 46, Dr. Fritz Hölscher gives an interesting account of his experiences with guaiacol carbonate as an intestinal antiseptic, especially in typhoid fever.

Medical examiners on boards of health should carefully scrutinize each and every diploma that comes under their observation, that it should not read emanating from this "institution." It is, too, very deplorable that such a well known and worthy journal as the *Pharmaceutical Era* should lend its columns to such an enterprise.

The so-called president, directors, secretary and treasurer are all "M.D.'s" and yet I can not find any of these names among the thousand medical men in the Medical Directory of the United States.

Trusting you will give this such publicity as your wisdom may think worthy, I remain

Very respectfully, EMIL BORIES, M.D.

I.

WISCONSIN ECLECTIC MEDICAL COLLEGE,
1809 Fond du Lac Avenue,
MILWAUKEE, WIS., March 24, 1896.

MR. EMIL BORIES, Seattle, Wash.

Dear Sir:—Replying to your letter of application of March 19, for particulars of our College, we have pleasure in forwarding with this our latest prospectus, which if you will carefully go over, will explain to you our mode of working. And after reading, if you will submit to us, fully and confidentially any doubts or seeming difficulties which may have suggested themselves; will on our part to do all we can to give (in extenso), thoroughly satisfactory replies and explanations.

Further, it would be of great benefit if in your reply, you would give us some idea of what medical knowledge or experience you have. This knowledge will enable us the better to advise you how to act, so as to obtain the desired M.D. degree. The obtaining of a medical diploma is a very great event in any person's life, as the legal append of M.D. gives to its holder an authority, and a certain position which can not be obtained in any other way. It raises the individual in the social scale no matter who he, or she may be.

We would ask your attention to the fact that we have this week made very large reduction in our fees which ought to bring them within the reach of all who are qualified. The fees which are inclusive of charges of every kind are reduced to \$35.

We shall be glad to, and indeed expect to hear further from you, and to answer any or all questions you may desire to submit.

We are yours very sincerely,
WISCONSIN ECLECTIC MEDICAL COLLEGE,
FRED RUTLAND, M.D., President.

II.

WISCONSIN ECLECTIC MEDICAL COLLEGE,
1809 Fond du Lac Avenue,
MILWAUKEE, WIS., April 3, 1896.

MR. EMIL BORIES, Pharmacist, Seattle, Wash.

Dear Sir:—Yours of the 29th received with thanks. I enclose with this our examination blanks. The instructions are very simple, make your answers by number and also make your answers as brief as is consistent with making yourself clearly understood. Then, when through take your answers to a Notary Public and make a declaration in his presence that, they are your own unaided work. Send your answers to us and if found to be 75 per cent. correct, we can legally confer the degree and issue diploma.

Yours very respectfully,
FRED RUTLAND, M.D., President.

III.

EXAMINATION BLANK.

1. State your name in full, age and nationality.
2. Have you ever studied medicine in any medical school or college— if so, for how long.
3. Or under a preceptor or physician.
4. Or in private studies.
5. Have you ever practiced medicine either as a profession or otherwise. For how long.
6. What school of medicine do you prefer.
7. What do you understand by the term an element.
8. Define a chemical change.
9. Define the term Decomposition.
10. Define the term *Materia Medica*.
11. Define the term Therapeutics.
12. Define the term Pharmacy.
13. Define the term Toxicology.
14. Define the term Obstetrics.
15. Name say thirty or more remedies which you consider in the front rank as being of most service to man.

16. What is the office and use of the Brain in the human anatomy and to what diseases is it most liable?
 17. Same of the Lungs.
 18. Same of the Heart.
 19. Same of the Liver.
 20. Same of the Spleen.
 21. Same of the Kidneys.
 22. Same of the Intestines.
 23. Give an outline of how the bony frame work of the body is built up and name some of the more important bones.
 24. Same of the Arterial and Venous system.
 25. Same of the Nervous system.
 26. Outline your treatment of Bronchitis, Cancer, Consumption, Diphtheria, Erysipelas, Fever (scarlet), Measles, and any other troubles you have particularly studied or treated successfully.
 27. What treatment would you give a case of poisoning by Belladonna, Digitalis, Chloroform, Carbolic acid, Nitric acid and Nit Silver.
 28. What is a Tonic Medicine?
 29. What is an Alternative?
 30. What is an Antipyretic?
 31. What is a Cathartic? Name two or more of each of these classes.
 32. What is the first stage of labor? What is the second stage of labor? What is the third stage of labor?
 33. How would you reduce a dislocation of the elbow joint?
 34. How would you reduce a dislocation of the hip?
 35. What is the essential difference between sterility and impotence?
 36. Do you consider it good practice to administer as a regular thing such a class of medicines to a sick person which would under ordinary circumstances make a healthy person sick?
 37. Give your ideas of what characteristics a physician should have to make him or her successful.
- Please return this list with your reply papers.

Dr. Reuben D. Mussey.

LEXINGTON, KY., April 20, 1896.

To the Editor:—My attention was called to your very interesting and able address contained in the JOURNAL of April 4 several days after I had written you acknowledging the receipt of a number of copies of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. I was a student under Dr. R. D. Mussey when he was a professor of surgery in Miami Medical College in 1856 and 1857, and he was my first teacher in surgery. He used to exhibit the specimen of the neck of fractured femur with bony union within the capsular ligament, the same that he took to Europe with him and showed to Sir Astley Cooper. Our class was always of the impression that he was the first to call attention to the fact, and I believe he so stated in his lectures. I saw in the last JOURNAL that Dr. Edward J. Brown advises that this honor belongs to Dr. Phineas Spalding, of Haverhill, New Hampshire.

If so, Dr. Mussey was never aware of the fact, and he was accorded the honor generally by surgeons of America. I was delighted to read your address on the biography of a great and Christian surgeon. I remember vividly his counterblast on tobacco and lectures on intemperance, and to which he would often refer in his lectures. With kind regards,

I remain yours, etc., F. M. GREEN, M.D.

The Oldest Alumnus.

CONCORD, N. H. April, 13, 1896.

To the Editor:—The JOURNAL of April 11, p. 748, says: "Death of the oldest Alumnus of Jefferson Medical College." Now while that is true, yet I would call your attention to the fact that the AMERICAN MEDICAL ASSOCIATION has a member in Newport, N. H., who was 86 years old February 17, and therefore from February to September older than Dr. Gemmell, but as he did not graduate at the Jefferson Medical College until 1836, he has not the distinction of being the oldest alumnus.

Dr. John L. Swett was born in Clairmont, N. H., February

17, 1810. Graduated from Jefferson Medical College, in 1836, and located in Newport, N. H., the same year. He has done a good business and commands the universal respect of the profession and the public.

Yours truly,

G. P. CONN, M.D.

"The American Medical Association."

TECUMSEH, MICH., April 20, 1896.

To the Editor:—"The AMERICAN MEDICAL ASSOCIATION—what is it?" A "Correspondent" asks the *Record* the above inquiry (see p. 843). It would be a difficult matter to state whether or not the above paragraph emanated from the brain of the editor of the *Medical Record* or the printer's devil; it is unworthy of the former and scarcely worthy of the latter. Permit me to state for the benefit of the *Medical Record* that the AMERICAN MEDICAL ASSOCIATION is the only association that represents the medical profession in this country; that it is large enough to hold the brainy editor of the *Record*, and that it is even worthy of every "effort that he may make to get there"; that it possesses the best medical journal in America, and its editor knows how to run it. Very respectfully,

J. F. JENKINS, M.D.

ASSOCIATION NEWS.

Rush Monument Committee.

In consequence of the tardy returns from the members of the AMERICAN MEDICAL ASSOCIATION, who were constituted members of the Rush Monument Committee, returns of the several collections they have made will be received by the Secretary, Dr. George H. Rohc, Catonsville, Md., until Thursday, April 30, by which time it is earnestly hoped the pledges made at the Baltimore meeting will be redeemed. It must be remembered that these obligations were voluntarily assumed and without a dissentient voice. It is expected, therefore, that the returns to be reported at the coming annual meeting will be proportionate to the enthusiasm with which the present plan of obtaining contributions was adopted.

ALBERT L. GIBON, M.D., Chairman.

8 West 127th Street, New York City.

Section on Neurology and Medical Jurisprudence.

The following subjects will be discussed and papers presented:

THE ETIOLOGY OF INSANITY.

1. Discussion opened by W. F. DREWRY, Petersburg, Va.
2. Paper by SMITH BAKER, Ithaca, N. Y.
3. Intoxication and Insanity, J. T. SEARCY, Tuscaloosa, Ala.
4. Remarks by FREDERICK PETERSON, New York City.
5. Inebriety in the Etiology of Insanity, J. N. QUINBY, Jersey City, N. J.
6. Duestro Case and Its Bearing on Alcoholism Epilepsy and Paranoia, LUDWIG BREMER, St. Louis, Mo.
7. Insanity in Children, E. D. FERGUSON, Troy, N. Y.

EXPERT MEDICAL TESTIMONY IN DISPUTED MENTAL CASES.

8. Discussion opened by CHAS. H. HUGHES, St. Louis, Mo.
9. Paper by L. HARRISON METTLER, Chicago, Ill.
10. Medical Aspect of Crime, JNO. C. LE GRAND, Anniston, Ala.
11. Necessity of Reform in Medical Expert Testimony, DANIEL R. BROWER, Chicago, Ill.
12. Paper by SAMUEL AYERS, Pittsburgh, Pa.
13. Remarks by J. J. M. ANGEAR, Chicago, Ill.
14. Proposed Regulation of Medical Expert Testimony, A. WALTER SCITER, Herkimer, N. Y.
15. Remarks by FREDERICK PETERSON, New York City.
16. Expert Testimony in Disputed Cases of Inebriety, T. D. CROTHERS, Hartford, Conn.
17. Remarks by HAROLD N. MOYER, Chicago, Ill.

MEDICAL ASPECTS OF CRIME.

18. Discussion opened by DANIEL R. BROWER, Chicago, Ill.
- Topic: Some of the Physical and Psychical Peculiarities of the Habitual Criminal.

19. Physical Criminology or Symptoms of Crime. ARTHUR McDONALD, Washington, D. C.
20. Paper by THOMAS D. COLEMAN, Augusta, Ga.
21. The Physiology and Psychology of the Congenital Criminal. JAMES WEIR, Owensboro, Ky.
22. Medical Aspects of Crime in Relation to Insanity and States of Mental Enfeeblement. H. E. ALLISON, Mattewan, N. Y.
23. Medical Theories of Crime. W. O'DANIEL, Bullards, Ga.
24. Crimes Prevention in the Large Cities. G. W. INGRAHAM, Binghamton, N. Y.
25. Paper by ALBERT C. CORR, Corlinville, Ill.
26. The Physician and Criminal. J. B. RANSOM, Dannemora, N. Y.

OTHER PAPERS.

27. Medical and Surgical Treatment of Epilepsy, FREDERICK PETERSON, New York City.
28. Modern Methods of Treating Epilepsy. W. X. SUDDUTH, Chicago, Ill.
29. Inhibition as a Function of the Nerve Cell, WM. B. HALL, Sewanee, Tenn.
30. Feigned Insanity: Report of cases, W. F. DREWRY, Petersburg, Va.
31. Criteria of Mental Aberrations, Chas. H. Hughes, St. Louis, Mo.
32. A Study of the Condition of Delirium in its Relation to Insanity. H. A. TOMLINSON, St. Peters, Minn.
33. Man's Brain and Mind: The Former Sometimes Insane, the Latter Never. G. W. DRAKE, Chattanooga, Tenn.
34. Drugs in Insanity, WM. S. WATSON, Fishkill-on-the-Hudson, N. Y.
35. The Pathology of Degenerative Habits. H. S. DRAYTON, New York City.
36. Neurotic Origin of Pulmonary Consumption, THOMAS J. MAYS, Philadelphia, Pa.
37. Angeioneurotic Edema, L. HARRISON METTLER, Chicago, Ill.
38. Etiology and Prophylaxis of Functional Nervous Diseases. JOHN PUNTON, Kansas City, Mo.
39. Some Observations on Paralysis Agitans. W. J. HERDMAN, Ann Arbor, Mich.
40. Electro-diagnosis Simplified, S. V. CLEVINGER, Chicago, Ill.
41. Franklinization as a Therapeutic Measure in Neurasthenia. MARGARET A. CLEAVES, New York City.
42. Hernia from a Medico-legal Standpoint. H. O. MARCY, Boston, Mass.
43. Some Medico-legal Questions in Surgical Operations, W. H. MANLEY, New York City.
44. The Medico-legal Significance of the Sciagraph, HAROLD N. MOYER, Chicago, Ill.
45. Psycho-neurosis following Anesthesia and Surgical Operations. HUGH HUGAN, Atlanta, Ga.
46. Functions of the Cerebellum and Some Suggestions as to Technique in Intracranial Operations, THOMAS D. COLEMAN, Augusta, Ga.
47. Diablosia or Blindfold Vision, with an Illustrative case, H. A. MOODY, Mobile, Ala.
48. Alcoholic Multiple Neuritis, THEODORE DILLER, Pittsburgh, Pa.
49. The Degeneracy of the Teeth and Gums, E. S. TALBOT, Chicago, Ill.
50. An Observation Relative to Localization in extradural Hemorrhage, E. D. FERGUSON, Troy, N. Y.
51. Electricity and Light as Therapeutic Agents. W. S. WATSON, Fishkill-on-the Hudson, N. Y.

W. J. HERDMAN, Secretary.

Section on Materia Medica, Pharmacy and Therapeutics.

TUESDAY, MAY 5 AFTERNOON SESSION.

1. Address of Chairman The Practice of Pharmacy as a Liberal Profession, F. E. STEWART, Detroit, Mich.
2. How Much Pharmacy should be Taught in Medical Colleges? G. WALTER BARR, Keokuk, Iowa.
3. The Teaching of Materia Medica and Therapeutics in Our Colleges, DANIEL R. BROWER, Chicago, Ill.
4. Methods of Education in the Departments of Materia Medica and Therapeutics, H. W. ROGERS, Cleveland, Ohio.

Discussion: Opened by WARREN B. HILL, Milwaukee, Wis.

WEDNESDAY, MAY 6 MORNING SESSION.

5. Serum Therapy,
 - (a) Principles of Serum Therapy. Contribution from the Harvard Laboratory, HAROLD C. ERNST, Boston, Mass.
 - (b) Theory of Serum Therapy. Contribution from the Bacteriologic Laboratory of the City of Philadelphia, B. MEAD BOLTON, Philadelphia, Pa.

- (c) The Antitoxins, What They Are and How They are Prepared. Contribution from the Bacteriologic Laboratory of the University of Pennsylvania.

JOSEPH MCFARLAND, Philadelphia, Pa.

- (d) Serum Therapy in Diphtheria, EDWIN ROSENTHAL, Philadelphia, Pa.

- (e) Antitoxin in Tetanus. Contribution from the Pepper Laboratory of Clinical Medicine.

S. S. KNEASS, Philadelphia, Pa.

WEDNESDAY, MAY 6—AFTERNOON SESSION.

6. Serum Therapy—Continued.

- (f) Tubercle Antitoxin, or Antituberculin,

PAUL PAQUIN, St. Louis, Mo.

- (g) Protonuclein.

Discussion opened by GEO. L. STERNBERG, Washington, D. C.

THURSDAY, MAY 7—MORNING SESSION.

7. Suggestive Therapeutics.

- (a) Attention, a Factor in Therapeutics,

G. V. I. BROWN, Duluth, Minn.

- (b) The True and Tenable Ground of Suggestive Therapeutics, J. B. TAYLOR, Bloomington, Ill.

- (c) Practical Uses of Suggestive Therapeutics,

WILLIAM LEE HOWARD, Baltimore, Md.

Discussion.

THURSDAY, MAY 7—AFTERNOON SESSION.

8. Emergency and Stimulating Rations,

CHARLES E. WOODRUFF, Fort Sheridan, Ill.

9. Prescription Writing and Pharmacy, as Practiced in Our Large Hospitals and Dispensaries,

HENRY R. SLACK, La Grange, Ga.

10. Proprietary Medicines, O. D. BENSON, Des Moines, Iowa.

FRIDAY, MAY 8—MORNING SESSION.

11. A New and Improved Hypodermatic Case,

ELMER LEE, Chicago, Ill.

12. Guaiacol Carbonate.

V. W. GAYLE, Kansas City, Mo.

13. Discussion of the United States Pharmacopeia.

14. Report of Committee on Chairman's Address.

SOCIETY NEWS.

Mitchell District Medical Society. The 49th semi-annual meeting of this Society will be held at Shelbyville, Ind., June 29 and 30, 1896. An elaborate program is being arranged containing papers by some of the most eminent men in the profession. The Shelby County Medical Society which has more than a State reputation as entertainers, is preparing to entertain the Society handsomely. The program will be issued about June 15.

The Ohio State Pediatric Society will hold its annual meeting at Columbus on Wednesday, May 27. Those who have papers to present should at once communicate with the Secretary, Dr. Geo. M. Clouse, of Columbus, giving title of paper. The other officers of the Society are: President, Dr. S. W. Kelley, Cleveland; Vice-President Dr. J. P. West, and Chairman of Council, Dr. J. M. Dunham, of Columbus. Any regular physician who is particularly interested in pediatrics and a worker therein is eligible to become a member of this young and growing Society. Drones not wanted.

Illinois State Medical Society. The citizens of Ottawa, Ill., will be pleased to entertain at their homes all those who may attend the meeting of the Illinois State Medical Society, May 19, 20 and 21. In order to avoid confusion it will be necessary for those who wish to avail themselves of this offer to notify Dr. J. R. Hoffman, Secretary of the Committee of Arrangements. It will be impracticable for us to provide entertainment for those who do not notify us in advance of the meeting.

COMMITTEE OF ARRANGEMENTS.

Next Meeting of the Association. To the Editor:—At a meeting of Philadelphia County Medical Society held April 15, a committee was appointed to urge the members of the AMERICAN MEDICAL ASSOCIATION to favor the holding of a semi-centennial celebration of its organization. The Society also instructed its delegates to invite the ASSOCIATION to hold the

meeting of 1897, which will be the semi-centennial, in the city of Philadelphia. Will you kindly give in the *JOURNAL* publicity to this announcement and advocate editorially the acceptance of the invitation to Philadelphia.

Yours very truly,

JOHN B. ROBERTS,
JAMES C. WILSON,
WILLIAM M. WELCH,
Committee.

Philadelphia, April 17, 1896.

The Medical Society of the State of Pennsylvania will hold its forty-sixth annual meeting at Harrisburg, Pa., May 19 to 21, inclusive. The large number of papers and names of the writers assure a very "useful" meeting; the members will be well rewarded for their attendance. The Hall for the Exhibits is one of the finest in the city, a new building well lighted and with plenty of space for exhibitors. The exhibit will be confined to pharmaceutical articles recognized by the United States Pharmacopeia. It is the first of the kind held by any State medical society; perhaps we may say, by any medical society in the country. While these things of profit have been provided, those of pleasure have not been forgotten: receptions have been provided for so that the medical man and his wife can meet the citizens of the capital city of Pennsylvania. This will be the fourth time that the State Society has visited Harrisburg and some of the Committee of Arrangements have been on all four committees. No matter how many come, we can accommodate all.

Medical Association of Missouri.—Announcement. The Thirty-ninth Annual Meeting of the Medical Association of Missouri, will be held at the Court House in Sedalia, Mo., on Tuesday, Wednesday and Thursday, May 19, 20 and 21, 1896, convening at 10 o'clock, A.M., on Tuesday, the 19th. Sedalia is easily accessible from every section of the State, and we expect the largest attendance ever had by the Association. You are cordially invited to attend. We take pleasure in advising you that a rate of a fare and one-third for the round trip, upon the certificate plan from points in Missouri, has been granted to delegates; provided that not less than 100 tickets shall be certified to by the secretary. Take a certificate from the ticket agent when you buy your ticket, and if you travel over more than one road take a certificate for each ticket purchased. Present your certificate to the secretary as soon as you arrive. Do not purchase your ticket earlier than three days prior to the opening day of the meeting. The following roads have agreed to give the one and one-third fare on round trip tickets, viz: All roads belonging to the Western Passenger Association whose lines extend into Missouri; also the M. K. & T. Railway; and the Kansas City, Fort Scott and Memphis Railway, south of and via Clinton; Sedalia, Warsaw & Southern. The leading hotels will give reduced rates.

President, C. Lester Hall, M.D., Kansas City, Mo.: Secretary, Frank R. Fry, M.D., St. Louis, Mo.

W. A. Evans, E. F. Yancey, A. F. Dresel, Committee of Arrangements.

Sedalia, Mo., April 17, 1896.

National Confederation of State Medical Examining and Licensing Board.—The sixth Annual meeting of this organization will be held in Room No. 1, Hotel Aragon, Atlanta, Ga. (which offers reduced rates), Monday, May 4, 1896, at 10 o'clock A. M. The following program will be carried out, namely:

1. Introductory Remarks by the Vice-President.
2. Report of Committee on revision of the Constitution and By-Laws.
3. Discussion and action thereon.
4. Report of the Secretary.
5. Annual Address of the President.
6. Address by James Russell Parsons, Jr., Esq., Albany, Director of Examinations, University of the State of New York: Preliminary Education, Training and Practice in New York.
7. Paper—The Limitations of the Standard of Modern

Educational Requirements, as Determined by State Medical Examining Boards, by Joseph M. Mathews, M.D., Louisville, Ky.

8. Paper—(Subject to be announced), by William S. Foster, M.D., Pittsburg, Pa.

9. Some obstacles to an Inter-State recognition of a State License to practice Medicine, with suggestions for their removal, by Charles McIntire, M.D., Easton, Pa.

10. Miscellaneous Business.

11. Election of Officers.

The objects of the Confederation, though purely of an advisory nature, are to discuss questions that pertain to State licensure in medicine, with a view to a comparison and improvement of methods, a collection and dissemination of information on the subject, and to consider any and all propositions that have for their purpose the advancement of the standard of medical education in the United States. The officers of the Confederation, therefore, beg to extend a cordial invitation to members of State Examining Boards, and all ex-members of State Boards, and especially to every physician and educator who is friendly to the objects sought, to attend the meeting and participate in the proceedings.

Please indicate by a note to the Secretary whether you will attend.

By order of the Executive Council.

B. M. GRIFFITH, Secretary.

Springfield, Ill., April 1, 1896.

PUBLIC HEALTH.

Sale of Second-hand Clothing Not a Nuisance.—The supreme court of North Carolina declares, in the case of *State v. Taft*, Feb. 25, 1896, that the sale of second-hand clothing is not a nuisance in itself, but is, on the other hand, a lawful business. As a consequence, it holds that the commissioners of towns authorized to pass laws for abating or preventing nuisances of any kind, and for preserving the health of the citizens, can not pass an ordinance making it unlawful for any person to import into the town, for the purpose of selling or offering for sale, any second-hand clothing, cloth or bed furniture. But it does say that the town authorities would have the right to compel fumigation and disinfection of second-hand clothing, and that they might require proper assurances, before such articles were imported or offered for sale, that they have not been bought in or brought from markets or places where epidemics of contagious or infectious diseases were or had been recently prevailing, or they might prohibit the further sale of such stocks from which articles had been sold and had communicated disease. In the case of *Rosenbaum v. City of Newbern*, decided March 10, 1896, the same court holds valid a city ordinance which imposes a fine of \$50 for selling or offering for sale second-hand clothing without having it disinfected by fumigation, and by paying a price fixed according to the nature of the garment, as set forth in the ordinance, for the city authorities to do the fumigating. Here the court says that the right to buy or sell such articles is not an absolute one, but may be subjected to such restrictions, by the lawmaking power intrusted with the authority, as may be necessary to make its exercise consistent with the safety and security of others.

Possible Co-existence of Smallpox and Cowpox.—Dr. S. L. Abbott, of the Massachusetts State Board of Health, has had a singular case, which, as given in the *Boston Medical and Surgical Journal*, for March 19, tends to confirm the generally accepted theory of the non-identity of variola and vaccinia: "I was summoned one day to a young woman who was said to be a little indisposed, but on account of the appearance of a slight eruption it was thought expedient to call in a physician. I found her up and dressed, her symptoms not having been severe enough to keep her in bed at any time. All that I could see was a few, perhaps half a dozen, abortive pustules of varioloid. She did not feel at all sick. Its character was unmistakable, however. At the time there was a moderate epidemic of smallpox in the city, kept under control by general vaccination.

The patient had been vaccinated in childhood, which accounts for the mildness of her attack. In the same room with her was a nursing infant, six months old, which had not been vaccinated, and which I vaccinated at once. The vesicles of vaccinia developed normally, and were of such a perfect type that on the eighth day I took virus from the arm and vaccinated two interesting little girls about five and seven years old who had never been vaccinated before, the only children of a poor widow. The following day, on visiting the infant from whom I had taken the vaccine matter I was horrified to find a commencing eruption of smallpox. This developed rapidly, became very full and finally confluent—the pustules about the mature vaccine vesicles crowding upon them and entirely overwhelming them, so that they did not dry up in the usual way, but lost their individuality in the surrounding confluent eruption—and the child died in a few days. It can well be imagined that the succeeding week was not a very comfortable one for the vaccinator, who, however, succeeded in keeping his own counsel and waited for events. The vaccine development, however, went on in the vaccinated children in normal fashion, *producing perfectly normal vesicles*. In fact, it was so effectual that one more vesicle appeared in addition to those directly produced by the punctures of the vaccine quills, and close to them. No constitutional disturbance occurred, and the vesicles dried up in the usual way. There was no evidence whatever of variolous infection. A little consideration shows that the first child was vaccinated at a very early stage of the variolous infection, the system not being very powerfully impressed by it at the time, so that the vaccine virus was able to overcome it locally, establishing, so to speak, little islands of pure vaccinia which went to complete development before variola appeared on any part of the body. It seems to me that this case is of special value at the present time, when the claim is being made that the bacillus of variola and vaccinia is the same, and lately, in Paris, that vaccinia is nothing but attenuated variola. With regard to the former claim, if the assertion is true, the question comes up: What is the significance then of the bacillus? If the second is true, how could it happen that an attenuated virus, when planted in a soil already preoccupied by the same virus, did not develop with it and add to the intensity of its development?"

Michigan State Board of Health. The regular meeting of the Michigan State Board of Health was held at Lansing, April 10, 1896. The meeting was called to order by the President Hon. Frank Wells of Lansing, and the following members were present: Prof. Delos Pall, Albion; Dr. Samuel G. Milner, Grand Rapids; Dr. George H. Granger, Bay City; Judge Aaron V. McAlvay, Manistee, and Secretary Henry B. Baker of Lansing. The regular business of auditing bills and accounts was transacted. The Board voted to direct the Secretary to request health officers from whom no annual reports had been received for the year 1895, to make such reports immediately, in accordance with State law, or proceedings would be commenced against such delinquent officers. Reports by Attorney Gen. Judge McAlvay and the Secretary of the Board, who read a letter from Health Officer Duffield, showed that the report of the health officer of Detroit was being made out and might be expected in a few days. One of the most important and interesting subjects which came to the attention of the Board was in connection with a communication from Gov. John T. Rich, which suggested that the State Board of Health communicate with the proper official at each State institution in Michigan, especially the several asylums for the insane, calling attention to the prevalence of consumption in animals and in man, the danger of this disease being spread from animals to man by means of the milk supply, and suggesting a plan whereby each institution could Pasteurize or in some way sterilize all the milk used. The Secretary mentioned that the subject of the Pasteurization of milk was being taught at the Agricultural Experiment Station, at Madison, Wis. If necessary, some person might be sent to this school for instruction, who could return and teach the subject in this State. He mentioned that Mr. Grosvenor is said to be Pasteurizing milk for sale in Monroe, Mich., and that a company in Northville has been thus preparing large quantities of milk for sale in Detroit. The Board directed the Secretary to send to the several State institutions communica-

tions which shall cover the Governor's suggestions for the sterilization of the milk supply for the inmates of State institutions. In connection with this subject the Secretary read an item relative to a farmer who lost two head of cattle from tuberculosis. Later the disease developed in the farmer's family, consisting of six members, all of whom, together with two attendants, have since died with consumption. The difficulties in the way of inducing the people generally to act on this subject are many, but the Board recognizes the fact that it is of very much greater importance that the milk supplies of cities and villages should be sterilized so as to be free from tuberculosis and typhoid fever germs, than it is to protect only the inmates of State institutions. The Board directed its Secretary to prepare for publication and general distribution a forcible statement of the facts and dangers from infected milk, and methods for the sterilization of the public and domestic milk supplies. The Secretary made a special report upon the distribution of the Board's leaflets and pamphlets relative to communicable diseases, to school teachers, county school commissioners, city school superintendents, and in a number of instances to pupils in high schools. This report showed that there are about 16,000 teachers in Michigan, and that about 20,000 sets of such publications had been sent out. This distribution of leaflets was in compliance with Act 146, laws of 1895, which requires the Board to supply data and statements bearing upon the modes of spreading and the best methods for the restriction and prevention of the dangerous communicable diseases, which subject is required to be taught in every public school in Michigan.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Michigan: Bay City, Ionia, Marine City, April 4 to 11, smallpox reported; Detroit, April 11 to 18, 1 case, 1 death.
Louisiana: New Orleans, April 4 to 11, 74 cases, 23 deaths.
Alabama: Mobile, April 5 to 12, 2 cases, 1 death.
Ohio: Dayton, April 9 to 16, 4 cases.
Kentucky: Paducah, April 7 to 14, 5 cases.

SMALLPOX—FOREIGN.

Dublin, March 28 to April 4, 1 death.
Alexandria, March 5 to 11, 1 death.
Amsterdam, March 28, to April 4, 1 case.
Cairo, March 5 to 11, 2 deaths.
Cardiff, March 28 to April 4, 1 case.
Cienfuegos, March 29 to April 5, 1 death.
Corunna, March 21 to April 4, 3 deaths.
Genoa, March 28 to April 4, 2 cases, 1 death.
Hamburg, March 28 to April 4, 3 cases.
London, Eng., March 21 to 28, 33 cases.
Odessa, March 21 to 28, 14 cases, 3 deaths.
Prague, March 21 to 28, 14 cases.
Santiago de Cuba, April 4 to 11, 2 deaths.
St. Petersburg, April 14 to 21, 17 cases, 4 deaths.
Tuxpan, March 21 to April 4, 2 deaths.
Warsaw, March 14 to 21, 1 death.

CHOLERA.

Alexandria, March 5 to 11, 2 deaths.
St. Petersburg, March 14 to 21, 1 case.

YELLOW FEVER.

Santiago de Cuba, April 4 to 11, 1 death.
Rio de Janeiro, March 7 to 14, 231 deaths.

NECROLOGY.

JAMES WEST ROOSEVELT, M.D., of New York city, died unexpectedly from pneumonia on April 10, aged 38 years. He was the son of the late S. Weir Roosevelt, a nephew of James A. Roosevelt and a cousin of Theodore Roosevelt, President of the Police Board. He was an alumnus of Columbia College medical department, of the class of 1880. A widow and three young children survive him. He was a member of the Academy of Medicine, the Medical Surgical Society, the Practitioners' Society, the Pathological Society, and was attending physician at Bellevue, Roosevelt and Seton Hospitals. He was a man of versatile ability, a graceful yet forcible writer, and a specialist in affections of the thoracic viscera.

MARIE PHILIBERT CONSTANT SAPPEY, M.D., of Paris is

deceased. *Science* thus speaks of him: "The anatomist, Dr. P. C. Sappey, died on March 14, at the age of 86. He was the author of important researches on the respiratory apparatus of birds, on the lymphatics and on other subjects, but is best known for his great work on 'Descriptive Anatomy,' which was begun in 1847 and completed in 1863." His second edition, revised throughout, was published from 1867 to 1872 in four volumes. He also wrote upon special subjects, such as the anatomy of the human urethra and the pathology of hepatic cirrhosis.

JAMES P. PARKER.—The editor of the *General Practitioner* announces the decease of Dr. James P. Parker, of St. Louis, who was editor and proprietor of the *Annals of Ophthalmology and Otology* since 1890. He was born forty-two years ago on a farm near Marshall, Ala., and after receiving such education as the county schools afforded, he began the study of pharmacy and received his degree in this branch of medicine in 1883. He then entered Jefferson Medical College and graduated with the degree of M.D. in 1886.

Dr. MARY E. OSBORN, died April 5 at the Jewish Hospital, Cincinnati, aged 40 years. She graduated at the Philadelphia Woman's College in 1883, and has filled several important positions of trust with conscientious fidelity, among which were the superintendency of the Aultman Hospital at Canton, Ohio; Preston Retreat, Philadelphia, etc. The cause of death was multilocular, gangrenous ovarian cyst. Dr. Osborn was one of the best educated and foremost of America's women practitioners.

JOHN F. MCKENZIE, M.D., of Leroy, Ill. (Louisville Medical College 1874), April 14. The McLean County Medical Society met and passed appropriate resolutions.—Alfred Miller, M.D., of New Ulm, Minn., at Berne, Switzerland, March 3. He was surgeon U. S. Vol., from 1861 to 1864, and stationed at Fort Ripley.—A. H. Williams, M.D., of Hendersonville, Tenn., shot from ambush while on his professional round of visits, April 11.—F. H. Conger, M.D., of Prairie du Sac, Wis. (College of Physicians and Surgeons, N. Y., 1872), April 7.—Thos. M. Hess, M.D., of Berwick, Ill. (Rush Medical College 1871), April 9, aged 77.—W. C. Tappan, M.D., of Baltimore, Md., April 10, aged 78.—S. L. Brown, M.D., of David City, Neb., April 11, aged 80.—W. K. Mattern, M.D., Coroner's Physician of Philadelphia, Pa. (Jefferson Medical College 1882), April 16.—Chester A. Hard, M.D., of Los Angeles, Cal. (Ind. Med. College 1845), April 18.

BOOK NOTICES.

History of the Life of D. Hayes Agnew, M.D., LL.D. By J. HOWE ADAMS, M.D. Philadelphia and London: The F. A. Davis Company, Publishers. 8vo, cl., pp. 376.

The Chicago office of the F. A. Davis Company are making a clearance sale, at a greatly reduced price, of the biography of this well-known Philadelphia surgeon. The volume contains the story of the life of Dr. Agnew, with that of the ancestral records of the Agnew family. The story of the early professional life of Dr. Agnew is full of suggestiveness and encouragement to those for whom life seems a bitter mockery and a failure generally. Lives of men who have distinguished themselves in any branch of professional learning are always interesting and instructive, but doubly so when the subject of the biography has such a brilliant career as the late Dr. Agnew.

The International Medical Annual and Practitioner's Index for 1896. Edited by a corps of thirty-seven department editors, European and American, specialists in their several departments. 728 octavo pages. Illustrated. \$2.75. E. B. Treat, Publisher, 5 Cooper Union, New York.

This fourteenth edition of the well-known year book has been carefully prepared, and brought quite up to date. It is doubtless one of the first of the annuals to have articles on "remedial cycling" and the new photography, each of which topics is managed with knowledge and ability.

MISCELLANY.

Mineral Springs.—There are 1,044 in France that have been exploited, and the number of visitors in 1894 was over six hundred thousand.

The 4th International Congress of Criminal Anthropology will be held at Geneva, Switzerland, August 24 to 29. All articles must be in French.

Rommelaere Institute.—The government of Belgium has just received a bequest from M. Renier, of \$400,000, to found a medical college to be called the Rommelaere Institute.

Female Medical Students.—Out of a total of 1,004 students in Switzerland 304 are women, and they rank high in their studies.

A New Means of Livelihood.—A Paris daily recently contained an advertisement for a person of fine and distinguished physique, to attend in the waiting room of a physician, in the capacity of a "cured patient."

Are Venereal Diseases a Cause for Divorce?—This question was discussed at a recent medico-scientific meeting at Bonn, and decided in the negative, but the Russian periodical, *Wratch*, asserts that the consequences are so serious that the marriage should be dissolved at once upon their appearance.

The Centennial of the Societe de Medecine at Paris, was celebrated March 22, with great élat. A century of labors for humanity and science is a grand record, and the AMERICAN MEDICAL ASSOCIATION, but half as old, will send its greetings and congratulations to this noble daughter of the Revolution.

New Method of Injecting Serum.—Recent experiments with rabbits have shown that if the antistreptococcus serum is injected all around a patch of erysipelas, the lesion is confined within it and heals rapidly. The quantity used was only $\frac{1}{4}$ c.c. The same quantity injected elsewhere had no effect.—*La Semaine Médicale*, April 1.

Chemical Warming Oven.—The *Therap. Woch.*, March 29, describes a new apparatus that holds vessels, cups, etc., filled inside with sodium acetate, which has the property of retaining its heat almost indefinitely when once heated. Boiling water set in the apparatus was found at 150 degrees three hours later. It is designed to keep food, etc., warm for invalids, infants, etc.

Medical Experts.—Some of the medical journals of France and Belgium are urging the formation of a medical corps, to serve as medical experts in court, with a special medical and legal training for this end, which requires knowledge and talents of a high order, and should be suitably dignified and remunerated. Germany has long had a court officer of this sort (Gerichtsarzt).

Pocket Full of Spoons.—A physician recently appeared at a meeting of his medical association in this condition. He stated that he had accumulated them at the houses of his patients and measured their capacity, which he found different in every case, ranging from two-thirds to three times the standard capacity. One teaspoon held exactly five times as much as another. He had brought them to serve as a warning to his colleagues in ordering their medicines.

The Sero-therapeutic Tuberculous Truce.—Bernheim has succeeded in arresting the progress of tuberculosis with forty to sixty inoculations of a serum he prepares from human Koch bacilli, injected for five or six months into animals. When this tuberculous truce, as he calls it, is secured, he sends the patient to some fresh air cure or sanitarium to maintain this improvement, and strengthen the reserve forces of the organism.—*Union Médicale*, March 28.

The Roentgen Ray as a Moral Agent.—The *Union Médicale*, March 28, reports the case of a young woman who applied for an operation on account of pains in her arm, as she was convinced

that there was some abnormal condition of the bone. The surgeon diagnosed the case as the effect of some slight traumatism on a hysterical subject, and by taking a photograph of the arm proved to her that it was perfect. Once convinced of this, the patient left entirely cured.

Causes of Migraine or Periodic Headache.—Dr. Marcus, of Pyrmont, announces the discovery that the periodic headaches he has suffered from for forty years are directly due to changes in the atmospheric pressure. He has watched the advent of his attacks and those of others, and finds them always coinciding with a variation in the pressure, which is not always accompanied by changes in weather, but is always confirmed next day by the official weather bulletin. It seems to depend on the rapid fluctuations of pressure, and therefore he asks physicians who reside in localities where the atmospheric pressure is more stable, to investigate the subject, and possibly discover some way in which chronic sufferers may find relief.—*Therapeutische Wochenschrift*, March 29.

High Class Journalism.—We clip the following from the *New York Medical Record*: "The AMERICAN MEDICAL ASSOCIATION—What is it? A correspondent asks for information as follows: I see that the AMERICAN MEDICAL ASSOCIATION will meet in Atlanta soon. Can you give me any data on the subject or refer to any one who can—how large a society is it, date and place of meeting? I am especially interested in Jenner and vaccination and I would like to present some matter to the society, if it is a large society and worthy of the effort."

The foregoing inquiry shows the state of imbecility to which a presumably healthy brain may come when its possessor depends for information solely on the poor old *Record*.

Defective Legislation as to the Supply of Anatomic Material.—The *General Practitioner* calls attention to the troubles that are liable to arise from "shy legislation" on behalf of a proper study of anatomy. "The Medical College of Des Moines, Iowa, which is the medical department of the Drake University, has recently become troubled over the manner in which it procured bodies for dissection. Corpses were recently shipped from Omaha to this college and several arrests followed. It seems that our western colleges are particularly unfortunate in this respect. The success of the present session of the Topeka Medical College, located at Topeka, Kas., has been almost destroyed through troubles of a similar character to that mentioned above. Some legitimate provision should be made looking to the procuring of dissecting material for all colleges and thus avoid the sensational exposures which have followed each other during the past winter."

Sun Sanitarium.—The *Semaine Médicale*, April 1, describes the Rikli sanitarium in the mountains near Trieste, where the patients are kept out of doors, and exposed to the sun, wind and rain, in complete nudity, the head alone protected. The location of the institution is very beautiful, elevated, and secluded, with high walls separating the different parts of the large park. Commenting on the alleged credulity of the Germans, the writer adds that a hypnotizer of some fame was recently summoned from Dresden to Berlin, to treat an officer, général de brigade, in a large hospital there, for acute myelitis, under the eyes of the superintendent, and in spite of his protests.

A Reckless Midwife Committed for Manslaughter.—According to the *Press and Circular*, a midwife has recently been committed for manslaughter at the coroner's court, Sheffield, Eng., for attending a case of labor after having been warned against doing so. She had previously attended a case where death took place from puerperal fever, and four days after this she attended the woman whose death, also from puerperal fever, became the subject of inquest.

Second Pan-American Medical Congress.—The *Escuela de Medicina*, Mexico, February 15, announces the appointment of the

committee having this important enterprise in charge: President, Dr. Carmona y Valle; Vice-President, Dr. Lavista; Secretary, Dr. Licéaga. The date has been fixed for the 16th, 17th, 18th and 19th of next November, with an inaugural, a closing and an extra day devoted to science. Spanish, English and French are the official languages. It is hoped that there will be a large representation of "medicos" from the United States and Canada, as well as from the entire western continent. Dr. Lavista is the editor of the new publication of the Museo Anatómico-Patológico, which has just been inaugurated by the President of the Republic with much ceremony, and owes its existence to Dr. Lavista's efforts. He is also president of the Academia de Medicina.

The Life Insurance Companies on Urinalysis.—According to the *Medical Examiner*, March, one of the large New York companies has arranged to have all microscopic examinations of the urine of applicants made by expert microscopists, who are appointed for this purpose in various parts of the country. It has been ascertained that microscopic examinations are sometimes made when unnecessary, and where the cases would have been declined without them. It has also been found that reports of microscopic examinations are sometimes made by those who are so evidently unprepared to do the work needed, that for all practical purposes they are of no value. "This action," says the *Examiner*, "is a practical illustration of the importance of that which we have often urged upon both the medical examiners and medical colleges, namely, to be so prepared that, when asked to do that which legitimately belongs to their sphere of duty, they will not be found wanting. If medical examiners had been prepared to do this work, there is not a shadow of doubt but that they would still be doing it for this company. If there is still a desire to make microscopic examinations on the part of medical examiners, the common sense view of this matter is to prepare themselves for the work. Those who are prepared, and show companies that they are, will undoubtedly be retained. Colleges should see that their graduates are fitted for microscopic work before they certify that they are, by the issuance to them of a diploma."

The Anti-vivisection Movement in Massachusetts.—In the issue for April 10 of *Science* is a condensed paragraph regarding the action taken by the friends of modern methods of physiologic study: "At a postponed hearing on vivisection before the house committee of judiciary of Massachusetts, the proposed legislation against vivisection was opposed by Profs. Bowditch, Theobald Smith and J. J. Putnam, of Harvard University; Prof. Hodge of Clark University; Prof. Wilcox, of Wellesley College; Prof. Sedgwick, of the Massachusetts Institute of Technology, and others. President Eliot is reported by the *Boston Transcript* to have said that in the last twenty-five years, during which experiments in physiology had been conducted in Harvard, not a single instance of a student bringing any complaint of cruelty against the work done in the physiologic laboratories had ever come to the knowledge of the corporation. There was no abuse of vivisection in Massachusetts. The men whom this bill indirectly accused of cruelty to animals were the most humane, merciful, clear-sighted men in the community, devoted, year after year, to the most humane occupation now existing in the world. Their profession showed in their faces, and he appealed to the members of the committee to know whether they thought that the men who had appeared before them could be guilty of the charge implied by the application for such legislation."

Jennerian Anniversaries. We learn from the *British Medical Journal* that a committee has been formed in Berlin for the celebration of the Jenner centenary on May 14. Among the members are Profs. Virchow, R. Koch, von Leyden, Von Bergmann, Gerhard, König and others. The program includes an exhibition of portraits, medals, old and new instruments, writ-

ings, etc., bearing upon Jenner's great discovery, and also a festive gathering on the day itself, intended not only to "honor the benefactor of the universe," but to protest against the anti-vaccination agitation which is constantly going on. The *Brooklyn Medical Journal* for April announces a banquet-celebration that has been appointed for May 14, 1896. The *Journal* says: "On Thursday, May 14, the Medical Society of the County of Kings will celebrate the centennial anniversary of the first vaccination of the cowpox as a protection against the most terrible disease which ever afflicted the human race. Though the plague was more deadly, it only visited the civilized world at long intervals, but the smallpox was always present, destroying annually nearly a million people, and the best authorities agree that during the eighteenth century no less than 45,000 people died from the dread disease in Europe; while in some portions of Asia cities were actually abandoned by their inhabitants to escape the disease which spared no one; and in America more than half of the afflicted Indian tribes were sacrificed to its ravages. When we contrast the eighteenth century with the nineteenth all will admit that the Entertainment Committee can not go too far in making the anniversary an event which will honor not only the name of Jenner and his work, but also the medical profession of the fourth city of the Republic."

Right to Unmutilated Body of Husband.—An entirely new question to the courts of New York, and one of considerable interest, was decided by the supreme court, appellate division, in the case of *Foley v. Phelps*, Feb. 21, 1896. The plaintiff's husband fell through an elevator shaft in a building in New York city, and was taken, in an unconscious condition, to the Bellevue Hospital, where he died three hours after admission. She applied, it is alleged, at the hospital for his body, and begged those who were in charge of it not to allow or permit an autopsy to be performed, and gave notice that she would immediately send an undertaker for the body, to remove it to her home, where it would be prepared for burial. Notwithstanding this, she charges that the defendant, without her knowledge or consent, procured, assisted, aided and abetted in performing an autopsy on her husband's body. These allegations, the court says, clearly establish an unlawful act, for while the criminal law neither gives nor recognizes any right to institute a civil suit for damages, still it incontestably determines the wrongful nature of the act complained of, and a civil action will lie, and will lie in favor of the widow. Irrespective of any claim of property, the right which inhered in the plaintiff, as the decedent's widow, and in one sense his nearest relative, the court goes on to say, was a right to the possession of the body for the purpose of burying it; that is, to perform a duty which the law required some one to perform, and which it was her right, by reason of her relationship to the decedent, to perform. That right of possession, it holds, is a clear legal right, which the courts of law will recognize and protect. The right is to the possession of the corpse in the same condition it was when death supervened. It is the right to what remains when the breath leaves the body, and not merely to such a hacked, hewed and mutilated corpse as some stranger—an offender against the criminal law—may choose to turn over to an afflicted relative. The invasion or violation of this right furnishes a ground for a civil action for damages.

The Arterio-Venous Anastomosis Discovery Anticipated by Riolan.—Dr. Folet writes to *Progrès Médical* that the late anatomic surprise given to the medical world by Drs. Debierre and Gérard is referred to by Riolan, and by him ascribed to Galen. This anticipation may, in his opinion, be recalled of record without in any wise prejudicing the originality and merit of the work of his countrymen. He says, as quoted in the *New York Medical Journal*, that these arterio-venous anastomoses were pointed out without any direct demonstration or exact

description by Riolan. The majority of authors speak of Riolan's "Encheiridium Anatomicum" (1648), without having read it, and that is the reason why Riolan has been accused of being one of the most systematically obstinate opponents of the theory of circulation. The truth is, says the writer, that Riolan's theory of the general circulation was an extremely curious and mixed one, and may be summed up as follows: There are blood vessels in which the blood circulates, the aorta and the vena cava. The blood takes a centrifugal course in the large artery, the aorta, and a centripetal course in the large vein, the vena cava. But in the medium or small blood vessels, arterial or venous, the blood is stagnant, or has a sort of slow backward and forward motion in order to nourish the tissues which it washes. The excess of the arterial wave—and here, says the writer, may be seen the coincidence between Riolan's theory and the facts pointed out by M. Debierre—passes from the large-sized artery, where it travels toward the periphery, into the large-sized vein, where it returns to the center through the anastomoses which exist between the arteries and the veins of the limbs. The existense of these anastomoses can not be denied, he says, for Galen demonstrated it and daily experience confirms it. Again Riolan wrote: "The veins have this peculiarity, that, in the limbs, they manifestly communicate with the arteries. Galen proved it, and it is so clear that we should not question it." The writer states that he has referred to the chapter in Galen's work indicated by Riolan, and that he has found nothing in regard to the subject, but in the preceding chapter he has found the following incidental passage: "The arteries which are brought together by several points with veins . . ." Riolan, then, says M. Folet, was much more explicit than Galen, whose authority he invoked. The writer states that he has called attention to the foregoing passages only because of the curious coincidence.

The Late Dr. Cheek, Medical Missionary to Siam.—The late Dr. Marion A. Cheek, of Oakland, Cal., had a romantic history, as reported in the *San Francisco Examiner*. The survivors of Dr. Cheek have a claim, growing out of his adventurous career, against the Siamese government for \$80,000, the value of 176 elephants that were once his property, but which were, it is alleged, unjustly confiscated by the government. The *Examiner* says: "The story of Dr. Cheek's adventures in the East reads like a romance. He went to Siam a missionary of the Christian religion. His knowledge of medicine stood him in good stead. He ingratiated himself into the hearts of the princes of the land as well as the lowly natives, who saw in his remarkable cure of disease an unfathomable mystery. Dr. Cheek was an American. He overlooked no opportunity to better his condition. He gained valuable concessions from the Siamese government and established the business of logging teak timber to Bangkok, the capital. The returns were so great that some of the native princes in the interior cast longing eyes upon the profits the American was turning. One of them suggested a partnership. Dr. Cheek was loath to accept the proposition, but he decided that his own welfare demanded that he join hands with the dusky prince. The Doctor had an agreement with his princely partner as to the distribution of the labor. Cheek agreed to do the actual work. He went 500 miles into the teak timber district and hired many native laborers. He likewise secured 176 elephants. The Doctor had indifferent success one season. The river was low and no logging could be done. The prince became dissatisfied. He was appeased, thought Dr. Cheek, the following year, when a double quantity of timber was floated into Bangkok. Then the trouble commenced. The government took a hand. The Doctor's partner and prince assigned his interest in the firm to the royal family. The ruling powers were becoming dissatisfied with foreign interests and their extension in Siam. The excuse was readily found for action. The failure to make a

shipment of timber in one season opened the way. The government stepped in and confiscated Dr. Cheek's plant, elephants and all. This summary action ended the Cheek logging business. Minister Barrett at Bangkok has made every effort to bring the matter to a focus. The Siamese government is said to be desirous of submitting it to arbitration. The will of Dr. Cheek has been filed and probated in Alameda County. His widow and two children now reside in Oakland. They have local counsel, who are pressing the payment of the claim to their utmost."

Unobserved Gonorrhea of the Rectum.—Dr. Wallace Johnson, of Washington, writing to the *Medical News*, March 28, considers the question of the unobserved frequency of the above named symptom. On the same subject, in the February 20 number of the *Deutsche med. Wochenschrift*, in an article by Dr. Theodore Barr, Dermatologist to the City Hospital at Frankfurt-on-Main, gives some unusual figures as to the frequency of the disease when carefully sought for. He says that from June 15, 1895, to Jan. 1, 1896, of 191 female patients with gonorrhea, 67, or 35.1 per cent., of all the cases, had gonorrhea of the rectum, as was established by microscopic examination. He thinks that the supposed rarity of the disease is owing to the fact that few cases give rise to symptoms pointing to the rectum. Few have bloody or purulent discharge from the rectum and few have pain or tenesmus. Where these symptoms are present he thinks them due to excoriations and ulcerations at the anus. Dr. Barr thinks that the cause is almost always found in a cervical gonorrhea, the secretions from which are carried into the rectum by the syringe nozzle, the thermometer or other manipulations about the anus by patients of not too cleanly habits. One of his cases developed a peri-proctitis as a complication, which afterward formed a fistula, in the discharge of which the gonococci were demonstrated.

The Dwarf Peoples of Africa.—Prof. Heli Chatelain, of the Smithsonian Institute, writes to *Illustrated Africa* the following observations respecting the wide distribution of the dwarf people of Africa. He says: "The Bushmen, or San, of South Africa belong to the same race as the pygmies or dwarfs of the Central African and equatorial forests. Their stature varies between four and five feet. Their physical appearance and their language show affinity with the Hottentots, but the relationship is very remote. The San language is poorer in morphology than the Khoi-khoi, but richer in clicks. The Bushmen, like the pygmies, are exceedingly timid, and hover, as Helots, on the skirts of Bantu settlements, whom they supply with game. The Hottentots, on the contrary, are pastoral, independent, and even aggressive. They are the terror of less audacious and less advanced Bantu tribes. Perhaps no savage people on earth excel the Bushmen as hunters; and their rock paintings show decided artistic aptitude. Both Hottentots and Bushmen are not numerous enough to resist, independently, the absorbing influence of their Bantu and European neighbors. The pygmies of Central and Equatorial Africa form, most probably, one ethnic class with the Bushmen of South Africa. Their language, however, is not yet sufficiently known to warrant the expression of an opinion as to kinship with San. They are hunters and fishermen, living in temporary grass huts of the beehive shape, and keep no domestic animal save chickens. Though culturally on the lowest scale, they are said to possess many virtues; and may, under the regenerating influence of the Gospel, develop some sterling qualities and attain prominence in certain specialties."

Proposed Adoption of the Anthropometric or Bertillon System of Identification in New York City. The Police Department of New York intend to put in operation a system of anatomic identification, similar to that in use in several European countries, and in Chicago in this country. The system derives its name from its inventor, Dr. Alphonse Bertillon, now the Chief of the

Identification service at the Prefecture of Police in Paris. He called it the Anthropometric System, but the world insists on knowing it by his name. The system depends upon a series of accurate and minute measurements of various portions of the human frame, assisted by photographs. The photographs are not merely photographs of the face. These are valuable adjuncts, but are not infallible in themselves. The rapidity with which a professional rogue can change his appearance is astonishing. Photographs of particular feature are often more accurate and decisive. For instance, it is impossible among 100,000 individuals to find two ears exactly alike, except in the case of twin brothers. But photography, as already stated, is only an adjunct. The special value of the system depends upon measurements of those bony parts of the body which undergo little or no change after maturity and can be measured to within so small a figure as to be practically accurate. These are the head, the foot, the middle finger and the extended forearm from the elbow. In addition, measurements are taken of the length, the span, the trunk of the body and the right ear. Notes are made of the color of the eyes and hair, the supposed age and nationality and of any individual marks or scars upon the body. The measurements selected are those that science has indicated as being the least changing from year to year. The success of the system depends upon three facts, which Bertillon considered of great importance, and which many years of experience have rendered indisputable: The almost absolute fixity of the human skeleton beginning at and after the twentieth year of age; the extreme diversity of dimensions which the human skeleton presents when one subject is compared with another; the facility and relative precision with which certain dimensions of the skeleton are capable of being measured. The measurements adopted were as follows:

- 1, Three body measurements, consisting of height, standing, stretched out arms, height sitting; 2, four head measurements, consisting of length of head, width of head, length of right ear and width of right ear; 3, four limb measurements, consisting of length of foot, length of left middle finger, length of left little finger, length of cubit. All these measurements can be taken in a few minutes by any ordinary operator. The instruments are simple and can be obtained in Paris at a cost of about \$11. The measurements are noted upon descriptive cards about six inches square, upon the same side of which are generally placed two photographs of the criminal, front and side view, and upon the back a record of his criminal operations, convictions, terms served, etc., and his scars and marks.

Practical Notes.

Vomiting of Pregnancy.—La Torre announced at a recent meeting of the Società Lancisiana degli Ospedali, Rome, that he had succeeded in stopping the vomiting in three cases of this kind, by means of a simple tampon of ichthyol applied to the neck of the uterus. — *Gaz. degli Osp. e delle Clin.*, March 14.

Paramyoclonus Multiplex.—A typical case of this disease which had persisted thirteen years, was recently cured in five weeks with Fowler's solution, in doses increasing from 2 to 10 drops, three times a day. It was accompanied with cold lotions and galvanization. — *La Semaine Médicale*, April 1.

Effect of Castration on Skeletal Development.—Most travelers in the Orient have noticed the tallness of the eunuchs, and Poincet has called attention to the excessive growth of the bones in cases of early castration. He has recently commented on the curious fact that the exactly opposite effect, viz., stunted growth, is produced by lack of function in the thyroid glands. — *Province Médicale*, March 28.

Loretinate of Bismuth in Ophthalmia.—The *Revue Gen. d'Ophthalmologie*, March 31, states that this substance is a better antiseptic than iodoform, as it only develops colonies in forty-eight hours, while they are found in twenty-four hours with iodoform. As an occlusive dressing for the eye, loretinate of

bismuth offers superior advantages, preventive and curative, especially in cases of phlyctenular ophthalmia, for which it really seems a specific. It can be used with other treatment, which it seems to promote. Excellent to use as an accessory in cases of ocular ulcers, diphtheria, tuberculosis and epithelioma.

Blisters.—There have been some protests to Huchard's sweeping denunciation of blisters. Matthieu asserts that in hydrarthrosis a cantharides blister is invaluable, and he also uses them in gastralgia, on a space the size of a five franc piece. Adrian thinks that if the substance were applied in the form of chloroform solution, with a little squill, no bad results would follow, which he ascribes to the use of plasters that leave some of the irritant on the skin. In veterinary practice the blister is of the greatest service. All seem to agree that they are worse than useless in broncho-pneumonia, kidney and cardiac troubles, and for children and elderly persons.—*Bulletin Médical*, March 29.

Fragments of Lead in the Eye.—Valois recommends in cases of injury to the eye from some flying fragment of shot, immediate antiseptics of the eye and vicinity; also applications of ice with antiphlogistic treatment, sub-conjunctival injections of sublimate, slight compression of the eye-ball, but above all absolute repose. Later, if there is no reaction, an expectant policy is best, but if there is, and if the fragment can be seen with the ophthalmoscope, it is to be extracted. Enucleation or exenteration is required if there are inflammatory accidents, or enucleation alone if there are sympathetic complications. If the latter persist, with a probability that the fragment is still in the orbit, curettement must follow. If the fragment is producing paralysis by its pressure on some nerve, it must be sought and removed.—*Gaz. Méd. de Liège*, April 2.

Intra-peritoneal Rupture of Ovarian Cysts.—There are about three hundred cases of these ruptures on record, and where they used to be followed by grave consequences, modern asepsis has much reduced the fatality, which was 63 in 127 cases (Nepveu, *Annales de Gyn.*, 1875). The recent cases of gelatinous effusion have all recovered after laparotomy, and Professor Lannelongue reports several cases of ruptured cysts discharging fluids and pus into the peritoneal cavity, which recovered after ovariectomy, without septicemia or drainage, showing that the pus must have been sterile. Animals inoculated with the gelatinous effusion did not show any aseptic consequences. Hence, infection need not necessarily follow the escape of the fluid into the abdomen during the operation. The *Bulletin Médical*, March 29, devotes several columns to a discussion of this subject by the Bordeaux *Société de Gynécologie*.

Progress in Electro-Therapeutics.—Professor d'Arsonval's announcement that alternating currents of great frequency and high tension exert a powerful and beneficial effect on the organism, has been verified by Apostoli, who places the patient in the center of a huge solenoid, without any direct contact with the wires. The currents circulate around him, and the results have been surprisingly successful in more than a hundred cases he has treated during the last year and half. Rheumatism and gout have been most benefited, diabetes next, but the general health in all has improved, insomnia ceases, and cheerfulness, appetite and strength return with these daily fifteen minute electric treatments. The process seems to be that all the organic transformations are facilitated and accelerated *Journal de Méd. de Paris*, March 28.

Salicylic Medication Through the Skin.—When salicylate of soda is not tolerated by the stomach, salicylate of methyl can be substituted for it in cases of acute articular rheumatism, administered through the skin. Linossier and Lannois, of Lyons, have secured fine results in this way, painting the thigh with 4 grams and covering close with an air-tight pad. The healthy skin will not absorb solids nor liquids, but it will absorb gases,

and it is to the volatile properties of salicylate of methyl that its success is due in these cases. The skin absorbed it even when it was held at some little distance, showing that it was the vapors which were taken up. Almost half of the amount absorbed was eliminated in the urine within twenty-four hours. Grease or vaselin prevented absorption. Bourget has administered salicylic acid in a salve, but he mixes it with turpentine, which irritates the surface, so that it can no longer be called a strictly healthy skin.—*Bulletin de l'Académie de Médecine*, March 28.

The Alkaloid Derived from the Areca Nut.—The *British Medical Journal* quotes Dr. Mouquet, in *Nouveaux Remèdes*, regarding the therapeutic range of the hydrobromate of arecolin. This drug has a powerful sialogogue and diaphoretic action, and markedly stimulates intestinal peristalsis in horses and other animals. It has the same properties as eserine and pilocarpine, but in a higher degree, and the indications for its use are the same. Given hypodermically in doses of two centigrams to twenty-five milligrams it is found useful in animals, especially in the treatment of intestinal indigestion. Areca nut, though largely employed in veterinary practice, is little used in human medicine. The editor of the *Nouveaux Remèdes* suggests that arecolin might be worth trying on the human subject, but it would be prudent to begin with very small doses, such as two to four milligrams. Areca nut is said to be a powerful anthelmintic, the administration of which does not require to be preceded by a purge. It can be taken in milk or in soup without any unpleasant taste being perceived.

Detroit.

THE WAYNE COUNTY MEDICAL SOCIETY at its regular meeting, April 16, had exhibited a young man by the name of Lewis, with a cardiac hypertrophy, mitral insufficiency, and possibly an aneurysm of the arch of the aorta. This individual has been exhibited before the medical class at the Fort Wayne Medical College, Ind., and also before the St. Louis and Cleveland College classes. At this time compensation seems to be fully established, and the outcome would be interesting and well worth writing up, as so many individual medical men have seen and examined this man. Delegates to the AMERICAN MEDICAL ASSOCIATION from the Wayne County Medical Society have been elected.

AT THE REGULAR MEETING of the Detroit Medical and Library Association, April 13, Dr. Frank Walker read a paper entitled, "Chronic Gastritis."

HEALTH OFFICE report for week ending April 18: Deaths under 5 years, 50, total 111; births, male 63, female 55, total 118. Contagious diseases: Diphtheria, last report 7, new cases 2, recovered 5, died 1, now sick, 3; scarlet fever, last report 25, new cases 7, recovered 11, died none, now sick 21; smallpox, last report none, new cases 1, died 1; measles, last report 1, new cases 1, recovered 1, died none, now sick 1.

Washington.

WEEKLY REPORT OF HEALTH OFFICE.—The report of the Health Officer for the week ending April 11 is as follows: Number of deaths (stillbirths not included), 112; death rate per 1,000 per annum, 21.1; death rate per 1,000 per annum for the corresponding week last year, 20.2.

INEBRIATE ASYLUM BILL.—The Senate Committee has reported adversely the bill to create a hospital for the treatment of inebriety in the District of Columbia.

ANTI-VIVISECTION HEARING.—The Senate Committee on the District of Columbia held a meeting on the 17th inst. to hear the views, pro and con, on the anti-vivisection bill. A most convincing argument against the passage of such a bill was made by Surgeon-General G. M. Sternberg, U. S. A.

MEDICAL SOCIETY.—At the regular meeting of the society, held on the 13th inst., Dr. Compton reported a case of purpura hemorrhagica; Dr. Adair, U. S. A., reported a case of

appendicitis: Dr. McCormick reported a case of cancer of the stomach and hypertrophy of the heart, with specimens; and Dr. Magruder presented two specimens of cancer of the stomach.

TO FURTHER PROTECT THE INSANE.—Mr. Woodman, of Illinois, has introduced a bill in the House providing that no insane person, or person who is alleged to be insane, whether charged with crime or otherwise, shall be incarcerated in any insane asylum or hospital in the District of Columbia, or in any of the Territories, nor shall he be detained or confined by anyone until he has been brought before a court of records and adjudged to be insane. Such insane person shall be represented by counsel.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—The 245th meeting of the society was held on the 17th inst. Dr. Bromwell read a paper on "Meddlesome Midwifery," and Dr. T. C. Smith reported a case of fibroma of uterus distending the perineum, and presented the specimen.

Cincinnati.

THE HEALTH DEPARTMENT is examining the charges made by the barbers' union that a number of shops are using the dirty towels for many of their customers, thereby spreading disease.

THE MISSISSIPPI VALLEY DENTAL ASSOCIATION held their annual meeting in Cincinnati April 16.

A NUMBER of cases of diphtheria have developed at Glendale and an extra sanitary officer has been appointed.

A CASE of smallpox has developed at Lima, Ohio.

THE TRUSTEES of the Cincinnati Hospital have decided against the present free use of such expensive drugs as listerin, trionol, phenol, etc.

A DOZEN or MORE of the most prominent practitioners of this city have organized what is to be known as the "Doctors' Headquarters." They are to occupy the Decorative Art Building on Garfield Place, and a telephone will be placed on each floor with connections with each office, a number of the different departments of practice will be represented, and in the event of an emergency call a response will be obtained from one present should the desired physician be absent.

THE FOLLOWING CASES were presented at the Academy of Medicine last week: Dr. E. W. Walker reported a case of dermoid cyst of the kidney, removed from a young child, with recovery. Dr. Joseph Ranshof reported a case of scirrhous cancer of the kidney, successfully removed from a young man about 25 years of age. Dr. E. Gustav Zinke exhibited a specimen of a large gangrenous multilocular ovarian cyst and hematoma (will be published in full in this JOURNAL). Dr. A. I. F. Buxbaum demonstrated the new method of cocaine anesthesia by cataphoresis. He operated on a tooth which prior to anesthesia was so sensitive as to prohibit the touching of its surface, but after the application of a 30 per cent. solution of cocaine on cotton and the current applied for about fifteen minutes the pulp could be manipulated without any pain on the part of the patient.

MEMBERS who contemplate attending the AMERICAN MEDICAL ASSOCIATION can obtain tickets, sleeping car berths and all desired information by addressing Dr. G. I. Cullen, 714 West Sixth Street.

THE FOLLOWING APPOINTMENTS have been made at St. Mary's Hospital: Dr. Otis L. Cameron, to succeed Dr. Ferd Kramer, deceased; Dr. T. W. Hays, Pathologist; Dr. George B. Twitchell, assistant surgeon, and Dr. Charles R. Bush, microscopist.

THE FOLLOWING series of lectures are announced by the Young Men's Christian Association: April 8, "The Physiologic Effects of Alcohol," Dr. J. A. Davis; April 18, "Personal Purity," Dr. W. H. Taylor; April 23, "The Food We Eat," Dr. W. H. Taylor; April 30, "X Rays," Dr. S. P. Kramer.

* **THE ANNUAL REPORT** of the Cincinnati Sanitarium shows that since the establishment of the institution twenty-three years ago, 2,711 patients have been admitted, while 1,242 have been discharged as cured. This is in the ratio of about 45.81 per cent., a very fair showing when we stop to consider that a recovery of 30 to 40 per cent is considered about the average of those receiving the most judicious and careful treatment.

THE MORTALITY REPORT for the week ended Friday, April 10, shows: Membranous croup 1, diphtheria 3, erysipelas 2, measles 9, typhoid fever 5, other zymotic diseases 4; cancer 5, phthisis pulmonalis 24, other constitutional diseases 3; apoplexy 3, Bright's disease 2, bronchitis 6, heart disease 9, men-

ingitis 3, nephritis 3, pneumonia 23, other local diseases 25; deaths from developmental diseases 7, from violence 5, under 1 year 23, from 1 to 5 years 23, from all causes 142; annual rate per 1,000 21.09; deaths during preceding week 123, corresponding week 1895 97, corresponding week 1894 109, corresponding week 1893 119.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 11 to 17, 1896.

Capt. Nathan S. Jarvis, Asst. Surgeon (Willets Point, N. Y.), is granted sick leave of absence for one month and five days.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending April 18, 1896.

Asst. Surgeon C. M. De Valin, ordered to examination for promotion.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the fifteen days ended April 15, 1896.

P. A. Surgeon J. J. Kinyoun, to proceed from Washington, D. C., to Wilmington, Del., for special temporary duty, April 8, 1896.

P. A. Surgeon C. P. Wertenbaker, to proceed from Delaware Breakwater Quarantine to Wilmington, Del., for special temporary duty, April 8, 1896.

Asst. Surgeon J. A. Nydegger, granted leave of absence for two days, April 13, 1896.

Asst. Surgeon W. J. S. Stewart, granted leave of absence for six days, April 6, 1896.

Asst. Surgeon Seaton Norman, granted leave of absence for fifteen days, April 14, 1896.

Asst. Surgeon S. R. Tabb, to proceed from Richmond, Va., to Chicago, Ill., for duty, April 14, 1896.

Asst. Surgeon H. S. Mathewson, to proceed from New York, N. Y., to Boston, Mass., for temporary duty, April 6, 1896.

APPOINTMENTS.

Sherrard R. Tabb, of Virginia, and Henry S. Mathewson, of Connecticut, commissioned by the President as Assistant Surgeons, April 1, 1896.

Change of Address.

Armstrong, C. L., La Due, Mo.
Butler, G. F., from 851 Jackson St. to 794 Adams St., Chicago, Ill.
Edmonds, O. R., from St. Louis to Tina, Mo.
Henkle, C. K., from St. Louis, Mo., to Independence, Ore.
Kell, Baillie J., from New Cumberland to Barnhill, Ohio.
Keene, L. S., from De Land, Fla., to La Porte, Ind.
Kirkpatrick, C. D., from St. Louis to Centerville, Mo.
McMurry, Milton, from Norman, Okla. Ter. to Purcell, Ind. Ter.
Pittsburg Medical Review, from 33 to 8 Ninth St., Pittsburg, Pa.
Raymond, W. C., from Evanston, Ill., to 11 Rue Léopold Robert, Près le Boulevard Raspail, Paris, France.
Russell, E. D., from Iowa City to Clare, Iowa.
Richman, S. T., from 5701 Wentworth Av. to 5729 Wentworth Av., Chicago, Ill.
Thomas, C. H., from 1807 Chestnut St. to 1633 Locust St., Philadelphia, Pa.
Wilder, Wm. H., from 4002 Ellis Av. to 5811 Ellis Av., Chicago, Ill.
Watts, G. W., from 2505 Calumet Av. to 361 W. 65th, Chicago, Ill.

LETTERS RECEIVED.

Allport, Frank (4), Minneapolis, Minn.
Baker, Henry B., Lansing, Mich.; Buxton, W. E., Samsville, Ill.; Burr, C. B., Flint, Mich.; Brooks, Allen C., Wilkesbarre, Pa.; Bastin, W. C., Mulkeytown, Ill.; Brooks, F., St. Paul, Minn.; Bowman, Ed. S., Davenport, Iowa; Baker, C. H., Detroit, Mich.; Bausch & Lomb Optical Co., Rochester, N. Y.; Burghardt, C. A., Milwaukee, Wis.; Battle & Co., St. Louis, Mo.; Babb, J. G., Columbia, Mo.; Bittman, Chas. W., St. Louis, Mo.; Bryant, D. C., Omaha, Neb.; Byrne, J. H., Chicago, Ill.
Connor, Leartus, Detroit, Mich.; Coe, H. W., Portland, Ore.; Cole, R. Beverly, San Francisco, Cal.; Cory, A. L., Chicago, Ill.
Danforth, L. L., New York, N. Y.; Dibrell, J. A., Little Rock, Ark.
Estes, W. L., So. Bethlehem, Pa.; Eastman, Jos., Indianapolis, Ind.; Elder, B. H., Peoria, Ill.
Ferguson, D. B., Troy, N. Y.
Griffith, F. P., Lagrange, Ind.
Hitchcock, C. H., Aurora, Ill.; Hobby, C. M., Iowa City, Iowa; Halden-stein, I., New York, N. Y.; Hammond, Wm. A., Washington, D. C.
Ingals, Fletcher E., Chicago, Ill.
Jackson, Edward, Denver, Colo.
Kelley, S. W., Cleveland, Ohio; Kibler, C. B., Corry, Pa.; Kell, J. B., Barnhill, Ohio; Kennedy, S., Shelbyville, Ind.
Lippincott, J. B., Company, Philadelphia, Pa.; Leatherman, J. R., Atlanta, Ga.; Lord & Thomas, Chicago, Ill.; Lawbaugh, A. I., Opechee, Mich.
Malsbury, L. O., Peru, Ind.; Marks, A. A., New York, N. Y.; Madison, H. L., Burlington, Iowa.
Nuzum, Helen B., St. Paul, Minn.
Pearock Chemical Co., St. Louis, Mo.; Preston R. J., Marlon, Va.; Potter, William Warren, Buffalo, N. Y.; Playter, Edward, Ottawa, Can.
Raymond, W. C., Paris, France; Reid, J. H., Burnett Creek, Ind.; Rozzell, M. W., Pryorsburg, Mo.; Rio Chemical Co., (2) St. Louis, Mo.
Sternberg, Geo. M., Washington, D. C.; Sykes, G. A., New York, N. Y.; Shurts, W. H., Company, The Newark, N. J.; Smith, B. M., Davis, W. Va.; Stearns, F. & Co., Detroit, Mich.; Spencer, George A., Haverhill, Mass.; St. Peter State Hospital, St. Peter, Minn.; Stevenson, David W., Richmond, Ind.; Staver & Abbott, Mfg. Co., Chicago, Ill.
True, Charles, Kankakee, Ill.; Taggart, Gray, Galesburg, Ill.; Thayer, Chas. P., Boston, Mass.
Whittaker, J. T., Cincinnati, Ohio; Webb, C. W., Wellsboro, Pa.; Westmoreland, W. F., Atlanta, Ga.; Wyman, Hal. C., Detroit, Mich.; Würdemann, H. V., Milwaukee, Wis.; Woodward, W. C., Washington, D. C.; Waters, Geo. M., Columbus, Ohio.

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ADDRESS.

DR. JAMES FANNING NOYES—1817-1896: MEMORIAL REMARKS.

Delivered before the Detroit Academy of Medicine.

BY LEARTUS CONNOR, A.B., M.D.
DETROIT, MICH.

Dr. James Fanning Noyes began his earthly career in a modest farmhouse adjacent to the town of Kingston, R. I., on Aug. 2, 1817, and closed it Feb. 19, 1896, at Providence, R. I., in the elegant home of his honored and loved nephew, Dr. Robert Noyes. Between these two dates and places Dr. Noyes wrought his part in the drama of human life. In the pursuit of knowledge and doing of work he wandered far from his beloved Rhode Island, but when the end of life drew near he returned to his kindred and left his earthly body near the spot where it was given him.

It was his to live in a period of human history surpassing all previous periods. In it the practice of medicine entered upon fields of conquest heretofore undreamed of. Accurate scientific knowledge was multiplied in all directions, and its application to medicine gave astounding results. Thus the application of the laws of optics to the study of vision gave us the ophthalmoscope, a workable knowledge of the refraction of the eye and the means for so correcting its defects as to afford incalculable good to humanity. Similar instruments of precision for the study and treatment of other organs followed, till now nearly the entire body can be seen, and much that transpires within it actually heard. The discovery of anesthesia, the study of bacteriology and asepsis have rendered the surgical exploration of every organ in the body measurably safe, thus rendering amenable to treatment many heretofore incurable diseases. The chemist, the physiologist, the anatomist, the pathologist, the microscopist, the pharmacist, the hygienist, all have contributed important elements of this wonderful age. The steam and electric railways, the steamboat, the telegraph, the telephone and hosts of other mechanic arts have opened a multiplicity of medical problems of the highest interest. All these and their associated discoveries were seen by Dr. Noyes at their inception. Truly his was an age of all ages the greatest—the ripe fruit of long working, hoping, waiting.

No study of an individual life is adequate if separated from its ancestors. Each is, in a large sense, the product of the hopes, thoughts, fears, loves, ambitions, deeds of those who have gone before. Dr. Noyes came of ancestry that protested against the infringement of their religious and civic liberties in England, and sought on the bleak shores of New England opportunity to work out their ideas of the personal responsibility of each individual directly to its Maker, and to found a State based upon these ideas. In 1634 the Rev. William Noyes, a Puritan and Nonconform-

its, emigrated from England and settled at Newburyport, Mass. In this town, in 1647, the Noyes House was constructed, and has been occupied by some member of the family to the present day. Farther down the Rev. James Noyes drew up the famous Saybrook platform, was an incorporator of Yale College and preached at Stonington, where he died in 1719.

Dr. James F. Noyes was the fifth son in a family of twelve children, eight of whom grew to maturity. One brother, Edwin, became a well-known lawyer and railway man at Waterville, Me. One brother was for some years superintendent of the Michigan Central Railway. One brother still lives on the old farm at Kingston, R. I.

James was first trained in a private school kept by his sister Susan on the farm, for the benefit of the small children in the neighborhood. When older he entered a winter school kept by his father during the winter upon the farm. Later he entered the old Kingston Academy, at Kingston, R. I., in which his brother Aziel had charge of the classical department, other departments being in charge of Christopher Comstock and Hon. Thomas B. Church, father of the celebrated artist Church. Lastly he attended the Latin School for Boys, conducted by the Rev. Thomas Vernon, long time pastor of the Congregational Church at Kingston. It thus appears that most of his school training was from members of his own family.

Ill health now compelled him to relinquish the idea of securing a college education, thus changing his life, as at subsequent periods other attacks of ill health compelled changes in his professional career. It does not appear that these attacks were of a sort dangerous to life, but only to continuous mental and physical activity. Illustrative of his father's practical way in dealing with his children the Doctor related the following: When 16 years old his father placed his son in charge of a district school. Young, unsophisticated and ignorant of teaching, he was quite disturbed at the outlook, but in the early contest between teacher and pupils the discipline of the school was maintained, while the affection of the pupils had largely increased. His father was present at the end of the term, studied the situation, and remarked to his son that he need teach no longer, but rather attend school, because he had proved that he possessed material worth educating. The wisdom of this course is evident. Many young people are not worth spending money in educating beyond the common school. All professions, including the medical, are cursed with a host upon whom good money was entirely wasted. It is a pity that they had not been tested ere entering upon professional study and turned aside into callings for which their "make up" best fitted them. The world would thus have obtained the best possible work from each, and the unfortunates been rescued from the misfortune of spending their lives, as square pegs in round holes, pinched at each corner.

In 1842 James F. Noyes began the study of medicine with Dr. Joseph Potter at Waterville, Me. Two years later he took his first course of lectures at Harvard Medical School, and after a second course at Jefferson Medical College he graduated in 1846. After some further study in New York City, he was appointed assistant physician in the United States Marine Hospital at Chelsea, Mass., under Dr. James B. Loring, late United States minister to Portugal. In the fall of this year he assisted at the first public administration of ether for surgical purposes. In 1848, during the trial of Dr. Valorous P. Coolidge, at Augusta, Me., Dr. Noyes gave evidence showing that prussic acid had been used in the murder. His position being maintained by chemic evidence, conviction of the murderer was secured. This use of prussic acid being new in this country, the case attracted wide attention. In 1849 Dr. Noyes engaged in active practice at Waterville, Me., an opening being made for him by the removal of his former preceptor, Dr. Potter, to Cincinnati, Ohio. This fact, coupled with the influence of his distinguished brother, seems to have aided him in securing at once a large and lucrative practice. This rapid introduction to a large business doubtless had much to do with so undermining his health as to compel a vacation at an early date. However, while he could endure the work he did it with all the enthusiasm and energy which he possessed. The experiences thus obtained made a lasting impression upon his mind, and the older members of the Academy can recall the frequency with which he recounted his observations of medical events which occurred "down in Maine." In 1851 he left Waterville to form a partnership with his former preceptor in Cincinnati, Ohio, and continued in active work there till four years later, when failing health compelled a rest.

This rest was spent in Europe studying ophthalmology with Albrecht von Graefe, at Berlin and Vienna. The years 1858 and 1859 he spent in Paris, pursuing the same studies. While here he made the acquaintance of the late Dr. J. Marion Sims and delighted to describe Sims' first vesicovaginal fistula operation on the continent, on a patient which had failed to obtain relief from two of the best European operators. Sims' operation was perfectly successful and laid the foundation for his subsequent popularity among the French. To Dr. Noyes, Sims' triumph was patriotic as well as personal. It compelled the French surgeons to recognize the merit of American gynecology.

In 1863 his brother, then superintendent of the Michigan Central Railway, and living in Detroit, induced him to move to that city, where he remained till his retirement from practice in 1886. While he did some eye and ear work in Maine and Cincinnati, the most was done in Detroit. He was the second regular physician to engage in this work in Detroit or Michigan. The first was Dr. Hildreth, who, after a few years' practice entered the army, settled in Chicago after the war, and finally died from an accidental overdose of medicine.

Dr. Noyes' first office was in a frame dwelling on the site of the new post-office. In a few years he purchased the southwest corner of Fort and Shelby streets, and on the Shelby side of the lot erected an office building for his exclusive use, which he occupied until he sold the property in 1886. This purchase was a fortunate investment, as he paid \$9,000 and sold it for \$45,000. During his holding he received a steady income from

the rent of the dwelling-house and had his office and lodgings free.

The conditions under which he began practice at Waterville, Me., Cincinnati, Ohio, and at Detroit were all most favorable to his securing immediate and lucrative practice. Those at the two former places have already been noted. In Detroit, in addition to his brother, who occupied a high business and social position, he had cousins, W. B. and B. B. Noyes, then leading hardware merchants, and Miss Seraphine Noyes, a leader in the intellectual and social life of the city. These were pleased to acquaint their friends with the accomplishments of their distinguished relative and to introduce him to the leaders in business and society. On the organization of the Detroit Medical College in 1869 he was elected Professor of Ophthalmology and Otology, a position which he held for ten years. His record as a teacher is familiar to some of the present members of the Academy, to his students during those years and to many members of the profession. He was a member of all the local and general and medical organizations which were in any way related to his own professional life or that of his associates, viz, the Detroit Academy of Medicine, the Detroit Medical and Library Association, the Michigan State Medical Society, the AMERICAN MEDICAL ASSOCIATION, the American Ophthalmological and Otological Societies, the American Association for the Advancement of Science, the Pioneer and Historical Society of Detroit, and the Rhode Island Historical Society. He was an honorary member of State medical societies which he visited during his travels, viz., the Ohio, the Rhode Island, the Maine, and the Texas Associations. He was a Mason, and a member of the Detroit and Grosse Pointe Clubs. In 1872 he was president of the Detroit Academy of Medicine. On its organization he was elected president of the Detroit Cremation Society and signified his faith in this method of disposing of the dead by directing that his own body be cremated. He was not a prolific writer, but papers from his pen are quoted in the volumes of the *Boston Medical and Surgical Journal*, the *Detroit Review of Medicine and Pharmacy* and the transactions of the several societies to which he belonged. The published discussions of the Detroit Academy of Medicine during the period of his active practice contain frequent records of his views on a great variety of topics in all departments of medicine and surgery. He was a general practitioner of superior accomplishments before he became a specialist, and never lost his interest in any department of the entire field. He introduced a method of operation for strabismus by folding the weaker muscle and stitching it until adhesions were established and the shortening became permanent.

He took an active interest in the establishment of Oak Grove Asylum at Flint, Mich., and until his death was a trustee. Last year he provided the funds for the erection of an amusement hall for the inmates, to be known as "Noyes Hall."

He donated a large amount of money for the maintenance of free beds at the Rhode Island Hospital. For many years he had supported several young people while they were being educated for positions in which they could earn their living—his idea being to make useful citizens, capable of supporting themselves, of some who would otherwise be a burden to both themselves and others. Possibly he did this to partially compensate for his never having a family

of his own. For many years he was ophthalmic surgeon to St. Mary's, Harper and Woman's Hospitals, and he took pride in doing the work.

As a physician his manners partook of the race whence he sprung and of the customs of the physicians among whom he was educated. These covered under a gruff exterior a really kind and sympathetic heart. If the patient gave instant attention and unquestioning obedience the Doctor was a most delightful person. To other patients his words and acts as well as manner were intended to compel a proper respect for the profession in general and himself in particular. While in general practice, Dr. Noyes gained a reputation for daring and skillful surgery, and until his death he never tired of watching surgical operations. He once told the writer that he had made a mistake in dropping general for special surgery. His mental inclination was toward mechanical rather than the abstruse problems of pathology, physiology, the action of remedies, etc. In the management of medical cases he leaned heavily upon his medical friends, just as they leaned upon him in their surgical cases.

Why he never married is not clear, as he was fond of the companionship of cultured ladies and numbered them among his firm friends. The fact explains many peculiarities of his personal and professional career.

For many years anterior to his retirement from practice he was subject to occasional attacks of heart disturbance of a nature never fully made out by the most skillful diagnosticians. These attacks were very distressing to both himself and his attendants. A little extra exertion would frequently induce them. Indiscretions in diet or smoking or extra excitement were often followed by their presence. From the account of his death it would appear that he died in one of these. He thought himself that the walls of the artery supplying the heart muscle had become degenerated. His urine contained sugar for some years anterior to death, but I do not know as the relationship between this and the heart difficulty was ever satisfactorily worked out. Certainly the heart affection long antedated the urinary abnormality. However, he retained his mental powers until the last, and his death was sudden and peaceful.

After his retirement from practice his friends noted a marked change in him. His spells of moodiness and irascibility which previously had now and then enthralled him, entirely disappeared and he became one of the brightest and sunniest of men at all times. He also became interested in the comfort and happiness of those about him. He spent much time in travel, and was one of those wise travelers which become filled with the habits of the people observed, their customs, their history, the physical characteristics of both people and country, the social, educational, political and industrial peculiarities—in short, everything which it was possible for him to learn. This large increment of his mental riches, with his judgments thereupon, he placed freely at the disposal of his friends, and in such a manner as to delight and charm. Far beyond the habit of his earlier life he seemed to have a genuine pleasure in serving friends. His personal antagonisms faded away with personal asperities of speech and manner, and his entire personality mellowed and grew steadily richer in all that pertained to a genuine manhood. His hoary head became a crown of glory, shining brighter and brighter until

his spirit took its upward flight. From this study of these 78 years of a single human life we note:

1. The stock from which Dr. Noyes sprang was Puritan of the straightest sort. It was earnestly settling the fundamentals of individual and State development. Necessarily the ornaments and amenities of human life were given little attention. His ancestor left England and came to Newburyport, Mass., because he wanted an opportunity to worship God and conduct his daily affairs in accordance with ideas quite at variance with those prevailing in the land of his birth. This ancestor was a minister whose purpose was to aid in solving the problems involved in a government of the people directly responsible to God. Strange as it may seem to some, Dr. Noyes at one time had determined to become a minister, and had packed his trunk with the intention of entering a theological seminary, but a trivial incident diverted him to the study of medicine. From the date of landing on the bleak New England shore, his ancestors never swerved from their original purpose. He himself was born and reared on a Rhode Island farm, by parents sufficiently educated to conduct a private school, while they supported themselves by farm labor, taught their children those habits of industry, perseverance and thrift which characterized his career.

2. While ill-health prevented his securing a college training, he obtained all the education possible and never lost a chance to increase it during each year of his life. To the very latest moment he was adding to his store and to his ability to utilize it.

3. It would seem that he entered the profession of medicine because he loved it and all that pertained to it. It will be remembered that his medical studies covered a period of six years, though at that time but two were called for by any medical college. He was not content with study in one city, but studied in many, a fact which rendered him personally conversant with the most noted men of his student days. Further, during all his life he continued to pursue medical studies with zest, determined to keep himself in the front rank of a rapidly developing profession. Why he entered upon the study of ophthalmology is not clear; possibly the exposures incident to country practice in Maine during the winter months was too much for his physical powers, and the specialty of the eye then being a novelty, diverted him from general practice. Be this as it may, he spent much time and money in qualifying himself for his special work, and he never had any patience with those who entered medical work of any sort without the most perfect preparation.

4. Outside of medicine he was most interested in music. He thought that good music brought him nearest divine things. It stirred his whole being as it does but few. Hence he supported directly and indirectly all musical societies within his reach. His life was full of activity; in fact he was a model of industry. He never wavered in his devotion to the higher ideals of his chosen profession. He did the duties of each hour according to the light which he possessed. His affection for the Detroit Academy of Medicine never failed, his loyalty was unquestioned, and his faith in its future service to medicine unfaltering. As a man, as a patriot, as a citizen, and as a physician his life presents material for profitable study and emulation.

ORIGINAL ARTICLES.

LONGEVITY OF PHYSICIANS.

Read before the Broome County (N. Y.) Medical Society, April 7, 1896.

BY JOHN M. FARRINGTON, M.D.

BINGHAMTON, N. Y.

All men think all men mortal, but themselves.—*Young*.

"It is a swift current—that stream of life, on which we ride. We fall asleep, and awaking, find ourselves almost home. Our companions, too, are constantly changing; at every moment new ones come aboard, and old ones leave us, and we have scarcely time to become familiar with their faces, or to make ourselves acquainted with their character or purposes, before they are summoned to the gangway the boat is lowered, and we wave them a friendly farewell. All along the sands of that silent shore, which we now so faintly see, our friends have left us; and we are awaiting the time when, cheerfully, manfully and hopefully, I trust, we shall receive our summons and depart 'alike to the inevitable grave.'"

—Extract from Dr. Frank H. Hamilton's Eulogium upon the life and character of T. Romeyn Beck, M.D., LL.D., February, 1856.

What I shall present upon the subject of the Longevity of Physicians will be more in the nature of a compilation of what I have been able to find published by my predecessors, rather than tables or deductions framed from my personal observation and experience. I shall therefore quote freely the substance, if not the exact language, of what I have found recorded. After a very diligent search for information on this, to me, interesting topic, I have been led to the conclusion, that there is quite a dearth of matter, thus far printed on this subject.

I am aware that heredity is the prime factor to be considered in forecasting the probable longevity of any member of the human family, and vocation is of secondary importance; nevertheless statistics prove that it has its influence beyond question in the life of the individual. Life insurance companies classify some vocations as extremely hazardous and decline to assume risks upon persons engaged in them. The scope of this paper is not designed to include, only for reference or comparison, any profession or vocation save that of the medical practitioner.

F. G. P. Neison, Esq., read before the Statistical Society of London, March 15, 1852, a paper "On the Rate of Mortality in the Medical Profession" accompanied with many full and elaborately constructed tables, the whole occupying thirty pages of the Quarterly Journal of the Statistical Society of London published in September, 1852. Mr. Neison's article considered the rate of mortality among two different classes of medical men: the one class being the officers of the Medical Department of the Royal Army and the other the members of the Royal Medical Chirurgical Society. The facts relating to the former were collected from the records of the Society for the benefit of the widows of the officers of the Medical Department of Her Majesty's Army established in the year 1816, and the facts, relating to the latter class were abstracted from the books of the Royal Medical Chirurgical Society established in the year 1805. Mr. Neison states that the utmost care was taken by him and the analysis was a laborious and troublesome one. The social condition of the members had an important influence on the rate of mortality and he found that the results of his analysis were not only exceedingly curious, but of great and practical importance. By social condition, Mr. Neison refers to married and single, his researches showing that the rate of mortality of the unmarried from 20 to 54 was 2.386 per cent, while the married for the same ages

was 1.872, and that from 55 to 84 the rate of the unmarried was 2.972 and the married 4.422; that is, that the mortality of single life is greater in the earlier ages and less at those ages more advanced. These tables however refer to those connected with the army. Mr. Neison's investigations relative to the members of the Royal Medical Chirurgical Society show the mortality of medical men differs but little from that of the general male population of England and Wales. Dr. Wm. A. Guy read a paper before the Statistical Society of London, Dec. 19, 1853, "On the Duration of Life among Medical Men." His essay embodied a table showing the average age at death in 260 members of the medical profession. He excludes all deaths by violence, accident or suicide, which I regret, as these fatalities are frequently concomitants or resultants of the practice of our profession. The arrangement of his tables are such that I have not been able to make any practical use of them. His conclusions are that the duration of life of members of the medical profession does not differ materially from that of the clergy; that the duration of life of physicians has somewhat increased during the last three centuries. He made a table of three classes of medical men, showing that the general practitioner exposed to so much fatigue, harassed by calls for his professional services, at all hours of the day and night, and often a prolonged attendance among those classes of the community with whom contagious diseases are most rife, have their lives shortened when compared with the other members of the same profession.

James Easton of London has published an account including the name, age, residence and year of decease of over 1,700 persons who survived 100 years and more, from the 1st to the 18th centuries. The official records of the Board of Health of New York contain a record of over thirty centenarians that died in that city during a period of three years and five months from Jan. 9, 1864, to May 15, 1867. It is stated that the oldest of the Greenwich and Chelsea pensioners all answered in the affirmative the two questions: Were you descended from persons of long life? Have you been in the habit of early rising?

Intemperance is one of the most pernicious agencies in shortening life, operating at all times and in all seasons, and is no respecter of persons or professions.

If an excuse or apology could justly be made for any one falling into the habit of intemperance, it could be made for the wearied and worn-out physician who whilst he should be an example of the proper mode of living is tempted to use alcohol in some form for the temporary stimulation he receives. But the fallacy, as well as the unfortunate results of such a course, is at the present time made more apparent, since the true position of alcohol as a medicinal agent has of late been so conclusively shown. That instead of being a stimulant and supporter of animal life it is a depressant, and is henceforth to be classed as an anesthetic and not a stimulant.

Mr. Neison, whose paper we have previously referred to, was an actuary of London and a high authority on statistics and has, from a series of careful observations, deduced some valuable statistics regarding this subject of intemperance, which prove that the average duration of life after the commencement of intemperate habits is among beer drinkers 21.7 years, of spirit drinkers, 16.7 years and among those who drink beer and spirits indiscriminately 16.1. He framed the annexed table of expectancy of life.

Age.	Temper- ate.	Intem- perate.	Loss of Life.	Per cent. of duration of life of Intemperate as com- pared with Temperate.
20	41.2 yrs.	15.5 yrs.	28.7 yrs.	35 per cent.
30	36.5 yrs.	13.8 yrs.	22.7 yrs.	38 "
40	28.8 yrs.	11.6 yrs.	17.2 yrs.	40 "
50	21.2 yrs.	10.9 yrs.	10.3 yrs.	51 "
60	14.3 yrs.	8.9 yrs.	5.4 yrs.	63 "

It was noticed that professional men addicted to drunkenness are shorter lived than drunkards in other pursuits. The influence of marriage upon longevity is a well established fact. Few unmarried centenarians will be found. The results of the observations of Dr. Guy were stated as follows: Mean average of married 66.7 years, of unmarried 62.0 years.

The superior longevity of the farmer over all other vocations is shown in all the tables of those who have made the subject of longevity a study. The following verse well portrays some of the causes that make the farmer's life more favorable to longevity.

"From toil, he wins his spirit light,
From busy day, the peaceful night;
Rich, from the very want of wealth
In heaven's best treasure, peace and health."

In the official registration report of Massachusetts for 1843 to 1866 the average age of the physicians who died during those years, 820 in number, was 55.84, a lower rate than Dr. Guy found in England, which he arranged in three classes, the lowest 67.04, the highest 72.95. The Massachusetts table gives that of lawyers 56.21, judges 66.38, clergymen 57.79, the judges being the highest in the list of sixteen different professional pursuits. Few physicians survive to extreme old age, but as a class they enjoy a comparatively long career, despite the risks of contagious diseases and the arduous nature of their duties.

Lieut. J. W. Maclay, in an essay on "The Relation of the Different Professions and Vocations to Longevity," published in 1873, divides longevity into normal and abnormal; the former denotes the average length of life and the latter advanced or extraordinary longevity. The average of life varies with the habits of the people as regards morality, industry and civilized culture. Ancestral history, as we stated at the beginning of this article, is of the first importance—if a good constitution has been inherited, long life is almost assured if ancestors were long-lived. There are many influences that affect the duration of life, *e. g.*, habits, vocation, residence, health and intelligence. Judges are long-lived not because their vocation is particularly favorable, but the inherited vigor that gives them judicial qualities enables them to bear the strain which short-lived persons would neither undertake nor sustain.

Statistic tables often fail to prove what they claim because they include in their averages such different kinds of persons, and thus mislead the student from noticing real causes and deductions.

The London *Lancet* of January, 1886, states as follows: "The weaker will sometimes prove himself the more tenacious of life by observing rational methods of living, of which the more robust is careless. Moderation has probably more to do with success in this respect than anything else. To eat sufficiently and drink stimulants sparingly, to alternate work with adequate rest and to meet worries heartily, will afford to every one the best chance of arriving at a ripe old age."

Dr. Wm. Ogle, Superintendent of the Statistical Department of the Registrar General's Office, read a paper on "The Mortality of the Medical Profession" before the Royal Medical Chirurgical Society in Lon-

don in January, 1886, from which I shall quote liberally. The census of 1881 showed that there were in England and Wales physicians, surgeons and general practitioners 15,091, and after the census was over, the causes of the death of all males aged 15 and upward in England and Wales during the three years 1880-82 were abstracted from the National Death Register, in combination with the occupation of the deceased persons.

The results of this process as regards the mortality of medical men was to show that their mean annual death rate in those three years was 7.40 per 1,000 between 20 and 25 years of age, 11.57 between 25 and 45, 28.03 between 45 and 65, and 102.85 per 1,000 at 65 and upward.

Dr. Ogle compares the mortality of medical men in those three years with that of men engaged in other pursuits, and gives a table showing the annual death rate in a number of different professions and trades. Each of the rates is calculated for 1,000 males aged upward of 20 years with the same age distribution as the medical profession. The death rate of medical men is shown to be far in excess of that of other professions. Thus, the death rate is 15.93 in the clerical profession, 20.23 in the legal profession and 19.90 in the scholastic profession, while in the medical profession it is 25.53. The rate in the medical profession is not only higher than in any of the other learned professions, but also compares unfavorably with the rates in most other trades and industries, and is indeed only exceeded by the rates in certain trades and occupations that are notoriously unhealthy.

Having established beyond doubt the fact of the marked excess in the mortality of the medical profession, Dr. Ogle proceeds to consider what are the causes to which this excess is attributed, or rather what are the diseases under which it occurs. This information has been derived from copies of the entries in the Death Register relating to the death of 3,865 medical men during the years 1873-82 forwarded to the General Medical Council in accordance with legislative enactment for the due correction of the Medical Register. Dr. Ogle's information based upon these facts is, as he asserts, unique in character. No similar information, unfortunately, exists for any other profession or industry. The number of deaths dealt with is fairly large. The deaths were spread over a period of ten years and they occurred in all parts of the country; they may therefore with full confidence be accepted as a fair sample of the causes of death of medical men. The 25,535 deaths estimated to occur annually among 1,000,000 medical men are therefore assumed to be caused by the various diseases in the proportion shown by the classification of the causes of the 3,865 deaths. The result of this distribution gives the annual death rate per 1,000,000 medical men from each cause of death dealt with.

A table is appended giving side by side with these death rates from the several causes among medical men, the rate for the same causes among all males in England and Wales, irrespective of occupation, and duly corrected for differences of age distribution. The result of this comparison is to show that, with very few exceptions, the mortality of medical men is higher from every disease or group of diseases than is the mortality of males generally. Under some of these headings the medical mortality is twice or thrice or even more times greater than the average. Passing over Dr. Ogle's comparison of the mortality from the

various diseases we notice the death rate from suicide, which is 363 per 1,000,000 among medical men against an average of 238 for all males, and it is further pointed out that the tendency to suicide is increasing in the medical profession, whereas no corresponding increase is shown in the figures for the general male population. In order to facilitate a comparison between the death rates from suicide in the three principal professions, legal, clerical and medical, the annual rates were specially calculated for the six years 1878-83; they are given as 128 for the clerical, 354 for the legal and 464 for the medical profession.

In the *Medical and Surgical Reporter* for February, 1881, I find it stated that Hecker's statistics confirm the fact that the duration of the life of medical men is notably less than the mean.

Dr. Escherich's tables show that in Bavaria of 100 men in each vocation, 53 Protestant pastors, 41 professors, 39 advocates or magistrates, 34 Catholic priests and only 26 physicians reach the age of 50.

Kayser finds in the region of Breslau the average age at which physicians die is 56 years, priests 58, professors 59, higher office-holders 64, apothecaries 64 and lawyers 64.

Hufeland, who wrote his work on "The Art of Prolonging Life," 100 years ago, in 1796, in writing of the longevity of physicians says: "Physicians, who so abundantly dispense to others the means of health and life, ought to claim here a distinguished place, but unfortunately this is not the case. It may be said of them in general, in serving others they are consumed, in healing others they are destroyed."

"At any rate," he says, "mortality is greater among practicing physicians than perhaps among men of any other profession. They have the least opportunity of observing those prudential rules and precautions for preserving health which they lay down to others; and there are few employments in which the powers both of the body and mind are exposed to so much consumption as in this. Head and feet must be always exercised in common. But the greatest mortality prevails during the first ten years of their practice. A physician who has fortunately withstood that period, attains to a certain strength of constitution, a kind of insensibility to fatigue and the causes of disease; by custom, noxious effluvia and the poison of infectious disorders become less prejudicial, and he acquires more indifference for the heart-melting scenes of woe and the numberless miseries, the consequences of vice and moral evil, which his business condemns him to be a daily spectator of; and thus a physician who has luckily passed his time of probation, may become an old man. A striking instance of this is afforded by our predecessor, Hippocrates, who lived to the age of 109. His whole life was employed in the study of nature, in traveling and in visiting the sick, but he passed more of his time in small villages and in the country than in great cities."

I have noticed a statistic table prepared by order of the legislature of Massachusetts at some time previous to 1858, which shows that the average age of physicians in that State was somewhat higher than that of the legal or clerical professions: Physicians 54.94, lawyers 54.13, clergymen 52.40, agriculturists leading the list at 63.93.

Dr. S. H. Freeman, president of the New York State Medical Society in the year 1858, in his annual address on "Human Longevity," was doubtless encouraged from a study of this Massachusetts record

to give expression to the cheering assertion "that the vocation of the physician though perhaps exposed to the severest vicissitudes and trials, in wearisome days and anxious nights, is not unfavorable to longevity; for medical men, from the general activity of their profession, their knowledge of the causes which promote health, and the wholesome exercise of the mind and body, are often enabled to enjoy long lives of active beneficence in dispensing those grateful charities, that cheer and soothe and bless."

According to Dr. Jarvis' tables, the average duration of the lives of physicians is 56 years. Consequently a physician who begins practice at the age of 24, his active profession life will be 32 years.

The Massachusetts Medical Society published a list of their members who died in 1870 and 1871, thirty-seven in number. The ages of thirty-two are given, averaging 60½ years, the extremes being 28 and 84. This, as well as the previous record from Massachusetts, gives a longer tenure of life than common opinion allots to our profession. My old friend and beloved teacher, Prof. E. R. Peaslee, who died at the age of 64, in an address in March, 1851, before the Medical School of Maine, at Brunswick, said: "The constant exertion of body and mind in medical practice, actually renders the average of life several years less in medical than in the other two professions." He quotes statistics for 1846 collated by the State of Massachusetts, giving the average of deceased clergymen 64 years, of lawyers 59 and of physicians only 47 years.

Dr. Casper, of Berlin, in 1834 deduced from statistics the following longevity of different callings: To 42 theologians that attained the age of 70 and upward there were agriculturists 40, commercial men 35, advocates 29, artists 28, teachers and professors 27, and physicians only 24.

M. Quetelet in "A Treatise on Man," Edinburgh, 1842, remarks that it would seem to follow from the above table that mental labor is more injurious to man than bodily; but that the most injurious state of all is that where fatigue of body is joined to that of the mind.

The mortuary registration for the year 1839 in England gave the average ages of deaths of persons in the three professions as follows: Clergymen 59, lawyers 50, physicians 45. T. W. Higginson is responsible for the statement that "Prof. Pierce has proved by statistics that the best scholars in our colleges survive the rest; virtue like intellect doubtless tends to longevity."

Dr. G. W. H. Kemper, of Muncie, Ind., in the *Indiana Medical Journal* of February, 1895, in an article on the "Longevity of Indiana Physicians," states that he found in the "Transactions of the Indiana State Medical Society," from 1880 to 1894 inclusive, 213 deaths of physicians recorded. These were representative men of the medical profession in that State, and their ages, in the opinion of Dr. Kemper, gave a fair estimate of the longevity of our profession. Of these 6 died in the twenties, 29 in the thirties, 49 in the fifties, 62 in the sixties, 33 in the seventies and 9 in the eighties. The ages of the octogenarians were as follows: Four reached 80, one 81, one 82, one 83 and two reached the highest, 88. The 213 persons lived 12,088 years, which gives an average of 56 years and 9 months to each person. Three of them met violent deaths at comparatively early ages, two having been run down by railway

trains and one assassinated; but for these accidents Dr. Kemper states the report would appear better.

Dr. Salzmann, of Essling, Germany has made a study of all the available facts regarding the longevity of physicians to be found in the records of his country, going back as far as to the sixteenth century. In that period the life of the medical man was 36.5, in the seventeenth 45.8, in the eighteenth 49.8, and in the current century 56.7. The comment is made that the increased life rate is the result of the growth of preventive medicine, and especially those measures that have reduced the extension of smallpox and contagious fevers.

At a meeting of the Illinois State Board of Health (the date of which I have been unable to obtain), Dr. John H. Rauch presented a report upon the mortality rate and causes of death among physicians. The paper contains many facts of interest. Dr. Rauch's observations are based upon data accumulated in the ten years preceding his report, regarding Illinois physicians. He finds that the average duration of life among them is lower than is usually supposed to be the case among physicians, viz., 52 years, and that only 11 out of every 100 reach the scriptural limit of three score and ten. During those ten years under observation there had been about 6,000 physicians living annually in the State, among whom there were annually about 80 deaths, giving an annual death rate of 13.3 per 1,000. We will not quote the table published with his report, which shows that the death rate among physicians in the earlier part of their practice is lower than among males generally, or even in the general population. After the age of 40, however, the death rate is proportionately greater, and after the age of 60 it is higher than in the general population. The doctor after he gets to be 40, therefore, should be more than ordinarily careful, for his chances of life are less than those of his neighbor. With regard to the causes of death Dr. Rauch gives tabulated statistics, and adds: "Of the grouped causes of death, consumption, diseases of the respiratory organs (including 91 from pneumonia) and Bright's disease caused 268 deaths, or more than one-fourth of the total. If to these be added a share of the deaths from diseases of the heart, the sequelæ of rheumatism, a fair estimate may be made of the effects of exposure to the vicissitudes of weather upon the wear and tear of medical life. As a result of mental strain and anxiety, of insufficient, irregular and interrupted sleep and similar causes in the total of deaths from diseases of the brain and nervous system, embracing forty-three from various forms of paralysis. In the group of zymotic diseases (enteric fever given separately) there were five deaths from diphtheria, one each from smallpox and yellow fever and eight from traumatic infection (septicemia, etc.), all contracted from attendance upon patients.

Less creditable to the *morale* of the profession are the eighteen deaths from overdoses of opiates and narcotics, the seven admitted suicides and the deaths from alcoholism, direct and indirect, twelve of the former and at least eight of the latter."

Dr. J. L. Kortright, in the *Brooklyn Medical Journal* for June, 1895, has an article on the causes of death of medical men in Brooklyn and New York for the years 1884 to 1892 inclusive. The mortuary statistics includes 450 physicians. The average of age at death was 54.6. He does not publish the entire table of diseases but states that a large proportion of

them may be classed as accidental and in no way dependent upon the pursuit of the practice of medicine. The startling announcement is made that the mortality from suicide among physicians is four times that of other adult males. In most cases death was caused by poison. Frequently the suicide was unintentional and resulted from an accidental overdose on the part of some victim of a drug habit. Pneumonia furnishes a large death rate, which would be expected when we consider the exposure to inclement weather and night air incident to the practice of our profession. Bright's disease, apoplexy and various forms of heart disease are grouped together as all having common pathologic conditions, viz., arterial sclerosis and degeneration of the muscular fibers. The mortality from these causes was 35 per cent., whereas the usual death rate from these causes among all male adults is only 25 per cent. Arterial sclerosis was a cause of over a third of all the mortality. In concluding his article Dr. Kortright gives the following sage advice and warning: "The lesson, then, that we should learn from our deceased colleagues is not to work too long. When you find your arterial tension increasing, your temporal artery becoming tortuous, your radial growing hard, especially if you have a little palpitation and pass an increased amount of limpid urine, whatever your years, know that old age is upon you. Henceforth shape your life like one that is old. Curb your ambition. Be content with a small practice. Reduce your expenses. Give up your night work. Decline confinements. Take a long vacation in summer. Retire early. Eat abstemiously. Drink not at all. Sell your horse. Take a great deal of moderate exercise in the open air. Watch the functions of the skin. Guard against a chill. Cultivate an even disposition. Study to be quiet."

I have nothing but commendation for what the doctor evidently means in these laconic sentences and yet it seems to me that at least two of them need a little qualification or amplification. "Sell your horse" means, I presume, so that you will get more exercise in walking, but some patients would be too far distant to visit on foot, and after sufficient exercise on foot driving is both healthful and pleasant. The other sentence, "Drink not at all," leads me to think that Dr. K. is a Kentuckian, as I recall reading the experience of a traveler in Kentucky who on a hot day, weary and parched with thirst, stopped at a house by the roadside and asked the resident if he could give him a drink. The reply was, "I am very sorry, my dear sir, but I have not anything to offer you." "Why," said the traveler, "is not that a well?" "Oh, yes; yes; you can have all the water you want, but I thought you *wanted a drink*."

Dr. E. J. Marsh, in an address on longevity delivered before the Medical Society of New Jersey, of which he was President, in June, 1892, states that the medical profession does not stand high in the list and the mortality is great in comparison with that of other professions. The hard physical work, the exposure to vicissitudes of weather and the contagion of diseases, the disturbance of regular hours of sleep and food, the mental strain and anxiety from responsibility for life or death are all prolific causes of sickness or of premature decay. The dangers and burdens fall chiefly upon the young men and those in the prime of manhood and when this stage of life is safely passed the mortality of physicians approximates the average for the other professions.

Of 89 presidents of the New Jersey State Medical Society whose deaths are recorded in the "Transactions," 24 died under 60 years of age, 34 between 60 and 70, 20 between 70 and 80, 10 between 80 and 90, and 1 at 93. At the date of Dr. Marsh's address Dr. Enoch Fithian, of Greenwich, N. J., had passed his centennial birthday. Dr. Holyoke, of Salem, Mass., practiced his profession for seventy-five years, and even after his hundredth birthday was consulted and gave medical advice. A statement was published in April, 1895, that Dr. de Bossy, the oldest of French physicians, was born in 1793, that he had never been ill and was still in active practice in Havre. He rises at 7, summer and winter, and as soon as dressed starts on his rounds, usually on foot. He attributes his longevity to moderation in all things. His father lived to be 108, and in that fact more than to his own conduct do I attribute this long life of the son.

Dr. William Salmon now living in Glamorgan, England, entered his 107th year March 16, 1896. He is still in excellent health. His father was also a physician. He derives deep pleasure from the faith that he is the oldest justice of the peace, the oldest physician, and the oldest freemason in the world, and Gladstone, who is young enough to be his son, sends him a birthday telegram every year, with his sincere wishes for here and hereafter.

The most remarkable instance of longevity that ever came under my own observation was that of a hale farmer, Samuel Vann, living in the town of Ulysses, Tompkins County, N. Y. He was born in New Brunswick, N. J. He was never ill, so far as I have been able to learn, until a few days before his death. He walked about the country, going frequently several miles in a day, until just preceding his death, which was some acute disease, I should think peritonitis, from what I have learned about it. He retained full possession of all his faculties, transacted all his business personally and gave no indications of such advanced age. Hon. Irving G. Vann, recently appointed by Governor Morton as one of the Judges of the Court of Appeals, is a grandson of Samuel Vann, who died March 19, 1877 after he had entered upon his 107th year. I saw a man 108 years old, but he was confined to his bed and as helpless as an infant. He was the father of Rev. Marshall, a Baptist clergyman living at that time in Covert, N. Y.

Shepard Homans, the great life insurance actuary, in 1891 published some matters of great interest in reference to longevity in general. He says man grows 20 years and his natural limit of life is 100 years. It has been found that the natural limit of life in all animals is about five times the period of their growth or complete development. Thus the camel grows 8 years and his natural life is 40; the horse grows 5 years and lives 25; the ox grows 4 years and lives 20; the dog grows 2 years and lives 10; and the hare grows 1 year and lives 5.

Buffon states: "That the man who does not die of accident or disease lives everywhere to 90 or 100 years of age." Hufeland says: "Nearly all those deaths which take place before 100 years are brought on artificially, that is to say, by disease or accident." Dr. Farr in the Sixteenth Annual Report of the Registrar General of England says: "The natural term of human life appears to be 100 years." Finally the prophet Isaiah says, lxx, 20: "There shall be no more thence an infant of days, nor an old man that hath not filled his days; for the child shall die an 100 years old." The

extreme limit of life, Homans states, appears to be about twice the natural term or limit. Thus instances have occurred of man living to 200 years, or very nearly; and Buffon relates with much minuteness the history of a horse that lived 50 years. "How are we to account for the ages recorded in Genesis," says Homans, "of Adam, his sons and Methuselah?" "We can not disregard the teachings of science, nor need we doubt the statement in Holy Writ. Each has Divine authority. By what theory can we reconcile the two. Simply that the year or unit of time among the early patriarchs differed from that adopted since the Deluge, which has been twelve calendar months." Hensler, a high authority, shows the strong probability that the years till the time of Abraham consisted of three months only; that it was afterward extended to eight; and that it was not until the time of Joseph that it was made to consist of twelve. These assertions Hufeland (1796) states are in a certain degree confirmed by some of the Eastern nations, who still reckon only three months to the year, and besides it would be altogether inexplicable why the life of man should have shortened one-half immediately after the flood. It would be equally inexplicable why the patriarchs did not marry till their sixtieth, seventieth and even one hundredth year; but this difficulty vanishes when we reckon these ages according to the before mentioned standard, which will give the twentieth or thirtieth year, and consequently the same periods at which people marry at present. The whole therefore, remarks Hufeland, according to this explanation, assumes a different appearance, and with the period of Abraham, we find mention of a duration of life which can still be attained and which no longer appears extraordinary, especially when we consider the temperate manner in which the patriarchs lived, and therefore we reach the comforting assurance that man can still attain to the same age as ever. I have made diligent inquiry to verify the above statement, but have been unable to find any corroborative evidence that any Eastern nations now or ever have had years less than twelve months, which was the Jewish year not only, but also the Egyptian. I am surprised that this important statement from so high an authority should have passed unchallenged so many years, as Erasmus Wilson, F. R. S., published the translation of Hufeland's *Art of Prolonging Life*, in 1853, and as late as 1891 Shepard Homans refers to it as a very satisfactory explanation of what would otherwise seem difficult of comprehension.

In recently looking over the transactions of our (N. Y.) State Medical Society, it seems as though I was walking through a graveyard where were buried a host of my medical friends or acquaintances, and that on every side of me were the headstones or monuments recording their names, ages and brief notices of their earthly labors and the professional honors which they had won during their active professional lives. Each and every volume of the *Transactions* contained obituaries of former members read by surviving professional brethren who in turn, soon after, or at least many of them, lay down the burden of life and were represented in later volumes by some medical friend presenting their obituary memoirs. I was much surprised on reading these memoirs to notice that most of these physicians died at an earlier age than I had supposed, though at the time of their death I knew their ages, yet somehow in the lapse of time that had occurred I had retained an impression that

they were older men than the published records now show they were. Some of them were privileged to have the poet's wish:

"To glide my life away! and so, at last,
My share of duties decently performed,
May some disease, not tardy to perform
Its destined office, yet with gentle stroke,
Dismiss me weary to a safe retreat
Beneath the turf that I have often trod."

Others were summoned by long and painful maladies, yet were

"Sustained and soothed
By an unfaltering trust."

"The air is full of farewells to the dying and mournings for the dead, but our ears are so dulled by the iterated sounds that their dread import rarely reaches our hearts; unless on occasions when we are appalled by the intrusion of death stalking into our own households, or invading the circles that embrace those with whom we are accustomed to associate, and whom we hold in regard for qualities that have endeared them to our hearts and capacities that have commanded our admiration."

Whilst passing in review the life and character of many professional friends and acquaintances of former years, and as I have scanned the death record of the past for the facts here recorded, the solemn words of Daniel Webster have come forcibly to mind, for he left on record his deliberate convictions regarding professional fame in these words:

"Professional fame fades away and dies with all things earthly. Nothing of character is really permanent but virtue and personal worth; these remain. Whatever of excellence is wrought in the soul belongs to both worlds. Real goodness doth not attach itself merely to this life. It points to another world. Political or professional reputation can not last forever; but a conscience void of offence toward God and man is an inheritance for all eternity."

In bringing to a close this compilation of what I have been enabled to secure upon this interesting subject, I desire to state that I have no doubt that there is much in print that I have failed to find, not having had an opportunity to visit any of the large libraries of our cities while preparing this article. Nevertheless, I trust that some one else will, by reading what I have collected, be prompted to supplement my article with fuller details and statistics from other sources. It would not be a very tedious task for the secretary of every medical society to tabulate from the mortuary records of its members a table and statistics of real value and interest. And every State and city of our country that has a system of recording the vital statistics could furnish much material for a paper on the longevity of physicians. Our State of New York has these records since 1880, but in a recent correspondence with Dr. B. F. Smeltzer, the Secretary of the State Board of Health, he states as follows: "It is regretted that the information you desire has never been tabulated; the records, however, are at your disposal at any time you wish to consult them or send a representative to this office for that purpose, when we would be pleased to aid you in securing the desired information."

To the older members of our profession I desire to speak words of cheer, for old age has opportunities for usefulness equal to any period of life. The veterans in medical practice have solved many problems that the younger practitioners are still wrestling with.

Experience is the most efficient teacher and one whose lessons are least likely to be forgotten. How many visionary theories have been traversed and found baseless; how many lessons taught us by honored professors have proved of little value; but the lessons we have learned from practical experience and careful observation, repeatedly tested, have proven to be an anchor to our souls when we have been tossed upon the waves of tempestuous controversy and adverse criticism. We find solace often in that couplet:

"One self-approving hour whole years outweigh,
Of stupid starers and of loud huzzas."

If confident that we are correct in our diagnosis and procedure, we may calmly rest while the hurricane of discordant criticism may roar about us. Longfellow thus encourages old men, and these words should give inspiration to every member of our loved profession on whom the infirmities of age are resting.

"But why, you ask me, should this tale be told
To men grown old, or who are growing old?
It is too late. Ah! nothing is too late
'Til the tired heart shall cease to palpitate.
Cato learned Greek at eighty; Sophocles
Wrote his grand *Oedipus*, and *Simonides*
Bore off the prize of verse from his compeers
When each had numbered more than fourscore years:
And *Theophrastus*, at fourscore and ten,
Had but begun his *Characters of Men*.
Chaucer at *Woodstock* with the *nightingale*,
At sixty wrote the *Canterbury Tale*:
Goethe at *Weimar*, toiling to the last,
Completed *Faust*, when eighty years were past.
These are, indeed, exceptions, but they show
How far the Gulf stream of our youth may flow
Into the Arctic regions of our lives,
Where little else than life itself survives."

A PRACTICAL OPHTHALMOSCOPE.

BY EDWARD JACKSON, A.M., M.D.

PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC,
SPECIAL LECTURER ON PHYSIOLOGIC OPTICS IN THE UNIVERSITY
OF COLORADO.

The Sight-hole.—The principal use of the ophthalmoscope is to enable us to study the interior of the eye. The use of its lenses for the measurement of refraction is of much less importance. In most of the forms of the instrument employed in this country its principal use has been somewhat sacrificed to assist its less important function. To measure refraction with the ophthalmoscope it is necessary by using a large sight-hole to exaggerate the blurring caused by imperfect focusing. For the other uses of the ophthalmoscope this blurring should be reduced as much as possible. It can not be entirely corrected by lenses, because in all eyes, with the pupil dilated as in a dark room, there is irregular astigmatism which no lens can correct. Such blurring is reduced directly in proportion to the reduction in the size of the sight-hole: hence, the most distinct view of the details of the eye-ground is only to be obtained through a small sight-hole.

Again, one of the chief obstacles to obtaining a view of the fundus is the reflection of light from the surface of the cornea. The reflection gives rise to a minute image of the source of light apparently situated a few millimeters behind the cornea; and, therefore, so close to the surgeon's eye that the light from it falls on his retina in a circle of diffusion. The size of this circle is directly proportioned to the size of the sight-hole in the ophthalmoscopic mirror, through which the light is admitted. If this circle be larger

than the image of the patient's pupil, the pupil is seen as through a luminous cloud. But if the circle of diffusion be smaller than the image of the pupil, the view through the part of the pupil not covered by the luminous cloud will be clear. The reflection from the patient's cornea is the main obstacle to the examination of the eye without the use of a mydriatic, and particularly to the examination of the region of the macula. For the great mass of ophthalmoscopic examinations it is therefore the most serious obstacle. The sight-hole of three or four millimeters in diameter, used in most ophthalmoscopes, is too large. One of two millimeters in diameter is distinctly to be preferred for the great bulk of ophthalmoscopic work.

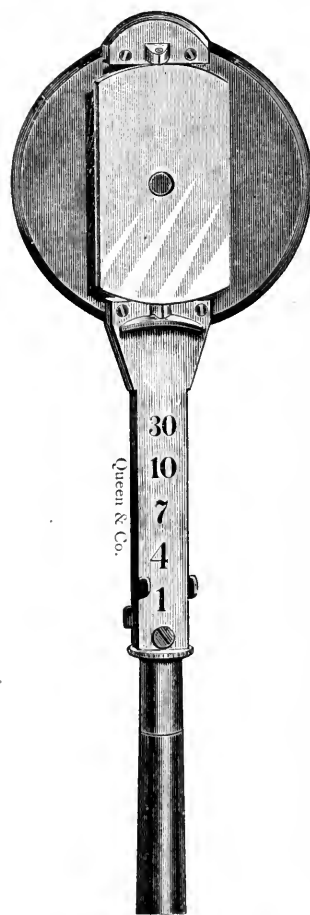
The Lens Series.—Another point in which convenience has been sacrificed for the supposed ability to more accurately measure refraction with the ophthalmoscope is in the number of lenses employed. The excesses in this direction are sometimes almost ludicrous, and become entirely absurd when put forward as the especial virtues of an instrument. Others who have made considerable practical use of the ophthalmoscope have noticed this and referred to it; for instance, Knapp (*Archives of Ophthalmology*, 1895, p. 552) in commenting upon the double-disc ophthalmoscopes of Loring and Knauer, speaks of them as having "a superfluous wealth of glasses." "These instruments are less inconvenient than other double-disc ophthalmoscopes, but with regard to easy handling are still inferior to the single-disc instruments, and these can be made to carry a number of glasses sufficient for all purposes."

These instruments have lens series in which, for the weaker lenses, the interval is one-half diopter. I have never known an ophthalmoscopist who, I thought, could measure refraction with the ophthalmoscope to the accuracy of one-half diopter in a large proportion of his cases. I am sure that for the ophthalmoscopist who is not daily measuring refraction with the ophthalmoscope under most favorable conditions, such an interval between the lenses is a delusion and a snare. He will do more accurate work with a greater interval, say of one diopter, which will cause a sufficient blurring when the correcting glass is departed from, to be certainly recognizable. Loring (*Text-book of Ophthalmoscopy*, Part 1, p. 111) says: "I feel convinced that it is very difficult, sometimes impossible, with young people to tell the lighter degrees of H (less than .75 D.) with the ophthalmoscope;" and on page 118, that degrees of astigmatism "as low as 0.75 D. can be detected by this test, provided the accommodation in both the observed and the observing eye is perfectly relaxed." Loring refers to the measurements of refraction with his own ophthalmoscope, having a sight-hole almost four millimeters in diameter. With the sight-hole reduced to improve the instrument for its primary uses, the value of the half-diopter interval between the lens is correspondingly reduced. There is, therefore, no reason for an interval of less than one diopter between the lenses of the instrument that is to be most useful for the general practice of ophthalmoscopy.

In the measurement of refraction with the ophthalmoscope it is very important, indeed it is absolutely essential, for accuracy, that two lenses which are to have their effects compared as to blurring of the image, should be so arranged that the one can be substituted for the other without taking the instrument

from the eye. Slight changes in the distinctness of the image are worthless when the change from one to the other can not be made instantly. On this account no lens series can be considered satisfactory which is not all available without removal of the instrument from the eye.

Focus of the Mirror.—Where a single mirror is furnished with the ophthalmoscope it has been customary to give it a focal distance of eight or ten inches. This would give to parallel rays a convergence of four or five diopters. The rays, however, that fall on the ophthalmoscope mirror are usually divergent from a point not more than twenty or thirty inches away, and such rays leave the mirror only two or three diopters convergent, so that they are perfectly focused on the retina of an eye two or three diopters hyperopic; and are almost perfectly focused on the retina where the



hyperopia is lower than this. When this is the case there is formed on the fundus of the eye examined a little inverted image of the source of light, which makes a most unsatisfactory area of illumination. To secure a more uniform, diffuse illumination, for a great majority of eyes which present low or moderate degrees of hyperopia, the rays entering the eye must be rendered more convergent, so that they will focus in front of the retina and form upon the fundus an area of comparatively uniform diffusion. The focal distance of the ophthalmoscopic mirror, to accomplish this, should be not more than three or four inches. If, for any reason it is desired to throw into the eye, as in myopia, rays that are less convergent or parallel, this may be effected with such a short-focus mirror by bringing the source of light close to the mirror.

A Modified Form of Ophthalmoscope.—In 1885 I

showed before the American Ophthalmological Society a new form of ophthalmoscope, and in the following year suggested additional lens series for it (*Transactions American Ophthalmological Society*, Vol. iv, pp. 111-361) which, with the arrangement of lenses in two slides moving vertically behind the mirror, allowed of the combination of lenses, and of a sufficient lens series completely available, without removal of the instrument from the eye. This form of instrument has since been widely used, and is still, in most respects, entirely satisfactory. But the lens series, the focal distance of the mirror and the size of its sight-hole then adopted, conformed closely to those of other standard ophthalmoscopes, and experience has shown more and more clearly that these were capable of considerable improvement. I, therefore, recently had made by Queen & Co., of Philadelphia, the instrument shown in the accompanying cut, upon the mechanical plan of the earlier instrument, with a mirror of four inches focal distance, having a sight-hole two millimeters in diameter, and with the following lens series:

Convex, 1, 2, 4, 6 and 15 diopters.

Concave, 1, 4, 7, 10 and 30 diopters.

These, by combinations, furnish the following lens series, every number of which is available without the instrument being taken from the eye:

Convex, 1, 2, 3, 4, 5, 6, 8, 11 and 15 diopters.

Concave, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15 and 30 diopters.

As to the advantages of this lens series, we have already discussed the worthlessness of a shorter interval than 1 D. for the weaker lenses. The convex series furnishes each diopter to six, then skips to eight, and so on. It should be remembered that hyperopia of over six diopters is rare. Among 4,000 eyes I found only eighteen having more than this amount of hyperopia (*Trans. Am. Ophthalmol. Soc.*, 1889, p. 438). Then, too, by withdrawing the six diopter lens one and five-eighths inches from the eye it measures eight diopters of hyperopia, and at intermediate points measures all intermediate amounts. Really, for the measurement of refraction, no stronger convex than ten diopters is required in the ophthalmoscope, but it is convenient to have a stronger lens for the ophthalmoscopic examination of opacities in the cornea, crystalline lens and vitreous.

It will be noticed that the series of concave lenses gives each diopter up to ten. In the 4,000 eyes above referred to, 24 presented myopia of over ten diopters. But here again the variation of the distance of the lens from the eye enables a few strong concave lenses to measure every degree of myopia; thus the thirty diopter concave held one and one-fourth inches from the cornea measures but fifteen diopters of myopia, and at shorter distances from the eye measures intermediate amounts. If one wishes to be even approximately accurate in the estimation of high degrees of hyperopia and myopia with the ophthalmoscope, he must always measure the distance of the ophthalmoscope lens from the patient's eye, and allow for it; and this process is simplified by having a few well-chosen strong lenses.

It is doubtful if a more extended lens series than this was ever of practical advantage to the mass of ophthalmoscopists, and the accurate measurement of refraction with the ophthalmoscope by the direct method is of far less importance since the introduction of skiascopy. Every lens in a series that is not

needed is a source of possible inaccuracy and a nuisance. It is just as important to have no useless lenses that must be run over in finding the right one, as it is to have at command all that are really needed.

TUBERCULAR PERITONITIS.

BY BYRON ROBINSON, B.S., M.D.

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At this time experiments are rife in every direction. Even the laity demand cause and effect and ask the question: "What is the practical effect of trial?" Peritoneal tuberculosis has interested me for years, and of late the apparent cure by abdominal incision and drainage.

After considerable observation for the past eight years in tubercular peritonitis, I must say that the so-called surgical therapeutics lack an essential base of explanation. I have posted about twenty cases of tubercular peritonitis, operated on some eight to ten patients and made some careful observations on three cases in Professor Senn's clinic, having therefore over thirty cases of quite careful observation.

To be short, in regard to the cases of abdominal section to relieve peritoneal tuberculosis, I will say that all recovered, except the sixth case, after the operation, and became so well that they left the hospital and passed into the unknown field outside the hospital, from which few report, and I have lost all trace of them. They regained a very large part of their health before leaving the hospital. The sixth case died, I think between two and three weeks after the operation, not from the surgical procedure, but from extension of the peritonitis due to tuberculosis. I unhesitatingly say that the tubercular peritonitis in the stages at which I operated appeared to be benefited in all, and at least temporarily improved all but the one case too far advanced.

The present state of the subject of peritoneal tuberculosis is entirely unsettled. Opinions have a wide swing, an extreme swing among surgeons, gynecologists and internal medical men. But so do all subjects until natural experiments force a more rigid standard of decision. It requires many experiments to learn a small number of natural laws. The more wild and varied opinions on any subject, the rarer the opportunities one has for testing his experiments. Ten years ago we relatively knew nothing of the subject in regard to its therapeutics. If I remember rightly it was an old veteran, the methodic and abdominal surgeon, Spencer Wells, who opened the abdomen of a patient possessing a tubercular peritonitis in 1865. In 1885, it seems to me, she was reported alive, twenty years after. This, of course, was a long forgotten circumstance and experiment. But people easily forget matters. It requires a tenacious grip to remember the long-continued effects of good and bad result.

The condition of some cases of peritoneal tuberculosis precludes any possibility of recovery by any known therapeutic agent. There are two forms which we meet in tubercular peritonitis, viz. (a) the dry form, and (b) the moist variety. The dry form appears quite red, congested, and presents large, thick, swollen diseased parts. The ligamentum peritonei is dense, but friable. In cases in which Dr. Lucy Waite and I performed laparotomy the disease had progressed very extensively, showing enormous pathologic products, and yet a year afterward present fair appearances.

The broad ligament with the tube may be thick and twelve to fifteen times their original size. The peritoneum was studded with large and small tubercles. Three weeks' drainage improved the patient very much. Some of the patients presented the most formidable conditions of callosal nodules, and yet were wonderfully improved. It would seem the dry form is amenable to treatment. The second variety is the hydrops peritonei tuberculosis, the moist variety. Ascites slowly arises and the abdominal cavity gradually swells. It is quite likely that it is the chief one of destruction.

In opening the abdomen one may not be able to see the innumerable small, fine miliary tubercles, but one can feel them. When large enough to see they look like small blisters studding over the omentum majus, mesentery and visceral peritoneum. After a certain time or size of the tubercle, degeneration occurs at its center and its caseous degeneration may result in an ulcer; when more advanced bowel perforation results.

On opening the abdominal cavity the first organ, in general, is the omentum majus, for it seems that the business of the omentum majus is to meet emergencies in the abdomen. It seems to be prepossessed of attempting to defend the abdominal cavity by meeting and monopolizing the invading disease. By tracing the omentum majus one is very liable to discover the primary tuberculosis, which in woman is so often from the Fallopian tubes. The omentum is like a man-of-war, it guards the ports against hostile entrance, it is the great peritoneal protector against infectious invasion and the surgeon's good friend to cover up the mischief his hands have wrought. It is asserted by Senn that we meet with peritoneal tuberculosis in the female the most frequently. This is not in accord with the peritoneal tuberculosis I found in 350 personal autopsies, for we found it more frequent in males. From the appearance of the subject it seems that they have other organs than the peritoneum affected.

The present trend in tubercular peritonitis is to perform an abdominal section; yet the very reason against such procedure is that we still know nothing about the real method of cure. And in truth, do we really know whether the section actually cured, or would the patient have done as well without the section? Pibram undertook the tedious labor of finding out how many died of tubercular peritonitis in the pathologic institute of the University of Prague, according to Vierordt, and he found that 165 out of 3,500 died of tubercular peritonitis, *i. e.*, about 5 per cent. A mortality of 5 per cent. from tubercular peritonitis is about what agrees with some other estimates. It seems that in one series of one hundred autopsies which the pathologists and internes of Cook County Hospital were kind enough to allow me to carefully examine during the autopsy, some six died of tubercular peritonitis and several others possessed peritonitis which suggested the same pathologic process, but died from other causes or from tubercles in some other viscus. Differences of opinion arise among physicians from differences of circumstance in life. The surgeon sees one kind of tubercular peritonitis, especially two forms, *e. g.*, large ascitic abdomen, not only enlarged by fluid, but by boggy masses arising from exudates or inflammation in the omentum or mesentery, both stiffening the mesenterium and omentum so that through emaciated abdominal walls

the surgeon distinctly maps out the tumor. Now, just in these cases the surgeon operates, and it may be that this surgical cure which we do not understand is in just such cases. The gynecologist, to a certain extent, may be classed with the surgeon, but he is generally better able to understand the conditions from his more extensive experience in the abdominal cavity (in this country at least, where gynecology and surgery are becoming so widely separated).

Some of the cases reported in this paper appeared simply hopeless from tubercular invasion of the peritoneum. The most advanced cases and the most profoundly affected were those of the dry variety. They were all women but one; two of them, operated on by Dr. Lucy Waite and myself, showed the parts perhaps fifteen times thicker than normal. In one of them it is a year after the operation and in another some ten months; and reports are good. The tubes, broad ligaments and lower omental border presented immense shapeless masses with scarcely any ascites. One case is about three years old, in which Dr. Bertha Van Hoosen assisted. A point of some interest is that the omentum is frequently found at the primary seat of the tubercular peritonitis. It is not easy to explain the predilection of the omentum for the primary seat of peritoneal inflammation. It is absolutely astounding how a human being can live so long with such vast and serious lesions as tubercular peritonitis produces. The peritoneum may become an inch thick. Small and large ulcers beyond count with large tubercles stud the ligamentum peritonei, visceral and parietal peritoneum almost beyond conception. The mesenteric gland may become the size of a hen's egg, and one is amazed at the innumerable mesenteric glands which suddenly come into view in tubercular peritonitis, which normally attract little or no attention from size or number. Tubercular peritonitis is one of the best of nature's experiments to demonstrate the lymph node and the effort of the lymph nodes or glands to check the bacillary invasion. I have noted several large bowel perforations screened and protected by vast deposits of adhesions. It may be noted that these patients generally have other tubercular lesions, as pleuritis, pulmonitis and joint affections. They generally have a tubercular habit or shape and show to the clinician that they are subjects in which to suspect tuberculosis. It is well understood that lupus is a skin, or surface tuberculosis, and that it is quite amenable to surgical treatment, *i. e.*, a thorough curettement or application of the Paquelin cautery will relieve them for eight to twelve months. It may be that the surface serous tuberculosis which is so amenable to treatment is of a similar nature. It is not clear what drainage accomplishes. Does it relieve intra-abdominal pressure? Does it initiate changes in the stomata vera, the fluid regulators of the peritoneum? It may induce rapid multiplication of leucocytes, which swarm to the peritoneal surface and destroy the bacilli. I have injected the rabbit's peritoneum with Berlin blue suspended in fluid, and found that in ten hours the leucocytes have swarmed out on the surface and seized particles of Berlin blue and hastened back through the stomata into the lymphatics of the diaphragm. The leucocytes surround the particles of blue or coloring matter and it then becomes a foreign body no more. It is encapsulated in protoplasm. Of course these leucocytes may be out into the peritoneal cavity for something to eat, but they have not the discriminating powers to

decide what is food and what is not, so they seize any foreign body invading the peritoneum, whether it be in soluble coloring matter or vegetable microbes. The microbes the leucocytes may digest, englobe or destroy. Some leucocytes carry back into the diaphragmatic subserous lymph channels many particles equal to the 100 tubercle bacilli. Scores of leucocytes may be found loaded with particles of coloring matter lying in both straight, superficial and deep channels of the diaphragm.

It seems to me that the cure of tubercular peritonitis, if it be recognized as such, by incision and drainage (and iodoform) must rest back on the power of the leucocytes to fight the battle against invading microbes. In some cases there will be a deposit on the peritoneum sufficient to make it an inch thick. In other cases the adhesions are so dense and so extensive that several bowel perforations will be entirely protected by the adhesions. Surely no incision or drainage will benefit such; they are beyond the art of surgery.

The man who practices internal medicine sees the patient in another and very different condition. He is visited by patients with peritoneal tuberculosis of lighter grade. They are simply slightly ill, constipated, weak; sweat, have no appetite; occasionally sharp diarrhea attacks them. Examination of the abdomen reveals very little, no palpable tumors, omental and mesenteric thickening. In short, they are in a transitional stage between being compelled to stop labor and going to a surgeon. The different stages in which internal medical men and the surgeon find the cases of tubercular peritonitis in cities, cause different opinions as to the course of the disease and the results of therapeutics on the disease. My view is that the claim that abdominal section is a cure-all for tubercular peritonitis is not founded on facts, but founded on imagination. We do not understand how section cures it, nor has any one offered a satisfactory explanation. They claim that air passing into the peritoneal cavity produces the cure. Could they settle the fact by injecting air into the cases where microscopic examination had proved the presence of the tubercular bacillus? But we think we know to-day that tuberculosis is a curable disease, *i. e.*, it may be arrested and not kill a patient. Again, I think that many cases diagnosed and operated on as tuberculosis of the peritoneum are simply chronic peritonitis, and the drainage is the cause of the mystic cure. How many are injured by the abdominal section? Many are born to die unreported. How many cases are really tubercular peritonitis which are operated on and reported on in the ordinary journal?

Finally, what about the newer treatment of iodoform? Senn uses in the abdominal cavity two drams of a 10 per cent. iodoform-glycerin emulsion and claims it has curative effects. This emulsion is smeared over the affected portions of the peritoneum. It may be noted that others believe this valueless for treatment. It seems to do good work as an interosseous and parenchymatous injection, and if so, why not apply iodoform-glycerin emulsion to the peritoneum? Tubercular peritonitis is a surface tuberculosis and it yields the most readily to surgical treatment. Is it because it is a surface tuberculosis? We must not forget that the peritoneum is a great lymph sac and the endothelial layer rests on a bed of lymphatics. Has this anything to do with the curative effect of incision and drainage? What has vis-

ceral trauma to do with it? But there is no doubt that our observations are very defective in tubercular peritonitis, for doubtless many patients recover from it of whom we know nothing, and simply because we accidentally find one and operate, we think we have discovered a therapeutic agent. The month's rest in bed deceives us by its curative effect also; we are apt to overlook that. I call attention to the view that leucocytes may help the surgical procedure to fight the battle against the invading germs. For, really, tuberculosis is a benign disease and requires but a slight shock to check its progress. It, in this respect, resembles a growing uterine myoma whose existence is easily checked by a slight shock. Inflammation seems to be, from my experiments on the peritoneum, a production of leucocytes. It is a fight of the leucocytes against the invader, whether it be Berlin blue or microbes. The object of the leucocyte, a defender of invasion, is to digest or imprison the invader. Now, since the Berlin blue can not be digested, it is encysted, surrounded. Again, when the tubercle bacilli invade the peritoneum, the leucocytes surround it, forming what are known as tubercles, *i. e.*, the tubercles of the peritoneum are composed of leucocytes which endeavor to defend the organism. If the leucocytes are well fed or sufficiently numerous they will come off conquerors. Now, when the abdomen is opened in peritonitis a reaction arises from the trauma and the peritoneum is supplied for a season with much more blood than usual. This fresh supply of blood over-feeds the leucocytes or tubercles of the peritoneum, and the leucocytes with their renewed vigor digest or englobe the tubercle bacilli, hence the recovery from tubercular peritonitis; we may be able to do this same object by a simpler surgical procedure later. However, it seems that the recovery of the tubercular peritonitis with or without surgery must be credited to the leucocytes, the defenders of animal organisms against microbial invasion or inflammation.

BOVINE TUBERCULOSIS.

Read before the Chicago Pathological Society, March 9, 1896.

BY HENRY B. STEHMAN, M.D.

CHICAGO.

Tuberculosis in cattle has become a recognized factor in the production of tuberculosis in the human family.

The weight of evidence is rapidly accumulating to show that tuberculous food is directly responsible for the transmission of this disease in many individual cases. It is stated that of the mortality of the race 7 per cent. is due to tuberculosis, but the casual observer will readily see that this is but a partial statement of facts, for we all know that many cases with sufficiently pronounced lesions to produce death, are not classed in this category. The nature of many infantile diseases and lesions of important viscera in adults are only too frequently unrecognized. They are treated as inflammations of some sort, when in fact they are nothing more nor less than genuine tubercular affections. The prevalence and fatality of the disease makes it all the more important that we should discover and if possible prevent the causes and conditions which are active in its dissemination.

It is now admitted that food from a tuberculous animal, whether milk or meat which has been infected, may produce tuberculosis, and especially is this true in infants, in those greatly prostrated from some

febrile condition of a typhoid type and in those cases predisposed to the disease.

The investigations that have been made within the past two or three years, show that tuberculosis prevails pretty generally among our cattle and especially is this the case among our dairy herds. The reports which come to us from different States emphasize the fact that the affection is not limited to any special locality. Herds have been tested in which it was found that as high as 75 per cent. were affected, though this is exceptionable; nevertheless, it is not uncommon to find as many as 30 per cent. so diseased. The statement has recently been made that in the State of California (*THE JOURNAL*, Vol. XXVI, p. 240) 15 per cent. of the cattle are infected, but this estimate is far above the generally accepted opinion of veterinarians, who tell us that about 5 per cent. of the cattle of this country are tuberculous. In our own herd we found four diseased out of thirty-eight that were tested.

The opinion seems to prevail that the disease is most prevalent among the best bred herds, but the recent reports coming from the New York Board of Health show that of those condemned, the common stock more than outnumbered all the pure breeds (*Country Gentleman*, Vol. LXI, p. 231). Tuberculosis steals upon cattle as insidiously as it does upon human beings; in fact, in its incipient stage, or even when quite far advanced, whether it involves the thoracic or abdominal viscera, or both, physical signs are of little or no avail in making a diagnosis. It is only by the use of tuberculin that it can be positively detected. The disease may involve important viscera to a considerable degree and yet physiologic functions may not be impaired or the nutrition disturbed. It is only by the use of tuberculin hypodermically injected that the affection may be recognized by any degree of accuracy. The experiments at home and abroad have only strengthened the opinion of careful observers on the reliability of tuberculin as a diagnostic measure, and while it may not yet be recognized as an infallible agent, nevertheless the difficulty lies not in the value of the agent itself, but in the lack of experience and wisdom which is necessary to interpret the conditions which follow its exhibition and correctly differentiate them from pathologic or even physiologic symptoms which they closely simulate. The value of tuberculin lies in the fact that its exhibition produces a toxemia which manifests itself in a decided temperature rise where tuberculosis exists in an incipient or moderate state of development, but in those cases where the disease is far advanced no such reaction takes place. Fortunately, however, in those cases the symptoms are so manifest that the lesion may be recognized by the usual physical signs. The best authorities tell us that a characteristic reaction after the administration of tuberculin of two degrees above the normal is proof positive of tubercular infection (*Bureau of Animal Industry*). It only remains, however, to ascertain what is the normal temperature of each individual case, for as stated, there are various conditions, such as metritis, pregnancy, heat or handling that may increase temperature and thus modify the value of the initial observations. The temperature is usually taken by the rectum; from four to six observations are made, from twenty-four to forty-eight hours previous to the injection of tuberculin.

The temperature rise occurs from nine to sixteen

hours after the inoculation, and if the toxemia is profound we find symptoms such as general weakness, coughing, animal refuses food, coat is rough, breathing is labored, forearms are extended, eyes are glassy, and in thoracic lesions characteristic signs may be easily recognized. In other cases enlarged cervical and mammary glands may also be detected. This temperature manifestation may last with slight variations for a day or so and then gradually subside. In ordinary cases the animal suffers considerable from the intoxication, and in many cases the pathologic changes are increased by the use of tuberculin, so that they pass into a rapid decline.

Where, however, no tuberculosis is present the injection does no harm as was formerly supposed. It was our experience that in the healthy cattle within forty-eight hours all the functions were normal, and in a few days the milk flow was reestablished. This limited observation is confirmed by a large array of testimony (*Pennsylvania Reports*), and consequently this objection holds good no longer as an excuse for refusing to try this test. Besides, even though tuberculin is derived primarily from the product of the bacillus of tuberculosis, it undergoes such changes in course of its preparation that the article we call tuberculin is nothing but a chemie substance, and of course can not originate tuberculosis. Recent reports (*State of Iowa*) from those who have studied the subject carefully show that tuberculosis is not transmitted from parent to offspring; this observation among cattle has long since been observed in the human family by the profession. The disease spreads among herds either by the indiscriminate housing together of healthy and diseased cattle, or the infection is produced by the milk fed to calves from tuberculous cows.

The report of the English Royal Commission appointed to investigate this subject, says: "We have obtained ample evidence that food derived from tuberculous animals can produce tuberculosis in healthy animals." It says further: "The ordinary processes of cooking applied to meat which has got contaminated on its surface are probably sufficient to destroy the harmful quality, but it would not avail to render wholesome any piece of meat that contained tuberculous matter in its deeper parts. The boiling of milk, even for a moment, would probably be sufficient to remove the very dangerous quality of dangerous milk." The Commission reports that "while the recognition of tuberculosis during the life of the animal is not wholly unattended with difficulty—nevertheless in most cases it can be detected with certainty in the udders of milk cows." But more recent investigations prove that milk may be tubercular and yet the udder of the cow show no evidence of disease.

Roth (*Mod. Med.*, Vol. IV, 12, p. 314) tested thirty-six cows which showed no evidence of disease in the udder and in twelve the milk and cream contained tubercle bacilli. Twelve pigs were fed upon the same milk and five became diseased. Twelve out of eighty-eight guinea pigs inoculated with tuberculous milk became tubercular. Of twenty-one calves fed upon the same milk eight became infected.

H. W. Conn (*Hoard's Dairymen*, Vol. XXVI, No. 51, p. 1006) states that recent statistics from abroad show that of 45,000 swine slaughtered for market 11 per cent. were found tuberculous, and that a more careful study shows that of the swine fed at creameries upon the skim milk and slime of the centrifugal machine from 60 to 70 per cent. were found diseased.

Further, it has been found that butter made from cream gathered by the separator contains more bacilli than that made from raised cream.

The specimens which I present were removed from the animals slaughtered; you will notice various structures, lungs, liver, diaphragm, pleura, mediastinal, mammary and mesenteric glands, all showing various degrees of tubercular lesion. To me, however, the most gratifying specimens are the small mesenteric glands which scarcely show sufficient tubercular degeneration to be recognized, and yet this is all the macroscopic evidence we could find showing tubercular infection. These specimens were removed from a cow 6 years old, weight 1,100 pounds, Durham. Temperature observation previous to testing averaged 101.6 degrees; the first observation nine hours after injection was 102.6, eleven hours after 104.2, fifteen hours after 105, and then it dropped to 104, varying from this to 103.2 for twelve hours.

The searching quality of tuberculin is most strikingly shown in this test, and it speaks volumes in its favor. For it is evident that if tuberculin will cause reaction in an animal so slightly affected, by its intelligent use one can with great confidence rid a herd of all infectious animals. The specimens showing the extensive distribution of tubercular nodules over the lung and diaphragm illustrates to what degree a cow may be tubercular and yet show little or no constitutional disturbance.

To my mind this was a case of unmixt infection. This cow was a Holstein-Friesian, 8 years, weight 1,100 pounds, well nourished and gave a large flow of milk. Her average temperature previous to testing was 102.3 degrees. Nine hours after injection temperature was 107, eleven hours later 107.2, thirteen hours later 106.2, fifteen hours later 105.2, the temperature gradually receding to 104, where it remained for a number of hours. Previous to the exhibition of tuberculin this cow would not have been thought of as tubercular. There were no cervical glands involved, the udder was normal and upon auscultation the signs were negative. After injection, however, auscultation revealed signs which only could be produced by a pathologic lesion such as I now demonstrate.

DISCUSSION.

DR. E. R. LECOUNT—I would call attention to the fact that not only the milk but also the meat of tuberculous cows is dangerous. In certain experiments reported by Strauss the beef from tuberculous cattle which showed nothing wrong to the naked eye, was submitted to the temperature ordinarily used in cooking such meat, and then injected into guinea pigs and rabbits, producing typical tuberculosis in which the tubercle bacilli were found. A mere inspection of the meat, therefore, is insufficient to demonstrate its harmlessness.

TWO CASES OF PERNICIOUS MALARIA WITH RELAPSE.

Read before the Chicago Pathological Society, March 9, 1896.

BY JAMES B. HERRICK, M.D.
CHICAGO.

In the reports of pernicious malaria I would direct attention to the following facts:

1. The comparative rarity in this climate of the pernicious type of malaria.
2. The somewhat unusual complication in an adult of convulsions (Case 1).
3. The occurrence in the child of convulsions oft

repeated and resembling the petit mal of epilepsy and yielding only to quinin.

4. The ready explanation of the cerebral symptoms, afforded by recent pathologic studies.

5. The illustration of the necessity of blood examination as an aid to diagnosis.

6. The course of the temperature in Case 1 characteristic of the pernicious tertian fever, prolonged stage of fever, precritical rise, etc.

7. The relapse (Case 1) with change of type to the quotidian.

8. The lesson that even yet needs an occasional enforcement of the specific effect of quinin.

COMA; FACIAL PARESIS; CONVULSIONS; RELAPSE; RECOVERY.

Case 1.—Nov. 9, 1895, there was admitted to the County Hospital to the medical service of Dr. Norden, to whose kindness I am indebted for the privilege of seeing and reporting the case, a young man who was in such a condition of stupor that no history could be obtained. Nor could those who brought him to the hospital furnish any facts concerning the duration of the illness or its past course.

The face was somewhat flushed, the skin dry, the pulse 108 and rather weak, respiration accelerated, 24 to 40. The temperature was 104 degrees F. There was no exanthem. No bruise, mark or other evidence of injury, and no focus of suppuration could be found. No enlarged glands were detected. The tongue, while moist, was heavily coated; the patient was too stupid to protrude it.

The examination of the head was negative save for a slight paresis of the facial muscles on the left side. The retina was negative. The lungs and heart upon physical examination revealed nothing abnormal. The limbs, the osseous and muscular systems were negative. The urine contained neither albumin, sugar nor casts. The only positive finding was an enlarged spleen, the edge of which was distinctly palpable, two finger's breadth below the costal arch. The temperature on admission at 4 P.M. was 104. The next morning at 2 o'clock it was 98.8, pulse 94.

Late in the evening of the same day an examination of the blood showed the plasmodium malariae. Dr. Lemke, the house physician, who made the examination, found but a solitary parasite in the four slides examined. But this was so unmistakably the malarial organism that the diagnosis was beyond question. The parasite was endoglobular, somewhat irregular in contour, filled about one-half of the rather pale red corpuscle and contained fine, actively moving, dark pigments.

November 10: In stupor; temperature normal.

November 11: 12:15 A.M., chill lasting one and one-half hours. Patient during chill did not shake violently. Axillary temperature after chill 104.2. Patient very stupid. At 8 P.M. temperature 105. Quinin sulphate, gr. xv, was ordered to be given at 4 A.M. and at 4 P.M. for six doses; also five drops of Fowler's solution three times a day.

November 12: 4 A.M., convulsion lasting about two minutes. Pulse 100; temperature 98.6, respiration 28. 2 P.M., quinin bisulphate gr. xv, given hypodermically. 3 P.M., convulsion lasting three minutes; urine negative. 6 P.M., vomited.

November 13: 4 A.M., temperature 100.2; no chill; quinin gr. xv.

November 14: 8 A.M., pulse 68; temperature 95.4 (taken twice in axilla and twice under tongue); respiration 18; vomited breakfast.

November 15: Still somewhat dull.

November 16: Considerably brighter; given clothes.

November 18: Mental condition much improved. Denies ever having had convulsions before entrance to the hospital. Says was sick four or five days before being brought to the ward. Had pain in the side and legs; vomiting; severe headache. Has no remembrance of how he came to the hospital. Does not remember chills or fever. During the summer of 1895 was sick in hospital in St. Louis. Does not know exact nature of illness. Spleen still palpable.

The record does not show the temperature between November 20 and December 2, during which period the patient was helping about the ward and kitchen. During this time he did not take quinin.

December 2: Noon, chill; temperature 104; quinin begun.

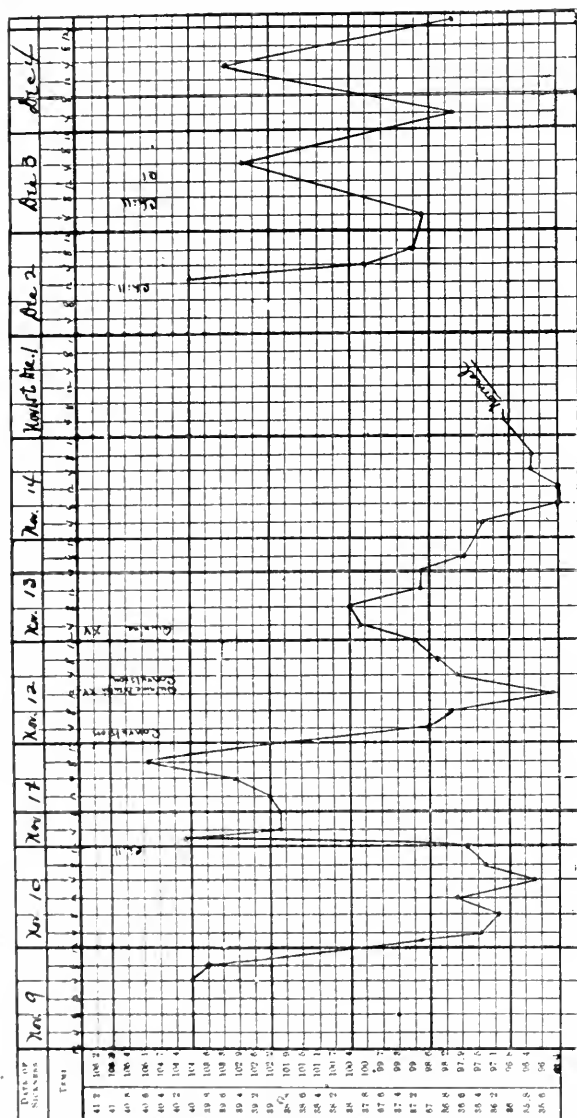
December 3: 11 A.M., chill; temperature 102.8.

December 4: 3 P.M., temperature 103.3.

December 5 to 8: Temperature normal. Patient left hospital at his own request.

This case presents several points of interest both from a clinical and pathologic standpoint.

Mode of Infection.—There is no definite knowledge of when or how the primary malarial infection occurred, though it was presumably in the south. The majority of the cases seen in Chicago are, I think, either imported malarias, drainage-canal cases, or the exacerbations of the disease in those infected long before, and in whom we are forced to assume the disease has remained latent, though what is the true nature of the so-called latency is as yet unsettled. Still, there are seen occasionally, developing in our city's midst, unquestioned cases of paludism in which one is at a loss to know where to look for the source of infection.



Temperature chart, Case 1, showing on November 11 precritical elevation of temperature, followed by pseudo-crisis. From November 11 to December 1 the temperature was normal and is not shown. The relapse is shown beginning December 2. December 5 the temperature was normal and remained so for three days, at which time the patient left the hospital. Some quinin was given by the mouth between November 10 and 11, but much of it was vomited.

Value of Blood Examination.—The case illustrates the positive value of blood examination. Without such an examination a diagnosis in a case of this character, in a supposedly non-malarial district and with no previous history would be at the best guess-work. One would be hesitating between cryptogenetic septic-pyemia, cerebral abscess, meningitis, concealed pneumonia, etc. With the blood examination the

diagnosis is a matter of certainty, treatment is clearly outlined and followed by brilliant results. We may, with reason, say that death was averted by the vigorous exhibition of quinin in this instance.

The Parasite.—While a more thorough study of the parasite would have been desirable, being prevented largely by the necessity of early administration of quinin, we may fairly conclude that the type of organism was the estivo-autumnal. The paucity of plasmodia in the peripheral blood, but one organism being found after careful search in four specimens, argues in favor of the estivo-autumnal type, where the parasite is found in far greater numbers in the visceral blood. One is scarcely warranted in asserting, from the inspection of a single endoglobular parasite, half-filling a somewhat pale red corpuscle, the parasite containing a small amount of fine pigment in active motion, that the parasite is of a certain definite variety. Yet this description fits some of the larger forms of the estivo-autumnal type better than it does the half-ripe forms of the tertian or quartan.

The Temperature.—The course of the temperature is that of severe estivo-autumnal fever. During the first attack, the severe one, the paroxysms were of the tertian type. The febrile period, it is to be noticed is the prolonged period of twenty-four hours characteristic of the pernicious forms of the disease. I would call attention also to one other characteristic of the temperature. After the chill on the morning of November 11, the axillary temperature was 104.2. Two hours later it had dropped to 102 degrees, and it rose again to reach its highest point, 105 degrees, sixteen hours later. This precritical elevation of temperature, with pseudo-crisis (calling to mind the pseudo-crisis of pneumonia) is emphasized by Marchiafava and Bignami in their description of the estival or pernicious tertian fever. Thayer and Hewetson in their monograph give a graphic representation of this same peculiar behavior of the temperature in the severe autumnal fevers.

Effect of Quinin.—The beneficial effect of quinin given hypodermatically is well illustrated by the accompanying temperature charts.

Relapse and Change of Type.—It is of interest also to note the change of type of the paroxysms during the recidivation beginning December 2. Here we see a well-marked quotidian type. The autumnal malarial fevers, whether passing under the name of pernicious tertian or estivo-autumnal fevers, are marked by an apparent lawlessness in the behavior of the temperature. This has not yet been found associated with a definite cycle of development of the parasite. The cycle may be of indefinite length or there may be various groups of plasmodia maturing at frequent intervals thus accounting for the great length of the paroxysm or the presence in some cases of a continuous or remittent fever. The quotidian type in this case may have been due to the destruction by the quinin of some of the weaker groups of plasmodia and the remaining of two groups having a cycle of twenty-four hours as in a double tertian. Thayer and Hewetson conclude as the result of their study of this form of disease that "the cycle of existence of this parasite has not been followed out in an entirely satisfactory manner" (p. 160).¹

Pathology of Pernicious Malaria.—The explana-

¹ The Malarial Fevers of Baltimore, Johns Hopkins Hospital Reports, Vol. v, 1895. A most complete bibliography of malaria since the announcement of Laveran's discovery is given in the monograph.

tion of the cerebral symptoms—stupor, facial paresis and convulsions, is to be sought in the blood vessels of the brain. The cerebral phenomena of malaria have been explained at various times on the score of congestion, of melanemia with pigment emboli in the capillaries (Planer 1854, Frerichs and others), and of endothelial swelling of the cerebral capillaries and consequent narrowing of the lumen of the vessel (Kelsch and Kiener). Since the plasmodial epoch, however, these manifestations have been regarded as due to the toxemia that undoubtedly accompanies hemic plasmodial development, or to the organic disturbances produced in the encephalon by the aggregation in the vessels of infected corpuscles.

While not denying the possible agency of toxemia in the production of malarial delirium, coma, convulsions or paralysis, one can not overlook the fact that in numerous instances there has been disclosed such plain obstruction of cerebral vessels by impacted infected corpuscles as to make it unnecessary to invoke the aid of an intoxication hypothesis. Such palpable mechanical interference with circulation must seriously alter the nutrition and consequently the functions of the brain. At times aphasia, local paralysis or convulsion point to a distinctly focal brain lesion. The physicians in our Southern States not infrequently describe cases of this sort. In the case in hand there was a slight facial paralysis. Marchiafava in a case with bulbar symptoms found occlusion of the medullary vessels by plasmodial thrombi. Danilewsky² found in the blood of a patient with paludism a large, free, semilunar form, evidently from its pigment, a hemocytozoön. In width it was nearly the diameter of a red blood corpuscle; in length it was about three times the diameter of a red corpuscle. He calls attention to the possibility of a mechanical obstruction of a capillary or arteriole by such a large body, with marked consequences if the vessel were in the medulla. So that circulatory obstruction would seem to be the cause of many of the cerebral symptoms in pernicious malaria.

The Italians, Marchiafava and Celli, and Bastianelli and Bignami have called attention to the fact that the infected corpuscles red and white, particularly in the cerebral vessels, can be seen lining the vessel wall, perhaps as Mannaberg³ suggests because of a certain acquired viscosity. Circulatory obstruction and thrombosis would thus be favored. Mannaberg depicts from some of Golgi's specimens, cerebral vessels lined and filled with infected corpuscles both pigmented and unpigmented. Dock⁴ also shows a microphotograph of a cerebral capillary with numerous pigmented corpuscles.

Minute hemorrhages from vessels thus thrombosed are mentioned by many, *e.g.* Bastianelli and Bignami. Mannaberg, Golgi, Dock, Councilman and Barker. Attention may be called, in passing, to the finding of similar capillary and arteriolar thromboses in other than the cerebral vessels. In cases where gastric symptoms have been pronounced, the vessels of the stomach have been found plugged with infected thrombi.⁵ The same condition has been found in the intestinal vessels. It is still unsettled why, in a given case, the infected corpuscles select the vessels of a

certain organ or certain vessels of one organ and shun others.

Rarity in Chicago.—So far as I can learn this is the second case of pernicious comatose malaria admitted to the County Hospital in the last few years, *i.e.*, since systematic examination of the blood has been made in all suspected cases. During this time scores of patients with malaria, chiefly from the drainage-canals district, have been seen in our wards.

COMA; EPILEPTIFORM CONVULSIONS; RECOVERY.

This case was seen in consultation with Dr. M. H. Stephens, to whom I am indebted for many of the facts.

Case 2.—Louise T., 5 years; native of Canada. Said to have lived in malarial district. Mother neurotic; father died of cerebral hemorrhage. Frail, nervous, poorly nourished as a babe. "Brick-dust" in urine. At 15 months, convulsions lasting from 10 p.m. to 7 a.m., followed by fever which mother said was "typhoid pneumonia." Dec. 31, 1894, 10 p.m., convulsion followed during night by a second one. Regained consciousness only after many hours. History of fever somewhat doubtful. Many attacks of petit mal at this time. These are said to have continued with more or less frequency until the fall of 1895.

Oct. 17, 1895, at noon, seized on the street with convulsion. Regained consciousness at 8 p.m. Dr. Stephens administered chloroform to ward off what appeared to be threatening convulsions.

October 18: Temperature a.m. normal.

October 19: 9:30 a.m., chill; temperature at noon 104.5.

October 20: Forenoon, chill; temperature 103.5. Between 4 and 6 p.m., normal.

October 21: Temperature 105.2; no further chills; temperature irregular from this on, varying between normal and 104.

October 22: Patient seen in consultation with Dr. Stephens.

Examination.—Mind clear, urine negative. All organs negative save an enlarged and plainly palpable spleen. No typhoid spots. Next day, October 23, blood examined and a single hyaline endoglobular body with small amount of blackish pigment found: this believed to be the malarial plasmodium.

October 26: Temperature 101 degrees at noon, following this normal. The later history of the case is best learned from Dr. Stephens' letter of Dec. 23, 1895:

Dear Dr. Herrick:—Your inquiry regarding Louise T. is just received. I am very glad to say that the child is doing well. The quinin, two-grain doses, three times a day, was continued for about a week. Then the dose was reduced. The fever rapidly disappeared and the little girl was out in about two weeks. She had no "petit mal" attacks from time of her severe convulsion at the beginning of her illness, until about two or three weeks ago. She had had no quinin for about a month. Had been on syr. ferri iod. and syr. hypophos. co. About two or three weeks ago she began having mild attacks beginning with one or two a day and increasing rapidly until she had from twelve to fifteen during the day. For a time I kept her on sod. bromid and also liq. sodii arsenitis, with no effect. Began giving quinin, sulph. gr. i three times a day about a week and a half. She improved rapidly and is now free from the mild attacks.

Yours sincerely, M. H. STEPHENS.

I regard this case as malaria for the following reasons: 1, lived in malarial region in Canada; 2, the previous febrile attacks attended by convulsions from which recovery had taken place, may well have been malarial, their repetition tends to exclude masked exanthemata, pyemia, malignant endocarditis, cerebral abscess, etc.; 3, remittent fever and chills; 4, enlarged spleen; 5, exclusion of other diseases; 6, yielding to quinin; 7, the detection of the plasmodium.

It is perhaps assuming more than can be proven to say that all the epileptiform attacks were due to malaria. But it seems warrantable to assume that in a neurotic child, the malarial infection acting upon an irritable cortex was the exciting cause of an outbreak of an otherwise dormant epilepsy. The prompt response of the petit mal to quinin, when bromids, etc., had failed, is very significant of a persistent mild

² Danilewsky, für Kenntniss der Malaria-mikroben bei Menschen. Centralblatt f. Bakt. und Paras., xviii, No. 8, Sept. 19, 1895.

³ Mannaberg, Die Malaria Parasiten, p. 161.

⁴ Dock, Pernicious Malarial Fever, Amer. Jour. Med. Sciences, 1894.

⁵ Barker, A Study of Some Fatal Cases of Malaria, Johns Hopkins Hospital Reports, Vol. v, 1895, p. 239.

malarial toxemia, that might be entirely symptomless and overlooked were not the child predisposed to cortical irritation.

Krafft-Ebing⁶ records a case resembling in some particulars the one I have reported. The case is of such interest that I give a synopsis of it:

Male, 29 years, rheumatic, with mitral lesion. August, 1886, intermittent fever, treated for three months; no epilepsy, no delirium. June, 1888, relapse. During fever fell and injured right mastoid process. Since then muscae, dimness of vision. Two days after injury slight attack of unconsciousness. July, two attacks. August, two attacks. September: Daily attacks of unconsciousness with convulsion; fever and delirium; no aura; no scar tenderness; cranial nerves, retina, sensibility, urine, all negative. Slight amblyopia; no hysterical stigmata. Spleen enlarged and easily palpated. February 17, 1891: Chill and convulsion. Up to March 8, there were daily several attacks with convulsions. The delirium that played a prominent part is accurately described. Fever persistent. March 8: Quinin, gr. v daily. March 16: Quinin, gr. xv daily. Temperature gradually fell to normal, spleen decreased in size and on April 1, patient left hospital apparently well.

April 10 reentered hospital with large spleen, and fever. Repetition of epileptiform attacks with delirium. Recovery May 15, under quinin.

Symptomatically this was an epileptoid neurosis. Naturally traumatic epilepsy had to be considered. Krafft-Ebing regards it as a case of masked malaria in which an injury to the head determined the point of the malarial attack, making of the brain a *locus minoris resistentiae*. Unfortunately no blood examination was made.

DISCUSSION.

DR. L. L. MCARTHUR—I would ask if in looking up the literature of the subject you have found anything in regard to suppression of urine by occlusion of the vessels of the kidney from the plasmodium? The reason I ask the question is, that, during the present week, I have had a case of malaria poisoning of the pernicious type referred to by Dr. Herrick, develop in a patient convalescing from a hernial operation at the Chicago Hospital, under the best of sanitary conditions. It is quite inexplicable how it may have originated. The temperature ranged extremely high, 103 to 105.5; the blood was laden with plasmodia, as shown by Dr. Frank Johnson. There was persistent vomiting, with pain in the back so marked that my attention was turned chiefly to the kidneys; the quantity of urine voided being eighteen ounces in twenty-four hours, heavily laden and highly colored; no albuminuria, no blood, no casts. But the plasmodium being found in the blood and the fever yielding to quinin, made me think that it was a malarial affection of the kidney. Possibly an embolic effect of the renal vessels, as suggested by the paper.

DR. SANGER BROWN—I would ask Dr. Herrick if in looking up the subject he has found that the plasmodium is discovered in patients who are not subject to malaria, or who have none of the positive symptoms of the disease. I saw in consultation a month or two ago an interesting case in which a man of 60 had attacks of unconsciousness, which were repeated several times in the course of three or four days. In the intervals he was not quite clear mentally. The question arose as to whether they were preliminary to a stroke of apoplexy, that is, small hemorrhages, or not. His son, who is quite an accomplished pathologist, made a careful examination of the blood and found the plasmodium in several slides. About a week after this the man had an attack of apoplexy which was fatal. If the blood had not been carefully examined in this case and the plasmodium found, it doubtless would not have been thought of attributing the symptoms to malaria. It would be regarded simply as the premonitory or preliminary light attacks of apoplexy or cerebral hemorrhage. I would also ask whether in the comparative number of plasmodia found in the accessi-

ble blood the examination bears any constant relation to the severity of the malarial symptoms, assuming that the cases which have been cited were cases due to malaria. If the symptoms were due to malaria, it would seem that they were severe, and the plasmodia ought to have been very numerous.

DR. D. W. GRAHAM was reminded by Dr. Herrick's paper of an experience some years ago before the plasmodium had been demonstrated. The patient while spending some weeks in Louisiana, when malarial fever was very common, had daily chills, and on his return became comatose and hemiplegic. He was given large doses of quinin with the hope that his condition was due to malaria. Although thought to be a case of cerebral hemorrhage by the consultant, consciousness soon returned and the hemiplegia passed away with the exception of a slight weakness of the afflicted arm. The effect of the plasmodium on the cerebral circulation, as given by Dr. Herrick, would seem to explain in a very satisfactory way this and many similar cases.

DR. WM. HESSERT—Dr. Herrick has brought out many important points in his paper, one of which is the examination of the blood in all cases of doubtful diagnosis, and even in cases where the diagnosis is more or less positive. Having had occasion to examine blood very frequently, I have come across phenomena, an explanation of which I have been unable to offer. For instance, I have seen minute particles of freely mobile material consisting of fine granules, these particles being in active motion. I have found bodies of different sizes and shapes in the blood. Some were dumb-bell shaped, others more or less biscuit shaped, and still others that were spherical. They were evidently not blood-plates, being opaque and yellowish in color, and not collected in clumps. The motion of these bodies was rapid, and I have been unable to tell whether they have ciliary appendages or not. In some instances I have found cilia, and for instance some in my own blood had cilia, and I certainly had no malaria. I have been unable to stain these bodies, which is an important point. I would like to get information from Dr. Herrick as to whether he has seen these phenomena himself. Some of the granules I speak of may be explained in this way, namely, I have seen eosinophilous cells in fresh slides break up, the granules becoming free and scattering through the field; but the nature of the other bodies I have been unable to determine.

DR. ROBERT B. PREBLE—My remarks are suggested by the question asked by Dr. Brown as to whether the malarial plasmodia have ever been found in the blood of patients who show no symptoms of malaria. Without answering this question, I would like to draw attention to a few bodies found in the blood, which may be readily mistaken for the plasmodium. The malarial plasmodia, in their typical forms, are easily and positively recognized; but it is not always easy to say, that a certain body which you see in the blood, is or is not a plasmodium. We gather from the wording of Dr. Herrick's paper that he was somewhat in doubt as to the malarial nature of the second case and he expressed himself very guardedly as to the nature of the body found in the blood and believed by him to be the plasmodium of malaria. A not infrequent error is to mistake a cremated red corpuscle for a plasmodium. One often sees a red blood corpuscle with a number of small clear circles arranged about the center of the disc of the corpuscle. The border of the disc is unchanged. This gives one an appearance somewhat resembling the sporulation form of the plasmodia. The difference, however, is so great that error is impossible, when the true segmentation figures have been seen once. Another thing, which may also lead to error, is the movement of the granules of the protoplasm of the white corpuscles. This motion is sometimes as active as that of the granules of the plasmodia and resemble it perfectly. The differences between a white corpuscle and a red containing a plasmodium, are so great that error is possible only when one forgets that the

⁶ Zur Intermittem-Larynia, Wiener Med. Presse, 1892, 1-4.

granules of the white corpuscle move at times. Dr. Hessert has mentioned the fact that auto-mobile bodies are often found in normal blood. The knowledge of this fact is not so general as it should be. These bodies show a great variety of forms and are often so active, that the slide must be kept in constant motion to keep them in the field of the microscope. They are, no doubt, frequently mistaken for the plasmodia. Before closing, I would like to draw attention to a very common error in the method of examination of the blood for plasmodia. It is common practice to dilute the blood with a solution of methyl blue, in this way staining the plasmodia. I believe that this is a fruitful source of error, for while it stains the plasmodia, which can be recognized as easily unstained, it also stains other bodies which can now be mistaken for the organism. Thus a member of the profession, who holds and deserves a high position, showed me a lymphocyte stained with methyl blue and which he believed to be a plasmodium. That error would not have been made if the specimen were unstained. This error is only an example of the many which may and do occur with this method of examination and I agree with Thayer and Hewetson that it is best to examine fresh specimens unstained.

DR. HERRICK (closing).—In answering the question of Dr. McArthur, I would say that plasmodial emboli have been found in the kidneys, chiefly, I believe, in connection with hematuria. As to the question asked by Dr. Brown with regard to finding plasmodia in non-malarial blood, I think that it is almost a contradiction in terms to say that plasmodia can be in the blood without malaria. We must assume, I think, that if a patient has the plasmodium in his blood he has malaria. Yet he may be free from symptoms. The question of latency of malaria is one that is by no means clearly understood. In patients who are entirely free from fever, who have been cured by quinin, the malarial plasmodium can sometimes be detected, and particularly are the crescent forms of the plasmodium persistent, long after all febrile manifestations have disappeared. This will call to mind the analogous finding of diphtheria bacilli in the throat in cases of diphtheria that clinically are cured, as well as the finding of tubercle bacilli in the sputum of those without symptom or sign of phthisis. The case which Dr. Brown speaks of might possibly be one of malaria with a thrombus due to infected blood corpuscles, a hemorrhage as the result of obstruction of a blood vessel by such corpuscles, an accidental combination of malaria and cerebral hemorrhage, or a mistake in recognizing the plasmodium.

The second question Dr. Brown asks is whether there is a relation between the number of plasmodia found in the blood and the malarial manifestations. That may be possibly true with regard to tertian infection, but with reference to the estivo-autumnal type, there is not that relation. The visceral blood, for instance, will contain a multitude of plasmodia, while the peripheral blood may be examined repeatedly and the plasmodia will be found absent. In the County Hospital case, the first one I reported, an unusually grave one, there is no question with regard to the diagnosis; yet in the blood on four slides only one plasmodium was found after careful examination. Dr. Graham's case may have been one of the severe cases of malaria with obstruction of a blood vessel from infected corpuscles.

Dr. Hessert and Dr. Preble have called attention to a very important point, and it is gratifying to see two gentlemen who have done so much in examining the blood frankly admit the great difficulties in recognizing plasmodia. As Dr. Preble says, when we have a typical ripe tertian organism it is recognized beyond the shadow of a doubt, yet there are many forms that are difficult of recognition, particularly the smaller ones that are but half developed, and the hyalin forms. And there are many things that can mislead the physician in examining the blood. I have seen in unstained specimens the eosinophilous granules referred to by Dr. Hessert. The coarse granules

of the eosinophilous cells, when scattered about, resemble hyalin bodies. But staining brings them out clearly with acid rather than with an alkaline dye. They can readily confuse one. There are other forms that are apt to cause confusion, *e. g.*, the blood plates.

I was interested in reading an article by Paltauf (*Centralblatt f. Bakt. und Par.* xi, 1892, p. 95), in which he clearly demonstrates that several cases of malaria in children, reported by Hochsinger, were not cases of malaria at all. Hochsinger submitted specimens to Paltauf for examination, and he came to the conclusion that in every single specimen where Hochsinger had found plasmodia, he had mistaken blood plates for the plasmodia. I am glad that Dr. Preble brought up the question of staining a fresh specimen of blood. It seems to me it is a dangerous method of examination unless we have an absolutely fresh and carefully filtered staining fluid, and one that we know contains no foreign material. It is certainly wrong to carry about in the pocket a methyl-blue solution for several weeks, then place a drop of the methyl blue on the tip of the finger, prick through that, and thus get a specimen of the blood. Many of these solutions will contain microorganisms, as well as precipitates, and the examination in that way can not be as reliable as by the examination of a fresh specimen of blood.

REMOVAL OF THE UTERINE APPENDAGES FOR UTERINE FIBROIDS.

BY FRANKLIN H. MARTIN, M.D.

PROFESSOR OF GYNECOLOGY POST-GRADUATE MEDICAL SCHOOL OF CHICAGO; SURGEON TO WOMAN'S HOSPITAL.

Batley, Tait and Hegar independently conceived, performed and contributed to modern surgery the operation of removal of the uterine appendages. In 1865 Batley "conceived" but did not publish "the idea of producing an artificial menopause for the remedy of disease." His idea was published in 1872. Hegar operated on the first case with the object of establishing an artificial menopause, a few days before Aug. 1, 1872, the memorable date of Tait's first operation for the same purpose. Batley did his first operation just sixteen days later, or Aug. 17, 1872. Thus the time was ripe and three great men of three great nations, separated by thousands of miles, discovered the fact, independently of each other, and shook the tree of progress which has resulted in such an abundant harvest.

The removal of the appendages for the cure of fibroids of the uterus is based on the facts: 1, that removal of the uterine appendages eradicates the part of the economy in which resides the organ or center of menstruation and produces an artificial menopause; 2, that removal of the uterine appendages accomplishes a reduction of the direct blood supply to the uterus and thereby produces atrophy by depleting the organ.

ARTIFICIAL MENOPAUSE.

It is yet an unsettled question where the exact seat of control of menstruation is located. It is not the province of this article to enter into the heated discussion as to whether this remarkable center lies in the ovaries or whether it is situated in the nerve structure of the Fallopian tubes. It is enough for us to know that the menstrual center, wherever it lies, is eradicated, in the maximum proportion of cases, when every vestige of both ovaries and Fallopian tubes is removed. It is well that such is the case, because it would be an awkward and incomplete operation which would seek to leave either the ovaries or the tubes

These two organs have a function which of necessity is incomplete without both of them. It would be difficult to remove the ovaries without interfering with the circulation and position of the tube. It would be equally impossible to remove the tubes without interfering with the circulation and function of the ovaries. Then, too, a much more secure and desirable pedicle can be obtained when both organs are included in a ligature than is possible if but one of the organs is selected. Then, as the function for which each of these small organs is designed is dependent upon both, and the removal of both is easier and therefore safer than the removal of one of them, and when we take into consideration the liability of either of these organs to become diseased, if not removed when opportunity permits, there seems to be no further reason why both organs should not always be removed when it is desirable to produce an artificial menopause.

REDUCTION OF BLOOD SUPPLY TO THE UTERUS.

In a previous article we discussed the blood supply to the uterus. We found that the organ depended upon two sets of arteries for its nourishment, the uterine arteries and the ovarian arteries (Fig. 1). The normal ovarian arteries are a trifle more than half the size of the uterine arteries. They supply the ovaries, the tubes, the fundus of the uterus and anastomose

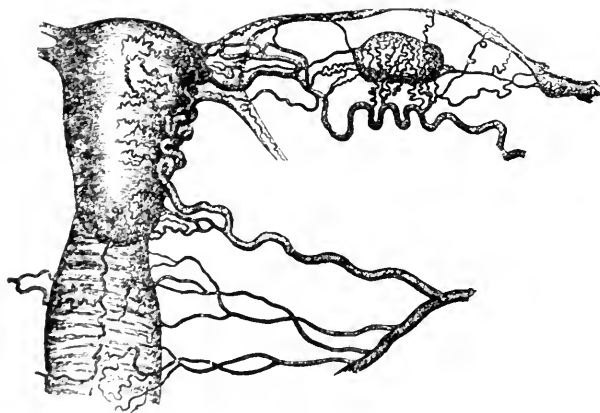


FIGURE 1.

with the uterine arteries which course along the sides of the uterus giving off frequent horizontal branches to the uterus. By referring to Fig. 1 it can readily be seen that the ovaries and tubes may be removed without including the main channel of the ovarian artery. Such a method of operating would deprive the removal of the appendages for the cure of fibroids of one of its chief features of benefit, viz., the reduction of blood supply to the uterus. For that reason special care should be maintained by operators adopting this procedure to include in all cases the main channel of the ovarian artery in their ligature. By tying this artery on both sides the large abnormally developed uterus is instantly deprived of one-third of its blood supply.

Dr. Byron Robinson, after witnessing my operation of tying the broad ligament from the vagina, recognized the value of this principle of cutting off blood supply to fibroid uteri, and afterward applied one of the principles of my operation through an abdominal incision, after having first removed the appendages, by tying the uterine artery as it courses up the side of the uterus to join the ovarian artery.

INDICATIONS FOR REMOVAL OF UTERINE APPENDAGES FOR FIBROIDS.

But a few years ago this was the operation of selection for the relief of uterine fibroids when an operation of the severity of a laparotomy was deemed a necessity. It is seldom performed at present except as an operation of *dernier ressort*, when laparotomy has been instituted with the object of removing the tumor and uterus and, because of contraindications, the latter operation is found inadvisable. The reasons for this change of position are:

1. The operation of vaginal and abdominal hysterectomy has been so perfected that in patients of ordinary strength, with tumors without severe complications, the mortality of hysterectomy is not materially greater than that of double oöphorectomy.

2. The operation of removal of the appendages fails about three times in thirteen recoveries to materially reduce the size of the tumor, and fails in one case in thirteen recoveries to produce an artificial menopause; while hysterectomy on the other hand is absolutely sure of curing every case of fibroid of the uterus, which recovers from the operation both of hemorrhage and tumor.

This materially narrows the field of operation which has done more to develop modern surgery than any other discovery of modern time, except the discoveries of Lister. The very enlightenment which it has created helps to make it obsolete. The operation now, in the hands of expert abdominal surgeons, is limited to cases: 1, where for some reason the operation is demanded because of prejudice against sacrificing of the uterus; 2, in cases where for some good reason quickness of time in operating is desirable; 3, in cases where unusual complications are revealed when the abdomen is opened which make hysterectomy impracticable; 4, in cases of small bleeding tumors in weak women who are near the menopause; 5, in cases of small hemorrhagic fibroids in weak women in whom laparotomy would not ordinarily be indicated but which are complicated with disease of the appendages.

THE OPERATION.

An abdominal operation is properly divided into five parts: Incision, removal of pathologic material, drainage, closure of incision and dressing.

The Incision.—After the skin has been prepared as described in Article VI, and sterilized towels have been placed around the field of operation, the patient is thoroughly anesthetized with ether and the operating corps is in its place; the operator standing on the left side of the patient, with a sharp scalpel makes an incision from above downward in the median line, from about two inches below the navel to two inches above the upper margin of the pubis, an incision about three inches in length. This incision should be unhaggled and should extend in depth through the skin, superficial fasciæ, the fat between the superficial fasciæ down to the deep fasciæ which immediately covers the muscles. In experienced hands but one stroke of the knife is necessary for this. If the hemorrhage is but venous, dry sponges only are necessary to keep the wound dry. If there are any arterial points of bleeding they are caught in the points of forceps by the assistant. The operator by another stroke of the knife incises the white deep fasciæ, and if this incision is through the linea alba, the subperitoneal space is entered, as will be indicated by the

bulging fat of this space. If the incision is to the right or left of the line the muscular coat of the abdominal wall will be exposed. The muscles are then separated by the handle of the scalpel in a stroke from above downward which brings into view the subperitoneal fat. The knife is carefully drawn over this from above downward, and this followed by a sweep of the scalpel handle separates the fat and subperitoneal tissue down to the peritoneum. The peritoneum is now caught in two catch forceps which are held up and separated laterally so as to present a sharp elevation of that membrane. This is carefully incised with the knife. When the peritoneum is opened it will be indicated by its sudden elevation in consequence of the entrance of air. An experienced operator will frequently open an abdomen carefully in thirty seconds. If it is done well it matters little if it takes five minutes. It is not necessary to seek for the linea alba if it does not happen to lie directly in the center of the superficial incision. It is more important that the wound should be direct and the different layers parallel than that the muscles should not be disturbed. When the peritoneum is opened between the forceps the index finger should act as a director above and below the opening and the peritoneum incised with scissors the full length of the wound, being careful not to wound the bladder below.

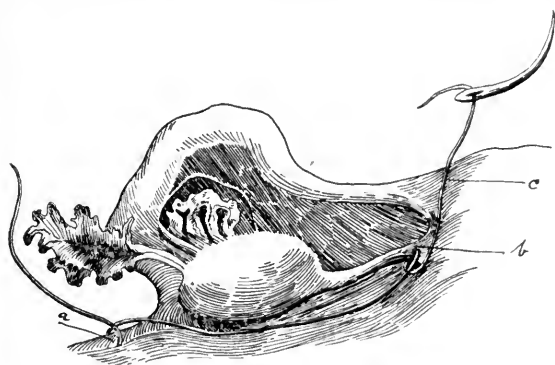


FIGURE 2.

Next attach the peritoneal edges of the wound at the center of the incision on either side to the deep fasciae with small catch forceps. This prevents peeling off the peritoneum from the parietes in any subsequent manipulations.

Exploration.—With the index finger of the left hand I now make my exploration of the abdominal viscera including the appendages. First the uterus is sought as a central landmark. From the uterus the finger is first swept to the left side along the Fallopian tube from the horn of the uterus. Just below the tube and above the broad ligament is the ovary. The opposite side is rapidly explored in the same manner. The exploration takes into consideration the size and position of the fibroid uterus, adhesions, the condition of the appendages, the possibility or feasibility of removing them and any abnormal developments.

Removal of the Appendages.—Our object, it must be remembered, in the removal of these organs must be to remove completely every vestige of ovary and tube and the thorough ligation of the main channel of the ovarian vessel. When the uterine tumor is not large, or if it has not developed into the broad ligament so as to spread out its folds and make it tense, it is an easy matter to ligate off the tube and ovary with one ligature. This is accomplished by lifting

the tube and ovary with the loose broad ligament and making a pedicle of the infundibulo-pelvic ligament (Fig. 2 *a*), the ovarian ligament (*b*) and the Fallopian tube (*c*). The ligature No. 10 braided silk or No. 8 antiseptic catgut threaded in a round non-cutting needle is placed around the pedicle, never through it except as it penetrates and surrounds a portion of the infundibulo-pelvic (Fig. 2 *a*) and the ovarian (*b*) ligaments in order to prevent its slipping over the edge of the stump. If the ligature is allowed to transfix the pedicle at any other place than through the firm ligamentous tissues of the two ligaments mentioned, it is liable to produce venous oozing into the loose subperitoneal tissue beneath the constriction of the pedicle, resulting in small hematomas which frequently prove troublesome. After the ligature is placed the ovary and tube are drawn well up and the strand of silk or catgut is tied firmly, first with a double twist knot and then two single twists

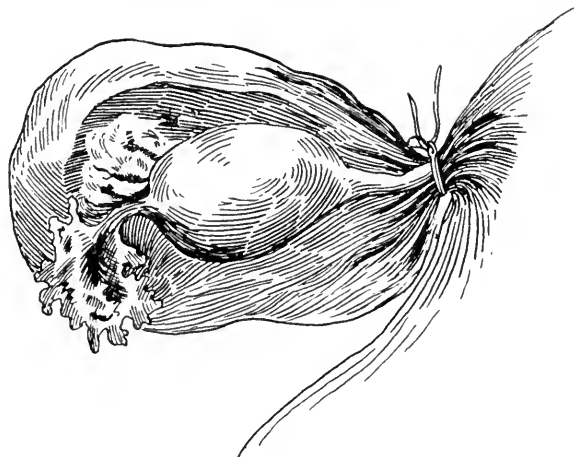


FIGURE 3.

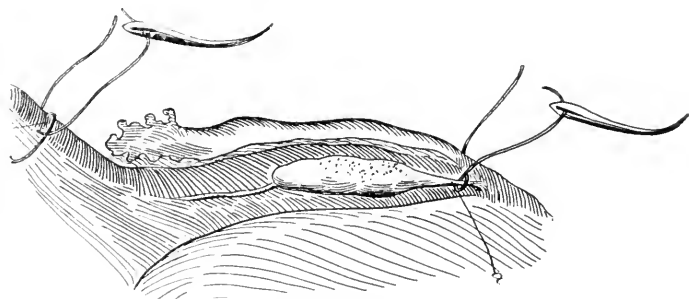


FIGURE 4.

and the ends cut short (Fig. 3). A pair of snap forceps is then placed on the pedicle outside of the ligature and the pedicle is severed about one-fourth inch from the ligature, the stump cauterized or rendered sterile with some strong antiseptic, this antiseptic removed by a moist sponge and the pedicle dropped.

If the uterus is considerably enlarged or if it especially develops into the broad ligaments, it is impossible to tie off the appendages of each side with a single ligature. This is because the loose folds of the broad ligaments of which the pedicle is ordinarily constructed, have been occupied by the enlarged fibroid uterus, and the ovary and tube are each flattened out on the surface of the tumor and are held fast by the peritoneum, which ordinarily acts as a mesentery to each, Fig. 4. Under such a disposition of affairs or any modification of it, the ovaries and tubes should be tied off by first ligating the neck of

the tube as near the uterus as possible after anchoring the ligature by a twist around the utero-ovarian ligament (Fig. 4 *a*); second by ligating the broad ligament outside the fimbriated extremity of the tube deep enough to include the ovarian artery, anchoring the ligature by a twist around the infundibulo-pelvic ligament (Fig. 4); third, after removing the tube and ovary the two peritoneal edges representing the broad ligament to which the tube and ovary are attached between the two ligaments already placed, should be united from one pedicle to the other with a running stitch of fine antiseptic catgut. This makes a perfect exsection of the appendages, and leaves the peritoneum perfectly closed with no tension on either of the pedicles (Fig. 5).

DISEASED APPENDAGES.

All cases, unfortunately, are not typical like the ones we have described. We often meet with diseased appendages when opening the abdomen for the removal of these organs in cases of fibroids of the uterus. A pyosalpinx, or an ovarian cyst, or abscess of the ovaries are often encountered. Almost invari-

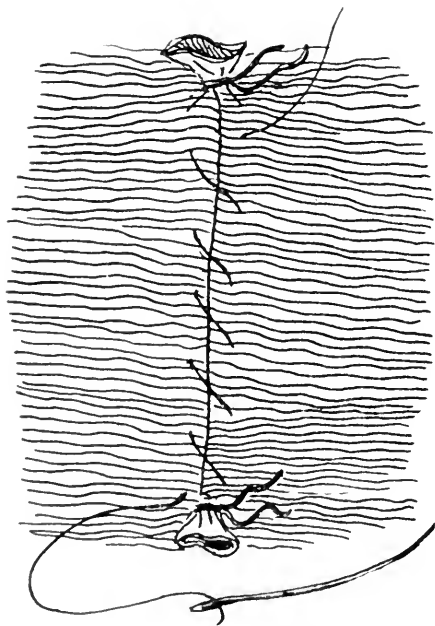


FIGURE 5.

ably when these things do exist, localized peritonitis has rendered them adherent to surrounding tissues, the uterus, omentum, intestines or the peritoneum of the broad ligament.

When these complications exist, and we have decided upon the removal of the appendages for the treatment of the fibroid, we have before us the problem of enucleation and excision of the diseased and adherent organs. The enucleation of an enlarged pyosalpinx, or an ovarian abscess, or a tubal ovarian abscess, or adherent appendages the result of an old peritonitis where pus is no longer present, is accomplished in practically the same way. When the abdomen is explored the abnormal condition of affairs immediately becomes apparent. Frequently there is an inextricable mass; occasionally the outlines of the tube and ovary can be traced and they simply appear as enlarged adherent semi-fluctuating cysts; while rarely, the appendages, not materially changed from their normal size, will be firmly imbedded and adherent.

I begin my enucleation in these cases, by passing the index finger of my left hand, with the palmar surface directed forward, down behind the isthmus of the tube just as it is given off from the horn of the uterus, hugging closely the body of the uterus until I have reached Douglas's cul-de-sac. As a rule, at this place I will find a line of cleavage, as indicated by the adhesions between the tube and the uterus and the ovary, and the intestines and omentum posterior to the ovary and tubes. This line of cleavage, which as it gives way feels like two pieces of strong paper which have been stuck together with fresh mucilage giving way before pressure of the fingers between them, can be followed rapidly, first with one finger, then with two or more, until the whole adherent tube and ovary are freed and lie ready to be ligated off in the palm of the hand. This is the happy result in the majority of cases.

In a few cases, especially after long standing disease, the adhesions are strong and well organized. Here great care and patience must be exercised, in order not to go into an adherent bowel, or to the other extreme and leave a portion of the stroma of the

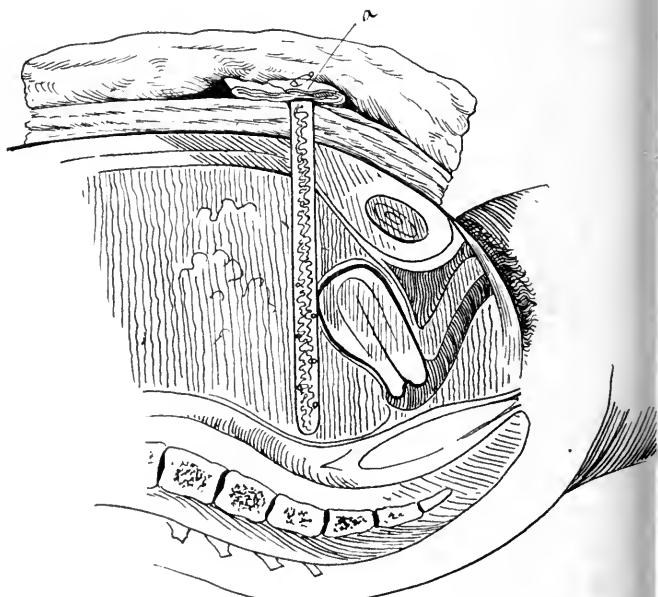


FIGURE 6.

ovary or a portion of the tube which may be just enough to prevent the menopause and thus make our operation a failure. Here, when the line of cleavage fails to yield readily, it is well to place the patient in the Trendelenburg position and separate the adhesions after exposing them to sight. With this precaution and the exercise of considerable care in manipulation it is seldom that one need fail to accomplish an enucleation.

When these adherent masses are once dug from their beds the stumps, after ligation, should be rendered perfectly sterile by the application of the actual cautery or strong chemic antiseptics. The parts should then be dried, and where it is practicable the raw surfaces should be covered with peritoneum.

Drainage. If there is oozing from the raw surfaces caused by the enucleation, a glass drainage tube should be placed in the cul-de-sac of Douglas, the lowest point of the pelvis, while the toilet of the peritoneum is being completed and the abdominal sutures

are being inserted. Before the abdomen is closed the tube should be pumped out in order to ascertain if there is more blood oozing from the peritoneal surfaces than would naturally be taken care of by the peritoneum. If more than a couple of drams of pure blood accumulates in the few minutes that are required to make the toilet and insert the sutures, the tube should be allowed to remain, and the sutures tied so as to enclose it snugly. The tube should not be larger than an ordinary lead pencil, or about one-quarter of an inch in diameter. It should be long enough to project about one inch above the wound (Fig. 7). The abdominal dressings are then placed upon the wound around the tube and secured by sterilized muslin bands which are pinned to broad adhesive straps fastened to the sides of the abdomen at some little distance from the wound. Over the top of the tube is slipped a piece of rubber dam (Fig. 6 *a*) about 12 inches square, the tube penetrating the center of the sheet rubber. The tube is then pumped out with a small glass syringe with a long rubber nozzle which will reach to its bottom (Fig. 7). After finally emptying the tube a long narrow strip of sterilized gauze is carried to the bottom of it with a straight metal sound, a small amount of the same gauze is left as a loose dressing over the end of the tube, over this is folded the rubber dam and fastened with a sterilized safety pin, and over all this is placed a liberal dressing of sterilized cotton and finally over this a snugly applied bandage of sterilized cotton.

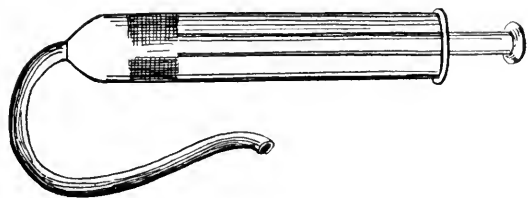


FIGURE 7.

Now when it becomes necessary to exhaust the drainage tube in an hour or two hours, it will not be necessary to disturb the wound dressing at all. The bandage is unfastened, the layers of cotton parted in the center and the rubber dam opened and spread out on the cotton, the capillary drain of gauze removed and the tube exhausted by means of the syringe, another strip of gauze inserted, the rubber dam refolded and pinned and the external dressings readjusted.

I go into the detail of my method of caring for a drainage tube in order to justify myself for using it. As understood by the majority of good surgeons, it is really a dangerous means of draining. But a few weeks ago, in a discussion in a prominent society on the subject of abdominal and pelvic surgery, I heard a surgeon of no mean repute condemn the glass drain and the suction pump, in unmeasured terms, when by his very language, he demonstrated his ignorance of the whole matter by saying that it was necessary to uncover the abdominal wound every time that the tube is exhausted. It is not necessary to uncover the wound at all to dress a glass drainage tube. It is not necessary to infect a glass drainage tube when uncovering it to exhaust it with the suction syringe, if the one doing the work is trained and competent. The nurse should be well trained. She should wash her hands to surgical cleanliness before loosening the bandage or removing the cotton over the end of the tube. She should rinse her hands in 1 to 1,000 bichlorid solution before unpinning the rubber dam; she

should again rinse them in bichlorid before removing the capillary drain; she should take the glass syringe with its rubber nozzle out of a pitcher of 1 to 1,000 bichlorid solution, rinse it quickly in sterilized water, rapidly exhaust the tube, and eject the fluid into a small glass graduate which has just been removed from an antiseptic solution; when the tube is dry she should take the steel sound out of a dish of bichlorid solution, a strip of gauze out of a fresh supply from a sterilized package and insert it to the bottom of the drainage tube. She should again rinse her hands and then rapidly close the tube and replace the dressings. Such a procedure requires two minutes if done by an expert and intelligent nurse. I will agree with everybody that this kind of drainage can not be carried out by an ordinary nurse. But when well attended to it is the most satisfactory method of keeping dry the free abdominal cavity that we are as yet acquainted with.

CAPILLARY DRAIN.

Occasionally after extensive enucleation of diseased appendages we may be so situated that we have no experienced nurse to leave in charge of a glass drainage tube; at the same time we *must* drain, and must drain in a manner that the after-care of the drain can be attended to by one of little experience. In these cases combined capillary gauze and tubular drain, through the Douglas cul-de-sac, may be resorted to. A rubber tube one-quarter inch in diameter and about twelve inches long, and a quantity of sterilized iodoform gauze in eight inch strips cut the strong way of the gauze without knots, are selected. After insuring thorough cleansing of the vagina the operator, guided by an assistant's finger in the vagina, penetrates the posterior cul-de-sac into the vault of the vagina with a pair of sharp pointed scissors. The scissor blades are then opened and between them from above downward, on a pair of forceps, is carried an end of the strip of gauze and the rubber tube. The assistant grasps these in the vagina and makes gentle traction on them. The operator then loosens his grasp and catches the abdominal end of the tube with a pair of catch forceps. The tube is then drawn through until from two to four inches of its upper end, according to the extent of drain required, is left in the abdominal cavity. Enough of the gauze is drawn through to make a loose packing for the vagina. A small bunch of the gauze is left in the abdomen in the cul-de-sac, around the end of the rubber tube. It is loosely packed so that it will remain in the position in which it is first placed. The abdomen is then closed in the usual manner. The vaginal end of the drain is arranged by cutting the tube off at the vaginal outlet; and over the vulva and the end of the gauze is placed a liberal pad of loose sterilized dry strip gauze. Orders are given to change this outer gauze as often as it becomes moist. When at the end of twelve to twenty-four hours there is little drain, a portion of the gauze may be withdrawn from the vagina, and if the drain has been slight the tube may be removed at this time. In twenty-four hours longer, if the drain is still small or none at all, the drain may be completely removed. After the gauze has been removed, a liberal vaginal drain of gauze may be carried on the end of a forceps to the vault of the vagina. This may be removed in twenty-four hours. After this nothing further is required but an occasional vaginal antiseptic douche. If drainage is profuse after twenty-four to forty-eight

hours the gauze drain should be withdrawn more slowly.

Closing abdominal Wound.—I favor any method which will coapt all the tissues of the abdominal wound in the exact relation and to the same extent that they were originally. This can be accomplished by including all the tissues, skin, fat, superficial and deep fascia, muscle, subperitoneal fascia, and peritoneum in a row of silkworm gut sutures placed one-third of an inch apart. If I have some of my own specially prepared antiseptic catgut at hand, I frequently sew the peritoneal layer separately with a running thread of the gut and then include the remaining layers in the row of silkworm gut. This is especially desirable if one has a long wound in a hemorrhagic patient. It completely closes the abdominal cavity from any oozing from the abdominal incision. It also obviates the necessity of the silkworm gut sutures entering the peritoneal cavity, thus removing the remote danger of adhesions of the abdominal viscera to the points of peritoneum penetrated by the stitch, and danger of septic material gaining entrance to the peritoneal cavity along the route of the stitch, in case of external skin or mural suppuration. I am careful to include all the tissues of my wound in order that the abdominal walls after incision will be as thick at the wound line as at any other position. If it is not, there will be a concavity at this point on the peritoneal surface which will act as a point of resistance, and which will favor abdominal pressure on the wound and from which ventral hernia is more liable to result.

Before tying the silkworm gut sutures, I render the wound aseptic by washing thoroughly with 1 to 1,000 bichlorid solution (employing care that none of the poison enters the peritoneal cavity) and finally rinsing the wound with sterilized water. After tying the main sutures of the wound I always put in superficial stitches of fine silkworm gut wherever they are necessary in order to insure coaptation of the skin edges.

Dressings.—Sterilized iodoform powder mixed with boric acid is dusted over the wound. Loose sterilized strip gauze is placed over the wound, and several inches around it, and over this is placed a dozen thicknesses of sterilized sheet gauze. This is held in place by sterilized muslin straps which are pinned to broad bands of adhesive straps attached to the skin on the outer borders of the abdomen. This prevents the dressing from becoming displaced by any movements the patient may make, and it also supports the wound and takes the strain off the sutures. Over this is placed an abundance of sterilized cotton and over the cotton in turn is placed a snug abdominal bandage with a perineal T to keep it in place.

AFTER-TREATMENT.

For detail after-treatment I must refer the reader to my article which appeared in the JOURNAL two weeks ago.

Dressing the Wound. The wound is not disturbed until the fourth day unless there are symptoms indicating that it is not doing well, viz., pain, fever, etc. At the end of the fourth day the nurse uncovers the wound carefully, washes it thoroughly with alcohol, and 1 to 2,000 bichlorid solution equal parts, with a wad of sterilized cotton on the end of dressing forceps. It is then dried carefully and redusted with sterilized iodoform and boric acid. It is then re-

covered with fresh sterile gauze. On the seventh day the same process is repeated and the stitches removed. After that it is washed off in the same manner every day until it is perfectly well.

ANALYSIS OF CASES.

I have removed the appendages for bleeding fibroids of the uterus in 65 cases. These cases have all recovered from the operation. The history, subsequent to the operation of a large per cent. of these cases, I have been unable to trace.

Cases 26, 28, 47, 48, 55, 61, 64, or 14 per cent. continued to menstruate indefinitely after the operation. Their symptoms were so severe in 26, 47, 48, 55, or 6 per cent. of the whole number that hysterectomy was afterward employed. In none of these cases was hysterectomy found necessary because of increase of the growth of the tumor. In the remaining cases, so far as I have been able to trace them, the tumors have reduced in size, hemorrhage has ceased and the patients have been materially benefited while in a small per cent. actual symptomatic cures were obtained.

BASSINI'S OPERATION FOR INGUINAL HERNIA PUT TO THE CRUCIAL TEST.

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The radical cure for inguinal hernia has been a problem which called forth the ingenuity of the surgeon from time immemorial up to the present day. The very fact that so many operations and varieties of technique have been devised, showed most positively that there was some fundamental principle at fault and every new operation or a modification was in the hope of correcting it.

Like all difficult topics in surgery which are to be solved, the error is made of delving in a world of intricacy and complexity for a difficult solution, when as a matter of fact a simple expedient is awaiting its discoverer under a misty cloud. Sims' speculum is a most excellent example, demonstrating what a wonderful scope of utility such a simple instrument fulfilled. Most elaborate instruments have been invented and every possible means imaginable promulgated for the disposal of the sac and the obliteration of the canal in hernia; but in each instance there was a great tendency for recurrence and consequently a great percentage of failures. These results were not due to a lack of the requisite instruments; but to a wrong principle as a working basis. Not until Bassini devised his operation for inguinal hernia, was the true defect overcome, namely, restoration of the obliquity of the inguinal canal. This operation has an anatomical surgical basis and marks an era in surgery. It seems incomprehensible that such a simple variation in technique from older procedures, should not have been resorted to earlier.

Professor Bassini of Padua first described his new method for the radical cure of inguinal hernia at a meeting of the Congress of Italian Surgeons held in March 1888. He reported 102 cases in which the operation was successful. At a later time he was able to present the following unprecedented statistics on cases upon which he operated himself or his colleagues.

Of a total of 251 cases, there was no return after a period varying from one to four and one-half years in 108 cases. In 131 cases there was no reappearance in periods varying from one month to two years. In four cases the result could not be ascertained and there was a recurrence in only seven cases. Such statistics from so reliable an authority should convince the most fastidious of the superiority of this operation over all others. Fortunately it is assuming its proper place in the minds of surgeons throughout the world and beyond doubt is the one which will hold prestige for all time. The operation is the one almost invariably selected in the surgical clinics of Rush Medical College and as yet I have heard of no relapses.

I wish to report the following case, as the operation was performed on a very unfavorable patient with a most excellent issue and which in my estimation is of more moment, as far as the reliability of Bassini's operation is concerned, than positive results in a hundred favorable patients.

F. J. N., German, age 67 years, consulted me Aug. 31, 1895, for double inguinal hernia of some thirty years standing. The hernia on the left side was small and gave rise to no inconvenience; but the one on the right side was as large as two fists when descended and caused considerable annoyance in spite of truss support. Upon examination I found a large internal ring, capable of admitting four fingers, in fact pressure atrophy of the truss had transformed an oblique into a direct hernia. Patient was in a bad physical condition, being of a very neurotic temperament; business reverses having brought on great despondency. Had multiple strictures in the deep urethra and both lobes of the prostate were enormously hypertrophied, necessitating daily catheterization. Urine ammoniacal and contained large quantities of albumin and casts. Arcus senilis well defined. In spite of contraindications, the patient was determined to risk an operation for the radical cure.

Operation: Patient was admitted into St. Joseph's Hospital and operation performed Sept. 1, 1895. Chloroform anesthesia owing to renal symptoms. Incision four inches in length, extending over the inguinal canal parallel with Poupart's ligament. The cord was isolated from the sac, and which was easily accomplished as there were few adhesions, although the patient wore a truss for many years. After enucleation the sac was incised and found to be empty. At the internal ring the sac was transfixed and ligated with catgut. To make sure double sure, another ligature was thrown around the sac, one-fourth inch higher up. The sac was then excised, the stump iodoformized and allowed to return. Four external silkworm sutures were then passed through the skin and Poupart's ligament on the one hand, then underneath the cord and through the conjoined tendon and outer border of the rectus muscle, aponeurosis of the external oblique and skin of the opposite side. These sutures were caught with forceps to be tied later on. The cord was next lifted from its bed with blunt hooks. The skin and aponeurosis of the external oblique at the edges of the wound were well retracted. The internal border of Poupart's ligament and the conjoined tendon were scarified with a point of a needle to a degree just short of causing capillary hemorrhage. The inguinal canal was then closed by uniting Poupart's ligament to the conjoined tendon and the external border of the rectus muscle with thirteen interrupted sutures of heavy chromicized catgut. Great stress was

laid on putting two reliable sutures at the internal opening without causing compression of the cord. The cord was next placed in its new canal and the aponeurosis of the external oblique stitched over it with fine catgut. The external silkworm sutures *in situ* were now drawn taut, tied and the operation completed with a superficial row of interrupted horse-hair sutures approximating the skin. In dressing the wound care was taken to elevate the scrotum well with adhesive strips. The wound was hermetically sealed with collodion dressing.

After Treatment: Some four hours after the operation, when the nurse had momentarily left the room, the patient arose from his bed, went to the closet and evacuated his bowels. It was impossible to keep him in bed thereafter, and he took his daily walks *ad libitum*. Knowing that the damage, if any, was already done, and as he was a private patient, restraint by force would have brought censure upon me by friends, I left him to his own discretion. There were no unfavorable symptoms: the highest temperature was 100.6 degrees, on the fourth day. The silkworm and horse-hair sutures were removed on the seventh day after operation. The patient was discharged from the hospital three weeks from the date of operation. Upon examination there was not the slightest impulse transmitted on coughing, and the canal was firmly closed throughout and remains so up to the present day.

Remarks: This case teaches us several important facts. In distressing cases of hernia, advanced age, even if accompanied with pathologic conditions, should not obviate the benefits derived from an operation for a radical cure. In this instance the operation selected, namely Bassini's, and which appears to be well nigh infallible, must be given its well-deserved merits. However, I wish to call attention to the modifications in technique which I employed. First, as regards the external silkworm sutures as tension sutures. Again, I took into consideration the age and other conditions present which had a very deteriorating effect on the tissues, and resorted to scarification of tendinous structures to induce a hyperemia and consequently increased tissue proliferation: although it is well known that connective tissues generally are the most proliferative of all tissues; especially is this the case with tendons. Often in hernia operations, where there are few adhesions to the sac, it is enucleated almost bloodlessly and extravasation is at a minimum. How illogical to bring such parts together for a permanent union without a raw surface! I think that the success in this case is largely due to this recourse. I do not think that the pillars would have held intact during the great strain exercised after operation before there was any chance for union; except for the great number of catgut sutures about one-fourth of an inch apart, as ordinarily but three to four sutures are deemed sufficient; also to the fact that there were four rows of interrupted sutures in all: by far more reliable than either mattress or continuous sutures. Bassini's operation has the advantage over all other operations in that the canal is changed into a curve instead of a straight line, consequently the greater resistance to a relapse. Bassini leaves his patients walk in a week or ten days after operation with no bad results; but even in a week's time the healing process has been well established: but when great force is exerted before any regeneration has taken place at all is a most excellent test.

THE ETIOLOGY, SYMPTOMS AND TREATMENT OF RHINOLITHS, WITH THE REPORT OF A CASE.

Read at the Annual Meeting of the American Laryngological, Rhinological and Otological Society, New York, April 17, 1896.

BY W. SCHEPPEGRELL, A.M., M.D.

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NEW ORLEANS.

Frances L., age 13 years, was brought to me by her mother, September, 1894, on account of a catarrhal discharge from the right nostril. She gave the following history:

About three years ago, without any cause which she could recall, the right nostril commenced to discharge as if from a continued cold. Soon afterward she became subject to headaches and felt as if she could not breathe, and could sleep only with her mouth open. A physician was called in, who took her temperature and, finding an elevation, pronounced it "malarial fever." She was given quinin and other remedies for malaria without success, there being always an elevation of temperature, varying from 99 to 101 degrees. Her breath was offensive and her appetite poor. After having tried antimalarial remedies and other treatments by several physicians, without any apparent improvement, the mother was advised by a friend to have the child examined by me as the symptoms from which she suffered might be due to "catarrh."

A rhinoscopic examination showed the left nostril stenosed by a deflected septum; the right nostril appeared atrophic, and on the floor of this nostril appeared a black mass, with an offensive odor, somewhat similar to the crusts so often found in ozena. An attempt to dislodge this mass by means of a silver probe, gave rise to a grating sound, and a diagnosis of rhinolith was made. After clearing the nostril by means of a nasal syringe, an attempt was made to remove the stone, but without success, as the anterior opening was not sufficiently large to permit the passage of the stone. A part of the calcareous mass was then broken off by means of strong forceps, and the rhinolith was then removed without much difficulty. The nostril had been anesthetized by a 10 per cent. solution of cocaine, and the child suffered but little during the extraction. The stone was found to weigh 24½ grains. The child was given an antiseptic nose wash, and the fever and headaches did not recur.

The specimen was sent to Dr. Metz, the city chemist, who made a careful analysis of it; he reported that the nucleus in this case was formed of a blood clot, the composition of which was still distinctly shown in a spectroscopic examination.

From the history of the case, we conclude that this rhinolith had developed about three years ago; as the blood clot, from some unexplained reason, had been surrounded by a precipitate of calcareous matter from the nasal secretion. This had increased in size until the case was called to my attention. The stone was so large that it had deflected the septum, causing considerable stenosis of the other nostril. The right nostril had been atrophied from the pressure of the rhinolith and from the irritation of the fetid secretion surrounding it. In the efforts to clear this nostril of its secretion, the nasal mucosa had been lacerated by the

sharp edges of the stone, giving rise to the absorption of septic material, and fever and headaches as the result.

Rhinoliths form an interesting part of the study of the diseases of the nose, not only on account of their rarity, but also on account of their uncertain etiology. The literature of these nasal concretions is, however, not new, as cases were already described in the 16th century by Mathias von Gardi (1502),¹ Bartolini (1654),² Clauder (1685),³ Dekerue, Vitus Reidlinus, Ruysch (1733),⁴ each of whom report isolated cases of rhinoliths. A collective study of this subject was not made until 1845, when Demarquay⁵ made an elaborate report of all the published cases.

Rhinoliths owe their origin to the presence in the nostril of a foreign body, around which the secretions of the nostril have gradually precipitated a calcareous mass. A piece of dry secretion may, however, form a nucleus or a clot of blood, as in the case here reported. In many cases the nucleus of a foreign body has been found; in most cases, however, the original body being soft has become absorbed by the surrounding mass, and the nucleus is then not found. In the present case, the nucleus was not clearly defined to the eye, and was ascertained only after a careful spectroscopic examination.

The body of rhinoliths are composed chiefly of inorganic matters (80 per cent.), especially of phosphate and carbonate of lime, carbonate of magnesia and some oxid of iron. They differ very much in size, sometimes being so small that it is surprising that they were not ejected from the nose during the process of blowing, and, at other times, so large that they fill the whole lumen of the nostril. In the case of Brown reported by Mackenzie,⁶ the rhinolith attained the enormous size of 4.44 by 2.5 by 1.2 c., and weighed 12.9 grams, and a case reported by Zuckerkandl⁷ was still larger.

The salts of which the rhinoliths are composed, derive their origin from the secretions of the nose. Why these concretions should form in certain cases and not in others, is not understood. Graefe⁸ and Sajous⁹ believe it to be due to a gouty diathesis, but this theory is not supported by the experience of other observers. Demarquay found this diathesis present in only one of fifteen cases which he examined. This writer suggests that the narrowing of the inferior meatus is the predisposing cause, and that the alterations of the secretions of the nose have some influence in their formation. The change in this secretion, however, is probably the result and not the cause of the rhinolith.

As the etiology of the majority of diseases are now supposed to be associated with some microorganism, observers are not wanting who have ascribed the development of these formations in the nose as due to microbial origin. Gerber¹⁰ reports a case in which he found a rhinolith made up of calcified microbes, and believes that these concretions are formed through the activity of these bacteria. E. J. Moure¹¹ in the *Mondsschrift für Ohrenheilkunde*, describes two interesting cases of rhinoliths, in which he was unable to account for the development of the rhinolith in the second case except on the microbial theory, as the rhinolith was filled with large masses of bacteria.

The symptoms of the presence of a rhinolith is usually a chronic discharge from the nostril, frequently of a fetid character, and sometimes reflex symptoms as headaches and neuralgia of one of the

various branches of the trigeminus. If the size of the stone is sufficiently large, nasal obstruction and its manifold effects are added as a prominent symptom. Although a smooth hard foreign body may remain in the nostril for a considerable time without giving rise to any special disturbance, still rhinoliths, on account of their rough and angular exterior, usually give rise to irritation and inflammation of the surrounding mucous membrane, and generally to a purulent discharge and to the development of granulation. The discharge may be retained on account of the foreign body interfering with free drainage of the nostril, so that the fetor in some of those is very offensive. Atrophy may also result, as in the case which I have reported. In some cases the symptoms are much more severe, as in a case reported by Hendley,¹² in which the nose was greatly swollen and a sinus opened externally, discharging pus. Bosworth¹³ quotes a case of Bovill,¹⁴ in which the left side of the face was swollen, there being also left facial paralysis, ptosis and epiphora of the left eye, and the nose and septum deviated to the right side, and the hard palate distorted.

The extraction of a rhinolith, when small, presents no special difficulty. The mucous membrane having been thoroughly cocaineized, the stone may be removed by means of a nasal scoop or a strong angular nasal forceps. Sometimes a snare may be successfully used for the extraction of the rhinolith, as first suggested by Voltolini,¹⁵ and the ordinary lithotrites used for urinary calculus sometimes facilitates the extraction. In the case described by Moure,¹¹ the body of the rhinolith was situated in the posterior part of the nostril, and it was removed by forcing it into the pharynx, whence the patient expectorated it from the mouth. Where this procedure is carried out, the soft palate should be held against the pharynx, with the finger of the left hand, so that the foreign body can not be swallowed, or fall into the larynx. When the rhinolith is too large for extraction, it should be broken up by means of a drill operated by the electro-motor, or strong forceps or the lithotrite, and the separate fragments extracted with forceps.

Bergeat¹⁶ describes a case in which he utilized the properties of hydrochloric acid in dissolving the earthy constituents of bone in the removal of a sequestrum from the nostril. He applied the acid by means of a sound with a spiral extremity, and repeated these applications until the sequestrum had been so diminished in size that it could be extracted without difficulty. Although I have not heard of anyone making use of this procedure in the case of rhinoliths too large for extraction, still the use of hydrochloric acid would no doubt be a useful expedient in certain cases.

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No. 3723 Prytania Street.

SOCIETY PROCEEDINGS.

Chicago Pathological Society.

Regular Meeting, March 9, 1896.

DR. JAMES B. HERRICK, Vice president, in the Chair.

DR. JAMES B. HERRICK read a paper entitled "Two Cases of Pernicious Malaria." (See page 863.)

DR. H. B. STEHMAN read a paper entitled "Bovine Tuberculosis," and made some remarks upon tuberculin as used for diagnostic purposes in cattle. (See page 861.)

PRESENTATION OF CASES AND SPECIMENS.

DR. J. HOLINGER presented three cases of *cholesteatoma* of the ear, with specimens, and discussed them as follows:

Case 1.—Twenty years old, was operated upon in fall of 1893. He was treated in the Eye and Ear Infirmary for several months for suppuration of the right ear, the drum of which was vacant, and granulations were removed at several instances, yet the fetid discharge did not become less or thinner. The general condition was very poor. The boy was anemic. He was learning the trade of a plumber but could not work longer than an hour at a time, then became tired, dizzy and had to stop. Since the operation he works steady. The greatest improvement in his general condition was noticed soon after the operation, when two months after his discharge from the hospital his nurse did not recognize him. Now nothing of his anemia that he suffered with from childhood can be proved. His ear stopped discharging and there is only one small moist spot near the Eustachian tube, all the other very large cavity is covered with healthy, dry epidermis, and can be controlled through the external meatus. His hearing was, before the operation, zero for whisper and six feet for conversation. It is now three meters or ten feet for whisper.

Case 2.—Patient is 22 years old and was sick since his second year. After three weeks of observation, during which polypoid granulations, and finally the almost entirely loose hammer were removed, and regular syringing of the attic with Hartman's antrum tube did not have any effect whatever on the bad-smelling, thick secretion, which carried considerable masses of epidermoid scales: the operation was performed middle of December. The bone was eburneous, and granulated very slowly. Three weeks after operation the whole wound was covered with Thiersch's skin grafts. During a narcosis of bromid of ethyl Dr. Beard was kind enough to cut the flaps out of the patient's arm, while I removed the granulations from the bone and stopped the hemorrhage. After the patient had recovered from the narcotic the flaps were put in place. The greatest part of them took. I did not succeed, however, in covering the Eustachian tube, in consequence of which you see a small, red granulation in back of its opening, the only moist place in the whole cavity. Different experiences of several authors (Profs. Liebenmann, Bezold, Schwarze), as well as my own, convinced me long ago that the perpetual opening behind the ear is the only operation that is able to prevent these cavities from suppuration and necrotic process, with the final perforation into the skull and meningitis. In this patient the other ear shows a typical cholesteatoma with large scales. But there was never retention or decomposition of secretions or necrosis, therefore I did not operate there. The hearing distance on the operated ear was two feet for conversation, now it is one foot for whisper. The ear that was not operated upon was the better one before, and had a hearing distance of five feet for conversation.

Case 3.—Wm. M., 17 years, came to my observation in Post-Graduate Medical School two weeks ago. I removed a large polypoid granulation from the posterior upper margin of the drum, which was vacant with the exception of a narrow adhesion that connected the mallet to the anterior wall and the promontory. You see now the white epidermis distinctly descending the promontory. It is only the neighborhood of the Eustachian tube that it does not cover yet. There you find a few granulations. The other middle ear of the patient is entirely covered with epidermis, which you can see through a big perforation of the drum. The rest of this membrane you see in back and front of the displaced mallet. The hearing of both ears of this patient is very poor, only four feet for conversation. The specimens are temporal bones, for which I thank Dr. Hectoen. I performed there the regular Zaufal operation, as I did it in these cases. One shows the operation before its most dangerous step, the removal of the bridge between antrum, external meatus and middle ear. The other one after this, and opens a free view into the middle ear, attic with ossicles, antrum. In all cases of cholesteatoma, however, the conditions are not as clear ones as in the normal, and then you have to make your way without antrum in the hard bone, and

avoid the facial nerve, which takes often considerable knowledge of anatomy of temporal bone.

DR. L. L. McARTHUR. *Fibroid Tumor of the Scrotum.*

A patient came to my office not long ago with a tumor of the scrotum for the purpose of having it aspirated. Clinically, the tumor presented the conditions which obtain with a hydrocele. The tumor was firm, small above, large below, smooth in outline, and quite fairly elastic, yet harder than it seemed possible for a hydrocele to be. It was not translucent either to sunlight or the electric light; therefore I made a hypodermic puncture before resorting to aspiration, finding that the needle went into a solid growth. The patient was sent to the hospital for its removal, the nature of which could not be determined prior to operation. By manipulation it was free from the testicle and lying above it, extending from the external inguinal ring to the bottom of a rather large scrotum. The specimen has wasted about 25 per cent. in size through the influence of alcohol. The cord ran down on the inner aspect of the tumor. On cutting through the tissues of the scrotum as one does in hernia, the various layers were recognized, and it was seen to come down upon the peritoneum. On opening the peritoneum I found a hernial sac in which lay a tumor which had but one small adhesion on the inner aspect of the tumor: that is, the finger could be swept completely around the tumor except on the inner aspect as it lay in the scrotum, and the index finger could be readily carried through the inguinal ring into the abdominal cavity. There was no history of a change in size from position. There was no history of intestinal or mesenteric contents coming down into the hernial sac. On studying the adhesion which existed on the side of the growth mentioned, it was found to have, after cutting through the peritoneal wall which covered the tumor, a connection with the vas deferens as near as could be made out. The patient says that it was always larger than the opposite side, but that in the past nine months prior to operation, it had increased and become painful. As the tumor had somewhat the characteristics of a fibrosarcoma, it was decided to resect the vas deferens and remove that portion which was attached. This was done.

Microscopic examination of the growth proved it to be a fibroid tumor which seemed to start from the vas deferens and filled the hernial sac. It was a hernial content. The peritoneum was resected up around it, especially the part which folds around the testicle in its descent and makes the tunica. The patulous character of the inguinal canal made me believe it to be a congenital growth, and the continuation of the peritoneum with the bursa of the testis showed that that was probably true. A small portion of the peritoneal sac was ligated off to make a normal bursa over the testis. A ligature was applied to the distal end of the vas deferens to prevent the escape of seminal fluid. The patient made a good recovery.

2. *Cyst of the Appendix.*—The next case is one that occurred in the practice of Dr. Frankenthal, of this city, and a relative of his family. A young man of 25 had been having for three years repeated attacks of appendicitis which were typical in character, and were usually caused either by excesses or carelessness in the selection of diet. I was called twice during the past three years to see him on account of these attacks and advised non-operative interference because while the symptoms were fairly acute, they were not alarming. His temperature would range between 100 and 103; the pain was fairly well marked, and an elongated tumor could be distinctly felt. He recovered from his first attack and by being careful in his dietary had none for a year and a half. He had a second attack, after which he paid more attention to his diet and a long time elapsed before he had another attack. Finally, about six months ago, he had a third one, when it was decided to remove the appendix after all the inflammatory symptoms had subsided. Each attack was followed by a rise of temperature, the thermometer often indicating 103 with acceleration of the pulse and the formation of a tumor. In operating, much to my surprise, I found an elongated appendix, five inches in length, markedly distended. A tumor was to be felt before operation which seemed to run down into the pelvis, and it was about the size of an ordinary Frankfort sausage. It was firm, elastic and translucent. Its contents, when allowed to escape, consisted of clear, glairy mucus. It was simply a mucous cyst of the appendix. I present it to you, not that such cases have not been found before, for there have been some reported, yet they are not numerous, but because it seems almost inexplicable how he could have had a temperature as high as he did ranging over a period of ten days without any pus or suppurative process. I can not conceive of his having had a suppurative process in his appendix, and then having it disappear, leaving nothing but a clear mucus. There were no adhesions in this case. The appendix, which was elongated and hanging down in the pelvis, was movable in the

abdominal cavity and showed no attachments to either the mesentery or other intestines. Its neck was totally obliterated.

DR. LUDWIG HEKTOEN.—It will be remembered that Dr. Van Hook (*Medicine*, March, 1896) described a strangulated inguinal hernia of the vermiform appendix. In the literature he found twenty-nine cases of cystic dilatation of the vermiform appendix: to this number he adds his own case, an unpublished case of Treves and one that came under my observation, making the total number of cases thirty-two. This small number shows the comparative rarity of cystic appendix.

The pathological condition in Dr. McArthur's specimen, as well as in many other similar specimens, is undoubtedly a partial obliterating appendicitis with consecutive distension of the distal part by the accumulating products of the mucosa and the inflammatory exudation during recurrent attacks of appendicitis, the regional lymph glands being unable to absorb the contents of the cyst because of chronic indurative lymph-adenitis, or because the lymphatic vessels are constricted at the cicatricial closure of the appendiceal lumen, which point is well marked in Dr. McArthur's specimen by the circular constriction near the proximal cut end. This specimen, taken in conjunction with the clinical history, demonstrated conclusively that there may be a partial obliterating appendicitis with consecutive cystic dilatation of the appendix.

DR. E. R. LE COUNT—I would suggest as a possible explanation for the fluid in the cyst, that the obliteration not only affected the lumen, but that the inflammation shut off the blood vessels on the outside of the appendix, causing an edema of the tissues.

The Medical Association of Georgia.

Abstract of the Proceedings of the Forty-seventh Annual Meeting, held at Augusta, April 15, 16 and 17, 1896.

The Association met in the Richmond County Court House, and was called to order by the President, DR. FRANK M. RIDLEY, of La Grange.

The Address of Welcome was read by DR. EUGENE FOSTER, of Augusta, which was responded to by DR. E. R. ANTHONY, of Griffin.

PRESIDENT RIDLEY then delivered his annual address, in which he forcibly and eloquently dwelt upon several topics of interest to the profession.

The first paper read was by Dr. W. J. MATHEWS, of Middleton, entitled

THE TREATMENT OF PNEUMONIA.

The Doctor had never seen a case in his experience where he thought the symptoms warranted abortive treatment, owing to not seeing the patient until a few hours after the prodromic chill, the lung then being engorged to such an extent that he thought his efforts would prove futile. Having satisfied himself that he has a case of pneumonia to deal with, his first step is to make the patient comfortable. To meet this end he envelops the affected side with counter-irritation, preferably turpentine. To relieve restlessness, pyrexia and pain he gives phenacetin. Should phenacetin fail, he gives morphin hypodermically. To reduce hyperpyrexia he administers phenacetin in sufficient doses every three or four hours in connection with a stimulant, the purpose being to reduce the temperature to 101° or 102°. In his experience phenacetin does not, like some of the other coal tar products, depress the heart. He advocates the application of blisters. He had never seen a case calling for venesection. To control the pulse he gives veratrum viride every three or four hours with whisky. The overworked heart should be closely watched, its action sustained and clot prevented. This he does by digitalis and carbonate of ammonia. In the stage of resolution he resorts to supportive treatment. The type of which he had spoken was the acute lobar variety.

DR. J. W. DUNCAN, of Atlanta, seldom blisters an adult. In the very initial stage a blister might do some good. He does not give the coal tar preparations in pneumonia, for the reason that if they are given to reduce temperature they are liable to produce cyanosis. He frequently uses veratrum viride and considers it a sheet anchor in this disease.

DR. J. B. MORGAN, of Augusta, read a paper on

COLLES' FRACTURE.

The most common and frequent fracture with which the general practitioner had to do was a Colles' fracture. The diagnosis of this fracture was not difficult. The history of the accident, the characteristic deformity, pain and seat of the

lesion, point at once to the nature of the fracture. Every case of Colles' fracture can be readily reduced by strong, forced dorsal flexion. This is best done under an anesthetic. The best temporary permanent dressing is Wyeth's modification of Pilcher's. The plaster of paris dressing is an excellent one, and is to be preferred in old people where there is firm impaction which the surgeon does not care to break up, or in cases where the fragments are more or less comminuted. It should be applied from the lower border of the metacarpus to the middle third of the forearm, with the patient's hand in the straight position. A straight dorsal splint may also be employed, but it is not as desirable as the plaster of paris. Under no circumstances use the angular, crooked or pistol-shaped splint, and no form of splint should be allowed to project beyond the metacarpus. The fingers must remain freely movable to prevent stiffness of the joint. Limited motion should be encouraged at first; later active and free. In aged patients, where we have more or less impaction of the broken ends, reduction should not be attempted, [as it is better to have a crooked deformed wrist than a failure in bony union, and impaction favors the consolidation of the fractured bone.

DR. W. L. CHAMPION, of Atlanta, contributed a paper on

THE IMPORTANCE OF CAREFUL CHEMIC AND MICROSCOPIC EXAMINATION OF URINE IN APPLICANTS FOR LIFE INSURANCE.

Within the past few weeks the author had examined patients with kidney lesions, who a few days or weeks previously had applied for life insurance and had been recommended as good risks. Every medical examiner, after due deliberation, ought to be able, after making a thorough physical examination, having considered the applicant's predisposition to any disease, and last but not least, having made a thorough chemic and, if necessary, microscopic examination of the urine, to tell the life expectancy of the applicant before him. Cases were cited by the author to demonstrate that a great many practitioners are too prone to overlook the condition of the kidneys, not to make a careful and thorough examination of the urine, not only in examining applicants for insurance, but their desire to formulate a correct diagnosis in diseased conditions should make it so. He urged the extension of chemic and microscopic investigations in this line of work.

DR. A. W. STIRLING, of Atlanta, in the discussion called attention to some experiments which he had made some years ago, and which formed the basis of a graduation thesis to the University of Edinburgh. Chiefly through the observations of Pavy, Johnson and others it was becoming known that every phase of albuminuria was not a case of Bright's disease. In order to ascertain the actual number of persons in whom albuminuria was present in health, he examined 369 boys between the ages of 12 and 16, who belonged to one of the large training ships on the Thames, near London. In order not to make a mistake in regard to the presence of albumin, he examined each one with four different reagents. He found albumin most common three hours after the boys got out of bed and assumed the erect posture, when the percentage was by examination 20.8 per cent. Of the boys that played in a band the percentage of albumin was about 60 per cent., while in those that did not play in the band it was only 12.8 per cent. Mr. Stichel, of Paris, had seen blindness produced by the playing of wind instruments due, he says, to passive cerebral congestion with a similar condition of the retina and choroid.

Dr. Stirling says that the urine is usually found to be absolutely free from albumin while the patient remains in bed and it makes its appearance within a variable but generally short time after the assumption of the erect posture, and independently of food and all other conditions. The albumin continues in the urine for only an hour or two, or perhaps in varying quantity throughout the day, but as a rule it is disappearing in the afternoon, and is entirely gone by bedtime. The ingestion of food has little effect in producing the albumin, and it is not breakfast which causes its frequency of appearance in the morning. Sometimes he had seen a slight rise after a meal, but this is trivial and by no means constant. He had boys brought ashore to the infirmary and confined to bed and then albumin was absent from the urine until they got up, breakfast or other meals having no effect. He had made very many and various experiments in connection with this subject, all tending to prove the same thing.

He examined 92 other cases, whose ages varied from 5 to 94, with the result that there was an increase in the percentage of people having albuminuria with advancing years. From 20 to 30 years he found the percentage of albumin to be only 10 per cent.; 30 to 40, 25 per cent.; 40 to 50, 36.4 per cent.; 50 to 60, 66.6 per cent.; 60 to 70, 75 per cent.; 70 to 80, 75 per cent.; 80 to 90, 83 per cent. These observations were confirmed by Grainger Stewart.

With regard to the advisability of insuring cases of "cyclic" albuminuria, he would suggest that in the present state of our knowledge, the most satisfactory method of dealing would be for the companies to accept an apparently healthy albuminuric at a high premium, agreeing to rearrange this on their being satisfied of the disappearance of the albumin for such a length of time as would give reasonable expectation of this being permanent.

THE MODERN TREATMENT OF SKIN DISEASES.

DR. BERNARD WOLFF, of Atlanta, read a paper on this subject, in which he outlined in a succinct manner the progress that has been made in the province of dermatology within the last twenty years. The remedies selected for use in cases of disease of the skin can be employed in several ways, namely, lotions or washes, ointments, pastes, plasters and soaks, as well as baths. Baths are of two kinds, the vapor and the simple medicated bath made to resemble the natural mineral waters. The chief purpose of the bath is, besides cleanliness, to bring about healthy activity of the skin, to remove scales, soften infiltrated areas, increase the elimination of waste products through the skin and to relieve irritable conditions of the skin. Baths are especially valuable in the treatment of parasitic and syphilitic affections of the skin. Ointments and pastes are more frequently used than any form of preparation in the therapy of skin diseases. The base of an ointment is a matter of importance, for upon it largely depends the benefit to be derived from the medicament. Formerly only lard and wax were used; now we have a greater number of articles to choose from. Of these vaselin, lanolin, adeps lanæ, and resorbin are the most useful. Ledermann has introduced a new excipient called resorbin. It is composed of refined almond oil, emulsified with distilled water with the addition of a small quantity of yellow wax and lanolin. The author's experience with casein ointment leads him to regard it as being incompatible with too many substances to be of much practical value.

The use of soaps is of some importance in the treatment of diseases of the skin. Only neutral soaps, or those containing an excess of unsaponified fat, are to be recommended. Free alkali is destructive to the protective horny layer of the skin. The over-fatty soaps make commendable vehicles for various medicaments, the most frequently used of which are hydro-naphthol, resorcin, sulphur, tar, corrosive sublimate. The use of soaps has the effect of encouraging cleanliness on the part of the patient, and cleanliness is one of the prerequisites of successful treatment.

The removal by electrolysis of nevi, moles, warts, and small malignant new growths of the skin is a well established surgical procedure.

DR. M. B. HUTCHINS, of Atlanta, said the modern treatment of skin diseases should embrace internal as well as local or external treatment. The patient's constitution should not be overlooked, although if he had to choose between local and internal treatment, he should prefer the former in the treatment of 99 per cent. of the cases of affections of the skin. He had not given the plaster mulls of Unna much trial. They had been objected to on account of containing a gutta percha base, and in any event the dermatologist would have to carefully select the cases in which to use them. With reference to soaps, such as the bichlorid of mercury, the chemic change which takes place renders the remedy inert, and it is impossible to get any absorption through the unbroken epidermis. Success in the treatment of syphilis by mercurial inunctions is attained, not by the absorption of the mercury through the skin, but by inhalation of the vapors from the mercurial ointment.

As regards gelatin paste he had used it a little, but thought it was objectionable because it stuck to everything with which it came in contact, particularly woolen goods.

In some cases of acne on the faces of young ladies he had obtained beneficial results by using the constant galvanic current to the cheeks where the eruption appeared. The stimulating action which takes place encourages the glands to throw off secretions without allowing them to remain sluggish and thus block up the follicles of the skin.

APPENDICITIS.

A paper on this subject was read by DR. SAMUEL LLOYD, of New York City. It was largely statistical. In making his compilation the author began with the very earliest recorded cases, and it covers a greater number of medical than surgical cases. The total number examined up to April 5, 1896, was 558, and the result was that 263 recovered, and 295 died. Of this number 226 were operated upon, 192 recovered, and 31 died. On the other hand, in direct contrast to this, 265 cases were treated conservatively, 60 recovered, while 205 died. A case was cited which the author had seen in consultation.

illustrating the course of extraperitoneal abscesses. According to the table of cases that the author had examined, the pathologic conditions could be summed up, as follows:

1. Cases in which the disease follows traumatism.
2. Cases following septic inflammations in other parts of the body, such as salpingitis in the female, post-partum septic inflammation of the uterus, typhoid fever, tuberculosis.
3. Direct infection of the mucous membrane of the appendix by its contained bacteria.
4. Alterations in its position and shape so as to occlude its lumen, preventing the escape of its natural secretions and contained intestinal contents.
5. Changes in its position and pressure upon its mesentery by growths, or impacted feces in the cecum.
6. Alterations in its position or shape so as to shut off its blood supply.
7. Foreign bodies, including fecal concretions.

There was one other pathologic condition about which the author could obtain no information from the cases tabulated, namely, the "abdominal tonsil," referred to by Sutherland, Robinson, Yeo Burney, Haigh, and Bland Sutton.

It is probable that in the present state of surgical knowledge the majority of medical men are in favor of surgical intervention in cases tending toward general peritonitis, even though the symptoms do not point to perforation, or abscess formation, in the hope that drainage of the abdominal cavity and the removal of the focus of disease may enable the surgeon to forestall what would otherwise be a fatal complication.

Of 445 cases out of 558 that were examined, 79 per cent. resulted in abscess, perforation, peritonitis, etc.

The following table gives the full data:

Perforation, without given cause.	11
With abscess.	10
With ulceration.	16
With peritonitis.	32
With concretion or foreign body.	41
With gangrene.	7
With gangrene and concretion.	19
With inflammation.	13
With hardened feces.	1
With concretion and peritonitis.	24
With foreign body and peritonitis.	7
	— 181
ABSCESS WITHOUT PERFORATION.	
Uncomplicated.	136
Containing concretion.	19
With perforation.	2
Sloughing appendix.	2
Foreign body.	1
	— 160
Foreign bodies.	36
Fecal concretions.	26
Inflammation of the appendix.	8
Enteroliths.	2
Gangrene of the appendix.	9
Gangrenous appendix with concretion.	2
Inflammation with concretion.	3
	— 86
GENERAL PERITONITIS.	
With concretion.	5
Foreign body and gangrenous appendix.	1
Foreign body.	3
Ulceration.	1
	— 10
Total.	437

It will be noticed that this is a dismal showing for the conservative treatment of appendicitis. The author believes that no case of appendicitis should be considered as purely medical. When one is called to a patient it is his duty to immediately prepare for operative interference. He would advise operation in every case, after studying the subject carefully, where the symptoms showed any tendency to increase. If a tumor was present and the symptoms suggested the possibility of the presence of pus, he would surely operate.

Dr. E. H. RICHARDSON, of Atlanta, followed with a paper on THE MEDICAL SIDE OF APPENDICITIS.

He cited the opinions of eminent practitioners both in this country and Europe in favor of non operative interference in a large proportion of cases.

Dr. W. H. ELLIOTT, of Savannah, said the foremost difficulty in cases of appendicitis was to know *when* and *when not* to cut. No man was fit to treat appendicitis who was not absolutely willing at any moment that he might be needed to open the abdominal cavity.

Dr. WILLIS F. WESTMORELAND, of Atlanta, was quite sure that in every case of relapsing appendicitis he had seen there were adhesions from previous attacks. Some of these cases had died. If they had been operated on in the primary attack, the chances would have been better for their recovery. He would open the abdomen as soon as appendicitis was diagnosed, if the patient would permit it.

Dr. JAMES A. WRIGHT, of Augusta, considered the opera-

tion for this disease very difficult, for the reason that no two cases were alike. It was an easy matter to cut down, but if pus and adhesions were found around the appendix the operation was extremely difficult.

Dr. J. W. DUNCAN, of Atlanta, had seen and treated medicinally several cases of appendicitis during thirty years' practice, one of them having died from a recurrent attack a few months after the primary one. He was satisfied that many cases operated upon were nothing but typhoid fever, and that other cases thought to be typhoid fever were really appendicitis.

Dr. J. B. S. HOLMES, of Atlanta, considers the disease a surgical one, and thinks it is safer to operate as soon as a diagnosis is made. The only cases he had lost were those that had been treated medicinally from two to four days previous to operative interference. If an early operation is performed, the mortality should be small.

Dr. WM. H. DOUGHTY, of Augusta, maintained that it was not prudent to operate upon every case of the disease as soon as the diagnosis was made, for the reason that the surgeon does not always see the cases in their incipency. If he did, it would be safe to remove the appendix as the chances were that at this time there would not be pus formation; in other words, the surgeon would have a comparatively clean condition within the abdominal cavity, and the mortality of operations done under these circumstances ought to be small.

Dr. M. L. BOYD, of Savannah, took the position that if all cases could be diagnosed early, it would be wise to operate at once.

Dr. GEORGE H. NOBLE, of Atlanta, thought it was extremely unfortunate that the general practitioner should view appendicitis from a prejudiced standpoint. There were undoubtedly, many cases of the catarrhal form that were relieved temporarily, or cured by purgation, possibly permanently. Where we have rupture and the discharge of the contents of the appendix into the peritoneal cavity, we have the fulminant form of the disease, and in such cases very prompt and active measures must be instituted. He advocated early operation.

Dr. L. G. HARDMAN, of Harmony Grove, said that while there were cases of appendicitis calling for the services of the surgeon, there were others that could be treated successfully by medicinal measures. Of fifteen cases which had come under his care, only two were operated upon. All recovered, both the operative and non-operative cases. In the cases operated on suppuration had occurred, and one of the patients, a physician, was present.

SOME ALBUMINURIC COMPLICATIONS OF PREGNANCY.

A paper on this subject was read by Dr. HOWARD J. WILLIAMS, of Macon. He said this complication was present in from 6 to 50 per cent. of all pregnancies. On the other hand, puerperal eclampsia was comparatively rare. From Jan. 1, 1891, to March 31, 1896, he had encountered 10 cases of albuminuria or toxemia in 163 pregnancies, and 2 cases of eclampsia in this number—10 cases. This gives 6 per cent. of toxemia and about 1 per cent. for eclampsia. The percentage given is based upon accurate analyses of the urine of every woman he had attended during the time mentioned. Albuminuria may be present in varying degrees, from a mere trace to a very large per cent., the urea and other excreta accumulating in the blood in the same proportion. The toxemia is slow or rapid, according to the degree of retention of the latter from the outside. These variations were shown by the recital of three cases.

The cardinal indications are to promote elimination of the toxic materials circulating in the blood and to restore the excretory organs to their normal functions. If, however, the poisoning is excessive and the life of the mother and the fetus is at stake, then the indication is to promptly empty the uterus.

Elimination is preëminently indicated for all forms of kidney disease, and in this complication it yields the best results. But if it can not be tolerated, or disagrees, a more liberal diet should be given, such as the white meats of fowls, fish, oysters, fresh fruits, and nutritious breads. Remedies to promote elimination by the kidneys were then dwelt upon. Nervous excitement should be controlled by sedatives and narcotics, though not to the extent of interfering with eliminative measures. Elimination of the waste products having failed to restore the functions of the excretory organs and the condition is urgent, eclampsia being imminent or other complications alarming, the uterus should then be emptied.

Dr. R. B. BARRON, of Macon, delivered the

ORATOR'S ADDRESS.

He dwelt upon and pleaded for higher medical education. Relative to practicing medicine purely for money, he said that money with the true physician was of secondary consideration;

that the real incentive for the best work with those practitioners who achieve success was that broad humanitarianism which impelled with resistless force the commissioned agents of God Almighty to relieve suffering, to stay the pangs of agonizing pain, to fight to the bitter end humanity's implacable and unconquerable enemy—death—regardless of any other consideration.

THE AFTER-TREATMENT OF TRACHEOTOMY CASES OF MEMBRANOUS CROUP

Was the title of a paper read by Dr. R. M. HARRIS, of Rome, in which he drew the following conclusions:

1. Croup, whether diphtheritic or membranous, is almost invariably fatal without surgical treatment, and the few cases that recover by medicinal treatment alone are not to be considered.

2. So far as the practical indications for tracheotomy are concerned it makes no difference whether croup be diphtheritic or membranous.

3. Tracheotomy has the advantage over intubation, in that it gives a better means of expectorating the membranes and furnishes free drainage from the site of septic infection.

4. Tracheotomy is a justifiable surgical procedure and should be performed in all cases where our therapeutic resources have been exhausted, and where the patient is in imminent danger of suffocation. It should be done in hopeless cases, since it either offers a chance for the patient or promotes euthanasia.

5. Tracheotomy keeps the patient alive until the pseudo-membrane disintegrates and resolves into a muco-purulent liquid and is expectorated through the tube.

6. The after-treatment is the most important part of the procedure and the author attributes the successful results reported to the persistent use of lime water.

Dr. J. B. S. HOLMES, of Atlanta, reported several interesting surgical cases.

Dr. GEORGE H. NOBLE, of Atlanta, reported a case of ENORMOUS VENTRAL HERNIA CURED BY A PLASTIC OR FLAP OPERATION.

The subject was a very large woman who came to him from a neighboring State, giving a meagre history, saying that the protrusion first appeared after severe straining, and grew rapidly until it reached the size of an adult head. The treatment she had received consisted in local applications only, no attempt at operative measures having been made. The case is of considerable interest on account of such a large hernia in this region and because the expansion of the ribs prevented closure of the ring by approximation of its margins, necessitating therefore a plastic or flap operation to close the aperture which was large enough to pass a closed hand through without resistance.

The operation consisted of 1, in trimming away the excess of the sac and uniting the peritoneum with buried catgut sutures; 2, four strong tension sutures were passed through the abdominal walls, piercing the semilunar lines down to the peritoneum, but not implicating it; 3, the semilunar flap was carefully outlined upon either side over the recti muscles with a straight or vertical side upon their outer margins and the convex borders turned toward and extending to the hernial ring. The aponeurosis of the external oblique and the outer layer of that belonging to the internal oblique muscles were cut through and the flaps liberated except where their bases joined the ring and turned over the opening, accurately abutting the edges, in which position they were stitched with buried silk sutures. The convex borders coincided with the margins of the ring to which they were made fast; 4, the recti muscles were brought in direct apposition by surrounding them with the large catgut, thus adding another layer of strong tissue over the hernial opening; 5, the skin and fatty tissue were then brought together and the tension sutures tied over all, the wound dressed antiseptically, with firm pad, roller bandages, etc. The wound proved entirely aseptic, and the result was very gratifying.

In another such case the writer would use buried silver sutures instead of absorbable material.

Dr. M. B. HUTCHINS, of Atlanta, read a paper on the

TREATMENT OF SKIN DISFIGUREMENTS BY ELECTROLYSIS.

That electrolysis has a wide application and a legitimate use, he was convinced by his own experience during the past five or six years. To do the work outlined in the paper a few galvanic cells, a sponge electrode, a needle holder, and for accurate work, a milliampèremeter, are necessary. In most cases the needle should be attached to the negative pole. The current used is weak, and varies from three to seven or eight cells. With a milliampèremeter it is found that we get from 1 to 5

milliampères from this current to the relative position of the electrodes, the greater amount of intervening tissue reducing the current by resistance, a lesser interval increasing it. The number of needles used, the manner of grasping the sponge electrode, the dampness of the sponge, all influence the strength of the current. The strength of current used in these operations is harmless to the patient and would not be felt upon the unbroken epidermis.

For the removal of superfluous hairs on the face of ladies, electrolysis was the only method. Many of the patent hair removers were excellent stimulants to its growth. A lounge, good eyes, a good light, a steady hand and perseverance were necessary. Dr. Hutchins had never seen any injury result from the treatment of moles by electrolysis. He had removed one by excision which had become epitheliomatous through a razor cut. There was no recurrence. Moles with hairs in them will frequently disappear from the simple effect of the current used in destroying the hairs, but destroying the mole does not always destroy its hair as they are deeper.

Warts of various kinds, so tedious of treatment with the old methods, save that of excision, with or without canterization, usually dissolve into froth under the action of electrolysis, being more easily destroyed than the average mole. The author then dwelt upon electrolysis in the treatment of epithelioma, small fibromata, milia, sebaceous cysts, keloids and hypertrophic scars, comedones, angiokeratoma, etc.

The paper was based entirely upon the author's own practical experience, and his implicit faith in this method of treatment is due both to results in practice and upon himself.

Dr. M. L. BOYD, of Savannah, followed with a report of a few interesting surgical and gynecological cases.

Dr. DUNBAR ROY, of Atlanta, Ga., read a paper on

THE USE OF SUBCONJUNCTIVAL INJECTIONS OF MERCURY IN CERTAIN FORMS OF EYE DISEASES.

In this paper the author tabulated twenty-five cases of various eye affections, and his experience leads him to the following conclusions: 1. In infected processes of the cornea, ulcers, abscesses, wounds, etc., this method of treatment is quicker and therefore more satisfactory for clinical purposes than those usually employed. 2. In acute iritis it does not seem to exert any beneficial influence, but produces great pain, while in other cases the pain is mitigated. 3. In chronic iritis and iridocyclitis the pain and congestion are often markedly influenced for the better, but it has no effect whatever upon adhesions of the iris to the capsule of the lens. 4. In post-operative infection and panophthalmitis it is by far the best method to which we may resort for good results. 5. In pannus of the cornea absolutely no effect was produced one way or the other. 6. With lesions of the choroid and other deeper structures of the eye he had had no experience, but expects to try this method whenever a case presents itself. From his personal experience he would unhesitatingly say that we can depend upon subconjunctival treatment alone, but as an adjuvant it is most excellent and in some cases produces results far more beneficial than were expected.

Dr. A. W. STIRLING, of Atlanta, read a paper on

GLAUCOMA IN RELATION TO GENERAL PRACTICE.

He said that glaucoma was to the ophthalmic specialist one of the most interesting of diseases, comprising 1 per cent. of all ophthalmic troubles. While he believes that every case of the disease requires the most skillful advice that can be obtained, still it is the first and foremost affection which comes within the province of the general practitioner, and with him lies frequently the ultimate safety or destruction of the eye involved. The reader reported several interesting cases, after which he dwelt upon the variability in tension. Coming to the treatment he counseled against the indiscriminate use of mydriatics, especially atropin, scopolamin and cocain in affections of the eye. Glaucoma had often resulted from the use of these agents and is almost always accentuated by them. In most ocular diseases they are harmful, and the general practitioner would do well to remove them from his list in ophthalmic practice, except when he knows he is dealing with an uncomplicated keratitis or an inflammation of the iris. On the other hand, in myotics, and notably in eserine and pilocarpin, we have a fairly certain means of temporarily benefiting many cases of glaucoma and of saving valuable time till the most suitable method of treatment can be decided on.

The following officers were elected:

President Dr. Geo. H. Noble, Atlanta.

First Vice-President Dr. J. B. Morgan, Augusta.

Second Vice-President Dr. R. B. Barron, Macon.

Secretary—Dr. R. H. Taylor, Griffin.

Treasurer, Dr. E. C. Goodrich, Augusta.

Place of meeting, Macon, Ga., 1897.

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SATURDAY, MAY 2, 1896.

THE CERTIFICATE PLAN.

In order to avail themselves of the excursion rates, those purchasing tickets must obtain from the railway agent at the starting point a certificate that full fare has been paid by the purchaser from the starting point to the place of meeting. On arrival at the place of meeting, this certificate is handed to the registration committee. (This year a separate envelope has been provided.) The Secretary will then sign the certificate, and return it through the post-office to the member. This signed certificate, presented to the agent at the place of meeting when returning will enable the purchaser to secure a return ticket for one-third fare.

THE NEWEST PHRENOLOGY.

There has been lately organized in connection with an eastern university a society the members of which agree to give their brains to be examined after death for the furtherance of scientific knowledge. The Anthropometric Society organized a few years ago has similar provisions for its membership, and it is expected that some valuable results may be obtained in time from this special and rather peculiar line of research. It goes without saying that the examination of the brains will be made by acknowledged experts and with every possible precaution and appliance to insure that in every minute particular it will be fully up to the most recent data of our knowledge of the subject, of cerebral anatomy and physiology. This, however, is not all that is needed; pathology without clinical observation is robbed of more than half its value, and

in these cases, every phase and fact of character, education and career of the original owners of the brains should be studied and correlated with the findings. With distinguished individuals who are more or less public property during their lives and with public characters generally, these desiderata may be met to a greater or less extent, according to their prominence and the interest taken by their fellows in their doings; but how about the less conspicuous individuals? If the brain structure, both macroscopic and microscopic, is to become so well known that we can determine what convolitional arrangements are normal or in the line of progressive evolution, or, on the other hand, are degenerative stigmata, we may expect some rather astounding revelations. In our present data we have already some rather remarkable facts; while CUVIER and CROMWELL had the largest brains, GAMBETTA had one of the smallest, and in two eminent men whose brains were recently reported upon by DR. BURT G. WILDER there was nothing found that would correspond particularly with their intellectual preëminence during life. In one, indeed, the brain was almost abnormally simple in its arrangement and moreover revealed one or two peculiarities that are at least eccentric and hardly indicative of superiority according to our present light on the subject. It would not be agreeable to friends, or to one's own post-mortem vanity if such can be assumed, to find an idiotic simplicity of gyri or the criminal frontal convolitional type of BENEDIKT. It can hardly be expected, however, if brain examinations become general that such possibilities can be insured against.

The physical examination, moreover, of the subjects whose brains are to be examined should be most thorough and by those who are competent to judge of all possible defects or conditions that can have a bearing upon brain development. This is a condition that can not be always fully met under the circumstances, and might be objectionable to some, but the difficulties it presents are light as compared to those of the mental and moral scrutiny that would be desirable.

With all these difficulties, however, the movement is a good one and we hope that it may extend. It can not fail to bring out many facts of value and it should not be embarrassed by any sentimentalism. It will, if extensively followed, throw most valuable direct and side lights on a vast number of medical anthropologic and psychologic questions. It should be supplemented by a more general and thorough study of the character peculiarities and physical stigmata of criminals and defective individuals, whose brains should also be submitted to the same complete examinations by experts. In connection with a thorough system of child study in public institutions, the examination of immature brains when practicable would be a most valuable adjunct. From all sources

combined we might reasonably expect to obtain most valuable additions to our knowledge of cerebral physiology.

THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Ordinarily we have no sympathy with attempts to establish any more national medical associations. The scope of the AMERICAN MEDICAL ASSOCIATION is wide enough to embrace every branch of medical science, however special its character or object, and this particularly so since the greater prominence and importance given to sectional work in this body. The AMERICAN MEDICAL ASSOCIATION, indeed, has become what the Congress of American Physicians and Surgeons sought to be, a veritable confederation of medical bodies devoted to independent lines of thought and practice, meeting in joint session in recognition of the common ground on which they all stood. In fact, the several sections of the AMERICAN MEDICAL ASSOCIATION can more justly claim a national representative character than the constituent bodies of the Congress, since the latter have an arbitrary limitation of membership as to numbers and to a certain extent locality. Of course, any number of men devoted to the special study and practice of any department of medicine have the right to associate themselves for social or scientific purposes and to limit the number and select the particular individuals with whom they prefer such association, but this does not give them the right to arrogate a specific national representative character or designation, since there is an unavoidable inferential reflection upon the professional standing of the men of the same category who do not happen to belong to their especial coterie. These have, in reality, a club rather than an association character.

The sections of the AMERICAN MEDICAL ASSOCIATION are attempting to do more than the special organizations referred to and though exception may be taken to the lack of special professional qualifications for membership in each, that is a matter to be attended to in their future development, until it shall come to be that the enrolled members of the Section on Surgery, for example, shall be recognized surgeons, those of the Section on State Medicine, men actively interested in national, State and municipal sanitation, and those of Obstetrics and Diseases of Women, authorities upon the various conditions pertaining to the sexual life of woman.

The Association of Military Surgeons of the United States, however, with the American Public Health Association, is not amenable to criticism as a superfluous body. It is true that the latter is not properly a medical body at all, although the great majority of its members and those of especial authority in its councils are medical men. The Association of Military Surgeons is in a measure also extra-medical in this,

that its members are military as well as medical men, they are officers as well as physicians, their bigamous relations, however, involving dual rather than divided obligations. While, perhaps, all that is strictly professional in the duties of the medical officers of the army, navy and national guard or volunteer militia, ought to be familiar to every thoroughly educated graduate in medicine, the peculiar requirements of a military and naval career—in the limitation of the authority of the medical officer and of any strictly personal interest in the cases that come under his care, in the predominance of the sanitary functions of his office, in the minimizing of supplies, remedies and apparatus to the utmost, in the necessity for the prompt suggestion and application of substitutes and temporary expedients, in the frequent changes of locality and exposure to danger; these and innumerable other conditions combine to impair the efficiency of the man who is unused to sword as well as scalpel.

The Association of Military Surgeons proposes to establish closer bonds between the medical officers of the national service and those of the national guard and volunteer militia of the several States, with the object of harmonizing their methods of procedure and making perfect concert of action between them possible should another great necessity occur for their conjoint operation. The officers of the army and navy recognize the benefit to themselves of the inter-communication afforded by the Association, as is evident from the numbers who are already enrolled as members.

The subjects to be considered at the approaching meeting of the Association in Philadelphia, May 12-14, immediately after the adjournment of the AMERICAN MEDICAL ASSOCIATION, are an earnest of the strictly special, that is medico-military, direction in which the Association proposes to work, to-wit, on standards of physical efficiency; visual acuity of recruits; value of athletics in the training of soldiers; baths, bathing and swimming for soldiers and sailors; practicable plans of sanitary organization and sanitary field service in our own and foreign armies; emergency rations; methods of sewerage of camps, posts, etc.; effects of new ordnance and projectiles in field service; care and transportation of the wounded on the field and aboard ship; annual encampments, etc. Add to these, which refer to *terra firma*, the changed conditions and requirements pertaining to military life on the deep sea in a floating box, hermetically sealed, and it will be admitted that the Association will not lack topics for its annual reunions.

There are certain obstacles yet in the way of the high professional prestige at which this Association aims. The national guard in many of the States and especially its medical department, lack that rigid system of organization which must obtain in any disciplined military establishment. There must be a

strict examination into professional competency, as in the United States Army, United States Navy and United States Marine Hospital Service, before any young medical officer should receive a commission; and promotion to the higher grades should depend upon the length of and the faithful performance of duty. It should not be possible for a governor's wife to persuade her husband to appoint her favorite medical adviser Surgeon General of the State, with the control and direction of the medical department of the national guard of that State, although not having the slightest aptitude or professional qualification or official experience. Perhaps in no better way can reform in the organization of the medical departments of the several States be accomplished than through this very Association, whose existence shall have been more than justified should it succeed in this direction.

CRIME AND THE NEWSPAPERS.

It is well known that the newspapers have a sensible effect, not in causing crime, but in producing those emotions, in recording the movement that leads to crime. It is a curious subject;¹ but considering the rising flood of sensational sheets, it may not be amiss to discuss it in a general way. In some minds the story of a crime excites a powerful tumult.² As regards the newspapers, the effect of the story is more pronounced than if it were played, or read, let us say from Victor Hugo, because the newspapers, with a felicity of which they have the secret, present exactly those details of a crime that most strongly influence the feelings. As far as the papers are concerned the rationale of crime is this: The emotion excited in B's mind by reading of A's crime, impels B to commit a crime similar to A's. That such cases occur we know from unquestioned testimony. Various morbid passions are at work here and that tendency to imitate what is admirable (whether rightly or wrongly conceived), is universal in human nature. "By a noble prerogative of our nature," says DE LA PLACE, "the story of great and virtuous actions inflames us with a desire to imitate them. But there are some persons who, from their organization or from pernicious examples, have acquired disastrous inclinations, which are violently excited by the narrative of a criminal action that has become the object of public interest. From this point of view, the publication of crime is not without danger."

It is certain that this tendency to imitation is over-

poweringly strong in neurotic subjects where impulses are not under sufficient control, either from the deliberate conviction that to obey one's impulse is a sort of religion or, at least, the only rule of conduct that a sensible man would observe;³ a belief held by the late PAUL VERLAINE and the disciples of the Decadent school, or in that unhappy and not insignificant class in whom the impulse to commit a crime is not so much a matter of imitation, as an obsession,⁴ dominating the thought, and sometimes beyond the power of the will to subdue.

Murder is a crime peculiarly liable to be a matter of impulse and imitation. How often it is committed by the victims of the mental *bouleversement* above referred to, may be seen by a glance at the literature of this subject. There is a fact reported by SAMPSON.⁵ "It was stated by MR. EWART in the House of Commons, upon the most unquestioned authority, that out of 167 persons who had been executed during a certain period, 104 had been present at executions. The mental process that takes place in the minds of criminals at the spectacle of an execution is well illustrated by a case of DESPINE'S. In this instance, decapitation seemed too puerile a thing to turn a man from a course of crime.⁶ The "thrill" of emotion experienced by the humane witness of an execution by decapitation is thus described by BYRON:⁷ "The first (beheading) turned me quite hot and thirsty, and made me shake so that I could hardly hold the opera glass (I was close, but was determined to see, as one should see everything, once, with attention); the second and third (which shows how deadfully soon things become indifferent), I am ashamed to say, had no effect on me as a horror, though I would have saved them if I could."

In the classical case of WILHEMINA STROHM fully described by PROFESSOR HOPF,⁸ we get an instance of the full effect and sequel of these emotions in a neurotic respect. As this case displays in a very striking manner the anatomy of a morbid criminal obsession, we shall give some details. There is no essential difference, as far as the *effect* goes, between witnessing an execution and reading about one in the papers. The spectacle of an execution makes such an impression on this girl, that the idea that she must end her life in so "beautiful" and "public" a manner takes complete possession of her mind. In her own words: "the pomp of the military escort, accompanying the prisoner to his doom, the crowd of spectators, the pity which, despite the atrocity of the crime,

¹ Sampson: Criminal jurisprudence in its relation to cerebral organization, London, 1843. Kraft Ebling: Beltrage, etc. Erlangen, 1867. *Ibid.* Vierteljahrsschrift f. ger. med., 1851. Marc Ideler, Die Geisteskrankheiten in Beziehung zur Rechtspflege, 1843. Le Grand du Sault: La folie devant les tribunaux. Despine: Psychologie naturelle. *Ibid.* De la contagion morale. Du danger que présente pour la moralité et la sécurité publiques la relation des crimes donnée par les journaux, Marseilles, 1876. Paul Aubry: La contagion du meurtre, Paris, 1891.

² De la Place: Essai philosophique sur les probabilités, p. 209. This is a passage from Le Grand du Sault: "On ne saurait croire combien les récits dramatiques et lugubres frappent les esprits faibles ou les individus prédisposés à la folie. Cette clinique journalière de crimes de l'aliénation mentale, du suicide et des exécutions judiciaires, qui malheureusement s'introduit de plus en plus dans les habitudes du journalisme parisien, a des conséquences vraiment fâcheuses pour le goût public, la morale, le repos et la santé des populations," *supra* p. 13.

³ A number of well known criminals have expressed this belief in their writings. See: Rapport médico-légal sur l'état mental de Lucien Morisset, inculpé de vol et d'assassinat par les Drs. Danner et Le Grand du Sault, Ann. d'hygiène. 3e Série, vi, p. 342. Other examples may be found in *Ibid.* p. 484. Kraft-Ebling: Vierteljahrssch. für ger. Med. Op. cit. Prosper Lucas: Sur l'imitation contagieuse, Paris, 1833. Delasiauve, Journ. de Méd. mentale, 1865, 333. Spielmann Diagnostik, p. 500. Marc Ideler. Geisteskrankheiten in d. Bez. zur Rechtspflege.

⁴ For cases, see Magnan, L'obsession criminelle morbide. A most interesting example is given by Wille: Archive f. Psychiatrie, xii, p. 21.

⁵ De la contagion morale, p. 10.

⁶ Moore's Life, Pt. II, p. 269.

⁷ Henke's Zeitschrift, 1823 T. 20, p. 429.

shone in many eyes, the firm bearing of the culprit, his speech to the people, his subsequent confession to the priest of The Eternal, the rapid and dreadful incident of hanging," etc., was all profoundly felt, and it proved sufficient to turn an excitable head, in search of notoriety. She commits murder in the excitement brought on by the tumult of such thoughts.

Other cases of this kind, of more recent occurrence, have been collected by DESPINE,⁸ PAUL AUBRY,⁹ LE GRAND DU SAULLE,¹⁰ and others. In these the influence of the newspapers is very apparent. They must accept a certain amount of responsibility here. What was formerly furnished as an incentive and stimulus to perverted minds, by the naïf customs of ancient executions, is now supplied by the details and illustrations in the daily papers. We are given the most minute descriptions of the *vie intime* of criminals, their appearance, dress, political and religious ideas, their presents of flowers, reception of sympathetic friends, their "remarks" on various matters of public interest, prison life, bearing in court, etc., with lastly, the lugubrious and emotionally written incidents of their sentence and execution. All this is diffusely printed, widely circulated, greedily read and discussed. It is, therefore, not in the least surprising, (knowing as we do how the morbid criminal obsession is awakened) that in countries where the newspapers are particularly sensational, France, for instance, and the United States, serious crimes; such as murder and arson, crimes which it is certain, are liable to be epidemic at times among the depraved and degenerate, have grown enormously in number of late. It has been shown that in France the serious crimes have increased since 1826, 150 per cent.¹¹ An increase of alarming extent has been observed too, in Germany, Italy and England.¹² In the United States, murders, according the best statistics we have, those published by the *Chicago Tribune*, have increased from 1,808 in 1885 to 10,500 in 1895!

It is not a pleasing prospect that these figures afford. What makes matters worse, is the fact that the great publicity given to crime has an educational value for criminals, enabling them to accumulate experience, observe how particular crimes failed and why, and avoid similar pitfalls. That criminals analyze the the cases of noted villains, and profit by such study, we know from their own written testimony, which may be accepted, especially if it is like the following: "I studied," says MORISSET,¹³ "theft and its consequences, crime and its effects; and, well I observed this fact, that theft can be discovered in the actions of the majority of men. Does not the pimp profit by the labor of workingmen? Does not the merchant grow rich on the aptitudes of his employees?"

This passage is extremely characteristic.¹⁴ Criminals are often strangely impressed by the example of great villains. MORISSET thus wrote of the murderer LACENNAIRE: "L. is a splendid man, a powerful personality. His work leads to inferences of enormous importance. If I was, in theory at least, superior as a man of action, LACENNAIRE was incomparably stronger."¹⁵ etc. LE GRAND DU SAULLE, who examined MORISSET, ascribes the utter absence of the moral sense revealed in these passages, to the influence of literature. In these cases there is abundant evidence to show that the tendency to imitation, which in many is morbid, is purely the result of calculation, in which it would be difficult to find any traces of insanity. But we find certain traces of moral contagion, a perversion of which the above citations are singularly good examples, a contagion disseminated largely by means of the papers. "The rôle of the press in the spread of this contagion," says PROFESSOR LACASSAGNE,¹⁶ "is no longer deniable. Without going back to the woman, LOMBARDI, to MORISSET, to TROPPEMANN and to CORNIER, the recent attempt upon JULES FERRY is the most remarkable example; the previous excitations of the press fall like poisonous seeds upon an especially prepared soil." To the influence of this contagion he attributes the growing number of murders by *dépêchage*, or dismemberment, which, he says, have become the fashion.¹⁷ "The diffusion of the press, transmitting everywhere with an unparalleled precision and minuteness, the romances of the courts, the deeds and sayings of great criminals, becomes thus a school of exposition for weak and vacillating spirits, seeking with hesitation the method of committing a crime that has proved most successful." We have, in this country, reached the highest point of this contagion in the example of HOLMES, whose case is too notorious to need any further mention.

We must leave the subject here hoping, however, that some day, in response to public opinion, a remedy may be given for a disquieting state of things. Nobody would deny that the press is, on the whole, a beneficent institution. No one, we suppose, would wish to control its freedom. Yet, if it could confine itself to the barest account of a crime, being content to state the facts and nothing else, it would be free from an influence that does it little credit, and that its better members are not slow in censuring.

EMBARRASSING DEFECTS IN ENGLISH SANITARY ADMINISTRATION.

The sources of official responsibility among sanitary officers are twofold and often-times inharmonious. At the present time mistrust and discontent are rife in the medical branch of sanitary service. A scandal

⁸ Op. cit.

⁹ La contagion du meurtre, Paris, 1894.

¹⁰ La folle devant les tribunaux, p. 538.

¹¹ Ferri: Soc. criminale.

¹² Morrison: Crime and its causes, p. 31.

¹³ Op. cit.

¹⁴ Others like it may be found in Lombroso's *Palimpsestes des prisons*.

¹⁵ For an account of Lacenaire, see Corre, *Les criminels*.

¹⁶ Archives d'anthropologie criminelle, 1888, p. 289.

¹⁷ Ibid, p. 249.

has recently sprung up in the heart of London in consequence of which a number of officers became involved in charges of corrupt dealings with real-estate agents. The *Press and Circular* alludes to these troubles in an editorial, offering as a solution of many of the regnant difficulties that the Medical Officer of Health be given the power of appointment and control of all his subordinate inspectors. It further says: "Of late years London has been making great strides in the onward march of preventive medicine, a fact upon which the inhabitants of the greatest and richest city in the world may well be congratulated. In various ways, however, the metropolis is a laggard in the scientific race, and compares unfavorably with many provincial towns, such as, for instance, Newcastle and Glasgow. There can be little doubt that the lack of intelligent public interest has lain at the root of this lamentable backwardness in a matter so deeply affecting the welfare of the community as the administration of sanitary affairs. Until recently Londoners have been content to leave the management of their roads, of their water supply, of their sanitation, of their poor-law service, in the hand of local bodies, which were only too often corrupt nests of nepotism and jobbery. With the advent of the London County Council, however, and an awakening of general interest in municipal matters, the promise of a purer and a fairer future was gladly welcomed by the sanitary reformer. But the day of full salvation is not yet with us. In many of our metropolitan districts, rich and poor alike, the Vestrymen or Councillors are chosen by small hole and corner cliques, and are elected as local rulers and administrators of vast sums of money without even the formality of a public election. For such a travesty of representative local government the citizens have themselves to thank. The voters hold the key to the situation, and if they choose to organize their ranks, nothing would be easier than to return to the Vestries men of good standing and unblemished character, in whose hands the public weal would oust all mere party purposes and the sordid filching and diversion of the ratepayers' money, which is, perhaps, best described by the terse and expressive term jobbery. Turning to details of practical health work, we are at once struck with the importance of the sanitary inspector, who is, as it were, the policeman of preventive medicine. As the servant, first of the medical officer and then of the Vestry or Council, it is his duty to investigate and to report upon the multifarious details that are brought within the purview of local health committees. Sanitary inspectors as a whole, we are glad to believe, constitute an honorable and useful body of public servants. On the other hand, it is a matter of common knowledge that a certain number of them are unfit for their position, and may be regarded as inheriting the traditions of the

bad old days of vestrydom. But apart from the black sheep, it may be fairly questioned whether the whole position taken up by the sanitary inspectors does not require serious consideration. The claims of these subordinate officials, as it would appear from a perusal of the reports of their association meetings, have grown until the Liliputian body imagines itself nothing less than a giant of Brobdignag. The sanitary inspector, as pictured by the association, is in future to become a kind of inspector, lawyer, medical officer of health, doctor and engineer, who is to act under and report to the Vestry; to carry on his own scientific investigations; to be his own hygienic law-giver." To conclude and to "put the matter in a nutshell," it is that the choice and control of his subordinate sanitary inspectors should be centered absolutely in the Medical Officer of Health. Past experience has proved over and over again that of all men the sanitary inspector is least fitted to serve two masters.

A MUCH-NEEDED REFORM BEGUN.

Elsewhere in this issue of the JOURNAL will be found the details of a case of murderous malpractice by a midwife which has led to action by the Illinois State Board of Health that promises quite far-reaching results and a much-needed reform in the practice of midwifery, at least in large cities.

The case was made the basis of an appeal to the State Board by the Acting Commissioner of Health of Chicago, DR. F. W. REILLY, who also submitted therewith the following preamble and rules and regulations:

WHEREAS, The act constituting the State Board of Health of the State of Illinois, in force July 1, 1877, charges the Board with "the general supervision of the interests of the health and life of the citizens of the State," and empowers it with "authority to make such rules and regulations . . . as it may from time to time deem necessary for the preservation or improvement of the public health;" and

WHEREAS, The unregulated practice of midwifery, which allows midwives to prescribe for the serious illness of the lying-in, to apply instruments, to perform grave operations and to assume the conduct of other than cases of natural labor, results in a great and avoidable increase in the mortality of mothers and the newly born, to the detriment and injury of the health and life of the citizens of the State;

Therefore, The Board, in regular quarterly meeting assembled in the city of Chicago, does, this twenty-eighth day of April, A. D., 1896, hereby adopt and promulgate the following rules and regulations for the practice of midwifery by midwives licensed in accordance with the Act to regulate the Practice of Medicine in the State of Illinois, in force July 1, 1887, to wit:

Rule 1. A midwife, licensed by the certificate of the State Board of Health, is authorized and empowered to attend cases of natural labor only, and no other; and, after such labor, to attend the mother and child—all such attendance to be under such rules and regulations and medical control or supervision as may be prescribed by the health authorities of the city, town or village in which the midwife resides or practices.

Rule 2. Before such rules and regulations shall be valid and in force they shall be submitted to the State Board of Health for approval; and upon such approval, and their due publication to those interested, they shall have the same force and effect as other rules and regulations of this Board.

Rule 3. Due publication of said rules and regulations shall consist in furnishing one printed copy thereof, by mail or otherwise, to each registered midwife in the respective city, town or village.

Rule 4. Any act of practice—as by prescribing drugs and medicines other than the simple aperients, cathartics and diuretics, or the administration of anesthetics, or the application or use of instruments—in violation of the rules and regulations herein provided for, shall be held to be the unauthorized practice of medicine and surgery as defined in Section 10 of the Medical Practice Act of 1887, and the offender shall be liable to the penalties prescribed in Sec. 12 of said Act.

These rules and regulations were unanimously adopted, and it now remains for each municipality in the State to prescribe such restrictions through its health authorities as may best meet the individual conditions of midwifery practice in the respective localities; these, when approved by the State Board, will have the force and effect of law.

If these regulations shall succeed in limiting the practice of midwives in Chicago to their attendance, practically as midwifery nurses, upon cases of natural labor only—anything further to be referred at once to the medical practitioner—there can not fail to result a material reduction in the puerperal mortality of that city. The action would seem to be a short-cut and a practical one to the end aimed at for years in England, where, according to the London *Lancet*, the second reading of the Midwives' Bill in Parliament is fixed for May 6, but, as the *Lancet* confesses, with the very smallest chance of being enacted. There are, in fact, not one, but several bills in different stages of forwardness in that country, varying from one for the registration of existing midwives and women who have had a certain amount of training—which registration would confer the right to attend cases of other than natural labor—to “A Bill for the Prevention of Puerperal Fever” and others, which would limit the midwife to such attendance as is contemplated in the rules and regulations of the State Board of Health above given.

CORRESPONDENCE.

Notes on Omnicura and Bracelin's Bactericide.

To the Editor:—In this age of progress, when new inventions and discoveries follow one another so rapidly, it easily happens that some of the most marvelous are overlooked. Few in our profession are ignorant of the Roentgen rays and their value, but many are still unfamiliar with the Omnicura and Bracelin's bactericide, and with Mr. J. J. Russell, the genial and enterprising agent who offers these remedies to the public and the profession. This is not to be wondered at, as long as physicians continue to look for information in medical journals only, instead of perusing the “voice of the people” in the Chicago *Tribune*, where the marvelous cures effected by the Bracelin remedy may be daily read by a discriminating public.

But like the violet which blooms in modest retirement, the “Omnicura” blushes almost unknown and unnoticed: our profession still lingers in total ignorance of its virtues, the *Tribune* does not herald it forth; only pedestrians who cast a passing glance at the windows of Mr. J. J. Russell's Panaceum, seem to be aware of its existence.

The lamentable state of ignorance among physicians concerning these remedies, has induced me to write this letter to the *JOURNAL*. The Chicago *Tribune* only has so far taken an active interest in this subject, and as long as the department stores do not furnish medical reading, it will be the only organ deserving

our admiration for its enterprise in that direction. Without it the Bracelin cure would waste its sweetness on the desert air; but nurtured in its bosom under the fostering genius of Mr. J. J. Russell, it has come to blossom like an octopus at the side of the omnicura. Armed with such weapons he defies diphtheria, scarlet fever and pneumonia, and he would not lose his head in an epidemic of Asiatic cholera. In such an event his fertile mind would not fail to provide the Bracelin bactericide with suitable pumping implements, and the “Voice of the people” would have to be issued in extra bulletins to keep pace with scientific progress.

To those who have failed to keep up with medical advance and are ignorant of the Bracelin cure, I owe a few words of explanation. Mr. J. J. Russell, who is one of the most remarkable men in this country, has informed me that its wonderful power as a bactericide is due to the presence of chlorin deprived of its irritant qualities by a process discovered by Dr. Bracelin, after severe mental effort extending over fifteen years. Dr. Gehrman, of the Chicago Health Office, has demonstrated that it differs from all known antiseptics in one particular: The latter kill bacteria; but the bactericide does not. I have myself verified the presence of a slight amount of hydrochloric acid and menthol in the air inhaled from it; but chlorin is totally absent, which is a great advantage, because the latter is very irritating.

The difficulties that meet young physicians in their efforts to gain a livelihood are daily increasing. Many a one starts out with a bold outlook in the future, who soon realizes that all his hopes rest on quicksand only, and if he does not succeed in making a bold strike at fortune, he sinks deeper and deeper in the slough of oblivion. To such I can give only one advice: Write a letter to the *Tribune* glorifying the Bracelin cure, and enduring fame will henceforth attend him. His name will continue to appear in public print as a man of genius and learning, his fame will be only second to that of Dr. Bracelin and of his accomplished agent, Mr. J. J. Russell, and with theirs it will be handed down to future generations.

But on no account let any one write criticisms against the Bracelin cure; it can not stand it. And for this reason the *Tribune* defends it like an enraged lioness protects her defenseless offspring. Woe to him who does! He will be covered with infamy and everlasting ignominy.

But why does the *Tribune* glorify the Bracelin cure only and not the omnicura? Why praise the good and ignore the best? Reader, I am no judge in such matters, but I am convinced that the *Tribune* is actuated only by the purest philanthropic motives. It is in the broadest sense a truly representative journal, in which the high standards of honesty, morality and patriotism that prevail in Chicago, are blended in exquisite harmony.

MARTIN MATTER, M.D.

“A Wisconsin Diploma Mill.”

MILWAUKEE, WIS., April 27, 1896.

To the Editor:—I would like to reply to Emil Bories, M.D., whose interesting communication appeared in your issue of April 25.

Section 1771 of the General Statutes of Wisconsin, as amended by chapter 220, laws of 1883, and chapters 180 and 352, laws of 1887, provide that, “Three or more adult persons, residents of the State, may form a corporation in a manner provided in this chapter to conduct, or pursue, or promote any one or more of the following named purposes.”

Among many things it provides for obtaining a charter, which is to be issued by the Secretary of State, for “establishing and maintaining schools, high schools, academies, seminaries, colleges, universities, lyceums and the like.” Also for the “Establishment and maintenance of any benevolent, charitable or medical institution, hospital or asylum, etc.”

Under the provisions of this statute, the founders of the "Wisconsin Eclectic Medical College" obtained their charter.

Section 2340 of the general statutes provides for annulling corporations, and places the power in the hands of the attorney general in the State to take action in such cases.

Section 2341 provides as follows: "An action may be brought by the attorney general, or by any private party, in the name of the State, on leave granted therefor by the supreme court upon cause shown, for the purpose of vacating the charter, or annulling the existence of any corporation created by or under the laws of this State, except a municipal corporation, whenever such corporation shall:

"1. Offend against any of the provisions of any law, by or under which it shall have been created, altered or renewed; or

"2. Violate the provisions of any law, by which such corporation shall have forfeited its charter by abuse of its powers; or

"3. Whenever it shall have forfeited its privileges or franchises by failure to exercise its powers; or

"4. Whenever it shall have done or omitted any act which amounts to a surrender of its corporate rights, privileges or franchises; or

"5. Whenever it shall exercise franchises or privileges not conferred upon it by law."

I desire to state that very active efforts have been put forth by the health department of the city of Milwaukee to have this charter annulled, and the attorney general is at present engaged in pushing the matter to the courts as rapidly as possible.

U. O. B. WINGATE, M.D.,

Sec'y State Board of Health.

The Optician's Side of the Case.

MINNEAPOLIS, MINN., April 22, 1896.

To the Editor: Your editorial remarks of April 18 on the "Ambition of the Optician," while thoroughly orthodox and unimpeachable, are yet suggestions of a controversy that has two sides to it.

We have a very virtuous feeling when we have pocketed \$5 or \$10 for a ten minutes' examination of a healthy presbyope, and yet we know perfectly well that an intelligent optician would have given the same glass and saved the patient our fee.

Of course there is the contingency of glaucoma, or some other disease of the eye, and so we can not admit the propriety of allowing the optician to meddle with eyes at all. Unfortunately for our pretensions the opticians and the public know us too well. They know that many of us give patients a less thorough, and in results, a less satisfactory examination than the better class of opticians and "refractionists," and we know that such superficial work is not to be charged up to "post-graduate fiends" so called. Some of the worst refraction work I have ever run across has come from eminent professors of ophthalmology in the East and West. For example, Rev. C. consulted an eminent professor on the New England seaboard and was given R. 3. L. a plain glass. Soon after an oculist in a large city in New York State gave him R. and L.

1.59 C. horizontal. Supposing, of course, that he could find relief in Chicago, he consulted Professor , who gave him prisms, 3 degrees each eye, base in. That finished him. He placed his collection of glasses, which he had never been able to wear, in the family museum, and determined to keep clear of oculists.

Having inveigled him into my office I found his refraction to be corrected as follows:

R. 2 .75 C. 70 deg. temporal 20 20
L. 2 C. 70 nasal 20 20

With this correction he has been able for the past two years to read and write with some degree of comfort. Of course, the case was difficult, but distinguished oculists are supposed to be equal to the emergencies. The man wanted relief and was,

willing to pay for it. He paid his money and he got in return the impression that he had been swindled.

A gentleman lately went to an optician and requested an examination of his vision. The optician soon found a high degree of hyperopia and a considerable degree of astigmatism, and thereupon advised that an oculist should be consulted. The man said he "would be —" if he would see an oculist. He "had already paid Dr. —," naming a prominent professor of ophthalmology, nearly a hundred dollars and had got nothing for it. Dr. — had given him:

R. 1. C. 15 deg. - Pr. 3 deg. base in. L. — 1.

My optical friend gave him

R. + 1.50 = + .50 C. 90 deg.

L. + 1.00 = + .50 C. 90 deg.

and he has relief from his asthenopia and a settled conviction that Dr. — had "worked" him, and that oculists are shysters.

On a recent visit to a large Eastern city I found one of my friends wearing glasses prescribed by an optician. She had suffered from headache and had consulted a prominent oculist who, after a prolonged examination, informed her that she had no need of glasses. Later, while under treatment in Boston, she was advised by her physician to consult an *optician* who partially corrected a compound hyperopic astigmatism and cured her headache.

Twenty-one years ago, after having wasted two years valuable time through the incompetence of my medical advisers, East and West, I consulted a brilliant young oculist in the middle West. He used atropia, informed me that I had hypermetropia, and gave me + 1 D. which I found worse than useless. A few months later a kind providence sent me to Drs. Williams and Ayres, of Cincinnati, where I got my first lesson in honest, careful refraction work, and a lesson that I shall never forget. At the end of ten days Dr. Williams gave me a correction for my astigmatism (simple) and I was cured.

My experience has given me a hearty contempt for specialists who do superficial and dishonest work, and when I see such men forcing themselves into prominence by pure unadulterated gall, often disgracing chairs in medical colleges, and not infrequently securing positions of the highest honor in medical societies, I think I see the reason why medical men are so little respected, and why they have so little influence in securing legislation.

If the conditions as regards refraction work are unsatisfactory to oculists, they have themselves to thank for it in a large degree. This is certainly true in the northwest, where a few prominent men have abused the confidence of, and corrupted the profession, blackmailed the opticians and plundered the public. The public have at last learned that opticians and "refractionists" give them as good service as shyster oculists and with much less expense. The result is, oculists find themselves doing very little refraction work, except what is sent to them by opticians, and we have the delightful spectacle of professors of ophthalmology soliciting business and demanding commissions from opticians, and in other ways descending to the level of street fakirs.

In , Dr. and others who are so bitterly opposed to the pretensions of the opticians have greatly weakened their own position by the notoriously superficial work they have done in this line of refraction. When teachers of ophthalmology ride such hobby horses as the ophthalmometer and impose their resultant guess work upon the public, they have small reason for criticising the opticians, or even the fakirs.

If all oculists had followed the example of their Philadelphia confrères, by doing honest refraction work with the aid of atropia and retinoscopy, the optician's pretensions would have fallen flat. Under existing circumstances, however, it looks to even a prejudiced observer as though the opticians were having the best of the argument.

Respectfully,

EDWARD J. BROWN, M.D.

Dr. Sims' Perseverance.

WEST UNION, IOWA, April 24, 1896.

To the Editor:—In the address of Dr. Jelks in our JOURNAL April 18, there is clearly a misprint. I think this should be corrected in justice to the memory of Dr. J. Marion Sims. It furnishes stronger proof of the patient perseverance of this truly great man, and evidences his wonderful power to inspire confidence in his patients, as well as all who came in close relation with him.

In the eighth line from the bottom of the first column, on page 752, the word "thirteenth" I think should read *thirtieth*. In 1876, when president of the AMERICAN MEDICAL ASSOCIATION in Philadelphia, he reported the tediousness of his efforts to perfect an operation for the cure of vesico-vaginal fistula, and remarked that the young colored woman mounted the operating table hopefully the thirtieth time. On page 52 of the "Report of Columbia Hospital for Women," by J. Harry Thompson, A.M., M.D., Government printing office, 1873, you will find the same statement, in an address delivered before the Academy of Medicine, New York, by Dr. Sims. Let Dr. Sims have all the honor—none can be too great—for his patient perseverance, and his ability to inspire hope and courage, as indicated by the fact that his patient was "placed upon the operating table the thirtieth time," instead of the thirteenth, without a murmur at "preceding failures." To any who personally knew Dr. Sims, or had met him occasionally, any matter to his credit would merit all the amplitude possible.

Fraternally, S. E. ROBINSON, M.D.

A Correction.

MINNEAPOLIS, April 19, 1896.

To the Editor:—In your report of the proceedings of the Tri-State Medical Society, in your last issue, I am so grossly misrepresented in what I said, that I must beg you to place this brief correction in your next issue.

The title of my paper was "The Relationship Existing Between Oculists and Opticians." You quote me as saying that I "advanced strong arguments in favor of licensing opticians to fit glasses." Had you said "dispense" instead of "fit," you would have expressed my sentiments. There is as much difference between dispensing and fitting glasses, as there is between dispensing and prescribing medicine; and the optician should occupy the same relation to an oculist, that a druggist does to the general and special medical practitioner, viz., a preparer and dispenser of specified remedies (glasses), upon the receipt of a physician's (oculist's) written prescription.

I claim that correcting errors of refraction is practicing medicine, and that no one should be allowed to practice any department of medicine, including refraction, unless he is a properly qualified, licensed graduate in medicine. I also advocate that as in most States, a druggist can only compound prescriptions after having obtained a pharmaceutic license, so opticians should only be allowed to dispense glasses when permitted to do so by a "State Board of Opticians" to be appointed by the governors of the different States.

Respectfully, FRANK ALLPORT, M.D.

"A Credit to America."

WINNIPEG, April 22, 1896.

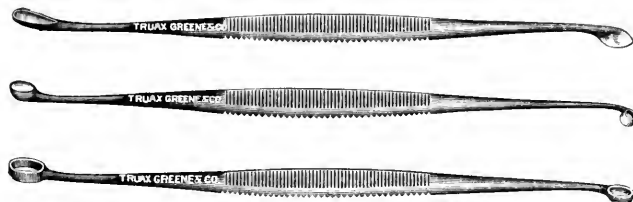
The JOURNAL is improving every week—a credit to America.
Yours faithfully, M. B. FERGUSON, M.D.

Total Extirpation of the Prostate Gland and Rectum.—Salischev describes in *Wratsh* No. 2, the removal of the lower third of the rectum and the prostate gland on account of a scirrhus cancer, the fifth operation of the kind on record. The patient made a fine recovery but succumbed four months later to a meningo-myelitis. The necropsy showed that the operation wound had healed completely.—*Bulletin Medical*, April 5.

NEW INSTRUMENTS.**A COMPLETE SET OF CURETTES FOR MASTOID AND MIDDLE EAR OPERATIONS.**

BY S. S. BISHOP, M.D., OF CHICAGO.

The illustration shows six curettes and spoons conveniently arranged in the form of three instruments. They are all sharp except one that I have had left dull for work in the immediate vicinity of the facial nerve.



The smallest one is my middle ear curette. The others are the sizes and forms I have found to be the most serviceable in the mastoid operations. It is a considerable advantage to have all the curettes we require within the compass of three instruments. It saves valuable time in selecting the various instruments as we proceed, and these all having the same general appearance, the eye recognizes them at a glance. The handles are flattened and roughened so as not to slip or turn easily. They will be found useful in other operations requiring curettes. They are fine specimens of the workmanship of Truax, Greene & Co.

PUBLIC HEALTH.

Enforcement of Registration Laws in Connecticut.—The last *Bulletin* of the State Board of Health reports that steps are being taken in the State to compel physicians to make more complete returns of the births. It says: "The habitual neglect of obeying the registration laws in regard to the reporting of births, by so many physicians, has driven the authorities to take peremptory action. The Health officer of New Haven County gave a list of delinquents last month to the prosecuting attorney. The latter, in a spirit of leniency which he says will not continue, refrained from prosecuting the law-breakers, but wrote them each a warning that future complaints would be vigorously investigated and liabilities enforced. The Health officer of Fairfield County, caused the arrest of a prominent practitioner in Stamford, last month. In his case too, the court suspended judgment with an intimation that his future conduct would determine further proceedings. At a meeting of the County Health officers held in Hartford on April 4, it was voted: That in future an examination of all the certificates of births, marriages and deaths would be made and whenever a violation of the law was found, the name of the offending party will be given to the prosecuting attorney of the town in which the offence is committed. The certificates themselves are evidence, as the registrar is required to endorse on them the date of their return. In the hope of promoting more successfully the above intention, a circular letter has been prepared and sent to the physicians, setting forth the objects of the registration laws and their weighty importance to the public interest. Among other things, this circular says: 'The main purpose of the registration of vital statistics is to furnish to the public a reliable means of tracing relationship, upon which depends matters of inheritance, descent of property, pension rights, etc., and to furnish such records as will be reliable and full, years hence, when collateral sources of information have disappeared.' The circular dwells upon the importance of exactness in the statement of particulars. 'Many inaccuracies and abbreviations appear in the certificates, which at first seem to be of little importance, yet when the purpose of the record is considered, it is seen that the certificate is vitiated for the purpose for which

it is designed.' Public opinion will sustain the action of the county officers in requiring an observance of these laws."

Drainage and Sewerage of Rochester, N. Y. Dr. George W. Goler, of the Rochester Department of Health, has recently delivered before a local scientific body, an address on the sanitation of that city. He began by saying that in the earliest days natural drains, ancient watercourses, were utilized as open drains, and later to some extent served as ditch drains, along which house drainage and rainfall alike were carried to their final destination. When the city began to be laid out in streets many of these old water courses were filled up without first providing for the rainfall and surface drainage, which still found its way to and along these old levels. The result was and is to-day that dwellings built along these old natural drains are not healthful; the house cellars and walls are damp, and their inmates would be found to furnish a large number of the sick and dead of our city. At first these open ditches served the double purpose of removing rainfall and house waste, but the unsightliness of these ditches and the offensive smell led to the establishment of the covered drain or box sewer, later to the stone sewer, then in an intermediate stage to the cement pipe sewer, and lastly to the sewer of vitrified pipe, and for trunk sewers the circular or egg-shaped sewer of heavy masonry, brick or stone.

The stone cement pipe sewers were an improvement upon the old box sewers, but even they were often very imperfect. Until about 1880 the stone sewers were built square in form with plank bottoms. They were not tight and they were of shallow depth, allowing of accumulation of filth within and fouling the ground for some distance without. The cement pipe sewers were rough and imperfectly joined. Time and the action of sewage produced disintegration of the rough cement pipe through which sewage found its way to the surrounding ground, converting it into a quagmire. Added to the ditches and imperfect sewers, which daily aided in polluting the soil and air in and around our dwellings, were myriads of vaults and cesspools. Although many houses had facilities, such as they were, for disposing of sewage, all did not avail themselves of these facilities—the owners in many cases preferring to carry a drain, often of wood, back into adjacent ground or into the vault. When vault and cesspool were separate they most often consisted of a hole in the earth, sometimes boxed in with rough boards rarely tightly built of stone or brick into which a box drain emptied. These cesspools, or cesspool and vault combined, formed the common type of receptacle for house drainage and human excrement. Thousands of such vaults and cesspools dotted the city everywhere, and, to make matters worse, they were often multiplied by covering over a full vault or cesspool with earth and digging a new hole alongside of it. How many of these vaults and cesspools were formerly to be found we do not know, but we do know that at the present time, with a better system of sewers extending to nearly all parts of the city, with improved fixtures and plumbing apparatus that makes it safe to have retiring conveniences within the house, more than 15,000 vaults are in use in Rochester."

Administrative Procedures against Tuberculosis. The *Glasgow Sanitary Journal*, for February, taking for its text the recently published report of Dr. James B. Russell, the senior medical officer of health for that city and a sanitarian of international repute, discusses the subject of official measure proper to be taken for the prevention of tuberculosis.

As to particular administrative procedures, it is pointed out that, though the compulsory notification of consumption has often been discussed, it has not been anywhere adopted; that though isolation has been spoken of, it is only the last stage of consumption that is essentially dangerous, but that for such cases there should be some provision; that as to disinfection, it should always be carried out after death, and if necessary by the local authority; and that public instruction as to the precautions that are really of consequence is of much importance. Concerning tuberculous meat and milk, Dr. Russell still holds that, if an animal is affected by tuberculosis in any part of its body, the only practical way of dealing with it is to condemn the whole carcass. Here, no doubt, he would object to the practice of some of the largest municipalities on the continent where this view is not adopted, and where the meat after sterilization by heat is offered for public sale at a low rate. It is

very doubtful, however, whether meat so treated would be bought even by the poorest of the population in this country. In the report it is argued with considerable ingenuity, though not, we venture to think, with the certainty of conviction to the mind of the reader, that the decisions of the late Royal Commission are to be taken as falling in with the Glasgow system, whose enforcement was successfully fought out before the law courts in 1889. With regard to milk, however, it is not easy to object to Dr. Russell's conclusions. On this subject his deliverance is that 'the importance of taking immediate action in the direction of eliminating tuberculous cows from the dairies, first of all in Glasgow, and next from those sending milk into Glasgow, can scarcely be exaggerated. It is at least equivalent in promise of beneficial results to any part of the special action recommended in this report. . . . Science has provided in tuberculin a test which overcomes that difficulty of diagnosis of tuberculous disease in the living animal which has hitherto made professional opinion uncertain or only equivalent to suspicion, and therefore insufficient to support decisive action. This test can be systematically applied only by a specially qualified veterinary surgeon.' Very much weight is attached to the value of general hygiene in the prevention of tuberculosis, and it is pointed out that in Glasgow as a result of general sanitary progress, the mortality from phthisis has fallen in such a manner as in some continental centers and by some authorities is attributed to the special precautions regarding sputum, etc., which have within the last few years been carried out there. 'We are warranted,' says Dr. Russell, 'in asserting that among infectious diseases, tuberculosis is the most amenable of all to general hygienic measures; that, in fact, from these alone as good results are obtained as from hygienic measures plus isolation, disinfection, etc., in the case of diseases popularly known as infectious.' This statement, however, is guarded as follows: 'It is not implied that special measures directed against the infectivity might not have produced even better results; but in view of what has been accomplished, and in view of the difficulties in the way of special prophylaxis, it is contended that more is to be expected from general hygiene.' In parallel columns Dr. Russell quotes from Dr. Thorne Thorne a specification for building a dwelling-house which will promote, and another dwelling-house which will prevent consumption. The former is to have a soil cold and damp or subject to the influence of the rise and fall of subsoil water; the walls are to be liable to dampness; the surroundings are to be such as to prevent the free movement of air and the ample exposure to sunlight; the building is to have such structural defects as will prevent ventilation by night and day and the entrance of daylight into the habitable rooms. The other dwelling-house is to have provisions in all respects the reverse of this."

Bovine Tuberculosis.—To the Editor:—I enclose herewith copy of a letter which I am sending to the medical directors of leading life insurance companies and to the editors of the principal medical journals.

I hope that the importance of the subject will entitle it to space in the columns of the *JOURNAL OF THE ASSOCIATION* and that you will assist in securing such a discussion of the subject as shall result in a diminished death rate.

Respectfully yours, HOWARD CARTER, M.D.

Milk Inspector's Office, St. Louis, April 20, 1896.

To the Chief Medical Directors of Life Insurance Companies:

Gentlemen: We are convinced that the great prevalence of tuberculosis among dairy cattle and the transmission of infection to human beings through the meat and especially through the milk of such animals is not second in importance to any question confronting the intelligent medical men of the day. I have demonstrated the presence of bacillus tuberculosis not only in the lesions and pus but in the milk of cows apparently healthy which reacted to the tuberculin test, establishing the identity of bovine with human tuberculosis and confirming the examinations reported by Drs. Salmon, and Smith of the U. S. Department of Agriculture, and others. I am not aware that this aspect of the subject has been at any time brought to the attention of life insurance companies. Its direct bearing upon the public health and consequently upon the death rate should specially commend it to them as a problem the practical solution of which would result in a saving of thousands of human lives and of millions of dollars annually. Not only would the death rate be reduced, but an improved vitality would be developed in coming generations by avoidance of the entry into the system of toxic germs, which, if they do not directly lead to conditions resulting in death may lie dormant until the general

vitality is sufficiently lowered to permit their full development. In bringing this matter to your attention I desire to request an energetic and persistent demand from the medical profession in general and from the directors of life insurance companies in particular for the enactment in all States of protective legislation, protection that will protect and benefit our whole people and diminish the ravages of this most insidious and dreaded enemy of the human race.

Very respectfully, HOWARD CARTER, M.D.
Milk Inspector, St. Louis.

Health Circular No. I.—The State Health Officer of Indiana has issued the following circular, concerning how certain foods shall be protected from dust pollution.

In many cities and towns it is the custom for grocers, butchers and other venders of food, to expose their wares in front of their shops and stores. Butchers very frequently make an unusual exposure of meats to the dust and filth of the street. Grocers expose on the sidewalks in front of their stores, dried fruits, smoked meats, etc.

Objections: The dust that floats in the air contains a great deal of filth. It carries pulverized manure, dried catarrhal and consumptive sputum, and much other offensive matter, besides microorganisms of all kinds. All this we must endure, to the evident disadvantage of our health, when we walk abroad in cities where dust is not kept down. It is not well, however, that we should eat dried manure and dried spittle on our meat and groceries, even if cooked.

What to Do: County Health Officers are hereby directed to issue written orders to all butchers and venders of meats not to expose outside their shops carcasses or parts of carcasses, of any animal intended for food. Neither shall dressed meats be transported through the streets without being protected from dust. Grocers must be ordered not to expose dressed poultry, nor uncovered smoked meats, nor uncovered dried fruits as dried apples, dried peaches, currants, etc., nor indeed any foods which may become polluted and corrupted by dust from the air in the way above described.

The Law: Section 2069 R. S. 1881 gives ample power to Health officers in this matter.

J. N. HURTY,
State Health Officer.

BOOK NOTICES.

I. King's College Hospital Reports, being the annual report of King's College Hospital and the Medical Department of King's College. Edited by NESTOR TIRARD, M.D., F.R.C.P., W. WATSON CHEYNE, F.R.C.S., F.R.S., JOHN PHILLIPS, M.A., M.D., F.R.C.P., W. D. HALLIBURTON, M.D., F.R.S. Vol. II. London: Printed by Adlard & Son, 1896. 8vo, cl., pp. 376.

II. St. Thomas' Hospital Reports. New series. Edited by Dr. T. D. ACKLAND and Mr. BERNARD PITTS. London, 1896. 8vo, cl.

III. Medical and Surgical Report of the Presbyterian Hospital, in the City of New York, vol. I, January, 1896. Edited by ANDREW J. MCCOSH, M.D., and WALTER B. JAMES, 8vo, bds., pp. 256.

I. This volume will not only be of interest to all old King's College men on account of its annual statements, but as well to all clinicians. The "Notes on Cases of Interest," by Prof. Rose, Prof. Cheyne, Mr. Careless, Mr. Burghard and Mr. Beale, are worthy of careful study. The reports from the various departments are unusually full and complete. The original papers by Dr. Tirard, Dr. Dalton, Sir Hugh Beevor, Mr. Cheatle, Dr. Short and Dr. Hewlett are valuable contributions to medical literature.

II. This is volume XXIII of the St. Thomas reports. It contains some very interesting papers by Drs. Cory, Payne, Sherrington and Cullingsworth, Mr. Battle, Mr. Stabb, Mr. Makins, Mr. Pitts, Dr. Ackland and Mr. Ballance. The paper by Mr. Pitts on umbilical hernia is alone worth the price of the volume, and the elaborate study of cerebellar abscess by Ackland and Ballance will make this series much sought after.

III. This is the first medical and surgical report of this hospital and we naturally turn to it with some curiosity. An examination of the work shows that this hospital has nothing to fear in comparison with the foreign hospital reports. There is no padding, but on the contrary concise and well-written accounts of interesting cases. The work done at this hospital,

as set forth in this volume, is a credit to American medicine and surgery.

The Non-Heridity of Inebriety. By LESLIE E. KEELEY, M.D., LL.D. Chicago: S. C. Griggs & Co., 1896. 8vo, cl., pp. 359.

"Oh! that mine enemy would write a book," said Job. He might then have some basis to fight on and penetrate the designs of his persecutor. Dr. Keeley has now done what Job wished his enemy to do, and those who can read between the lines can easily see that his grievance, that of non-recognition by the profession, dominates the whole book. He ostensibly believes in the non-heridity and curability of inebriety. He thinks he is dreadfully severe in his criticism of the regular profession: in reality he is only exhibiting his sore spots. He starts out to discuss an alleged disease, but he discusses medical ethics more. Thus (page 14): "The pretense of 'regular medicine' is that all dogmas are rejected: but the meaning is that all new things are rejected." This statement is so absolutely false that any drug manufacturer, any drug importer, any dispensing pharmacist could tell Dr. Keeley that on the contrary the new things are sought after with eagerness.

Again (page 15): "The germ theory was ridiculed for fifteen years, while its defenders were ranked as 'quacks.' Electricity, hydrotherapy, massage, all were classed in their beginning as quackery. But the 'grand old profession' generally ends by adopting everything. It will some day, if its morals improve, adopt all the pathies, including Christian science. It will fight the question many years, possibly, but will some day incorporate into the code of ethics a provision which will give a physician a proprietary right to his inventions relating to surgical instruments and remedies." *Hinc illæ lachrymæ.* We shall indeed come to a pretty pass when we acknowledge with due humility Dr. Blank's patent cure for meningitis; Dr. Scovendyke's proprietary cure for cancer; Dr. Winkenpoop's own dose for folly, as well as Dr. Keeley's secret cure for inebriety. No, Dr. Keeley: come out with your formula, let us have something tangible, and then we can discuss it and adopt it if it seems wise; until then there is nothing to discuss, and as the book gives no information on that point, we end where we began.

The Toxic Amblyopias: Their Symptoms, Pathology and Treatment.

By GEORGE E. DE SCHWEINITZ, M.D., Clinical Professor of Ophthalmology, Jefferson Medical College of Philadelphia. Very handsome octavo, 240 pages, 41 engravings and 9 full-page colored plates. Limited edition. De luxe binding, \$4.00, net. Lea Brothers & Co., publishers, Philadelphia and New York. 1896.

The task of the reviewer is a very pleasant one if there is so much to praise and so little to criticize as in the book before us. A careful examination has convinced us that the author has overlooked nothing that has ever been published on toxic amblyopias. The book is an excellent summary of our present knowledge of toxic amblyopias and a complete dictionary of the literature on this subject up to the present time, and will prove a veritable gold mine of reference for future writers. Tobacco and alcohol amblyopia naturally receive the greatest attention, occupying almost one-half of the book; quinin amblyopia comes next in importance, and here the author's original experiments and microscopic investigations are of especial interest. The remaining space of the book is devoted to abstracts of the clinical reports on visual disturbances caused by arsenic, lead, opium, salicylates, iodoform and a large number of other drugs and toxic agents. The book is printed in clear, large type, on excellent paper and issued in a very pleasing dress of cream and gold.

New Truths in Ophthalmology, as developed by G. C. SAVAGE, M.D. Third edition.

In the third edition of this work the accomplished author has not attempted to advance any "new truths," but has added three new chapters in attempting to prove those already advanced. One of these is devoted to a reply to Dr. Hotz's

criticism on his theories of the action of the oblique muscles. The incorporation of such an article in a book without giving the original criticism to which it is a reply, seems hardly to be in a spirit of fairness. Another chapter is given to an article published in the *Ophthalmic Record*, by Dr. Lowry, on the "Obliquity of Retinal Images in Oblique Astigmatism as Shown by Photography." The third is given to the author's address before the Eighth International Congress of Ophthalmology, without discussing the truth or falsity of the author's "truths." It is greatly to be regretted that he has not presented them in better form, avoiding the repetition and incongruity of a collection of papers and addresses on the same theories written at different stages of their development. The book is otherwise well written and contains a great deal of useful information.

NECROLOGY.

WILLIAM HUNT, M.D., for many years senior member of the surgical staff of the Pennsylvania Hospital, died on the 17th inst., in Philadelphia, of debility after several years of invalidism, following a severe injury received some years ago by being knocked down and run over by a wagon while crossing the street. It was believed in addition to fracture of ribs and other injuries, that he sustained a fracture of the cervical vertebrae. He had symptoms of concussion of the brain and for a long time was confined to the house and in fact never regained his health. Dr. Hunt was born in Philadelphia Sept. 26, 1825, and was educated in the Friends' School. He studied medicine in the office of Dr. George B. Wood, and was graduated by the Medical Department of the University of Pennsylvania in 1849. He entered the Pennsylvania Hospital as Resident Physician and served for two years. In 1854 he became demonstrator of anatomy in the University of Pennsylvania, and held this position for ten years. In 1856, he became a member of the surgical staff of the Episcopal Hospital and in 1863 was elected to the same position in the Pennsylvania Hospital, the former institution he served for twelve years and the latter for thirty years. He was also for a period surgeon to the Wills Hospital and to the Orthopedic Hospital. During the war Dr. Hunt was one of the Acting Assistant Surgeons of the United States Army, and was several times ordered to the front for active field duty. His principal military service, however, was in the government hospitals in Philadelphia. He served until the end of hostilities, but during all this period he refused to wear a uniform on account of his religious connection. He was a Fellow of the College of Physicians from 1854 to his death, and was for many years one of its Censors and a member of some of its most important committees. He was also a member of the County Medical Society, and of the Academy of Surgery (having been elected President of the latter) and an honorary member of the American Surgical Association. He joined the AMERICAN MEDICAL ASSOCIATION in 1859. Dr. Hunt's writings were eminently practical and his contributions to medical journals were always gladly received by the editors and readers. He was one of the authors of "Surgery in the Pennsylvania Hospital," and an associate editor of the *Annals of the Universal Medical Sciences*.

N. S. HILL, M.D., died at his residence in Neville, Ohio, April 13, where he has practiced consecutively for thirty years. He graduated from the Medical College of Ohio in 1862, was mustered assistant surgeon 121st O. V. I., Sept. 11, 1862, and served with that regiment until Oct. 28, 1864, when he was promoted Major Surgeon 52d O. V. I., and served as such to the close of the war. His army service included Gen. Sherman's Atlanta campaign and "March to the Sea." He was an active member of the Clermont County Medical Society, the Ohio State Medical Society and the AMERICAN MEDICAL ASSOCIATION. He was a prominent mason, Odd Fellow and member

of the Grand Army of the Republic. He was for several years a sufferer from chronic interstitial nephritis, the immediate cause of death being ascribed to a mitral insufficiency. At his request he was cremated and his ashes interred in Spring Grove.

MOSES WADLEIGH RUSSELL, M.D., died at Concord, N. H., on April 18, aged 59 years. He was born in Sutton, N. H., studied at the Colby Academy, New London, same State, and under Dr. Dimon Davis began the study of medicine about 1860, taking his medical degree from Dartmouth College in 1863. During the following four years he attended the special courses of instruction at New York under Dr. Austin Flint and at the College of Physicians and Surgeons. He practiced for a few years at Sutton, going thence to Concord, in 1867 or 1868. He was a member of the representative medical societies of his locality, and in 1892 was president of the State Medical Society.

JAMES JAY MAPES, M.D., of New York city, died April 10, at Saranac Lake, aged 31 years. He was a son of Charles V. Mapes, and a great-grandson of Gen. James Jonas Mapes, who commanded the American forces about New York city in the War of 1812. He was a nephew of Mrs. Mary Mapes Dodge. He was an A.B. of Columbia College in the class of 1888 and a graduate of the College of Physicians and Surgeons in 1891; he became an interne of New York Hospital, and after returning from an educational trip to Europe took an internship at the Nursery and Child's Hospital. Dr. Mapes studied under Dr. Roux, in Paris, and when the discovery of the antitoxin treatment for the cure of diphtheria was made he brought the first vials of the fluid to this country. His health broke down six months ago, and he developed tuberculosis.

LEON DIDELOT, M.D., at Lyons, at the early age of 46. His name is familiar on account of his many scientific writings, showing his mastery of medicine, chemistry, geology, paleontology, archeology, mineralogy and physics.

GEORGE WIEBER, M.D., was born April 15, 1825, at Weitzler, Germany. His father was a Lutheran clergyman who realized the value of a liberal education and gave his son the advantage of his experience. Dr. Wieber pursued his study of medicine in Halle, Marburg and Giessen; and in 1848 entered the German army as surgeon, continuing his service during the short war with Denmark. After leaving the army he served as surgeon on an American clipper for several years. In 1857 he began private practice in a suburb of Brooklyn. He gained the confidence and respect of the medical profession in those early days. At the outbreak of the Rebellion, he entered the service as Surgeon of the German Battery, afterward a part of the First N. Y. Artillery. While Surgeon Wieber was stationed with his battery at White-House Landing (on the Pamunky river), Va., in May, 1862, the writer had occasion to accept of his hospitality; for after superintending the transportation of the sick and wounded from the front to the Landing one stormy day and night, he was wet, weary and hungry, and Surgeon Wieber sheltered, warmed and fed him. It was but one of many offices of kindness he delighted to perform.

Dr. Wieber served in other positions as medical officer to the army, after the reorganization of the Artillery, till he returned to private practice in Brooklyn. Although an able practitioner in good standing for so many years, Dr. Wieber was not legally qualified under the existing laws of New York State. He therefore submitted to an examination by the Board of Censors, in 1875, and was granted a license by the Kings County Medical Society. He continued the practice of medicine in Brooklyn until prevented by sickness, his practice being more laborious and humane than lucrative. In 1890 he received an unusual injury by a fall, rupturing the rectus femoris muscle of the right thigh, which crippled him for several months. He was a member of Dakin Post, G. A. R. He served as sanitary inspector to the Brooklyn Board of Health for five years. He was formerly a member of Kings County

Medical Society and of the Anatomical and Surgical Society. At the time of his death he was a member of the New York German Medical Society, an original Fellow of the New York State Medical Association, an original Fellow of the Kings County Medical Association and one of its Executive Committee from 1887 to 1892. Dr. Wieber's first wife did not survive long after the birth of her only child. His second wife to whom he was married on Feb. 10, 1863, was the widow of the late Dr. Haller. Two children, twin boys, died of diphtheria and scarlatina in February, 1873.

Dr. Wieber was taken sick on Dec. 15, 1895, with an obscure intestinal trouble which proved to be carcinoma of the mesentery, and died at his home Jan. 31, 1896, hemorrhage of bowels supervening. A year or more before his death, he delivered sealed instructions to his wife regarding the disposition of his remains, which were as follows, namely: "Dakin Post is to be notified at once to take charge of the funeral. The services are to be held in my residence, and to consist simply of the Grand Army ritual. I direct that my remains be taken to the crematory, and there incinerated, the ashes then to be interred in the graves of my two children, buried in Evergreen Cemetery." His instructions were complied with. His widow and daughter, Mrs. Schoonmaker, survive him, also his son Adolph, who graduated in medicine at Giessen, Germany, in 1889, and at Long Island Hospital in 1890.

The many friends and patrons of Dr. Wieber miss him and mourn their loss. The medical profession of Brooklyn has lost a zealous supporter of the principles which pertain to the highest type of its science, art and ethics. The Kings County Medical Association assures the family of its sympathy, and that it will retain pleasant recollections of its deceased Fellow.

ASSOCIATION NEWS.

Notice.—Members contemplating attending the Atlanta meeting will please bring their receipts for dues of 1896 and thereby save second payment. Very truly yours,

CHICAGO, April 23, 1896.

H. P. NEWMAN.

Notice to the Ophthalmological Section.—The Section dinner will be held at the Aragon Hotel, Atlanta, Tuesday evening, May 5, at 8:30 P.M. The charge will be \$2 a plate, and it is hoped that ladies will attend. The dinner is in the hands of Dr. Dunbar Roy, "The Grand," Atlanta, Ga. All desiring to attend will please communicate with him at once, that he may have some idea as to the number for which to provide. It is hoped that the attendance will be large.

FRANK ALLPORT, M.D., Secretary.

MINNEAPOLIS, April 21, 1896.

Section on Diseases of Children.

A. C. COTTON, Chairman, Chicago, Ill.

A. J. WORK, Secretary, Elkhart, Ind.

Executive Committee—C. G. JENNINGS, Detroit, Mich.; W. S. CHRISTOPHER, Chicago; E. H. SMALL, Pittsburg.

TUESDAY, MAY 5TH—AFTERNOON SESSION.

1. ADDRESS OF CHAIRMAN. A. C. COTTON, Chicago.

2. Functional Dyspepsia in Children,

J. M. G. CARTER, Waukegan, Ill.

3. Diagnosis in Diseases of Children,

C. G. SLAGLE, Minneapolis.

4. Pediatric Therapeutics as Proven by Experience.

J. A. LARRABEE, Louisville.

5. Children of Feeble Resistance—Their Care and Management,

JOHN MADISON TAYLOR, Philadelphia.

6. Fractures in the Shafts of Bone in Children,

THOMAS H. MANLEY, New York.

Discussion opened by T. M. ROTCH, Boston; WM. PEPPER, Philadelphia; D. W. GRAHAM, Chicago; EDWARD H. SMALL, Pittsburg; I. N. LOVE, St. Louis; J. A. HOFHEIMER, New York.

WEDNESDAY, MAY 6TH—MORNING SESSION.

7. An Experience with Antitoxin with Instructive Results,

JOSEPH WM. STICKLER, Orange, N. J.

8. The Fallacy of Antitoxin as a Cure for Diphtheria.

ELMER LEE, Chicago.

9. Some Practical Points on the Effects of Antitoxin and Intubation with Especial Reference to Infant Feeding in Malignant Diphtheria, LOUIS FISCHER, New York.

10. Diphtheritic Laryngitis,

A. CAMPBELL WHITE, New York.

11. Sepsis in the Newly Born,

HENRY TULEY, Louisville.

12. Erysipelas in Infants,

ELLA PATTON, Quincy, Ill.

Discussion opened by PROF. EDWIN KLEBS, late of Zurich;

E. F. INGALS, Chicago; J. H. MCCOLLUM, Boston; W. E.

CASSELBERRY, Chicago; J. A. LARRABEE, Louisville; JAMES B.

HERRICK, Chicago; W. B. PARKS, Atlanta; W. D. BOOKER,

Baltimore; CHARLES JEWETT, Brooklyn, N. Y.; J. C. HOAG,

Chicago.

WEDNESDAY, MAY 6TH—AFTERNOON SESSION.

13. Chorea,

HENRY HATCH, Quincy, Ill.

14. Pertussis as a Neurosis,

S. J. RADCLIFFE, Washington.

15. Treatment of Infantile Spinal Paralysis,

HAROLD N. MOYER, Chicago.

16. Petit Mal in Children,

LOUIS BISHOP, New York.

17. Observations in Cases of Epilepsy following Injuries to the Head in Infancy, Childhood and Early Youth,

W. A. DIXON, Ripley, Ohio.

18. Spinal Injuries in Infants,

JAMES PORTER FISKE, New York.

Discussion opened by D. R. BROWER, Chicago; WM. OSLER,

Baltimore; SAMUEL WOODY, Louisville; J. C. WILSON, Phila-

delphia; WM. E. WIRT, Cleveland; SANGER BROWN, Chicago.

THURSDAY, MAY 7TH—MORNING SESSION.

19. Enterocolitis,

DANIEL H. CUNNINGHAM, Chicago.

20. Intussusception,

FRANK GIBSON, Pittsburg.

21. Use of Stomach and Rectal Tubes in Gastro-Intestinal Diseases of Children,

W. JAY BELL, Atlanta.

22. The Use of Physostigma Venenosum in Cholera Infantum and Cerebro-Spinal Congestions,

J. SCHNECK, Mt. Carmel, Ill.

23. To be announced,

JOHN E. WOODBRIDGE, Cleveland.

24. Typhoid Fever in Children,

JOHN A. ROBINSON, Chicago.

Discussion opened by W. B. PARKS, Atlanta; E. P. BRUSH, Mt. Vernon, N. Y.; J. M. G. CARTER, Waukegan, Ill.; W. D. BOOKER, Baltimore; W. JAY BELL, Atlanta; LOUIS FISCHER, New York; ELMER LEE, Chicago.

THURSDAY, MAY 7TH—AFTERNOON SESSION.

25. Curvatures of the Spine Occurring in Small Children,

WILLIAM E. WIRT, Cleveland.

26. Children's Shoes: Injurious Effects,

MERRILL RICKETTS, Cincinnati.

27. Rachitic Deformities and their Treatment,

JOHN RIDLON, Chicago.

28. Rachitic Chest Deformity in Twins, with Exhibition of Casts,

W. J. BELL, Atlanta.

29. Circumcision is not Necessary in Young Children,

W. B. PARKS, Atlanta.

FRIDAY, MAY 8TH—MORNING SESSION.

30. The Evolution of Girls,

HARRIET E. GARRISON, Dixon, Ill.

31. High Pressure Process of Teaching in our Public Schools, considered from a Medical Standpoint,

W. H. SHORT, La Grange, Ind.

32. To be announced,

I. N. LOVE, St. Louis.

33. Retention of Urine in the Newly Born,

EDWARD H. SMALL, Pittsburg.

34. Infantile Scorbutus,

ALBERT H. BURR, Chicago.

35. Rheumatism,

SAMUEL E. WOODY, Louisville.

36. Rheumatism in Children,

J. A. HOFHEIMER, New York.

Discussions opened by WM. OSLER, Baltimore; WM. PEPPER, Philadelphia; WM. E. QUINE, Chicago; J. A. WORK, Elkhart, Ind.; SARAH HACKETT STEVENSON, Chicago; G. W. MCNEIL, Pittsburg; JAMES B. HERRICK, Chicago.

SOCIETY NEWS.

The Roentgen Rays as an Aid to Surgical Diagnosis.—At the last meeting of the Academy of Surgery, held April 6, Dr. Thomas G. Morton, Philadelphia, read a brief "Note of a case in which a pistol bullet imbedded in the shaft of the radius was located by the X rays and successfully removed by operation based upon the skiagraphic aid to diagnosis." The history of the case was as follows:

William L., aged 30 years, of dark skin, probably a Mexican native or a mulatto, was brought to the Pennsylvania Hospital, Feb. 28, 1896, suffering with a recent pistol shot wound of the

right forearm, received in the act of running from an officer. Upon examining the limb it was ascertained that the ball had entered on the outer side, just below the elbow, and had apparently passed in a downward direction, but all efforts to locate the missile definitely were unsuccessful, not only upon this occasion, but also in subsequent attempts while in the hospital. Two weeks later, by order of the court, the patient was sent to the county prison, where Dr. Morton again saw him, with Dr. B. F. Butcher. At this time the wound was still open and discharging moderately; radius motion was painful and greatly restricted. There was no evidence of transverse fracture of either bone of the forearm. On account of the local symptoms and the forearm being very large and muscular, he decided not to make any immediate search for the ball, which was causing considerable irritation, but to first locate, if possible, the ball by means of the X rays. Through the kindness of Professor Goodspeed, of the University of Pennsylvania, he was able to accomplish this. As the result of several exposures, none being over five minutes, three skiagraphs were made, which were exhibited. Professor Goodspeed sent the following report: "Experiment eminently successful. Radius is split two and one-half inches. Bullet located four and one-half inches from the elbow joint when the arm is flexed inside."

Acting upon the information thus given on the following day, March 27, Dr. Morton made an incision directly over the location thus revealed, and discovered the ball lying partly imbedded in the radius, under a splinter of bone which roofed it over as is shown in one of the skiagraphs. Having found the location of the ball it was extracted without difficulty. It was observed, after removing the ball, that it had penetrated so deeply that an opening was made directly through the shaft of the radius and a portion of the upper surface had become separated and overlaid the missile, which accounted for the previous failures to find it by the usual means. This appears to be the first case in this city in which the Roentgen rays have settled an otherwise unsolvable problem of surgical diagnosis and have lead directly to operation for the relief of the condition.

Experiments by Professor Goodspeed and Dr. Cattell, at the University of Pennsylvania, Department of Physics, have been successful in very materially reducing the time needed for exposure to the rays and the production of skiagraphs, one being recently obtained of a human foot covered by stocking and boot, which showed the articulations and bones very clearly, and in which the time of exposure was only one minute.

To Prevent the Spread of Tuberculosis. The St. Louis Medical Association, March 7, 1896, passed the following:

WHEREAS, It is established on a firm basis that tuberculosis is communicable under certain conditions, and that the pulmonary forms are the most prolific sources of external dissemination of the germs of the disease; and

WHEREAS, The health boards of this country and other countries are urgently pressing the legislative authorities to affirm by enactment that pulmonary tuberculosis is transmissible and should be dealt with accordingly; and,

WHEREAS, The State Board of Health of Missouri in a committee report made to this body last year, recognized the infectious nature of this malady; and,

WHEREAS, It is urgent that the public should realize fully the nature of this plague which destroys fully one sixth of the population, and that the people should be protected from infection;

Resolved, That the president of the St. Louis Medical Society appoint a committee to include some members of the State and city boards of health to draft a measure for the prevention of the dissemination of consumption in the street cars, public schools, churches, theaters and other public places, and to advocate its passage by the city legislators if compatible with the constitution and scheme of charter, and by the State in the near future.

Committee: Drs. Paquin, Bremer, Ravold, Mulhall, Hughes.

Wayne County Medical Society. The Wayne County (Mich.) Medical Society passed the following resolutions April 23, 1896:

WHEREAS, An organized effort is now being made in the District of Columbia and State of Massachusetts to secure the enactment of laws for the restriction of experiments upon the lower animals; and

WHEREAS, Without such experiments there could be no scientific biology and medicine would have no scientific basis; and

WHEREAS, Our knowledge of physiology and toxicology and the action of many important medicinal agents has been gained in this way; and

WHEREAS, Our precise knowledge of the etiology of a considerable number of infective diseases has been obtained by inoculating susceptible animals with pure cultures of the various pathogenic bacteria, and could have been obtained in no other way; and

WHEREAS, By such experiment the demonstration has been made of the specific pathogenic power of the anthrax bacillus, the tubercle bacillus, the diphtheria bacillus and many others; and

WHEREAS, Many of our life-saving surgical operations have only become possible by experimentation upon the lower animals; and

WHEREAS, It would be impossible in the face of such legislation as is contemplated; be it therefore

Resolved, That the Wayne County Medical Society, of Detroit, Mich., do most earnestly protest against the enactment of such proposed legislation, believing it highly inimical to the advancement of science, and opposed to the best interests of suffering humanity; and be it further

Resolved, That a copy of these resolutions be sent to the Hon. John W. Babcock, of Wisconsin, to the members of Congress at Washington from our State, and also the members of the health committee of the Assembly and Senate of the State of Massachusetts.

MISCELLANY.

The Wonderful Ray.—Apropos of the wonderful penetrating powers of the cathodic ray, a young lady, at a recent dinner party in New York, ventured the remark that she understood that these new cathartic rays could go through anything.

Dr. S. D. Mason, of Brooklyn, N. Y., has resigned from the position of consulting physician at Inebriates' Home, Kings County, N. Y. He has been thirty years consultant in this asylum, and associated with it from its first organization.

An International Periodical, devoted to the history and geography of medicine, is soon to be published in Amsterdam, by Dr. Peypers, Parkweg. The articles will appear in English, French and German. Many scientists have already promised their coöperation, among them several Americans.

Whooping Cough Bacillus. Kourlov has been investigating the saliva of whooping cough patients, and has found in every case and in them alone, a certain special, spore-forming, ciliated ameba, which he suggests may be the cause of the disease.—*Bulletin Médical*.

Disputed Claim for Priority.—The *Deutsche Med. Wochenschrift* of April 9, is the battle ground of a lively tilt between Gruber of Vienna and Pfeiffer of Berlin, each claiming to have announced first the peculiar behavior of the bacteria of cholera and typhoid fever as they roll up into balls and flakes, in presence of the immunizing serum, and the differential value of this fact.

Honor Medal for an Assistant Surgeon.—President Cleveland has awarded a medal of honor to Jacob F. Raub. He was assistant surgeon in the 210th Pennsylvania Volunteers, and at the battle of Hatcher's Run, Va., Feb. 5, 1865, discovered a flank movement of the Confederate forces, apprised the commanding general at great peril, and, though a non-combatant, voluntarily participated in repelling the attack.

Traumatism and Tuberculosis. The general discussion as to the contagiousness of tuberculosis has led to the publishing of many cases of tuberculosis following an accident to the lungs in perfectly healthy persons. Some ascribe it to the locus minoris resistentiae, and others believe it is caused by con-

tagion in the hospitals where the traumatic cases are carried for treatment, while Kelsch asserts that it is due to auto-intoxication from some latent, unsuspected tuberculous lesions, which he states are found in two-thirds of the necropsies of young and old alike, who die from any cause, athrepsia excepted.

Is the Husband's Consent to an Operation Indispensable?—The *St. Petersburg Med. Wocheenschrift* of April 4, is devoted to a discussion of the question whether a physician does right to yield to the husband's refusal to consent to an absolutely necessary operation on his wife or child. Russian physicians are collecting data of cases thus sacrificed to the general custom of deferring to the will of the man of the house, on which to found an appeal to the government for an extension of the rights and duties of the attending physician. A case has just been decided in Brussels, bearing upon this point. A couple of prominent surgeons were sued by the husband of a woman who had died after an operation, unauthorized by him, or, as he claims, by his wife. The verdict was in favor of the surgeons. —*Gaz. Méd. de Liège*, April 9.

Contract to Retire from Practice.—A physician and surgeon sold his practice for \$250 and stated in the contract that he would withdraw and retire from the practice of his profession at a certain time, adding: "In short, I have decided to permanently withdraw and retire from the practice of medicine in Texarkana and vicinity, and it is my intention to introduce and establish the above-named doctors, W— and R—, as my successors to my practice and good will among my clientele." This last clause, the supreme court of Arkansas construes, *Webster v. Williams*, Feb. 22, 1896, in connection with the testimony of several witnesses that the doctor had declared that he had contracted to permanently retire, as a contract for permanent retirement. It also holds that the contract was reasonable and valid, and that the complainants were entitled to a perpetual injunction in accordance therewith.

While the Editor Slept.—The editor of the *General Practitioner* freely acknowledges that he fell into a pit dug for him by a Cincinnati Colleague. He appears to have mistaken Dr. Samuel Johnson, the long deceased lexicographer for some other Dr. Johnson now alive in the Western Reserve. He makes his odd confession thus: "Our article in the January number, reprinted from the *Cincinnati Medical Journal*, on 'Marriage and Celibacy,' turns out to be from the pen of Dr. Samuel Johnson in *Rasselas*, written so long ago that it might have rested in an Egyptian sarcophagus. We know a good thing when we see it, and we humbly apologize to our readers for not having seen this particular good thing a long time ago. We wondered who it was who wrote Johnsonese in 1895, but we were perfectly innocent, we confess, of ever having read the article."

Scientific Instruments and the Tariff.—The United States circuit court of appeals holds, in the case of *United States v. Presbyterian Hospital*, decided Jan. 16, 1896, that it does not follow that because articles are made for the use of physicians and surgeons in the practice of their profession that they are scientific instruments within the meaning of the term as used in the tariff law. The court says that the term "scientific instrument" does not describe one appertaining to any particular vocation or profession. It suggests an instrument which is something other than a mere mechanical tool or appliance, however peculiarly adapted to use it may be in scientific labors; one which, because it embodies some scientific conception, would attract the interest of learned minds; something as distinct from the ordinary mechanical instrument as is the scientific toy from ordinary toys. What is or is not such an instrument, in cases arising under the statute, is to be determined as a question of fact, according to the nature of the thing itself, and not necessarily according to the nature of the use for which it is primarily designed or in which it is prin-

pally employed. Ordinary metal tubes, a wire mask covered with flannel, and glass tubes for holding wound catgut, imported for use in clinics and training schools the court does not consider attain to the dignity of "scientific instruments."

New Hospitals for St. Louis.—The St. Louis City Council recently passed a bill which provides that the City Comptroller shall set aside 1 per cent. of the taxes each year for the purpose of erecting a new city hospital building. The amount required to build such a structure as is demanded, will be \$2,000,000. Hence the above provision, which would yield at most about \$75,000, would be inadequate. By private benefaction, a hospital for women may presently be inaugurated, a St. Louis lady having given \$100,000 as an endowment fund for an institution to be located on Henrietta street and Grand Avenue, and has also contributed \$40,000 in cash, with which to erect the buildings and purchase the grounds. The plans provide for thirty private rooms and all modern conveniences, and all appliances, both medical and surgical. Josephine Hospital (after the given name of the lady endowing the same) will be one of the best equipped and best managed institutions in the city. Dr. F. J. Lutz is chief surgeon, and the buildings are being erected under his supervision.

Proposed Jennerian Society in England.—The *British Medical Journal* states that the friends of vaccination in an antivaccination territory are about to take aggressive and organized action. The existing prevalence of smallpox in Gloucester, besides occurring in a city which is notoriously a center of antivaccinationism, has occurred in a city in which also there are not a few able exponents of the beneficent qualities of vaccination. "Of these latter, one, Dr. Bond, the medical officer of health of the Gloucestershire combination of sanitary areas, has recently issued papers from his own pen with a view of instructing the people in their own interest as to the facts concerning the benefits to be derived from vaccination and revaccination. Not only so, but Dr. Bond has also started a movement under the title of the 'Jenner Society,' for securing a wider dissemination of the literature regarding the prophylactic powers of vaccination, so that persons who at present know only the onesided arguments of antivaccination agitators may be in possession of the abounding evidence in favor of vaccination. There are other proposed lines of action to be taken by the society, not alone in Gloucestershire, but as widely as its membership shall extend: these, however, we do not touch upon here. Suffice it for the moment to state that any movement which has for its main object the dissemination of terse, simple and well-digested data and facts showing the beneficent results accruing from vaccination will be sure to confer an important service on the nation."

Privileged Observations of Physicians.—In a bastardy case it was proposed to prove by a physician that the mother had called on him in his office, accompanied by a young man of a particular description, which distinguished the latter from the one sued, and that the two said they were husband and wife, and wanted an examination made to see if she was with child. All of this, relating to matters which the physician had learned while the woman had called upon him in his professional capacity, the appellate court of Indiana holds, *Post v. State*, Feb. 21, 1896, was privileged. Not only was the physician prevented from revealing anything told him by the woman, but it would be equally objectionable, the court says, for him to divulge matters he had learned from mere observation. What he observed as to who accompanied the woman and what they said, must have been in reference to the subject-matter of the examination—the purpose for which they had called upon the physician—and was therefore privileged. The court also holds that there was no error in a refusal to allow another physician to testify that the child was perfectly developed, declaring that this information was also clearly privileged.

Antitoxin Treatment of Pseudo-Membranous Angina.—Dr. George Blumer reports in the *Bulletin* of the Johns Hopkins Hospital a series of eighteen cases of angina with generally successful results under the serum treatment. One of his cases is interesting from a bacteriologic point of view, for, so far as we have been able to make out, a membranous angina due to the bacillus pyocyaneus has not been described hitherto. This organism, though usually comparatively harmless, has been described as a factor in various diseased conditions, usually in association with other organs: in our case it was apparently in pure culture, but this may be due to the fact that it had overgrown the organisms with which it was associated.

The comparatively frequent presence of the pyocyaneus in chronic otitis media would lead one to suspect that it may not be an infrequent inhabitant of the nasal or buccal cavities. "Of the eighteen cases above recorded, sixteen received the antitoxin treatment, three of these cases being non-diphtheritic. While this of course is too small a number of cases on which to base any statistical conclusions, several facts in connection with the treatment seem worthy of attention. Two of the cases died, but both of these were moribund on admission, one dying three and the other eight hours after admission, so that the antitoxin was given no chance. The other thirteen diphtheria cases were most of them mild, in fact none were very severe, but both on the general condition and on the temperature the antitoxin seemed to have a marked effect. It was almost invariably noticed that the day following the injection the patient was much brighter, and in the case of children the return of the appetite was the most marked indication of improvement. In looking over the cases it will be noted that in those due to the bacillus diphtheriae the antitoxin, as a rule, caused a reduction of the temperature to the normal inside of twenty-four hours: in one or two of the cases there was a slight rise in the temperature eighteen to twenty hours after the inoculation, but in only one case was no effect on the temperature noted. The last two cases afford excellent examples of the effect of the antitoxin on non-diphtheritic cases: both were early cases, so that a spontaneous fall of temperature can be excluded, and in both the temperature was not influenced in the slightest degree by the antitoxin. Skin eruptions following the antitoxin injections were noted in several of our cases; they have been noted by various observers since the inauguration of the treatment, but not enough stress has been laid on the fact that these eruptions are in all probability due to the serum *per se*, and not to the antitoxic agents contained therein." The deleterious effects of the serum of one species of animal when injected into a member of another species are too well known to be repeated here, but it is interesting to know that Sevestre, by injecting horse-serum in 20 centimeter doses into children with non diphtheritic sore throats, was able to produce urticaria and other forms of skin eruption similar to those observed after the use of the antitoxin. "The skin eruptions were the only bad effects, if one could so call them, which were observed after the use of the antitoxin. No other appreciable symptoms plainly due to the injection could be observed, nor did the examination of the urine give evidence of any such."

Suits for Malpractice on the Pacific Slope. Dr. James J. McKone of Tacoma, addressed the Washington State Medical Society on the subject of the aseptic treatment of injuries, especially of compound comminuted fractures. He warned his hearers that the modern doctrines of the text books on surgery have placed some dangerous weapons in the hands of the damage suit lawyers, who appear to now frequent the far West. As formerly in the East, so now in the West, surgeons are the game for which the lawyers go a hunting.

A generation ago, the majority of these actions were brought on account of deformity resulting from fractures and dislocations. "The laity, believing that every broken limb should recover perfectly, no allowance being given for the severity of the injury. To them a fracture is a fracture, be it a compound,

comminuted fracture of the femur, or a simple fracture of the fibula. A surgeon having the skill to save a badly mangled limb, that we as medical men know requires more ability than the average capital operation which contributes so much to the surgeon's reputation, is doomed forever to be pointed out by the patient and his friends as a careless and incompetent man, should necrosis or shortening follow the almost miraculous saving of a compound, comminuted fracture of the femur.

"Samuel D. Gross once said that compound fractures caused him more anxiety than all the rest of his surgery combined. Suits for malpractice in New England, once so frequent, are now almost unknown, because damages against medical men were very seldom awarded. One reason being that eminent men from Boston, New York and Philadelphia were always ready to respond to the call of a brother physician in trouble and testify to the truth; this, coupled with the fact that the supreme court had decided that the plaintiff in a suit for malpractice must show the defendant guilty, either of ignorance or gross negligence, a very hard thing to prove. But in these Western towns no man on earth can tell what a jury will do; and with every unsuccessful applicant for the police force, a lawyer, and with the supreme court, famous for reversing the decision of the lower court, and then reversing its own decisions, the profession must be watchful."

Dr. McKone gives the following as an instance of some of the traps that are laid in the path of the surgeon:

"I operated some months since on a patient for appendicitis, and he took me severely to task because there was a stitch-hole abscess. He said it was all 'damned carelessness' in the preparation, and that a physician had told him three months before that there was no need of pus ever forming in a wound made by a careful surgeon.

"I trust, gentlemen, that these remarks may not be wasted, and that though we may always use the utmost precaution to be perfectly aseptic in every surgical procedure, still we must not give our patients lectures on bacteriology and have them expect what they will not always get."

A Mexican Treatment of the Bite of the Gila.—A correspondent in California to the New York *Sun* writes regarding the bite of the so-called gila monster:

The death of three persons, one a naturalist from Chicago University, in Arizona in the last few weeks from the bite of the gila monster, has renewed discussion in this region concerning the terrible venomous nature of the reptile. Without doubt the gila monster of the alkali plains and the hot, dry mountain canyons of Arizona and the State of Sonora in Mexico, is the deadliest venomous creature known to the natural history of North America. Physicians say that the poison sets up a tremendous action of the heart, and the victim really dies of heart failure. The person who has been drinking to excess a few days or a few hours before he is injured by the gila monster is almost sure of death in half an hour after the bite. Many physicians in the Territory say that alcoholic stimulants are worse than useless for a person hurt by the reptile, but Walter H. Vail says he owes his recovery to a prompt use of whisky and the application of ammonia. Dr. E. G. Harper, who has been among the Huilipi Indians in Mexico for several years, in the interest of science, says the savages there certainly have a decoction that is a cure, if administered immediately, for the bite of the gila monster found in that region. "I have tried to learn from the Mexican Huilipis this anti-venom decoction," said Dr. Harper recently, "but it was useless. President Diaz says, however, that it can be had, and he will interest himself to get it for the benefit of the people of the United States, where a death from gila monster bite happens once in a while. The most wonderful feat I ever saw was down on the edge of the desert wastes in southern Sonora several years ago. It was a test of the power of the anti-venom preparation of the Huilipis. The chief medicine man claimed that he was a wizard, too, and that the great spirit *Moz no ha*, who dwelt on the peak of Orizaba, came down and helped him defy death from the most deadly poisons known among the Indians. At the time of the test I witnessed, the medicine man summoned a dozen of his young assistants around a cauldron, which was steaming and boiling with roots, leaves, horned toads, rattlesnake heads, and a score of other kinds of articles. I was told that this was the anti-poison medicine. In an hour the stuff was cool and ready for use. The medicine man bounded into the arena

with a 'ho-ho,' brandishing over his head two gila monsters. Then he varied the program by twirling them around his body and permitting them to crawl all over him. He teased the reptiles, poked his thumb into their mouths, and even put them up to his face. I am sure the man was bitten several times. We looked upon this daring feat with horror, while the Indians viewed it with superstitious frenzy, and showered upon the medicine chief all the presents they could command."

Murderous Malpractice by a Midwife.—The following narrative is compiled from the sworn statements of the husband mentioned, the physician who was called in to the moribund woman, the physician subsequently employed by the husband and the medical inspector of the Chicago Health Department:

On Wednesday, March 25, 1896, the husband of A. L., living at 31 Jane Street, Chicago, sent for Mrs. Susanna Hora, midwife, 663 Milwaukee Avenue, to attend his wife during confinement. The midwife endeavored to "get the child" until 10:30 p. m. without success and then left the house saying she would get some medicine and return. She returned with a package containing obstetric forceps and, after administering medicine to the patient, proceeded to apply the instrument. After three-quarters of an hour's continuous effort to extract the child she discarded the forceps and an hour later the child was born dead. Before the child was born the husband asked her if she needed the assistance of a physician, to which she replied that she was a doctor herself and that everything was all right except that the child "was a little high up." After the child was born she washed and doused the patient and, in reply to an inquiry, stated that everything was all right, but it would take longer than in other cases for the recovery of the patient and then departed. When the midwife returned next morning she was informed that the patient began vomiting soon after confinement and was unable to obtain sleep, to which she replied, "It is good that she vomits." Thursday evening the midwife gave the patient some pills with directions to administer throughout the night. Friday the patient grew decidedly worse and in the evening a physician was called in and found the patient in a state of collapse, pulse barely perceptible, temperature 101 degrees, cold sweat and a Hippocratic countenance. Digital examination being painful he was only able to detect a lacerated cervix and desisted from further procedure in anticipation of her death, which occurred shortly after his visit. The midwife in the meantime had demanded the remaining pills, and these not being forthcoming she urged that they be destroyed when found. When the physician was advised of the death of the patient he issued a certificate of death from puerperal fever, but subsequently notified the coroner. The husband refused to allow a post-mortem and the coroner dismissed the case, the body being taken to the Bohemian cemetery for interment. Meanwhile the Health Department having incidentally learned something of the facts, instituted an investigation which led to a post-mortem by Medical Inspector, Dr. Clausen, and Dr. Nahinsky, the latter being employed by the husband. Examination revealed the following conditions:

External appearances: Rigor mortis well marked. Beginning decomposition most marked over lower abdomen and thighs; dark bluish discoloration over both groins and vulva, also of mucous membrane of vagina and perineum. A perforation about one-fourth of an inch in length about four inches from the navel and on the level of same on both sides, presumably made by embalmer's trocar. No pelvic deformities to be detected and no laceration of perineum.

Intra-abdominal examination: Intestines perforated (obviously by trocar) in various places, two of which perforations were located at junction of sigmoid flexure and the rectum and were about one-eighth of an inch in length. Marked pathologic changes in the peritoneum found in the pelvic floor behind the uterus. In the cul-de-sac of Douglas a laceration with ragged torn edges was found communicating with the vagina, which readily admitted four fingers. The peritoneum in this vicinity was darker in color and infiltrated, likewise the edges of the laceration. The mucous membrane of posterior and upper wall of vagina and the cervix were lacerated. The uterus was intact and enlarged. Its cavity contained some fragments of placenta and a small quantity of dark clotted blood. Bladder empty and normal and ovaries and tubes normal. Other abdominal organs apparently normal. The infant, well developed and large, presented a dark, discolored swelling above and behind each ear and a linear depression about one and one-half inch on each side of neck, parallel to the upper posterior border of the sterno-cleido-mastoid muscle.

As a result of these disclosures information was lodged with the attorney of the State Board of Health, and the husband

retained an attorney to prosecute the midwife in a civil action for damages. These proceedings were cut short by the midwife committing suicide by carbolic acid poisoning, April 11. During the investigation it was alleged by various persons that she had caused the death of a number of other 'unfortunate parturients, two or three within a short time of this case. According to the official register, Susanna Hora had been in practice as a midwife in Chicago some fifteen years, her State certificate having been issued Nov. 1, 1881, on alleged credentials from the University of Buda-Pesth, dated July 3, 1875.

In laying the above facts before the State Board of Health, Dr. Reilly, Acting Commissioner of Health, took occasion to say: "While this case has some unusual features it does not by any means cover all the horrible details of the unrestricted practice of many midwives, the criminal abortions performed by them, their numerous infanticides and frequent butcheries. A recent well-authenticated instance of such butcheries is that of a midwife who amputated an inverted womb after labor for a tumor, and in which operation she was 'assisted' by a physician holding a State certificate. The prosecution was a failure, because in the absence of the amputated structure it was impossible to prove the non-existence of a tumor. In fact, prosecution in these cases is rarely successful. There are now three licensed midwives in this city under indictments of long standing and concerning whose guilt there is no shadow of doubt. They are still plying their nefarious vocations unrestricted, except in so far as this department refuses to recognize their certificates of causes of death. This, however, gives them little or no concern, since they can readily obtain a certificate from a recognized physician for a small fee."

The action of the State Board is told in the editorial, "A Much-Needed Reform Begun."

Practical Notes.

Subconjunctival Injections of Quinin.—Proceeding on the basis of the action of quinin on the leucocytes in the blood, Bossalino, of Turin, has been injecting bichlorid of quinin, 1 to 400, in twenty cases of ulcers and abscesses of the cornea, complicated with hypopyon and even iritis in some cases. The injections were only slightly painful, and they produced a cure in ten to twenty days, while the leucoma afterward was much more transparent than usual.—*Gazzetta degli Osp. e delle Clin.*, April 4.

Thyroid Treatment of Obesity.—Maragliano confirms the results of the treatment of obesity with thyroid tabloids, and states that he has also found them efficacious in a case of scleroderma. He does not attribute this efficacy to the iodine in them, as he has often treated obesity with preparations of iodine, and the results are almost nil, unless the diet is materially modified, which is not necessary with the thyroid treatment a most important point in its favor.—*Gazzetta degli Osp. e delle Clin.*, April 4.

Hemorrhoids and Enlarged Prostate Relieved by Double Castration.—Dr. John Homans, at the Massachusetts General Hospital, had occasion to treat a man of 64 years for retention of urine due to enlarging prostate, the symptoms of which began to be noticed about four years ago. Double castration was performed and six days later urine was passed voluntarily; four days after that the use of the catheter was permanently discontinued. Twenty days after operation the man was again actively engaged in business, and was able to report that the operation appeared to have entirely cured his piles from which he had formerly been a great sufferer.

Typhoid Treated Exclusively with Phenacetin.—Bignami reports his success with this treatment in his private practice, in the *Gaz. degli Osp. e delle Clin.*, March 21. He had only six fatalities, which were mostly due to unhygienic surroundings. It produced a profuse diaphoresis in every case, to which he ascribes its beneficial action. Queirolo has shown also that phenacetin has a neutralizing effect on the typhoid poison in the blood, and the cases above demonstrated that it has a direct abortive effect on ileo-typhoid especially. Bignami administered 3 grams in six doses at intervals of four hours, for a week, reducing the dose to 2 or 1.5 grams with children

or elderly people. After the first week he continued with $\frac{1}{4}$ to $\frac{1}{2}$ gram every six hours, as long as the temperature was above normal. There were no inconveniences from its use, neither vomiting, hematuria, collapse or kidney troubles, only in a few cases a slight transient cyanosis.

Treatment of Anal Fissures with Cocain and Ichthyol. Surgical treatment is often accepted as indicated in these cases, but it would be seldom required if the fissure were first treated with cocain at 1 per cent. for five minutes and then cauterized with one or two drops of ichthyol. A recent fissure can be entirely cured with ten of these simple treatments, while an old one requires more, perhaps twenty, and must be treated its entire length, dilating the sphincter with a Nelaton dilator.—Cheron in the *Rev. des Mal. des Femmes*. Quoted in April *Union Méd. du Canada*.

The Revolution in Obstetric Treatment is becoming more evident every day, as asepsis is gradually displacing antiseptis. Vaginal douches were discarded first: and Leopold and Spoorlin have inaugurated an entire new method to determine the position and presentation of the fetus by abdominal palpation alone. In 1,000 cases thus treated the diagnosis was at fault in only 6.5 per cent. Kroenig and Ries substitute rectal for vaginal examination, and Strassmann has devised a series of external manipulations, under chloroform, which will do away with the forceps in many cases, and is, he claims, the method *de rigueur* when the fetus is dead. Remarkably favorable are the results of this entire avoidance of the vagina, which is left intact to its own secretions in all normal cases. Mermann reports no fatalities in 1,200 cases thus treated, and all normal but 5.7 per cent.: Leopold reports 1,382 cases with a mortality of .07 per cent. and morbidity in .65 per cent.; Ferratta had a mortality of .05 per cent. in 800 cases.—From an article in the *Union Médicale du Canada*, April.

To Ward Off Malaria. Laveran announces as the results of his investigations, that the preventive dose of quinin is 0.20 to 0.30 gram every day, or twice this amount every other day. This is a larger dose than is usually given, but it has been found that it produces no deleterious effects on the digestive organs, even taken for months at a time, and actually acts as a tonic, stimulating the appetite and improving the general health if taken at meal times. It absolutely prevents severe fever attacks, and is almost certain to ward it off entirely. By its bacteric action it kills the hematozoa or at least transforms the blood into an unfavorable medium for its development. Laborde recommends the hydrochlorid, or better still, the hydrochloro-sulphate of quinin, and in violent attacks it is better; but as a preventive Laveran considers the ordinary sulphate equally as good and it is less expensive. Laveran mentions the curious fact that it is impossible to experiment on animals in regard to the effect of malarial poisons as they are unaffected by it. (See this JOURNAL, pages 493 and 690, March 7 and April 4.)

Iodism. The *Semaine Médicale*, April 8, contains a detailed study of the toxic effects of iodine on the system, with a review of the cases of iodism on record, which shows that few organs are exempt from possible disorders following its use. None of the iodids are free from possible deleterious effects. The table below shows the percentage of iodism in one to four hundred cases observed:

	None.	Slight.	Moderate.	Severe.
Pot. Iodid	23	38	23	16
Sodium Iodid	34	11	15	10
Ammon. Iodid	22	32	31	11
Str. Iodid	22	34	28	16

Only 25 per cent. of the cases are free from complication but it is not severe except in 10 to 15 per cent. and in some of these the system becomes accustomed to it in time. The most frequent and serious consequences are coryza, eruptions, renal and nervous troubles. There are no means of determining its effects beforehand, as they seem to depend upon some idiosyn-

crasy, impossible to foresee except perhaps in renal troubles. It is also established that the tendency to produce iodism, and the severity of the attack, is directly dependent upon the size of the dose. There is no preventive medication possible, except administering the iodine in very small doses to begin with (50 centigrams). Belladonna for severe coryza, and bicarbonate of soda in severe cases of iodism, are the only remedies that have proved beneficial.

Subcutaneous Injections of Mercury in Syphilis.—The *Annales de Derm. et de Syphil.* for March, devotes fifty-four pages to a symposium of reports on the treatment of syphilis with injections of mercury. The forms used were: Calomel (Fournier, Portalier, Barthélemy and others); bichlorid or cyanid of mercury (Abadie); olive oil and mercuric iodid (Lavarenne); gray oil (Hallepeau). The reports embrace a large number of cases, and the efficacy of this treatment seems to be established beyond a doubt, but its disadvantages (pain, occasional abscesses at the injecting point, and rare cases of serious distress) are such that nearly all agree that its use should be restricted to severe, urgent cases, which are often cured as if by magic. Relapses are liable to occur, unless preventive injections are made from time to time. Hallepeau denounces the use of cocain with them. The injections are all made in the buttocks. Barthélemy advises a weekly injection of calomel during the whole time that the blood is contagious. It has been the experience of several that patients much prefer this treatment to pills or local friction, etc. Lavarenne has treated tabes successfully and reports one absolute cure, and the arrest of another quite advanced case to such an extent that, during the four years of the treatment, the patient has not been obliged to interrupt his business a single day. Fournier considers the specific indication for its use the lingual syphilitic lesions, which he has seen swept away almost instantly by injections of calomel. His formula is: Calomel, 5 centigrams; pure cocain, 1 centigram; olive oil, q. s. to make 1 c.c. Applied with a Feulard syringe. Scarenzio mixes oil of vaselin with his calomel. Abadie's formula is: Mercuric cyanid, 50 centigrams; cocain hydrochlorate, 50 centigrams; distilled water, 50 centigrams.

Syphilitic Chancre on the Chin.—The leading article in the *Bulletin Médical*, March 29, urges the extreme importance of differentiating at once the signs of extra-genital syphilitic lesions, acquired accidentally, so that they can be treated promptly, and covered close with some plaster which will prevent the further infection of the subject and also the infection of those around him. The writer recommends Vidal's red minium and cinnabar plaster, as less irritating than Vigo's, first washing the surface with Van Swieten's solution, with other measures as necessary. The barber shop is the most frequent means of contagion by the razor or brush, which is disinfected even less than the razor. The infection may occur on leaving the shop through some scratch or pimple. Chambermaids and other attendants on persons with syphilitic lesions are very liable to acquire these chancres on the face, which are most frequently misunderstood at first, and the infection allowed to spread in a most dangerous manner.

Rupture of Spleen; Three Splenectomies with Recoveries.—The London medical periodicals have given considerable prominence to the discussion before the Clinical Society, of that city, of three cases of operation by Mr. Pitts and Mr. Ballance at the St. Thomas Hospital, done for rupture of the spleen. One case was that of a man, aged 36 years, admitted to hospital in the early morning of October 12 last, under the care of Mr. Pitts. He had fallen from a height of seven feet on to an iron girder, striking his left side. He complained of pain over that side and was slightly blanched, but otherwise apparently well. At 11 A.M. his condition became suddenly worse; he was deathly pale and almost pulseless, the extremities were cold

and the respiration quick. Both flanks were dull, but the dullness on the left side could not be wholly got rid of by change of position, and the man complained of great pain in the abdomen and said he thought he was dying. Restoratives were employed, and by 3 P.M. he had rallied sufficiently to make operation a reasonable thing to attempt. In the meantime it had been observed that the quantity of fluid in the abdomen had greatly increased. On making the median incision an enormous quantity of blood gushed out, the peritoneal cavity being literally distended to its utmost capacity. When the spleen was brought into view it was found to be ruptured completely across, the vessels in the hilum being also torn. The cleansing of the peritoneum from blood and clot took some time, and the wounds were closed in the usual way. The patient gradually rallied and at the end of a fortnight he appeared in every way as if completely convalescent. He then commenced to lose ground without manifest cause and soon presented the appearance of extreme anemia. His aspect was withered and sallow; he lost three stone in weight and became extremely feeble. There was a daily rise of temperature and the pulse was rapid. He also had fainting attacks, headache, great thirst, severe pains in the abdomen, and passed an excessive quantity of urine. The red blood discs numbered 2,500,000 and the white corpuscles 17,000 per cubic millimeter. It was determined to treat this patient on general principles. He was given cod-liver oil and bone marrow, but it was not until arsenic was administered that any real improvement was observed. In about two months the number of red and white corpuscles in the blood became normal. He gradually regained weight and at the present time was in robust health and following his occupation as a laborer, but all the external lymphatic glands could be felt to be definitely enlarged.

The second case was that of a lad, aged 10 years, under the care of Mr. Ballance. When admitted, September 11, the patient was in collapse and evidently suffering from severe shock. He was pale and the skin was clammy, respiration hurried and diaphragmatic. The abdomen was held rigidly during respiration and was acutely tender to palpation, especially in the splenic and iliac regions. Dullness in both flanks, that in the left flank varying with position. After oscillating a good deal, operative interference became imperative, so the abdomen was opened below the umbilicus. On opening the peritoneum, much liquid blood poured out and an incision was made in the upper part of the linea semilunaris. Blood and clots welled up, and on examining the spleen it was found to be ruptured. A ligature was therefore applied and the organ removed, a lienculus being found and left in. The lad made a good recovery and left the hospital on October 4. The injury was caused by a blow with a cricket ball five days before admission, so that his condition on admission was due to secondary hemorrhage from the spleen.

The third case was a woman, aged 45, who was admitted September 15, having been run over by a cab. She was extremely collapsed, and complained of intense pain in the left side. A catheter was passed and a little blood and urine was withdrawn. The abdomen was opened in the middle line when much bloody fluid escaped. Another incision was then made in the upper part of the left linea semilunaris, and the spleen was found to be transversely ruptured. It was removed, the pedicle being tied with silk. About a fortnight after the operation her condition grew worse, the temperature rose to 102 every day, the pulse was rapid and her general condition was one of extreme feebleness. There was a diminution of red cells in the blood and an increase of leucocytes. This state continued for about a fortnight, when she was put on extract of spleen and raw marrow. From this date she gradually improved, and by November 19 she was able to walk down stairs without assistance.

The first of the above cases, that of Mr. Pitts, is condensed from the report in the *London Lancet*; the other two cases, both of which were under the care of Mr. Ballance, are quoted from the *Medical Press and Circular*.

Mr. Pitts further stated that the number of cases of ruptured spleen he had seen post-mortem after removal was very small compared with the number of fatal cases in which death had taken place as a consequence of the hemorrhage. They had laid stress upon the fact that the spleen ought not to be lightly removed. Their experience of the removal of the wandering

spleen has been that no special symptoms followed the operation. In Case 3 the patient was practically moribund, and the abdomen was as full of blood as it could be. When practicable he would prefer suture of the tear to the actual cautery. The latter, moreover, necessitated pulling the spleen out of the abdomen, and he did not think it would be a scientific or a satisfactory procedure. He promised that they would do their best to obtain the subsequent histories of these patients.

Detroit.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION had its usual weekly meeting Monday, April 20, at which several important matters were brought up.

THE WAYNE COUNTY MEDICAL SOCIETY met at the office of Dr. Kenneth Gunsolus, Thursday, April 23. Dr. Frank S. Hough read a voluntary paper on "Counter Irritants," which was discussed by a number of the members. After the literary feast of the evening, Dr. and Mrs. Gunsolus invited the members of the society present, about seventy, to repair to the dining room where a banquet was served. Music made the remaining part of the evening pleasant.

HEALTH OFFICE REPORT for week ending April 25: Deaths under 5 years 34, total 79; births, male 40, female 43, total 83. Contagious diseases: Diphtheria, last report 3, new cases 2, recovered 2, died none, now sick 3: scarlet fever, last report 21, new cases 9, recovered 5, died 1, now sick 24: smallpox, none; measles, last report 1, new cases 3, recovered 2, died none, now sick 2.

Louisville.

LICENSE.—The common council recently passed a license law which reads as follows: "Each practicing attorney or counselor at law, physician, dentist, surgeon, architect, civil engineer, chiropodist, veterinary surgeon or dentist shall pay a license as follows: One whose yearly business amounts to less than \$2,000, shall pay an annual license of \$10; one whose yearly business amounts to \$2,000 or over, and less than \$5,000, shall pay an annual license of \$20; one whose annual business amounts to \$5,000 or over and less than \$10,000, shall pay an annual license of \$40; one whose yearly business amounts to \$10,000 or over shall pay an annual license of \$100. Should any of the foregoing parties be associated in a firm, each member of the firm shall pay a separate license." A member from each of the various medical societies in the city has been appointed to confer together and employ counsel to test the legality of such a law in the courts, their claim being that it is a counterpart of the income tax which was declared unconstitutional by the supreme court of the United States.

Philadelphia.

A PROPOSED SEMI-CENTENNIAL CELEBRATION OF THE AMERICAN MEDICAL ASSOCIATION.—At the meeting of the Philadelphia County Medical Society held April 15, the following resolutions were unanimously adopted:

WHEREAS, The AMERICAN MEDICAL ASSOCIATION completed its organization and commenced its actual existence in the city of Philadelphia during the first week of May, 1847; therefore be it

Resolved, That a committee of three be appointed by the Chair to publicly urge that the ASSOCIATION celebrate in 1897 its fiftieth annual meeting with ceremonies appropriate to its long and successful career; and be it

Resolved, That the delegates of the Philadelphia County Medical Society to the meeting of the AMERICAN MEDICAL ASSOCIATION at Atlanta be instructed to extend the ASSOCIATION a cordial invitation to hold its semi-centennial meeting in Philadelphia, the city of its birth.

The President accordingly appointed Drs. John B. Roberts, James C. Wilson and William M. Welch to act upon this committee.

AUGUST WEATHER IN APRIL.—According to the meteorologic records, which have been regularly kept at the Pennsylvania Hospital since 1824, the week ending April 18 gave the highest temperature record for the past seventy-two years. The thermometer standing in the garden of the hospital indicated 92.5

degrees, while that of the United States Weather Bureau on the top floor of the postoffice here marked 93 degrees at 4 P.M. The highest recorded observation of high temperature in April, in this city, previous to the above, was in 1888, when it got up to 90, surpassing by one degree the highest previous April temperature, which occurred in 1830. The sudden onset of summer weather with its accompaniment of heat prostrations and insulations, caught the hospitals by surprise, and the usual method of erecting tents under the shade of the trees for treating such cases could not be carried out because the leaf-buds only burst within the last fortnight and the leaves are as yet too small to give any protection from the sun's rays. Of the score or more of cases which were taken to the hospitals the larger proportion were cases of heat exhaustion, but several cases of insolation were reported at the coroner's office.

SUDDEN DEATH OF THE CORONER'S PHYSICIAN.—On the 16th ult. Dr. Wm. K. Mattern, physician to the coroner's office, was suddenly seized with severe pain in his chest and shortly afterward expired. He seemed in his usual health early in the day and made a post mortem examination a few hours before his death. He had recently performed an autopsy upon the body of a woman, who had died from septic poisoning, and had spoken of being overworked and an assistant had been promised him. A post mortem revealed pyemic abscesses in the kidneys and liver, and rupture of a pulmonary artery, the result of sepsis. It is strange that, with such marked lesions, he had not experienced more disability. The predecessor of Dr. Mattern, Dr. Robert H. Taylor, likewise lost his life from blood poisoning contracted in the performance of his duties. It is believed that Dr. Formad's death, a few years ago, may also have had a similar explanation, as he died after a few days' illness, of acute pneumonia.

THE RÖNTGEN RAYS.—The X rays and skiagraphy are becoming of daily utility in surgery in locating foreign bodies and in determining the relative position of fractured bones after all the dressings have been applied. Last week a patient of Dr. T. G. Morton, suffering with metatarsalgia, had her feet skiagraphed by Professor Goodspeed, and a negative was obtained by an exposure of twenty-three seconds, which afforded a clear photographic print of the bones of the foot, clearly demonstrating the distortion of the bones of the phalanges and the pinching of tissues between the base of the first phalanx of the little toe and the head of the adjoining metatarsal bone. The picture fully sustained the views of Dr. Morton as to the pathology of this peculiar form of neuralgia and illustrated, even better than a diagram, the method of relief to be obtained through operation.

THE MEDICO-SURGICAL COLLEGE is making extensive improvements and has begun work upon a large clinical amphitheater adjoining the hospital, which is estimated to cost \$180,000 and will be ready for the next session.

GUAIACOL IN TYPHOID FEVER.—Dr. H. G. McCormick, of Williamsport, by invitation, read a paper before the Philadelphia County Medical Society on the therapeutic uses of guaiacol. He presented a number of clinical charts illustrating the prompt antithermic effect produced by painting 20 to 30 drops of guaiacol upon the surface of the abdomen. He had used it in 77 cases making 850 applications, without any accident or serious depression resulting from its use. He extolled its use in typhoid fever, preferring this to the cold bath treatment, which he considered impracticable in private practice. Out of 56 cases of typhoid fever treated by guaiacol, externally and internally, 55 recovered; the fatal case entered the hospital late in the second week and died of perforation two days after admission. From his own experience he considered guaiacol used internally as a disinfectant of the alimentary canal and externally as an antipyretic, as the best treatment of the disease.

ANTITOXIN TO BE DISTRIBUTED FREE.—The Bacteriologic

Laboratory of the City Board of Health under the efficient management of Dr. Bolton, has been manufacturing diphtheria antitoxic serum for use in the Municipal Hospital. There being a sufficient supply on hand to warrant its distribution to the poor, the Board of Health has publicly offered to supply the antitoxin and has appointed a physician to administer it for other physicians in appropriate cases. It is also stated that the services of the Philadelphia Bacteriologic Laboratory will hereafter not be confined to this city, but examinations in cases of suspected diphtheria, will be made and culture tubes sent by mail to any part of the State of Pennsylvania, without charge.

DR. ERNEST B. SANGREE has been elected to the Chair of Pathology and Bacteriology in the Vanderbilt University at Nashville, Tenn.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 18 to 25, 1896.

Capt. Ashton B. Heyl, Asst. Surgeon, is relieved from duty at Ft. Thomas, Ky., and ordered to Ft. Canby, Washington, for duty.

First Lieut. Henry A. Shaw, Asst. Surgeon (Ft. Snelling, Minn.), is granted leave of absence for one month, to take effect about May 2, 1896.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending April 25, 1896.

Asst. Surgeon H. La Motte, detached from the "Franklin" and granted four months' sick leave.

Asst. Surgeon M. K. Johnson, detached from the Naval Laboratory and Department of Instruction and ordered to the "Franklin."

Change of Address.

Armstrong, S. T., from Asbury Park to 71 Maiden Lane, New Rochelle, N. Y.

Eaton, Roy R., from Chicago, Ill., to Lowell, Mich.

Furay, Chas. E., from St. Joseph's Hospital to Rooms 210-11, Brown Block, Omaha, Neb.

Greely, G. H., from Hillsboro to Thornton's Ferry, N. H.

Kent, Jas. L., from Bertha to Dublin, Va.

Kelley, Warren, from Little Rock to Carlisle, Ark.

Luebbers, Alfred, from St. Louis, Mo., to 256 N. Pearl St., Dallas, Texas.

Lersche, E. P., from 192 S. Robey St. to 877 Spaulding Av., Chicago.

Murray, R. D., from Key West, Fla., to Marine Hospital, Mobile, Ala.

Norris, M. D., from Catonsville to Sykesville, Md.

Nance, Willis O., from 119 Garfield Boul., to "Suite 803 Venetian Bld.," residence 5466 Monroe Av., Chicago, Ill.

Randall, F., from 60 Liberty St. to 72 William St., New York, N. Y.

Waters, L. C., from 669 W. Monroe St. to 463 W. Monroe St., Chicago.

LETTERS RECEIVED.

Allport, Frank (2), Minneapolis, Minn.; Atkinson, W. B., Philadelphia, Pa.; American Publishers' Collection Co., New York, N. Y.; Ammonol Chemical Co., The, New York, N. Y.

Bausch & Lomb Optical Co., Rochester, N. Y.; Burr, C. B., Flint, Mich.;

Battle Creek Sanitarium, Battle Creek, Mich.; Baltimore Medical College, Baltimore, Md.; Bonwill, W. G. A., Philadelphia, Pa.; Boehringer,

C. F., & Soehne, New York, N. Y.; Bittman, Geo. W. (2), St. Louis, Mo.

Cotton, A. C., Chicago, Ill.; Craig, S. S., Alamosa, Colo.; Carlin, P. V., Denver, Colo.; Chicago Edison Company, Chicago, Ill.; Chambers,

J. H. & Co., St. Louis, Mo.; Columbus Phaeton Co., Columbus, Ohio.

Duplex Saddle Company (2), Chicago, Ill.

Emmert, J. M., Atlantic, Iowa.

French, Plunkney, St. Louis, Mo.; Ferguson, M. B., Winnipeg, Manitoba;

Fairchild, D. S., Clinton, Iowa; Frazille, C. H., Rockford, Iowa.

Grosvenor, J. M., Boston, Mass.

Hay, Thomas, Philadelphia, Pa.; Haldenstein, L., New York, N. Y.;

Hicks, C., Carbons, Ind.; Herrick, S. S., San Francisco, Cal.; Hill, N. S. (Mrs.), Neville, Ohio; Hotz, Wm., Chicago, Ill.; Haldeman, S. S.,

Portsmouth, Ohio; Hall, Geo., Baileyville, Kans.; Hall, John R., Marshall, Mo.

Imperial Granum Co., New Haven, Conn.

Katharmon Chemical Co., St. Louis, Mo.

Ludwig, Henry C., New York, N. Y.; Londonderry Lithia Spring

Water Co., Nashua, N. H.; Lowry, G. W., Hastings, Mich.; Lundholm,

E. M., St. Paul, Minn.; Love, I. N., St. Louis, Mo.; Lord & Thomas, Chicago, Ill.; Lummer, Geo. L., Peoria, Ill.

Merrick, M. B., Passaic, N. J.; Moe, J. H., Sturgis, Mich.; Mumaw, H. A. (3), Elkhart, Ind.; Morris, John, Baltimore, Md.; Moss, T. R., Dyersburg, Tenn.

Paquin, Paul, St. Louis, Mo.

Reed, C. A. L., Cincinnati, Ohio; Roach, Joseph, Baltimore, Md.; Ross,

A. A., Hochheim, Texas; Rohr, J. H., Kneeland, Wis.; Rowell, Geo. P. & Co., New York, N. Y.; Ruth, C. E., Keokuk, Iowa; Rodi, C. H., Calumet, Mich.

Schleifeilth & Co. (2), New York, N. Y.; Snedden, E. M., New York, N. Y.;

Smith, E. R., Toledo, Iowa; Smith, J. D., Paducah, Ky.; Sutherland,

J. L., Grand Island, Neb.; Stover, G. H., Eaton, Colo.; Sims, S. N., Danville, Ill.; Struch, Carl, Chicago, Ill.; Schering & Glatz, New York, N. Y.;

Scheppegrell, W., New Orleans, La.; Stewart, F. E., Detroit, Mich.

Watson, Irving A., Buffalo, N. Y.; Wingate, U. O. B., Wilwaukee, Wis.;

Webster, Geo. W., Chicago, Ill.; Wilburn, C. T., Lansing, Mich.; Wright,

A. L., Carroll, Iowa; Wherry, W. P., Fort Wayne, Ind.; Woodbury, Frank,

Philadelphia, Pa.

Young, H. B., Burlington, Iowa.

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ADDRESSES.

THE ADDRESS OF THE PRESIDENT.

Delivered at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY R. BEVERLY COLE, M.D.

SAN FRANCISCO, CAL.

Perhaps never before in the history of this ASSOCIATION has its presiding officer, elevated to his exalted position through the kind suffrage of his confrères, felt at a greater disadvantage than at present. Fully imbued with an appreciation of the dignity and importance of the station, and the difficulties attendant upon the proper discharge of the duties that devolve upon him, I must crave your kind indulgence for any errors of judgment as expressed through my rulings, and trust they may be ascribed rather to an excess of ambition to do right than to a willful carelessness or indifference.

Fifteen years ago in the beautiful city of Atlanta I was made your First Vice President, my superior officer being the distinguished surgeon of New York, Prof. L. A. Sayre, and I recognize it as an interesting coincidence that it should be my privilege to return to this Athens of the South to round out my official connection with this, our loved institution.

Indeed, my present visit is fraught with the greatest interest to observe the great changes that have been wrought in the period, as expressed through the wonderful growth in population and business, whether in manufacture or trade; the evidences of refinement and culture as exhibited in your lovely homes and grand public and private structures, and last, but not least, it is apparent on every side that that generous hospitality for which your people have ever been distinguished has not only not abated, but, if possible, increased in the same ratio with the advances made in every other direction.

At the time alluded to these people had but recently passed through the trials, privations and sufferings incidental to a most cruel civil war, than which nothing is to be more deplored, the indications of which were more or less noticeable in every surrounding. But, lo! what a change! In lieu of the remains of portentous breastworks and other requirements of physical strife, there has arisen as though through the operations of Aladdin's lamp or some magic wand, this most picturesque and prosperous city, and to-day we, from the North, East and West, again grasp your hands that are so cordially extended with that warmth and unity of purpose that express in silence more than it is possible to utter with the lips.

These occasions that bring us annually together serve many purposes. They are in a sense a family reunion, each individual of which is interested in the welfare of the other, and the whole in the one great, noble and God-like object of studying the best methods for alleviating suffering and prolonging life. These

convocations also serve to bring the members of our profession in closer touch with each other, and establish friendships that in many instances endure throughout life.

It is not my purpose or intention to occupy your valuable time in delivering an oration, however propitious the occasion, nor yet to expatiate upon themes that are now past; but for a few moments only, to call your attention to several living questions that seem to me, at least, to be of vital importance, and deserving of our earnest attention, and in some directions appeal to us very strongly for action.

It can not have failed to attract your attention that the tendency of the "Grand Army" of medical men of to-day is to depreciate the dignity of their profession and bring it to a commercial level. When the older members of our beloved profession were yet young, to be a physician was considered the greatest of honors and the holiest of callings. The medical man was looked upon by those whose ailments he ministered to, in a sense, as a saint and his word was law, to disobey which was a mortal offense, and the opportunity to repeat which was never furnished. The doctor was a gentleman as well as a scholar, commanding the love and esteem of his patients and the community in which he lived. This was the rule; but I fear that now it is the exception. The reason for this is undoubtedly to be found in the multiplicity of so-called medical schools with their natural bidding for patronage, the low standard of preliminary requirement, the limited curriculum and superficial examinations. As the outgrowth of this condition we have the ranks of the profession overcrowded, and those who are in any manner qualified together with those who are not, in order as speedily as possible to become prominent, resort either to the making of books, the authors of which are too often without the least experience in the science of which they profess to treat; or organize medical schools and thus bring about the condition just alluded to. From my standpoint of reasoning the only remedy for these growing evils is governmental interference and regulation of medical education, or certainly of professional examination. I would suggest for your consideration the propriety of referring this matter to a special committee with a request that they report at the next session of this ASSOCIATION.

I am perfectly conscious that in some of the States recent new departures have been made or attempted, giving evidence of a disposition to correct errors, but are these new requirements and regulations faithfully carried out? Is the announced advance much more than a species of advertisement intended to appease the anxiety and restless spirit of those who have been laboring assiduously to bring about a revolution in our system? I fear not. True, New York has taken, through its Board of Regents, a decided step forward, which if religiously carried into effect would meet and correct many defects, and the result would be

highly satisfactory; also can it be said that Illinois and perhaps some other States are making efforts in the same direction. But my observation does not greatly encourage me in the hope I have so long cherished; yet I have not relinquished this hope and trust that time will reveal these steps to be properly directed and followed. What has been said of New York and Illinois will apply with equal force to other States where these new departures have been taken.

I am well aware that this question has been repeatedly presented in one form or another, but the results have been *nil*, or at most, unsatisfactory, and being convinced that nothing will be accomplished except through agitation, I have once more ventured the attempt to set the ball in motion.

A member of our profession, also a teacher, recently in a letter addressed to me, suggests that in this address I urge the members of the ASSOCIATION to secure legislation in their respective States of such character as to bring about improvement in this direction. Another, with equal earnestness suggests that there should be a national board of examiners created by Congressional provision composed in part of the heads of the medical bureaus of the army and navy, that shall examine all applicants as to their qualifications to practice medicine and surgery, and to such as are successful a certificate shall be issued, setting forth the fact, which would without doubt be accepted by the examining boards of the several States and a license be issued thereon, entitling the holder to engage in practice within that State. This, he says, would leave the State boards independent of the national, in so far as the power to issue a license, and for proper cause revoke the same, may be concerned.

It may and doubtless will be argued by some of you that the efforts of the American Medical College Association within the past few years have brought great changes in the desired direction. It must be admitted that improvement has been effected, but so very slowly, and the usage of many of the schools to evade the laws established by the Association is so general, that the good resulting is small, very small, and the manifest reluctance of so many now within the organization to embrace the last advance, viz., the adoption of the four-years requirement, gives but little promise for the future; and again, whilst of the whole membership of the College Association, quite a number, seemingly, as announced through their annual circulars, desire to elevate the standard of preliminary qualification of applicants for admission, I fear that but few adhere to what they profess; in other words, whilst not a few colleges announce a liberal preliminary education as a prerequisite to admission, the examination of matriculation is a mere farce, conducted usually as they are by one member of the faculty, and consisting generally of no other questions than which a kindergarten pupil should be able to pass.

So long as these examinations of matriculation are conducted by members of the faculty of the medical schools, just so long will these evils continue, and so long as the professional examinations for degrees are conducted by interested parties, just so long will the ranks of the noblest of professions be filled with uneducated, untrained so-called doctors.

The medical profession is over-ridden with quasi-medical schools, and the community with so-called dispensaries, where small fees are paid and yet smaller service received, resulting in a growing distrust and a

contempt on the part of the laity for the grandest and noblest of all sciences, as practically exhibited recently by the New York Life Insurance Company and the Equitable Life Assurance Society in adopting a graded scale of fees for medical examinations; competition is the explanation; and these and other corporations, avaricious as they always are, worshipping at the shrine of gold, see only the few thousands saved to their respective companies, but fail to see the enormous loss that will be entailed in the end. No man qualified to make a thorough examination, such as is required by insurance companies, if he be properly imbued with the value and importance of his service, will or can assume the responsibility attaching to his function as an examiner, without an adequate return. Surely the fee of \$5 was small enough, and the offer of any sum less is simply an insult to an educated physician and a bid for cheap, unscientific service, which can be had from the ranks of the unskilled and irresponsible. But are these services such as a sound insurance corporation desire? I think not; but they ought to have none other or be compelled to pay for it. Let every examiner plant his foot and decline employment without adequate compensation; let it be published to the world that certain companies employ incompetent men, or paying cut fees receive cut services, and very soon will they discover their mistake and be brought to a realization that the best goods always command the best prices.

As has been said, I know that this question has been discussed times without number, and is annually considered by the College Association, but I am beginning to feel that after all it is better to agitate in this ASSOCIATION, from which the College Association sprang, than to depend wholly and solely upon the latter.

Cicero once said to Piso, with whom he had had a disagreement: "You have crept into honors through the reputation of your ancestors, like whose smoky busts you are only in color." So may it be said of the great mass of the medical profession of to-day; they have crept into its ranks, induced through the exalted reputation given it by the mighty brains of its greatest representatives, like whom, however, they are only in title. Whilst I thus discuss this burning question in language perhaps a little too plain, I do not wish to be interpreted as saying or thinking that this great and glorious country of ours is without schools equal to any to be found in the world, or teachers who are not the peers of the best. On the contrary, from the standpoint of one who has enjoyed peculiar opportunities for observation in many of the larger educational centers, I feel justified in asserting that the United States, including Canada, can proudly boast of as good schools and brilliant teaching material as any country, and further, that its general system of medical education in some particulars (because of its great practical character) is vastly superior to that pursued in many, which has produced and is producing some of the brightest, ablest and conscientious original investigators, through whose labors the literature and field of science are being daily enriched, building for themselves individual monumental reputations, and for the profession of which they are such conspicuous and shining lights, winning the esteem and admiration of thinking men, and the love and devotion of those in whose behests they are laboring.

The list of such men as have been wholly educated at home is too lengthy to present at this time; with

many you are, or have been personally acquainted, whilst the names of others have been handed down through the long line of professional literature, and are to be found emblazoned on every page of medical history, there to endure so long as time shall continue.

But such men are not of the class to which we have been alluding, and with which our profession is so overcrowded; these first have taken up the science through a love for science and an exalted appreciation of the duty of man to man, the God-like character of their calling, and a desire to possess a self-approving conscience; these considerations led them to a proper preparation, such as is secured only through unremitting study, assiduity and honesty of purpose.

These are the men who should constitute the beacon lights of the profession, guiding the younger ones contemplating the adoption of medicine as a profession. Of this class there are within the sound of my voice many to-day, and I appeal to you in the name of science and humanity, to bend your energies, exert your every influence, and lend your aid to the end that this noble profession as represented through its rank and file, shall no longer be the subject of ridicule and scoff, but within the near future command as it should that esteem and respect to which its exalted character and purposes entitle it. It is not sufficient for the Association of Colleges to say that it proposes to do thus and so, or that it has done so and so, but we want an earnest determined effort on the part of you who are in direct and immediate interest to see that that which is promised is performed, that there may be no more gerrymandering as to preliminary requirements to the study of medicine and that the highest possible standard be set up, remembering always the aphorism:

VIRTUS IN ACTIONE CONSISTIT.

Another quest of grave importance and of which I think this ASSOCIATION should take cognizance and suggest a remedy, is the total abstinence of reciprocity between the United States and foreign countries as to laws governing the right to practice. Why Americans should be required when taking up their abode in Germany, Great Britain and even in the territory of our first cousins, the Canadas, to undergo an examination preliminary to securing a license, whilst *our* portals are flood-gates through which every country of the earth pours its overplus of medical men, or rather to put it more correctly, why our country should receive with open arms, without let or hindrance the excess of product of foreign schools without requiring of them the same as is required of us? I can see no reason, and am distinctly of the opinion that the time has arrived when we should be heard, and something done to arrest the strides of this rapidly growing wrong.

Looking over the medical registers of the various countries it will be easily discernible that the number of graduates of foreign schools is greatly in excess of the number who remain at home and engage in the field of their profession. What has become of those who do not remain at home? The answer is, that from three-fourths to seven-eighths emigrate to America, and strange to say, I am led to believe that the very regulations governing their examinations are in a large measure responsible for this condition of things. From the best sources of information at my command I learn that in Germany the examination for the doctorate is much less stringent than the "Staats Examen."

The former confers no rights, and the latter is indispensably necessary to entitle the candidate to the privilege to practice in the empire; consequently the student who desires to emigrate may pass the required examination for the degree of "Doctor in Medicine," or before he reaches this may conclude as no examination is required in many of the States of the Union he will take his certificate for the several semesters he may have attended and go to America, "The land of the free and the home of the brave," where he may practice his (in many instances) imperfectly acquired profession and not infrequently impose upon the credulity of the people. In many cases the university examination is conducted by the same men who compose the board and conduct the "Staats Examen," which seems at least to be paradoxical, but which I believe is nevertheless true; this system is fraught with possibilities that bode no good.

The university examination for the doctorate is an easy one, and the fee for the same goes to the faculty, whilst that paid for the "Staats Examen" goes to the government; ergo, when we consider that the fee for the doctorate goes into the pockets of the examiners, and that for the state's examination goes to the government, and that the candidate is permitted to engage in practice in his own country, thus becoming a competitor of his examiners, it is easy to see to what extent the custom may be abused. I mean no offense, and do not charge that abuses are practiced, but merely call attention to possibilities, and as all men are human, it is not probable that the Germans differ from other people.

For the degree, it is not even obligatory that the foreign student should attend either the didactic or clinical lectures, and the examination, as has been said, is so easy for such that it has been and doubtless is an inducement for many who possibly failed at home to repair to this country with a diploma, which through want of knowledge on the part of our people, carries more prestige than a degree from one of our home universities.

Coming nearer home, to our very borders, we find that in the several provinces of Canada not only is it impossible for an American to receive a license without examination, but also is it impossible for one having a license in one province to practice in another, and that no Canadian with Canadian qualifications is eligible to registration in Great Britain.

Now, whilst we recognize the excellence of their, or at least some of their, medical schools and the elevated standard of preliminary requirement observed, it seems somewhat singular that this want of accord between the several provinces should exist, which is, indeed, attracting their own attention, and I see that at the meeting of the Canadian Medical Association in 1894, a committee on "International Registration" was appointed, which reported at its last meeting held in Kingston, "that it regretted that the system which at present obtains," "prevents the names of medical practitioners in the Dominion being placed on the British register, which the council of medical education of Great Britain has more than once signified its willingness to grant, that with this end in view it is, therefore, most desirable that there should be a uniform standard of medical education and a uniform method of examination for the whole Dominion." Thus it will be seen that our neighbors are wrestling with this question in the hope of securing uniformity of requirement throughout the British realm.

But whilst this is so, and they are to be commended for their laudable efforts in this direction, they deny to the American educated graduate the right to practice in any and all provinces without first undergoing a proper examination. From my standpoint whilst they are to be commended, as perhaps are all other people acting under similar regulations, there is a very trite maxim that applies to this condition with considerable force, "that it is a poor rule that does not work both ways." Now, I would not have Canada, Great Britain, Germany, France or any other country having these regulations and requirements recede one iota, but would rather encourage them to even higher aims, but I would have our own people adopt a similar system, through which foreigners coming, whithersoever they may, will be required to undergo a rigid examination before a national board of examiners, composed in part of the medical bureaus of the United States army and navy and partly of men appointed by the President or Chief of the Board of Education, which board would have its headquarters at Washington, D. C.

Through the operation of such a regulation or law the number who now seek the degree simply for the reason that it is recognized in this country, would be greatly lessened and there would be introduced into the ranks of the profession such only as are thoroughly qualified, to that extent certainly that entitles them to practice in their own country, thus relieving this country of what we are not in need, and measurably reserving our own field for those who are educated here and those from abroad who have passed the necessary examinations at home, and possibly such as may be established here, furnishing a guarantee which will be alike a credit to the profession and a benefit to the people at large. In a word, is it not anomalous for a country to have two grades of qualifications for its medical men, one for home use and the other for exportation: is this not indeed getting down to a commercial basis?

Would it not be well to inject a little of the Monroe doctrine into the medical profession of America as well as into the government? Surely if it be admissible that a Doctor of Medicine can not practice in his own country without a state's examination as in Germany, or that the graduate of the university of one province can not practice his profession in another province, as in Canada, is it not admissible that we should as a great nation, however free in a general sense, establish some regulation by which we may protect ourselves, as against invasion from every nation of the earth, however desirable as citizens they may be (although the majority never become such, but too frequently render themselves offensive through their arrogance whilst living in our midst, and when a fortune is acquired take their gains and return to their own country)?

In every walk of life we find those of the same profession, as the clerical and legal, as well as the trades and mechanics united for the purpose of governing its members, not only in their relations to those not of their own calling but also of each other, thereby tending to elevate themselves in the dignity of manhood and stimulating them to a demand for the right. Why, then, should the medical profession not do the same, particularly as to their relations one to another, and the establishment of proper regulations governing the standard of education, entitling one to enrollment in its ranks, whether he be a foreigner or a

native-born, receiving his training in America or abroad? The code by which we are supposed to be guided makes no such provisions, and I throw out the suggestion that it may be well that it be so amended as to cover these questions.

Without any disposition to contribute to the already generally expressed dissatisfaction growing out of the recent announcement of the twelfth International Medical Congress to be held at Moscow, Russia, in 1897, we can not avoid asking ourselves the reason for restricting its transactions to the French language, or in other words, why it is that the English-speaking people, who perhaps furnish as much support to these Congresses as the rest of the civilized people combined, whether it be in the value of their contribution to the literature of the science or in the lavish expenditure of money amounting too often to recklessness, are overlooked. True, it may be reasoned that the French is more universally spoken, being the court language of Europe. But we answer that 75,000,000 of intelligent people on this continent, furnishing as brilliant minds as can be found within the ranks of the profession in any country of the world, who are through their recognized industry in the direction of investigation constantly enriching the science, are entitled to recognition. Let us trust, since none other than the French language will be considered official, that it may be developed that as many foreigners may be met who speak our language as there will be of English-speaking people who have some knowledge of other languages than their own. Individually I feel that this regulation is but little short of an insult, particularly since, to quote from their announcement, they say: "At the general meeting the addresses *may* be delivered in other European languages." English practically is ignored, and thus public notice is given that we are not wanted.

EMULATIO EMULATIONEM PARIT.

To quote from the post-prandial speech of Dr. J. H. Hollister, of Chicago, on the occasion of the annual dinner of the Gynecological Society of that city on Oct. 18, 1895: "Let no man be over-anxious about his reputation if he intend the right and does his best; ultimately that reputation will take care of itself and of him too." This is true of individuals, true of nations. Great has been the progress of nations during the last 300 years; the development of America in that period has been the phenomenal fact. Cradled without parental care, it came to its estate without the help of other nations: in fact, it grew by reason of their neglect. A noble manhood was its only inheritance. All else is of its own creation. For nearly two centuries we were esteemed a semi-barbarous people by the crowned heads and the elite of Europe, and their prejudices have only been in any measure conquered by our sublime indifference. The struggle to make ourselves a name and a place among the foremost has been indeed severe, but the issue is no longer doubtful. You who have met with this prejudice on foreign shores know well how strong it yet remains; but you know full well that as professional men you have nothing left to fear, and that especially in medicine and surgery Americans have no apology to make. We are to be courteous ever; but deferential or craven, if ever we were, nevermore.

The past year has been no exception to those that have preceded it, in the direction of advancement, invention and discovery; indeed, in some ways it has

eclipsed any of its predecessors. Without enumerating the *many* inventions and discoveries, perhaps the most important is that made by Roentgen of the cathode X rays, or rather their utilization in the direction of surgery. What the possibilities of this discovery and application may be far exceeds the comprehension of man at this time. If but one-half should be realized of what seems possible, it will be ranked as the greatest discovery of the nineteenth century, and the methods of investigation of disease be so simplified and made exact as to seemingly render it positively impossible to make an error in diagnosis. What a blessing to suffering humanity, a boon to the profession.

The claim advanced by Dr. Cyrus Edson of having discovered a cure for tuberculosis, in what he styles asceptolin, is one that naturally attracts attention, and as with the supposed discovery of Koch, will, I should think, be thoroughly tested. Let us hope for better results than were obtained from tuberculin; in this connection it is proper to say that it is to be regretted that men of the character and well-known scientific attainments and honesty of purpose of these should allow a description of what seems to them to be valuable to find its way into the secular press, there to be discussed by unscientific minds before it has been fully experimented with by their authors or others capable of instituting and of observing the results of properly conducted tests. This practice of flying promiscuously into print, whether through the columns of the daily press or medical journals, is fraught with evil, and in defense let be said what may, it savors of commercialism, is undignified and unwarranted and calculated to check investigation on the part of those whose ambition seems above this sordid level, and in so far stay the wheels of progress.

We can easily understand how tempted is the enthusiast, believing he has made so valuable a discovery, as would a cure for consumption be, to herald it to the world, and particularly the profession of which he may be an honored member. We can believe that in so doing he may be actuated by the highest motives, the most exalted sentiments, as holy as those that led the great, lamented Pasteur, who when admonished by his physician of the great danger he was exposing himself to, in spending so much time in a greenhouse where he was pursuing some investigation, replied, "I am in sight of the end, I can not give up my work; come what may I have done my duty." But such men rarely, if ever, promulgate any discovery till its value has been thoroughly established beyond all question. Let us emulate their example in the thoroughness of their work and the caution exercised in the promulgation of it.

The morbid mentality that seems to pervade a large portion of the clerical profession as well as our own, inducing them to endorse every species of proprietary and patent medicines, is a curse that should be stamped out. The clergyman under a conviction that it is his prerogative in looking after the soul to also care for the body, not only presumes to prescribe for the sick man but also to give his official endorsement to every nostrum upon the market without having the knowledge of its composition or the nature of the disease for which he recommends it. This is obviously wrong, productive oft-times of great mischief and is an unwarranted liberty taken with the confidence usually reposed in the clergyman, and an exhibition of meddlesomeness that is totally unjustifiable; surely if

he conscientiously discharges the duties properly attaching to his own profession he will have all he can well do, leaving the investigation of disease and its treatment to those whose profession it is to deal with such matters. This pernicious practice is not limited to the representatives of the church, but extends to the ranks of our own profession. How common it is for medical men, particularly the younger, to attach their names to general recommendations and grant individual certificates setting forth the wonderful results of the employment of certain proprietary medicines! This is less excusable yet, since such certificates carry with them the prestige of professional endorsement; that in itself is a gross violation of the code by which we profess to be governed. I feel that all such violations on the part of members of this ASSOCIATION should be made punishable, at least to the extent of reprimand or perhaps expulsion. Of course, these remarks are intended to apply particularly to the endorsement of such nostrums and proprietary medicines the formulas of which are not published but kept secret, either as to the ingredients or proportion of their component parts.

It has been with inexpressible pleasure that I noticed action had been taken by the ASSOCIATION at its last meeting, together with hearty support from the State Society of Pennsylvania, so far as the advertising columns of our JOURNAL are concerned. We commenced the reform where it should begin, at home, and now let us carry it still further and apply it to individuals. These published certificates are for the most part furnished for the advertising it will give its author, or perhaps the gratification it may bring to see their name in print, either of which is undignified in the extreme and tends to bring the profession to a commercial plane.

Equally gratifying is the effort now being made, asking congress for an additional member of the Cabinet and who shall be known as Secretary of Public Health, and who shall be head of a department, to be known as the Department or Bureau of Health, which shall have a general charge of health matters as well as statistics. Such a department would be of incalculable utility and value, and the measure should by all means possible be pushed forward.

While the year just passed has been marked by several important discoveries of scientific value, the usual advances in the line of medicine and surgery have been made, but I begin to fear that the tendency to push surgery to the exclusion or neglect of medicine is becoming glaringly conspicuous.

It would seem that every tyro imagines that surgery offers the quickest route to success, and that fame is to be attained *only through blood*. Hence every case the symptoms of which are directed to McBurney's point is necessarily a case of appendicitis, for which the only sovereign remedy is the knife; or, if it be a woman, and her suffering is referred to the ovarian region, or she have a fibroma, however small and barren of symptoms of importance, not only must she be subjected to celiotomy at once, but in nine cases out of ten has her uterus, or uterus and ovaries, sacrificed, thus unsexing her without the slightest effort being made to spare these organs, and preserve to the woman her distinguishing function.

If the same practice prevailed to emasculate every man who might have a neurosis of the cord and neighboring organs, there would be fewer operations

than are now done on woman for no greater cause. So common have these operations become of late, owing to the comparative safety through the employment of asepsis attending them, that many women consent to or even apply for them in order that they may avoid bearing children. How far a surgeon may be justified under these circumstances in rendering the desired aid is problematical, whether viewed from either a moral or legal standpoint.

To use the language of another: "We believe thoroughly in allowing the public to estimate the medical profession, but it sometimes seems as though the exploitation of the wonders of surgery was a little overdone, the result being that as soon as a person has any ailment of any part of the body, the people at once want to have it cut out," and, I am sorry to say that this feeling extends to too many of the profession, one saying to me some time ago in consultation: "Why, Doctor, you very well know that all of value in our science is surgery." It is scarcely necessary to say that the author of this remark was an abdominal surgeon, or to put it more directly an abominable surgeon.

That these operations are called for, and loudly demanded by the exigencies of the case occasionally no one can deny; but that they are being done much too frequently I challenge successful contradiction.

The mere fact that the improvements and advancements in surgical procedure make them relatively safe, should not be advanced as an argument, and I look with suspicion upon him who may claim that as no use can be assigned the appendix vermiformis it should upon the slightest provocation or excuse be removed. Is it not time that a halt had been called, and that such cases should be assigned to those who are expert in diagnostic technique as well as surgical procedure? Can any law of either God or man be found to justify oophorectomy or hysterectomy except under the most dire conditions?

Before concluding this very imperfect address, I wish to call attention, in addition to the several questions discussed, to a few serious defects from my standpoint of reasoning in the operations of the Constitution, By-Laws and usage of the ASSOCIATION.

1. There is nothing like the Council of the British and other medical associations, whose duty it is to be in permanent session, or, at least, to meet several times a year, to consider all public questions affecting the welfare of the profession in general and the interests of the AMERICAN MEDICAL ASSOCIATION in particular. At the annual session there is no time for calm deliberation, and consequently there is great danger of hasty and ill-advised legislation, and errors occurring at the moment require a whole year to correct.

2. It appears to me that the ASSOCIATION as a body should not act on any resolution or amendment until it has been carefully revised and recommended by the Council or the Business Committee. In this way we would secure better legislation and prevent the adoption of ambiguously expressed amendments and resolutions.

3. It seems to me that the permanent members of the ASSOCIATION, the conservative element, the men who attend year after year out of love for the ASSOCIATION and the science, and who are the most interested in their welfare should not be thrust into the background and deprived of all voice in the management as at present; it seems the height of absurdity to give

the ballot to the new members, who are unfamiliar with the modes of procedure and know nothing of the policy and tradition of the organization and disfranchise the old ones. (Possibly this may be in a measure overcome by the operation of an amendment introduced at our last meeting should it be adopted.)

4. As regards the place of meeting, I think the action of the nominating committee should be final, as was contemplated in the framing of the constitution wherein a nominating committee was provided for, a part of the duty of that committee was to discuss this question and thus relieve the ASSOCIATION itself of the waste of time and wrangling which this question invariably excites.

5. To me it seems desirable in deciding this question of place meeting that such State or other societies as extend invitations to the ASSOCIATION to meet with them, should be enabled through their representatives to state to the nominating committee the best rates of transportation to said point obtainable, for it is manifestly probable that by making arrangements in advance and getting the roads to bid, as it were, we may secure better terms than by fixing the place first, and making terms afterward.

6. And finally, it is obviously wrong that we should, on taking a vote upon vital questions, have no system or method by which those entitled to the franchise shall be protected in the exercise of it, as against such as are not so entitled. I would suggest as a remedy for the increasing evil that there should be some means of segregation adopted.

And now, one duty only remains, which I would fain avoid, but painful as it is and reluctantly as I approach it, it must be done. It is the sad, sad announcement that like all preceding years this just passed has been no exception, and that our ranks have been greatly reduced by the unrelenting hand of death; many of us here assembled to-day are looking about in the vain hope of meeting some who last year were our companions and co-workers. They are not here! They have passed to the other side and joined the silent majority. The committee on necrology will present a fitting report of such. Meanwhile let us indulge in the hope that their record during life may have been such as to entitle them to that reward which is accorded only to the faithful and just. Let us trust they may be among the elect, and that from on high may be exerting an influence upon our lives that shall be at once ennobling and sanctifying, that we may remember ever that our spirits, like theirs, must return to the God that spake them into existence, and yet:

"It is hard to be parted from those
With whom we forever could dwell;
But bitter, indeed, is the sorrow that flows,
When perhaps we are saying, forever, farewell."

Evidence of Negligent Treatment. A physician and surgeon undertook to treat an injury to the thumb of a man's left hand, and the hand became permanently disabled. For this alleged malpractice, a judgment for \$500 was obtained, which the appellate court of Indiana, affirmed March 3, 1896, in the case of Freeman v. Hutchinson. During the progress of the trial a physician and witness for the plaintiff was permitted, over the defendant's objection, to examine the injured thumb in the presence of the jury, and to exhibit and describe its condition. The appellate court holds that there was no error in this. Not only may a witness use the injured member in giving his testimony, but the court says it is proper for the jury to examine and inspect it. Such evidence is of the highest rank.

ON SOME OF THE LIMITS OF THE ART OF SURGERY.

Delivered at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

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Mr. President and Members of the American Medical Association.—Modern surgery has attained a degree of development which entitles it to the distinction of a science and an art. As a science surgery is of recent date, having been founded and perfected during the last half of the present century. As an art it has been practiced for centuries by our ancestors with credit to themselves and benefit to the injured, the crippled and the sick. When Boyer wrote the introduction to his classic work on surgery he expressed the conviction that surgery had reached perfection. How little did he dream of the great changes that would be wrought in the practice of his cherished profession by the progressive pathologists and surgeons of the next few generations! How innocent and absurd does such a statement appear in the face of the labors of such men as Virchow, Rokitansky, Rindfleisch, Klebs, Recklinghausen, in pathology; Pasteur, Koch, Ogsten, Rosenbach, Baumgarten, in bacteriology; Lister, Langenbeck, Billroth, Hueter, Esmarch, Czerny, Gussenbauer, Nélaton, Verneuil, Terrier, Macewen, Gross, Agnew, in surgery; Terrier, Hitzig, Horsley, in cerebral localization; Spencer, Wells, Keith, Winckel, Martin, Péan, Ségond, Pozzi, Sims, Emmet, Battey, in gynecology, and a host of other faithful unselfish workers who have made surgery what it is to-day and what it is intended to be, the most honored, respected and beneficent branch of the healing art. What a contrast between the standing of the surgeon of to-day in the community, the profession and from a scientific aspect as compared with his colleagues of only a century ago! It is not long since the art of surgery was limited to bleeding, cupping, leeching, setting of a broken limb, reducing a dislocation, stanching hemorrhage, opening an abscess or amputating a limb for injury or disease beyond the reach of conservative measures. He was the subordinate, almost slave, of the pompous, arrogant and self-confident physician of that time. He subsisted from the crumbs that fell from time to time from his master's table. The betterment in the standing and sphere of the members of the surgical craft during the last century is entirely due to the enormous progress that has been made in the science and art of surgery. During this time the legitimate field of medicine has gradually diminished before the advancing columns of progressive and aggressive surgeons. The physician no longer has a monopoly over the diseases of all the internal organs. The physician's distinctive apparel and gold-headed cane of but few years ago no longer intimidate the surgeon; they have disappeared from the scene and the surgeon stands on the same level, if not higher, in every respect with the physician in the eyes of the masses and the estimation of the scientific world. Modern pathology and the new science of bacteriology have laid a permanent foundation for the steady and progressive advance of surgical thought and work. The inflammatory complications of wounds and the etiology of most of the chronic infective surgical diseases have been cleared up by bacteriologic investigations during

the last twenty-five years, and the knowledge thus gained has enabled the surgeon to prevent in a large measure the former and to treat intelligently and with increased success the latter. Many of the most noted surgeons who have left a strong and permanent impression on surgical literature and practice during the last quarter of a century have been enthusiastic and practical bacteriologists and competent pathologists. The wonderful development of operative surgery during the same time is one of the earliest and richest fruits reaped from the vast and fertile field sown and cultivated by bacteriologists of every civilized nation. To the immortal Lister belongs the honor of having opened a systematic and successful crusade against the surgeon's most treacherous enemies—the pathogenic microbes. The great principles which he conceived and introduced into practice created a new era in surgery. Antiseptic surgery is one of the many fruits of his genius and the one, to whom we as a profession and humanity owe more than to any other surgeon dead or living, has been permitted to live long enough to see the creation and blessings of aseptic surgery, the handiwork of his innumerable enthusiastic followers. Antiseptic and aseptic surgery have smoothed the rough and rugged pathway of the practical surgeon. Ordinary cleanliness has given way to surgical cleanliness. The almost universal introduction of antiseptic and aseptic precautions in the treatment of wounds in private and hospital practice has nearly eradicated the three greatest enemies of the surgeon of old, namely, hospital gangrene, erysipelas and secondary hemorrhage, and minimized the occurrence of suppuration and its manifold immediate and remote complications.

No wonder that a sense of security created by such wonderful changes made the surgeons bold. In consequence of such revolutionary changes wrought in the practice of surgery new territories were invaded and organ after organ, the seat of injury or disease, were subjected to direct surgical intervention. Step by step the scalpel found its way into localities where formerly the physician had reigned alone and supreme, and where its presence would have been regarded by him as convincing proof of homicidal intent. No better evidence can be advanced to show the difference in the kind and scope of work of the surgeon of to-day with the one before the pre-antiseptic time than a comparison between the works of operative surgery of now and then. The sense of safety which took possession of the surgeon and an earnest desire to extend his skill to the successful treatment of affections which had heretofore baffled the efforts of the physician, brought on a warfare on almost every organ the seat of real or imaginary disease. The physician found himself suddenly out of his long time honored routine practice. The specialists utilized the opportunity and left no stone unturned to extend their sphere of activity. Brain surgeons, abdominal surgeons, neck surgeons appeared on the scene and filled the medical press with accounts of their wonderful surgical feats. The old-fashioned gynecologist, whose chief occupation consisted in introducing and removing pessaries, cauterizing so-called ulcers of the cervix, swabbing out the uterus and inserting medicated vaginal tampons, became restless and anxious to exchange harmless, bloodless measures for the knife and scissors. His desire for bloody operations was not satisfied by sewing lacerations of the cervix and perineum. He felt that in order to keep abreast with the spirit of the

present age he must increase his range of action, and in due course of time the ovaries, the Fallopian tubes and uterus became the theater of his aggressiveness. Even the acquisition of this additional territory did not satisfy his ambition. The adjoining great abdominal cavity, with its many important organs was looked upon with a jealous eye and it has been made the common camping ground of the general surgeon and the gynecologist for several years.

The throat and nose specialist, under the same influences, became disgusted with his brush, powder-blower and atomizers; sharp spoons, chisels and saws came into requisition, and the number of deflected septa, hypertrophic turbinated bones and third tonsil increased alarmingly and were attacked most energetically. The rectal specialist, who made a modest living by stretching the sphincter and ligating piles, saw a fortune in adding to his limited sphere of activity, resection of the rectum, and later, emboldened by his efforts carried his crusade to the topmost limits of the large intestine. The average orthopedist is no longer satisfied to correct deformities by the use of bloodless manual and mechanical measures; he has acquired a fondness for the knife, saw and chisel, so as not to be left behind in the procession. The genito-urinary surgeon has become tired of treating gonorrhea, strictures and syphilis; he can see no reason why he should not cut for stone, extirpate kidneys and perform plastic operations on the ureters.

The *furor operativus* manifested in these and other special departments of surgery, and its obvious results, render the standing and legitimate scope of the general surgeon very uncertain and indefinite at the present time. Let the general surgeon turn to the right or to the left, advance or retreat and he finds himself on reserved territory. As for the physician, he is expected to answer night calls, prescribe for diarrhea and whooping cough, watch cases of typhoid fever, measles, scarlatina and smallpox, and should complications arise and he does not report to the proper authority he renders himself liable to censure. Much of this ill-applied energy in the surgical world has resulted in detriment to patients and in retarding actual surgical progress. Operative surgery has been carried to extremes. A calm inspection of the ground that has been gone over will show "Some of the Limits of the Art of Surgery," the subject which I have chosen for this address.

Antisepsis and Asepsis. The marvelous reduction in the mortality following injuries and operations which the present generation has witnessed is largely due to the prevention of wound complications by the employment of efficient antiseptic and aseptic precautions. Improved means of hemostasis and the more efficient treatment of shock might reasonably claim a certain share in bringing about such a desirable change in the results of surgical practice, but what has made our work more satisfactory and the statistics of various operative procedures more encouraging is the prevention of infection, the protection of the patient against the immediate and remote effects of sepsis and suppuration. The treatment of wounds with these objects in view has been simplified and rendered more efficient from year to year, but it can not be said that perfection has been reached. We are not yet in possession of an ideal absorbable ligature and suture material. The person who will show us how to prepare the animal ligature and suture in such a way that it will not only be absolutely aseptic but

also antiseptic and without loss of its tensile strength, will be entitled to the lasting gratitude of the entire profession. The disinfection of hands and field of operation is open to future improvement. The important matter of drainage remains in anything but a satisfactory condition and the questions frequently raised, when to drain and how to drain, must be definitely settled by future experience and research. There are surgeons to-day who do not take into account the possible failure of antiseptic and aseptic precautions in estimating the dangers incident to operative procedures. Have we not all heard so-called abdominal surgeons say that an exploratory laparotomy is devoid of danger? Is it not a fact that the abdomen is being opened daily by men who have not the faintest idea of what they may have to do, simply because they regard such a step as harmless and free of danger and the shortest and easiest way to make a diagnosis? To say that such a blind confidence in the efficiency and safety of aseptic precautions is not in accord with the work of the conscientious surgeon is to put it mildly. It is fortunate for the patients of such ever-ready and self-confident operators that the peritoneum under ordinary circumstances can dispose of more pathogenic microbes without harm resulting than any other tissue of the body. If it were not such a serious matter it would be amusing to see how such men explain an occasional death that occurs in their practice in cases where it was least expected. If, perchance, a post-mortem examination was held, the first statement made is that the peritoneum showed no evidences of inflammation, consequently death must have occurred in consequence of shock, exhaustion, bronchitis, edema of the lungs, or heart failure. Very recently a prominent surgeon in giving his testimonial in recommending a certain kind of catgut, made the statement that he had performed one hundred consecutive major operations without having seen a single drop of pus. I have no reason to doubt the veracity of this gentleman's statement, but I am firmly convinced that it would be difficult, if not impossible, to duplicate such an experience in the practice of the average general surgeon.

I have made it a duty on my part to familiarize myself with the advances made in the technique of aseptic surgery and have the good fortune to perform all my operations in two of the best hospitals in Chicago and in a fairly well equipped college clinic, and yet I am only too willing to confess that I never finish my day's work without seeing pus. I have a painful recollection of two amputations for carcinoma of the breast on private patients, in both of which every possible precaution was carried out, and yet to my utmost disappointment, both of them died of the most virulent form of sepsis I ever encountered. To offset these cases I might refer to perhaps over two hundred similar operations in which, under much less rigid precautions, with few exceptions, faultless wound healing was obtained. I remember, too, a case of genu valgum in an adult treated by transcondyloid osteotomy under strict antiseptic precautions, where the operation was followed by violent suppurative osteomyelitis and extensive necrosis which for a long time seriously threatened the limb and life of the patient. I am sure that I am not alone in relating such experiences. Every surgeon is occasionally humiliated by such mishaps and here is the proper place to make open confessions. The careless, reckless remark so often made by men who ought to know better, that

the surgeon who understands his business can make and treat wounds which, if dressed properly, will heal without suppuration, has reached the ears of the legal profession and has already entangled many a worthy and honest member of our profession in the complicated and trying machinery of the law. I envy the surgeon who has implicit confidence in this or that method of preventing wound infection, but I am confident that I but voice the sentiment of the vast majority of surgeons by making the statement that one of the limits of the art of surgery at the present time is the inadequacy of our available resources in furnishing wounds, even under the most favorable circumstances, absolute protection against infection.

Phlegmonous Inflammation.—The employment of antiseptic and aseptic precautions in the treatment of intentional and accidental wounds has greatly diminished the frequency of progressive phlegmonous inflammation and its often disastrous consequences. That such an occurrence can not always be prevented, even by the most scrupulous care and attention to details, every surgeon of experience is willing to admit. In the most virulent forms of phlegmonous inflammation the most heroic and timely treatment, local and general, is often fruitless in averting speedy death. In the most desperate cases the surface lesion is often insignificant, the infection following the lymphatic pathways, soon reaches the general circulation resulting in death from acute sepsis before any decided gross pathologic lesions have appeared at the seat of infection or in any of the internal organs. How rapidly general infection may take place has been shown by the experiments of Schimmelbusch, who found microorganisms in the spleen five to ten minutes after infection of a wound. Colin and Niessen demonstrated by their experimental work that amputation a few minutes after inoculation, of the ears and limbs of rabbits with pure cultures of anthrax, did not protect the animals against generalization of the disease. Such cases in the human being fortunately are seldom met with, but when they do occur, the art of surgery is powerless in arresting the progress of the disease. Parenchymatous injections of solutions of carbolic acid or corrosive sublimate along the course of the inflamed lymphatics, and the internal use of alcohol in heroic doses promise the most, but in the great majority of cases the extension of the infection continues and terminates speedily in death from general sepsis. Whether bacteriology will furnish us with a more potent weapon in the treatment of such cases the future must determine. When the infection has resulted in suppuration the old adage *ubi pus ibi incisio* remains as true to-day as before the microbic origin of pus was known. In the treatment of diffuse phlegmonous processes it is now customary to make free incisions, establish free drainage and disinfect the cavity by flushing it freely with a safe and yet efficient antiseptic solution, such as a saturated solution of acetate of aluminum, a 3 per cent. solution of carbolic acid or a 1:5,000 solution of corrosive sublimate and apply to the part hot compresses wrung out of the same solution. A few years ago Helferich advised laying open of the entire cavity by a single incision, recently Kocher pleads in favor of small incisions for the reason that pus microbes multiply more rapidly when freely supplied with oxygen. I believe the best treatment is half way between these two extremes, that is, multiple incisions large enough to insert drains the size of the little finger with a view

of establishing a perfect system of drainage. We can not expect much from a single disinfection. In severe cases in which life is threatened by sepsis I invariably resort to continuous irrigation with a saturated solution of acetate of aluminum, a non-toxic and yet very efficient antiseptic agent. The inflamed part should be immobilized and maintained in an elevated position until the inflammatory edema has subsided. The same treatment yields the most happy results in the treatment of acute suppurative inflammation of the large joints. One of the great shortcomings of the art of surgery to-day is the lack of measures to deal more efficiently with progressive suppurative affections and secure for suppurative cavities an aseptic condition in a shorter and more direct way. In cases of circumscribed abscesses it is generally believed that the sooner the incision is made the more prompt will be the relief and the more speedy the cure. Clinical experience has not confirmed these expectations. The old surgeons applied emollient poultices until the abscess became soft before they used the bistoury. No modern surgeon has any use for the filthy germ-breeding poultice, for which he has substituted the antiseptic, moist, hot compress which answers the same purpose, as it furnishes the necessary heat and moisture, and at the same time prepares the surface for the incision. We are, however, almost as powerless as our forefathers in limiting, much less aborting, a suppurative inflammation. One of the greatest and most useful innovations in surgery would be a remedy, local or general, which would enable us to abort the process of destruction after the classical symptoms which characterize suppurative inflammation have set in. We must look to bacteriology to fill up this most important gap.

Acute Suppurative Osteomyelitis.—Closely allied to phlegmonous inflammation of the soft tissues is acute suppurative osteomyelitis as it is caused by the same kind of microbes and results in more or less extensive destruction of tissue. The etiology and pathology of this disease are now well understood and upon them is based the early operative treatment which is generally endorsed by the profession at the present time. The danger from general sepsis is greater in the more serious forms of osteomyelitis than a similar affection of the soft tissues owing to the location of the primary focus of infection and the frequency with which the adjacent large joints become implicated during the progress of the disease. The early removal of the osteomyelitic product by operative interference as a rule relieves pain promptly, limits necrosis, guards against joint complications and minimizes the danger from general sepsis. Immobilization of the affected limb in proper position and the exposure of the osteomyelitic focus by the use of the chisel or gouge as soon as a positive diagnosis can be made are the modern resources which have succeeded in greatly reducing the mortality of this disease as well as its immediate complications and remote consequences. There are, however, cases of acute osteomyelitis in which the earliest intervention of the art of surgery is powerless in preventing death from general sepsis. These are the cases of osteomyelitis in which simultaneously or in rapid succession a number of the long bones become involved and where the local signs and symptoms are overshadowed by the general symptoms which point to a progressive sepsis and which are so seldom favorably influenced by either local or general treatment.

Tuberculosis of Joints.—Only a few years ago the surgeons who paid special attention to diseases of the joints were enthusiastic advocates of early resection or arthrectomy in cases of tubercular joint affections. Typical resections were made regardless of the anatomical location or the extent of the disease. It was believed that such medical treatment would succeed in eliminating the local affection and in preventing the extension of the infection to distant organs by reinfection from the peripheral focus. Statistics prove that these hopes are unfounded and conscientious and thinking surgeons have substituted largely in place of operative treatment conservative measures. The surgeon forgets too often that tuberculosis of joints seldom appears as a primary affection but as a rule appears as a peripheral manifestation of the existence of an antecedent perhaps undiscoverable tubercular affection of another organ, hence the removal of the accessible tubercular product does not necessarily protect the patient against tuberculosis of other joints or organs or general miliary tuberculosis. It is on the other hand a familiar clinical fact that the operative treatment of joint tuberculosis has not infrequently been followed by tuberculosis of other organs or general miliary tuberculosis. The short-comings of the art of surgery are well brought forward in the treatment of tubercular joints. In large clinics where but a few years ago resection of joints for tuberculosis was a daily occurrence such operations are now rarely witnessed. This change in practice is largely due to the beneficial effects obtained from intra-articular and parenchymatous injections of iodoform glycerin injections. I have resorted to this treatment in hundreds of cases with the most satisfactory results. In about one-half or two-thirds of all cases of uncomplicated joint tuberculosis this treatment proves curative. It is of special value in the treatment of tubercular abscesses in communication with a tubercular joint or bone. From one to three or four injections usually suffice in obliterating the abscess cavity. The tapping and injection must be done under the strictest antiseptic precautions lest the operation will aggravate the case, perhaps render it hopeless, by becoming the direct cause of a mixed infection with pus microbes. As some persons are peculiarly susceptible to the toxic action of iodoform the minimum dose two drachms of a 10 per cent. emulsion should be used in the beginning. In cases complicated by renal affections this caution should be increased as any affection of the kidneys retards the elimination of the iodoform and thus increases the danger from intoxication. Another important precaution in tapping a tubercular abscess is not to puncture the skin where it is thin and cyanotic as when it is made in such a place the puncture is very liable to give rise to a fistulous opening and consequently increased risk of infection with pyogenic microbes. The puncture must be made through normal skin, if need be some distance from the abscess, and after removal of the canula it should be sealed with iodoform collodium and a small pledget of sterile cotton. Immobilization of the limb or part thus treated is often useful but not always necessary. During the process of repair initiated by the iodoform injections the capsule of the joint often undergoes great contraction which if not counteracted by an appropriate mechanical support may result in a deformity difficult of correction short of operative interference. In cases of joint tuberculosis in which this treatment does not succeed in effecting

a cure it will prove to be the best possible preliminary treatment to a successful arthrectomy or atypical resection. Iodoform is absolutely useless in the treatment of tubercular affections complicated by suppuration. The antibacillary effect of iodoform in such cases only asserts itself after the pyogenic product and its causes have been eliminated by operative measures or chemical disinfectants or by a combination of these two antiseptic resources. In cases in which the iodoform treatment fails or in which it is contraindicated, arthrectomy and atypical resection have been largely substituted for typical resection.

Malignant Tumors.—The imperfections of the art of surgery become very apparent in the treatment of far-advanced malignant disease of any part or organ. The essential cause of carcinoma and sarcoma remains to be discovered. The science of surgery must first divulge the true nature of tumors before we can expect a decided advance in their more successful treatment. The essential features of the modern treatment of malignant tumors may be summed up very briefly as follows: Operate early and thoroughly. The treatment of unoperable sarcoma by injections of the sterilized toxins of the streptococcus of erysipelas and the bacillus prodigiosus has not filled the expected results. In my paper on this subject read in the Surgical Section of this Association at the last meeting I gave the results of my experience with this treatment. An additional experience since that time only confirms my views expressed at that time concerning the utter lack of curative power of these toxins in the treatment of genuine cases of sarcoma. The microscope is no infallible means of diagnosis in differentiating between small round celled sarcoma and some of the granulomata. The curative effect of a remedy can not be established unless an absolutely correct diagnosis can be made of the disease in the treatment of which it is employed. The discovery of some remedy, which by its local or general action would correct erratic cell growth and transform embryonic into mature cells might possibly change malignant into benign tumors and by doing so deprive them of their malignant clinical tendencies. Experimental researches in this direction might possibly lead to a rational treatment of malignant tumors short of a resort to the knife or caustics. At the present time the surgeon's resources in the treatment of malignant tumors are largely limited to an early and thorough use of the knife. Every surgeon deplors the fact that with the exception of carcinoma of the lip or of parts similarly exposed the patients who apply to him for surgical treatment with few exceptions are suffering from malignant tumors which extend beyond the organ primarily affected and have given rise to regional dissemination, general metastasis or both. For instance, of the over 200 cases of carcinoma of the breast which have come under my own observation I remember only one case in which during the operation, the axillary glands were found unaffected and in this case the columnar celled carcinoma, the size of a pea, had obstructed a duct, in consequence of which a retention cyst the size of a walnut developed, for which the patient applied for treatment. In cases of carcinoma of the uterus that come to me for examination and treatment, I find that only one out of every eight or ten cases is a proper case for a radical operation. In more than one-half of my cases of carcinoma of the rectum I refuse extirpation of the affected organ, and advise in its place an inguinal colostomy, because the disease has extended.

to the pelvic connective tissue, the retro-peritoneal lymphatic glands or adjacent organs. Of eighteen cases of pyloric carcinoma of the stomach subjected to operative treatment, I found the disease limited to the part primarily affected only in one case; in the remaining cases the disease had extended invariably to the lymphatic glands, and in some of them to the adjacent organs, liver, gall-bladder, pancreas, omentum and colon. It is the operative treatment of advanced cases of malignant disease that brings so little benefit to the patient and so much disappointment to the surgeon. Asepsis and a greatly improved operative technique have done much to improve the results of operative treatment of malignant tumors, but they have not succeeded in doing away with well recognized restrictions upon the art of surgery to which I now desire to call your attention. There is perhaps, no other department in surgery which presents more diversity of opinions than the selection of cases of malignant tumors for operative treatment.

The conscientious surgeon looks as carefully for contraindications as for indications for radical operations. He is concerned more for the welfare of his patient than his own selfish interests. A prospective liberal fee has no influence in changing his decision. He makes a careful examination of his patient, the tumor and its environments, before he recommends an operation. He has learned from sad experience that aside from justifiable palliative operations for obstructive malignant affections, imperfect operations have proved as detrimental to his patients as to his reputation. He looks the ground over carefully before he decides to attempt a radical operation. The squeezing out of a fixed carcinomatous uterus between forcipressure forceps is not likely to prolong the life of the patient or increase the reputation of the surgeon who ignores to such an extent the limits of the art of surgery. The removal of a carcinomatous breast without a thorough clearing out of the axillary space may increase for the time being the bank account of the operator, but it will surely prove a detriment to the patient. The partial or complete excision of the rectum for carcinoma complicated by regional infection is an operation attended by great immediate risk to life without a ray of hope of effecting a permanent cure. Such bold and reckless overstepping of the limits of the art of surgery is not calculated to increase the estimation of our profession in the eyes of the public or to receive the sanction of the conscientious, discriminating surgeon. The radical removal of a malignant tumor means more than the extirpation of the primary tumor; it means the removal of every malignant cell, whether in the immediate vicinity of the primary growth or in the same region. Evidences of distant metastasis furnish a positive contraindication to operative interference. Regional dissemination beyond the reach of complete removal of every vestige of tumor tissue, local and regional, without imminent risk to life, constitutes an equally forcible argument against a radical operation. Large surface defects made by extensive radical operations should always be covered by a plastic operation or by Thiersch's method of skin grafting. It has always been my aim to cover the wound with skin by either of these methods immediately after the extirpation of the tumor for the purpose of securing healing by the first intention, as I am satisfied that the slow process of healing of large surface defects

by granulation, cicatrization and epidermization is conducive to an early local recurrence.

Surgery of the Three Great Cavities.—The systematic invasion of the three great cavities of the body for the treatment of injury or disease is one of the great triumphs of modern surgery. Our ancestors entertained a well-founded dread for operations which necessitated opening of any of the great serous cavities, knowing from experience their great susceptibility to septic infection. Recent experience has shown that any of these cavities can be opened for diagnostic or therapeutic purposes without much danger provided the operation is performed under strict antiseptic precautions. The prevention of septic complications by asepsis has been the means of creating visceral surgery. The sense of safety in subjecting the different viscera to direct operative treatment which has taken possession of the profession has enlarged to a wonderful extent the field of operative surgery, but it has carried at the same time the work of the ambitious enthusiastic surgeon beyond the limits of his art. Many of the bold attempts upon the organs of the three great cavities are far beyond the legitimate restrictions established by the science of surgery. The mania for achieving new victories outside of the sphere of legitimate rational surgery has neither brought lasting reputation to the adventurers nor benefit to suffering humanity. Many of the new operative procedures remind one more of sensationalism than the product of mature, deep surgical reasoning. The accounts of new operations that are being constantly devised have left operative surgery in a state of confusion. Works on operative surgery that left the press six months ago are obsolete or at least unsatisfactory to-day. The technique of nearly every operation is constantly undergoing changes by the addition of important or unessential modifications. Nearly every surgeon has a flaming desire to connect his name with an instrument of his invention, a new operation or a modification of an old one. A new operation is devised, a case is found upon which it is tried, and if the result is in any way favorable an account of it is sure to find its way promptly into the current medical literature. Many members of the medical profession are willing and ready imitators, who are always anxiously waiting for new discoveries and improvements, ever ready to apply them in their practice without questioning their utility or justifiability. This blind imitation of the practice of others has been the source of great harm to confiding patients and has exerted a powerful inhibitory effect on the true progress of surgery. This is an age of bold surgery. The surgeon who is careful in the selection of his cases, slow and painstaking in his work, need not look for recognition on the part of his students or colleagues; it is the man who lays the abdomen open by a single stroke of his knife, removes two healthy ovaries and closes the incision and returns his patient to her room in seven minutes, who commands the attention of his audience and bears with a self-confident dignity the proud distinction of being a bold and brilliant operator. In calling your attention to the limits of the art of surgery in the treatment of injuries and diseases of the organs contained in the three great cavities, time will only permit to point out a few of the most flagrant transgressions of the established principles of surgery during the last few years.

Surgery of the Skull and Brain.—The use of the

trephine in the treatment of fractures of the skull has had a varied experience since the time of Hippocrates. Trephining of the skull for injuries is one of the oldest operations in surgery. From time to time strong arguments have been made against the indiscriminate operating for fractures of the skull. Stromeyer and his followers abandoned the operation of trephining, believing and claiming that the operation resulted in more harm than good to the patient. It is not difficult to conceive that at that time the conversion of a subcutaneous into an open fracture was attended by great risks from infection. The minimizing of the danger from infection by aseptic precautions again brought the trephine into general use not only in the treatment of fractures of the skull, but also in the treatment of pathologic intracranial lesions of a non-traumatic origin. Many surgeons now advocate trephining in all fractures of the cranial vault, claiming that the operation would reduce to a minimum the dangers from remote complications such as obstinate headache, epilepsy and insanity. The question arises, is such a position in consonance with rational surgery? Every surgeon knows that such remote complications after fracture of the skull not subjected to trephining are rather the exception than the rule. It is evident that operative interference in such cases has been carried to extremes. Even under the protection of aseptic precautions, the transformation of a closed into an open fracture of the skull is attended by certain risks which no surgeon can afford to ignore and which must be taken into careful consideration before operative interference is determined upon. This advice applies with special force to the treatment of fractures of the skull in children, as in them spontaneous elevation of the depressed fragment or fragments is frequently observed during the process of repair. There is no rule in surgery without its exceptions, hence the advice to use the trephine in fractures of the skull with depression without regard to the age of the patient or the presence or absence of symptoms, lacks a moral as well as a scientific foundation. The art of surgery has its well-founded limits in the treatment of fractures of the skull. In my opinion, operative interference is absolutely indicated in fractures of the cranial vault under the following circumstances: 1. All open fractures, including gunshot and punctured fractures. 2. Depressed fractures attended by well defined symptoms caused either by the depression or intracranial complications. 3. Rupture of the middle meningeal artery with or without fracture of the skull. The use of the chisel or trephine is superfluous and often harmful in the treatment of subcutaneous fractures of the vault of the skull with or without depression, more especially in the case of children. The operation of trephining in the prevention of remote complications of fracture of the skull is often powerless, owing to the existence of visceral lesions which it can neither remove nor render harmless. The indiscriminate use of the chisel and the trephine in the hands of the inexperienced practitioner is fraught with danger and should not be encouraged by teachers and expert surgeons. Such teachings and practice are in conflict with the correct principles which should govern the true art of surgery. Brain surgery is of recent origin. It is in this department of the operative work of the surgeon that art has gone far in advance of the science of surgery. Cerebral localization and aseptic surgery have made it possible to treat a few intracranial lesions successfully

by direct operative interference. Cerebral localization is in its infancy, and the minutest aseptic precautions do not absolutely protect against infection. A few years ago the columns of the medical press brought glowing accounts of the removal of brain tumors. Patients were exhibited at the meetings of different medical societies with enormous cranial defects and ghastly depressions marking the place from whence a large glioma had been removed successfully. Such cases aroused the most intense attention and interest at the time, but where are they now? Subsequent reports failed to appear, and an ominous silence remains regarding their ultimate fate. Many of the cases of tumor of the brain operated upon who never recovered from the immediate effects of the operation were never reported, and those who were fortunate enough to survive the fearful ordeal, after a longer or shorter interval joined the silent majority. One of the well defined limits of the art of surgery is the operative treatment of malignant tumors of the brain. Tapping and drainage of the lateral ventricles as taught and practiced by Dr. W. W. Keen, may and undoubtedly will become in the future a useful and legitimate surgical resource in the treatment of inflammatory affections of that part of the brain, but so far it has not yielded encouraging results. When Lannelongue devised linear craniotomy for the liberation of the undeveloped imprisoned brain in the skull of infantile idiots, his doctrine was received with open arms by many surgeons who occupy the front rank in the profession. The lay and medical press vied with each other in bringing before the general and medical public the wonderful results following the use of the trephine, chisel and rongeur forceps in opening the skulls of such unfortunate children. Many of these little innocents of course succumbed to the immediate effects of the operation, but this did not subdue the ardor of the surgeon, as he had been instrumental in transferring an object of pity to that happy home where microcephalus is unknown and had relieved the family of a troublesome trust. Where are the cases that have been permanently benefited by the operation? Ask Lannelongue whether his hopes have been realized. I am free to confess that I have never been able to muster my courage to attack the skull of a poor, innocent and yet happy microcephalic child, because I have always regarded the operation as useless in promoting brain development. The responsibility of the surgeon is not limited by the defective mental development of the child nor the importunity of the parents in demanding the operation at all hazards. The surgeon should stand guardian over such a charge, mindful of the limits of the art of surgery. Have we a right to estimate human happiness? The driveling idiot has many enjoyments and pleasures that you and I know nothing about. His responsibilities to God and man are limited and his existence on earth is a long, happy dream, which only ceases when the soul leaves the imperfect body and returns from whence it came, where mental distinction is unknown. The operative removal of inflammatory products from the cranial cavity and the brain has yielded the most satisfactory results, and constitutes one of the most important achievements of modern surgery. This part of cerebral surgery will reach perfection with the progress of cerebral localization, and should be encouraged and cultivated by all who are desirous of extending the present limits of the art of surgery.

Surgery of the Chest.—Modern surgery has done much toward the alleviation and cure of injuries and diseases of the organs of the chest, but it is here also that we are confronted by well defined limitations of the art of surgery. The successful treatment of hydrothorax and empyema of the pleural cavity is the result of a better knowledge of their etiology and pathology and an improved operative technique under strict aseptic precautions. Tapping of the chest for tubercular hydrops followed by iodoform glycerin injection has done more for this class of patients than counter irritation and the internal administration of digitalis, squills, acetate and iodid of potassium. Free incision of the empyemic pleural cavity after resection of one or more ribs, followed by efficient tubular drainage, has become an established practice by almost universal consent. The treatment of chronic empyema with thickened pleura and collapsed adherent lung by Estlander's multiple rib resection or Schede's thoracoplastic operation has yielded brilliant results. The treatment of abscess of the lung by rib resection, free incision with the knife point of the Paquelin cautery and tubular drainage has been the means of saving many a precious life, which, without the aid of the surgeon would have been doomed to a premature death. With few exceptions this is about all that has been accomplished by the surgery of the chest. It is true that a few surgeons have been fortunate enough to cope successfully with a few affections of the heart and its serous investment, the pericardium. Tapping of the pericardium for serous effusion has become one of the established operations in surgery. A very few cases of pyopericardium have been brought to a successful termination by free incision and drainage. We are familiar with isolated cases in which bold surgeons exposed the heart by a free incision for the removal of a foreign body, or sutured a visceral wound, and their effort was crowned by success, but on the whole we are painfully conscious of the fact that the art of surgery has done very little toward the successful treatment of injuries and diseases of this organ. Many have been the efforts of surgeons to supplant the physician in the treatment of pulmonary tuberculosis, the results of such efforts are familiar to you all. In the very nature of things, such trespassing upon the legitimate field of the physician has been followed without exception, by an ignominious failure. It is unfortunate, but true, that the surgical treatment of pulmonary tuberculosis by direct surgical intervention is beyond the present legitimate limits of the art of surgery. Surgery has done very little during the last two decades toward a betterment of the treatment of penetrating stab and gunshot wounds of the chest. The careful surgeon knows that the hermetic sealing under aseptic precautions of the wound of entrance and exit, if such exists, affords the greatest degree of safety in arresting hemorrhage and in preventing septic complications. Free incision of the cavity of the chest with a view of arresting hemorrhage by ligature, or tamponade from any of the organs which it contains is attended by such great immediate risks to life that the possible benefits to be derived from it are more than overbalanced by the immediate dangers which attend such an aggressive course of treatment. The removal of malignant tumors of any of the organs of the chest is beyond the present limits of the art of surgery.

Surgery of the Abdomen.—For reasons that do not

require an explanation here the abdominal cavity was largely a *terra incognita* to the surgeon of less than half a century ago. To-day it is the favorite battleground of the average surgeon and the select field of the so-called abdominal surgeon.

The bold surgery of to-day upon the organs of the abdominal cavity is largely due to the comparative safety with which the peritoneal cavity can be invaded under proper aseptic precautions. This new field for the display of surgical talent and ingenuity has been diligently cultivated in a legitimate way by the honest progressive surgeon, but it has also been made the playground of unscientific sensational surgery by men who are ignorant of the legitimate limits of the art of surgery. The simple fact that any of the abdominal organs, in part or in whole, can be removed successfully without much danger to life does not establish the legitimacy of the surgical procedure. Billroth, one of the greatest, and certainly one of the most honest surgeons of this age, did not realize the expectations he entertained in regard to the benefits to be derived from direct surgical intervention in cases of carcinoma of the stomach, justifying surgical interference. Notwithstanding the wonderful improvements in the technique of operations upon the stomach, partial gastrectomy and pylorotomy have yielded anything but encouraging results. In nearly 50 per cent. the patients subjected to radical treatment for malignant disease of the stomach, succumbed to the immediate effects of the operation. In all of the cases which survived the operative ordeal, the patients succumbed to a relapse in from a few months to several years. I have opened the abdominal cavity for the surgical treatment of malignant disease of the stomach nineteen times, and only in one case did I find the disease limited to the organ primarily affected and in this case the general health of the patient had been so much deteriorated by the obstructive pyloric carcinoma as to contraindicate a radical operation, in all of the remaining patients a pylorotomy or partial gastrectomy was out of the question, as the carcinoma of the pylorus or stomach had extended to adjacent organs or had given rise to regional infection through the lymphatic glands sufficiently to contraindicate any attempts at radical removal of the disease. The legitimate limits of the art of surgery in the treatment of malignant disease of the stomach embrace the cases in which a sufficiently early diagnosis can be made when the malignant disease is limited to the organ primarily involved and the strength of the patient is adequate to overcome the immediate effects of the operation. The removal of the carcinomatous pylorus or any part of the stomach after the malignant disease has extended to adjacent organs or after regional infection through the lymphatic glands and channels has taken place is tampering with the present limits of the art of surgery. The palliative operations for carcinoma of the cardiac and pyloric extremities of the stomach have yielded excellent results, and should receive the sanction of every surgeon who has the best interests of his patients at heart. Witzel's operation for establishing an external gastric fistula in cases of malignant obstructive tumors at the cardiac orifice of the stomach, and Rockwitz-Wölfler's operation for pyloric carcinoma are the palliative operations which promise the most with the least immediate risks to life in all cases of malignant tumors of the stomach which give rise to obstruction. The treatment of intestinal obstruction by surgical inter-

vention has become an established custom. Physicians and surgeons imbued with a proper moral and scientific sense, recognize the importance of early surgical interference in all cases of intestinal obstruction due to mechanical causes. An early positive diagnosis is an essential prerequisite to success in such cases which must be followed by prompt action on the part of the surgeon. Intestinal surgery will celebrate its greatest triumphs with the progressive development of our diagnostic resources in the early recognition of the nature and location of the mechanical causes which give rise to intestinal obstruction. Volvulus and invagination, some of the most serious forms of mechanical obstruction, if they could be recognized within a few hours of their appearance and subjected to surgical treatment at once, would no longer figure so conspicuously in our mortality reports. The division or excision of a constricting band in the treatment of intestinal obstruction from such a source, if performed in time would yield a very small mortality, but if not brought within the present limits of the art of surgery, such cases seldom recover from the immediate effects of the operation.

The radical treatment of malignant tumors of the intestinal canal has not been attended by satisfactory results as a rule. In the majority of cases the operations were postponed until the malignant disease gave rise to symptoms of obstruction, when it was usually found that the carcinoma had passed beyond the legitimate limits of a radical operation. The implication of adjacent organs and extension to the lymphatic glands of the mesentery must be recognized at the present time as positive contraindications to a radical operation. With few exceptions the transgression of this rule in cases in which the patients survived the immediate effects of the operation was followed by an early recurrence of the disease to which the patient rapidly succumbed. Palliative operations in cases of malignant obstruction of the intestinal canal above the rectum, by establishing an anastomotic opening between the intestine above and below the obstruction, have become recognized procedures in surgery. In establishing such a communicating opening, the employment of mechanical devices, such as the metallic buttons of Murphy, Ramangé and Chaput, which must pass the intestinal canal unchanged, is a procedure fraught with more or less danger, which is being recognized more as the experience with them increases. In my own practice I have largely dispensed with the perforated decalcified bone-plates and now rely more frequently on the needle and thread in performing such operations and the mass of the profession is in accord with this practice. The custom followed by many American surgeons to remove the appendix in all cases in which a diagnosis of appendicitis is made, is a very harmful one. The removal of the appendix should be limited to those cases in which, during the first attack symptoms arise which portend danger to life and relapsing appendicitis. Some cases of appendicitis yield to medical treatment, and in a large percentage of such cases the patients remain free from a second attack. Pancreatic surgery at the present time is limited to the treatment of cysts by establishing and maintaining an abdominal fistula until the cyst becomes obliterated. The extirpation of pancreatic cysts and partial pancreatectomy for malignant disease are operations fraught with danger and do not come within the legitimate limits of the art of surgery at the present time.

Much has been done of late in the way of developing and enlarging the sphere of the surgery of the liver and the biliary tracts. Recent clinical experience and the results of experimental research have shown that a considerable portion of the liver can be removed for injury or disease with a fair expectation of success. The treatment of gunshot and stab wounds of the liver by laparotomy and suturing or tamponing of the visceral wound has yielded encouraging results. A number of successful cases of excision of isolated adenomatous tumors of the liver have enriched and graced our modern surgical literature. The operative removal of malignant tumors of the liver is an undertaking far beyond the present limits of the art of surgery. The successful treatment of abscess of the liver and echinococcus cysts by direct surgical intervention is generally recognized as one of the greatest achievements of abdominal surgery. The pioneer work of Sims and Kocher in laying the foundation for a rational treatment of impacted gallstones in any part of the biliary tracts has yielded unexpected results and has been the means of saving thousands of lives by averting the dangers from perforation and cholemia by a timely surgical intervention. The removal of calculi from the gall bladder can now be accomplished with very little danger to life. The cystic and common duct the seat of an impacted calculus are now exposed and incised, the calculus extracted and the wound sutured or drained, with a well-founded hope that the patient will recover, and that the operation will result in restoring the free flow of bile through the biliary passages. I have reason to believe, however, that the surgery of the biliary passages has been carried too far. That unnecessary operations have been performed upon the gall bladder and the biliary ducts, no one will deny. The simple fact that a patient is suffering from gallstones does not furnish a positive indication for surgical interference. The physician and nature's resources should be given a chance and the surgeon's services should be limited to those cases in which positive indications for operative treatment present themselves. The surgeon who recorded the first successful case of cholecystotomy has since become the victim of gallstones, but instead of calling upon one of his colleagues to open the gall bladder and remove the stones, he made a pilgrimage to Carlsbad and was promptly relieved of his sufferings. Cholecystenterostomy should only be performed in cases in which the common bile duct is permanently occluded by an impacted irremovable gallstone or cicatricial stenosis. Catheterization of the cystic and common bile ducts preceded or followed by dilatation by the use of laminaria tents in the treatment of impacted stones and cicatricial stenosis after the formation of a gall bladder fistula is a much neglected part of the surgery of the biliary passages and of sufficient importance to invite new trials and investigations. For substantial reasons abdominal nephrectomy and nephrotomy have been supplanted by lumbar operations. The treatment of tubercular hydrops of the peritoneum by incision, drainage and iodoformization remains in favor with the profession, and continues to yield the most satisfactory results.

Organs of Generation.—The greatest onslaught of modern surgery has been upon the organs of generation, male and female. It is somewhat strange that the organs created for distinguishing the sex and for the increase of the human species should have been

singled out as innocent objects of so-called modern aggressive surgery. The future historians who will record the work of many gynecologists belonging to the present generation will have reason to express their surprise at what disasters the art of surgery has produced when plied in cases far in advance of a scientific foundation. Here and there we hear a feeble voice protesting against the indiscriminate surgery upon the organs of generation of the opposite sex, but the mutilating work continues in spite of such opposition and well-meant advice. Every competent and honest gynecologist knows that in his sphere the art of surgery has been thoroughly abused. It is difficult to assign tangible reasons for such a fearful state of things. It appears to belong to the spirit of the present generation, the outcome of ceaseless unrest in pelvic surgery. When I arraign the gynecologists before this body composed of representative medical men of this country for innumerable and inexcusable transgressions of the rules which ought to govern and control the art of surgery, I do not include the scientific, honest, conscientious workers in that department of surgery, but my remarks will apply to a class of routine operators which has recently grown to alarming dimensions not only in this but in nearly every country which has been penetrated by the dim rays of so-called bold surgery. It is a subject that I would gladly pass over in silence, but you have imposed upon me a trust which I can not ignore and I stand here in the capacity of the conservative element in these days of wild, unfounded surgery to place myself on record in protesting against the unnecessary mutilation of the sexual organs of either sex, willing to stand or fall by the sentiments of the great mass of general practitioners, which after all must be regarded as the backbone and final tribunal of our profession. The new generation of doctors finds no longer satisfaction in practicing their profession in some rural district. The young practitioners have their eyes on large cities and have heard of enticing fees paid to specialists for insignificant operations. Why buy a horse and saddlebags when a fortune awaits them in devoting themselves to a specialty, more particularly gynecology? The recent graduate or the man who has become disgusted with country practice seeks a much employed gynecologist, follows his work for a month or two and returns to his prospective field of labor a full-fledged specialist. He is now ready to extirpate the uterus, remove ovaries and Fallopian tubes, sew imaginary lacerations of the cervix and perineum. Do you suppose that such an aspirant for gynecologic fame ever examines a woman and finds her perfect? Is it not true that in nine out of ten cases he finds something to mend? That my views are real and not visionary let me relate a few instances. A number of years ago a young lady accompanied by her grandmother applied to me for treatment for a neurasthenic affection. I was informed by the grandmother that a few days before they had consulted a young gynecologist, who made a hasty vaginal examination, looked wise and informed them that he had found the source of all trouble in the form of a laceration of the cervix, which would require an operation. As a matter of course the grandmother asked for an explanation of the injury and was promptly informed that it was one of the common accidents of childbirth. As the patient was unmarried and had never been pregnant this explanation proved unsatisfactory to the interested parties and no arrangements were made for

the prospective trachelorrhaphy—upon a virgin uterus. Not long ago an unmarried woman came under my care who had been told by an ambitious gynecologist that she was suffering from a myoma of the uterus which would necessitate a vaginal hysterectomy. I found a sharp antelexion, the anterior wall of the uterus being prominent and somewhat edematous had been mistaken for a tumor and nothing short of a hysterectomy would satisfy the operator. This patient recovered under conservative treatment without the loss of an important organ. The cases which I have just cited escaped mutilating operations by doubting the diagnosis of those to whom they first applied for treatment; others are less fortunate. Suffering woman will believe in and submit to almost everything. In fact it has become almost a fashion for women suffering from real or imaginary affections of the genital organs to consult a gynecologist as regularly as her dentist or dressmaker. Not long ago a girl 18 years of age was brought to me with the information that she became epileptic when 7 years of age, that later, when menstruation was established, the attacks never occurred during the menstrual period, and yet both of her ovaries were removed by a gynecologist. As could be expected, the epilepsy remained and when I saw her she was on the verge of insanity. Time does not permit to cite additional illustrations showing criminal trespass upon the legitimate limits of the art of surgery in the treatment of real or imaginary ailments of the female organs of generation. Every practitioner has seen such instances as I have cited above. Has humanity been the gainer since the gynecologists became surgeons? This is a timely and serious question. Is the average woman who has passed through the hands of one or more gynecologists physically and mentally in a better condition than our mothers of fifty years ago, whose ovaries were safe and who knew but little about speculums and vaginal douches? Let the older members of our Association answer this question. When the venerable and distinguished Emmet devised his operation for laceration of the cervix he pointed out clearly what conditions called for and were benefited by trachelorrhaphy. The operation was received with enthusiasm and everyone present here knows how much it has been misapplied. It is safe to assert that not one in ten cases that have been operated upon was the operation justifiable or proved of any benefit to the patient. Emmet's teachings and practice were in consonance with sound pathologic principles but hundreds of imitators were less discriminating in the selection of cases, and performed the operation simply because they found a laceration of the cervix, irrespective of the existence of symptoms which could be referred to this condition. Laceration of the perineum is another favorite subject of the "amateur" gynecologist. The extent of laceration and the symptoms caused by it are not always taken into careful consideration in deciding upon the propriety of an operation. To "do a perineum" in five or seven minutes still serves as an attraction for the lookers-on in many private hospitals and gynecologic clinics. I fully appreciate the value of a well-performed perineorrhaphy in proper cases, but I am equally well satisfied that the operation has often been performed unnecessarily, and that it requires more than five or seven minutes to perform it properly. The late lamented Robert Battey opened a wide field for operative gynecology. This modest, honest worker conceived the idea that the removal of

the normal ovaries would become a useful surgical resource in the treatment of certain nervous affections which before had baffled the skill of physicians. It required some time and the additional support of Hegar and Tait for his views to become popular among his colleagues. Battey lived long enough to learn that his example and teachings have created a wave in the misapplication of the art of surgery which to-day remains mountain high, and it is difficult to tell where it will end or where a rock sufficiently high and strong will be found to break its force. The frequency with which women are being castrated to-day is one of the most flagrant transgressions of the limits of the art of surgery. It is not unusual for one operator to exhibit from five to six normal ovaries as the result of half a day's work. All kinds of excuses are made for this kind of surgery. The ovaries are too large, cirrhotic, cystic, or perchance a ruptured Graafian follicle is discovered, when he consoles himself that he has removed an apoplectic ovary. Where is this wholesale unsexing of our female population going to end? The beginning of the end has come. The army of women minus their essential organs of generation is beginning to raise its voice against such mutilating work. The number of women who willingly sacrificed their ovaries to restore their shattered health without securing the expected relief has increased to an alarming extent. This sad experience has made the gynecologists more desperate and bold. They have been importuned by their castrated, tubeless patients to such an extent that the art of surgery was again resorted to. The uterus, which heretofore had been comparatively safe, was now selected as the offending body, and vaginal hysterectomy became at once a popular operation. Many atrophic uteri remaining after removal of their appendages have been removed in a vain hope of securing permanent relief. Vaginal hysterectomy for diseases other than carcinoma is now at its height. The uterus is being removed for hypertrophy, endometritis, flexion, version and minute myofibromata. This important organ is no longer safe if it is in the vicinity of a pelvic abscess. Perchance a healthy uterus is removed under the pretense of securing a more direct route to a focus or foci of pelvic inflammation. It is needless to say that most of the surgeons who clamor for the removal of the uterus through the vagina for insignificant affections or inflammatory lesions of adjacent parts, do so by the use of compression forceps. It is no great surgical feat to squeeze out an inflamed or displaced uterus between compression forceps. It is difficult to say where this rage for the removal of the female sexual organs will end or what organ will be the next battle ground for the aggressive gynecologists. The clitoris, the vagina, the cervix uteri, the ovaries, the Fallopian tubes, the uterus and its ligaments have successively passed through a trying ordeal of the *furor operativus*. What the next fad will be is impossible to foretell. As one operation after another is falling into a well deserved desuetude new ones will have to be devised to gratify the whims of the patients and the ambitions of the gynecologist. I have portrayed to you only a few of the excesses of the art of surgery as applied to the female organs of generation, but enough has been said to show you that it is time to call a halt. Further depredations can best be avoided by the general practitioners to whom most of the patients first apply for relief. Let them do their duty toward their patients. Many of the minor affec-

tions of the uterus and its appendages are within the reach of intelligent general and local treatment without a recourse to the knife. If gynecology is to live and become a real benefit to women suffering from pelvic disease, it must become more conservative. We all appreciate what surgery has done in prolonging life and in mitigating suffering in the treatment of ovarian cysts and the removal of the uterus, the seat of symptom-producing myofibromata. What I am objecting to, and on good ground, is the indiscriminate operating upon the female organs of generation for imaginary or insignificant affections. This is an evil that must be apparent to all and that the leaders of gynecology must assist us to suppress.

I can not dismiss the subject of genital surgery without making a strong plea in favor of conservatism in the treatment of prostatic hypertrophy. A few years ago J. W. White made a series of experiments on dogs which proved that the testicles possessed an influence which, to a certain degree, controlled the nutrition of the prostate gland. His experiments were made on dogs, the animals being vigorous and in full possession of their sexual power. He found that castration was constantly followed by progressive atrophy of the prostate gland. At that time he timidly suggested that castration in cases of prostatic hypertrophy might possibly prove to be a valuable surgical resource in the treatment of urinary obstructions due to such a cause. About the same time Ramm gave the result of his clinical experience, covering about the same ground, urging the utility of castration as a legitimate surgical procedure in the treatment of non-malignant obstructive enlargement of the prostate, a condition so frequently met with in men advanced in years. You are familiar with the subsequent history of this operation. Numerous operations have been performed in different countries which appear to support the claims made for it by both of these investigators. The operation has been modified in substituting for the castration section or resection of the vas deferens, and recently neurectomy of the spermatic nerves; both of these procedures are said to produce the same curative effect as castration. A sufficient clinical material has accumulated to prove that these different procedures frequently result in diminution in the size of the prostate and that the symptoms caused by the obstruction often diminish or disappear.

I can readily understand in what manner emasculation in young animals and young and middle-aged men should be followed by atrophy of the healthy prostate gland. Castration of women during active sexual life will bring about atrophy of the uterus as a constant result. Clinical experience has also shown that the anticipated menopause effected by castration has a decided effect on the myomatous uterus. But who would think of castrating a woman who has reached the menopause for such an indication? It is very difficult to understand how castration or its substitutes performed on men advanced in years, with atrophic dormant testicles should exert such a positive influence upon an organ, the seat of a senile affection. And yet, the fact remains that many reliable men have observed such results, and we can no longer doubt them.

What I fear, and the reason I allude to this subject, is this, that castration of aged men for hypertrophy of the prostate, when this operation becomes common property and is endorsed by surgeons who stand high in the estimation of the profession, will be misap-

plied in the same way, fortunately, probably to a lesser extent than the removal of normal ovaries. Men will be castrated for stone in the bladder, chronic cystitis and malignant disease of the bladder. It is not always easy nor possible to make a positive differential diagnosis between simple hypertrophy of the prostate and some of the conditions which simulate it so closely. In doubtful cases it appears to me it would certainly be advisable to make the diagnosis sure by a supra-pubic cystotomy before resorting to a mutilating operation, rather than remove the testicles and later discover a tubercular bladder or encysted stone or malignant disease of the bladder or prostate. Castration is such an easy operation that every tyro in surgery will be tempted to perform it upon willing subjects suffering from obscure affections of the bladder, complicating hypertrophy of the prostate gland. The Ramm-White operation deserves a fair trial at the hands of competent surgeons, in well selected cases, but I apprehend evil in the future, not so much from the proper use as the abuse of this procedure. In short, it is probable that this new surgical resource, which has not yet passed the trial stage of a legitimate established surgical procedure, will on a smaller scale become a repetition of the unenviable history of castration of the opposite sex. We have every reason to believe that so far the apparently successful cases have found their way into current medical literature, while the cases in which the operation has proved a failure, with few exceptions, have for apparent reasons not been published.

Gentlemen: It has been my purpose to call your attention in the brief time allotted to the delivery of this address to some of the limits of the art of surgery and to a few of the most flagrant prevalent trespasses of its legitimate limits by indiscriminating surgeons. I wish time would permit me to say something of the too frequent recourse to the recently revived operation of symphyseotomy and the unwarranted procedure known as Porro's operation, except in cases in which the uterus is the seat of a life-threatening affection, some of the evil results following the too frequent performance of ventro-fixation of the retroverted uterus, and many other topics in general surgery and gynecology to which no allusion has been made, where the limits of the art of surgery have been ignored, and too often reckless operating has disgraced the fair fame and reputation of our noble profession. Let us have in the future more of the *nil nocere* in place of the *furor operativus*. I have written and delivered this address with malice toward none, in the interest of the suffering portion of our population, for the true advancement of the science and art of surgery, and as a plea for recognition of the good work done by the great mass and backbone of our profession, the modest, toiling, inadequately remunerated general practitioner.

Benefactions to Boston Charities.—By the death of an heir the public bequests under the will of Mrs. Josiah Vose, of Boston, Mass., became operative and more than \$380,000 is released to many of the more prominent educational and charitable institutions in Boston. These bequests are: Massachusetts General Hospital, \$30,000; McLean Asylum, \$30,000; Institute of Technology, \$25,000; Female Orphan Asylum, \$15,000; New England Hospital for Women and Children, \$25,000; Institution for the Blind, \$10,000; Eye and Ear Infirmary, \$15,000, and Home for Colored Women, \$5,000.

ADDRESS ON THE CHARACTER OF DR. EDWARD JENNER AND THE HISTORY OF HIS DISCOVERY OF THE PROTECTIVE VALUE OF VACCINATION.

Read at the Centennial Anniversary, Atlanta, Ga., May, 1896.

BY N. S. DAVIS, M.D., LL.D.

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According to reliable authorities the subject of this address, Edward Jenner, was a native of Berkeley, in Gloucestershire, England. He was born May 17, 1749. His father was Rev. Stephen Jenner, who was rector of Rockhampton and vicar of Berkeley. He was the representative of an honorable family long established and owning some landed property in that county. His mother belonged to an ancient family in Berkshire. The father died when Jenner was only 6 years old, thereby leaving the care and education of Edward almost wholly to his older brother, Rev. Stephen Jenner, who appears to have assumed and executed all the parental duties relating to the younger brother with the utmost fidelity and tenderness. The early education of Edward was in the schools, chiefly at Wotton-under-Edge and Cirencester. During this time he developed so much fondness for natural history as to attract special attention, yet he was never behind in any other studies required. At the age of 14 it was decided that his further education should have direct reference to his entering the medical profession. Consequently he was apprenticed to Mr. Daniel Ludlow, a surgeon at Sudbury, near Bristol, for the purpose of studying surgery and pharmacy. It was during this apprenticeship that he heard a young woman, a milkmaid of the neighborhood, say to Surgeon Ludlow that she could not have the smallpox because she had previously had a cowpox sore on her hand contracted while milking. The remark was such as to indicate a prevalent belief among some of those engaged in milking, that there sometimes existed on the udders of the cow a sore or pustule the matter from which, if placed in contact with an abrasion on the hand of the milker, produced a peculiar sore, leaving a permanent scar and rendering him or her ever after immune to the contagion of smallpox. No attention was given to the remark by the surgeon, who like all his confrères regarded it either a mere accidental occurrence, or a superstitious vagary of the common people. But it was far otherwise with his young apprentice, Edward Jenner.

Endowed with the highest order of mental acumen, coupled with an equally high order of benevolence, and already trained to philosophical study, the simple remark of the milkmaid at once and indelibly fixed in his mind the question whether it did not point to a possible preventive of that most dreaded scourge of the human race, smallpox. Jenner never abandoned the idea of solving the question until he had completed its solution thirty years later. But with no accurate description of the alleged infectious sore or pustule on the cow's udder, and the fact that it was met with only at irregular intervals, he was limited during his apprenticeship to the gathering of such items of information bearing on the subject as might come within his reach. In the meantime he not only pursued his studies in surgery and pharmacy with diligence, but he seems to have devoted every available hour to further studies in natural history directly in the open field of nature, observing the habits of liv-

ing animals, gathering fossils, and acquiring unusual skill in drawing. At the expiration of his seven years of apprenticeship with Surgeon Ludlow, in 1770, at the age of 21 years he went to London for the further prosecution of his medical studies. He entered as a student at St. George's Hospital and became a private pupil of the celebrated John Hunter, in whose family he resided during the next two years. During this pupilage he early displayed so much skill and accuracy in making preparations of anatomy and natural history, and in dissecting delicate structures, both natural and pathologic, that he rendered much aid to his preceptor. So marked were these attainments that through the recommendation of Mr. Hunter he was employed by Sir Joseph Banks to arrange the valuable specimens, zoölogical and otherwise, gathered by Captain Cook during his first voyage of discovery ending in 1771. He performed the work so satisfactorily that he was offered the position of naturalist to the next expedition the following year. But his attachment to his older brother and to his native town caused him to decline this offer, and at the end of two years' study in London he obtained the necessary license to practice surgery and returned to practice in his native town of Berkeley at the beginning of 1773. While with Mr. Hunter, young Jenner mentioned his question of the possibility of making the cowpox a valuable preventive of the natural smallpox and subsequently corresponded with him on the subject. He was encouraged to make a thorough investigation, which he entered upon earnestly in 1775, or as soon as he had become established in the practice of his profession.

The first five years were consumed in fairly identifying the true cowpox vaccine pustule and separating it from other sores with which it had been confounded. During the same time his investigations led him to believe the true cowpox pustule yielded its active virus only at a certain stage of its advancement, and that it, together with the diseases known as swinepox and the grease in horses, were all derived from the action of smallpox contagion on these animals. So firm was his belief in the truth of this, that during a period of unusual absence of cowpox from the neighborhood, he ventured to vaccinate his oldest son with the matter of swinepox and produced in him all the symptoms of a very mild case of smallpox. After his recovery he was inoculated with genuine smallpox without effect. This gave him so much confidence in the ultimate success of his investigations that in 1780 he communicated confidentially to his intimate friend, Edward Gardner, the progress he had made and his confident belief that its results would be of the greatest benefit to the human race. In 1788 he carried an accurate drawing of the cowpox sore, as seen on the hand of a milkmaid, to Sir E. Home and others in London, who seemed to regard it as a curious and interesting illustration, but gave no evidence of perceiving its practical importance.

Finally, on the 14th of May, 1796, the long sought opportunity came, and he was enabled to take the lymph from a cowpox pustule on the hand of Sarah Nelmes and with it vaccinate the arm of James Phipps, a boy in good health, and aged 8 years. The vaccine disease passed through its successive stages perfectly and Jenner was surprised at the general resemblance of the vaccine sores to those of smallpox. About twenty days after the boy Phipps had recovered from his vaccination, his arms were inocu-

lated with smallpox matter without effect. The circle of proof was now complete. The vaccine lymph from the cowpox sore produced the characteristic vaccine on the hand of the milkmaid. The lymph from the vaccine sore on her hand produced the characteristic vaccine sore on the healthy boy, and both proved ever after entirely immune to the contagion of smallpox. Still Dr. Jenner patiently continued two years more in extending and verifying his proofs that there might be no reasonable chance of failure in the complete establishment of his great discovery. He then, early in 1798, wrote in a paper frankly all the important steps of his investigations and the full proofs of his discovery and its inestimable value to the human race, intending to submit it as a communication to the Royal Society, to which he had previously made acceptable communications on other subjects. But we are told by Dr. John Baron, the chosen biographer of Dr. Jenner, that the president of that Society, Sir J. Banks, advised him to be very cautious, lest such a paper should lessen the reputation he had already gained. Accordingly Dr. Jenner, with a supply of vaccine lymph, went to London for the purpose of directly demonstrating its effects to prominent members of the profession in that city. After tarrying there two or three months without finding a single individual who would submit to the simple process of vaccination, near the end of June, 1798, his paper was given to the world in an unpretentious pamphlet, dedicated to his friend, Dr. Parry of Bath, and he returned to his home in Berkeley. He however left with Mr. Cline, of St. Thomas' Hospital, a supply of the vaccine lymph, and this eminent surgeon soon found an opportunity to insert some of the same into the hip of a boy complaining of hip-disease. It was done under the plea of creating necessary counter-irritation, and perfect vaccine sores resulted therefrom. After fully recovering from the vaccination the boy was inoculated in three places with active smallpox matter without producing any of the symptoms of that dreaded disease. With this marked demonstration Mr. Cline became an active advocate of Jenner's discovery, and there was no longer difficulty in finding either physicians or patients willing to practically test its value.

Indeed, in less than twelve months after the publication of Dr. Jenner's pamphlet, a manifesto fully endorsing the truthfulness and value of his discovery was published, signed by seventy-three of the most eminent members of the medical profession in London. Within the same period of time the practice of cowpox vaccination was introduced into this country by Dr. Benj. Waterhouse, Professor of Physic at Cambridge, Mass., who vaccinated members of his own family; and the practice spread rapidly throughout the United States. Under the judicious leadership of Dr. de Carro, of Vienna, the practice of vaccination was rapidly introduced into all the countries of central and southern Europe.

In Spain it was warmly welcomed by both physicians and clergy, by whom a knowledge of it was rapidly communicated to all her colonies on this side of the Atlantic. In Russia the cause of Dr. Jenner found an efficient advocate in the Empress, who introduced the practice of vaccination in her own family, and facilitated its extension to Siberia and the countries of Asia.

Within the short period of two years after the original pamphlet of Dr. Jenner, entitled: "Inquiry

into the Cause and Effects of the Variolæ Vaccinæ." London, 1798, it had been translated into nearly every language in Europe. And within six years the practice of vaccination for the prevention of smallpox had been introduced and sanctioned in every civilized and even semi-civilized country on the globe.

Such is a simple narrative of the inception, patient prosecution, and final completion of the great discovery of the true cowpox lymph and its efficacy as a preventive of smallpox by Dr. Edward Jenner. And thus was the result of more than twenty years of thoughtful, skillful, persevering investigations given to the world with the utmost freedom and truthfulness. It was accompanied by no fictitious names, no unexplained processes, and no hint at selfish or pecuniary recompense. On the contrary, he was among the most zealous in extending its benefits to all classes, and especially to the poor. And he apparently looked only for the fulfillment of Lord Bacon's saying: "That it is heaven upon earth, to have a man's mind move in charity, rest in providence, and turn upon the poles of truth." While it is true that Dr. Jenner's discovery was received and adopted both by the medical profession and the masses of the people of all civilized countries with the extraordinary rapidity just described, it was not without the bitter opposition of some persons, and the injurious effects of a few over zealous or injudicious friends.

To correct the errors and misstatements of these and to furnish additional facts of value, Dr. Jenner published a paper entitled: "Further Observations on Variolæ Vaccinæ, London, 1799;" another on "A Continuation of Facts and Observations Relative to the Variolæ Vaccinæ, London, 1800;" and the same year, "A Complete Statement of Facts and Observations Relative to the Cow-Pock;" followed by another "On the Origin of Vaccine Inoculation, London, 1801." But in no one of these additional publications did he exhibit the ordinary spirit of controversy.

All were characterized by the highest degree of candor and regard for truthfulness, and he continued the practice of his profession in his native town regardless of the most flattering inducements to change his residence to London. In 1788 he had married Miss Catherine Kingscote, a lady admirably qualified to add to his social and domestic happiness. In 1792, wishing to lessen the pressure of his professional practice by changing its direction, he obtained from the University of St. Andrews the degree of Doctor of Physic. However, he not only continued a lucrative practice and actively maintained a social organization of his neighboring practitioners, but he also continued to give so much attention to studies in natural history that he was in 1788, or soon thereafter, elected a member of the Royal Philosophical Society of London. Notwithstanding all these proofs of his love of home, of domestic happiness, of nature in her native garb, and above all, of nature's God, during the few years immediately following the publication of his discovery, he was overwhelmed with correspondence from every quarter, to such an extent that, in his own expressive language, he was forced to become "Vaccine Clerk for the World." In addition to this, congratulatory communications came to him from kings, queens, officers of state and of learned societies, until he soon found himself elected to membership in nearly all the scientific societies in Europe. If we add to all these time-consuming topics, the fact that he continued to devote a certain amount of time

each day to the gratuitous vaccination of the poor at his own home, we shall see that his time for pursuing the paying part of his professional practice was seriously impaired. This did not escape the observation of his neighbors and most intimate friends, who near the close of 1801 presented him as a testimonial, a service of plate, which was designed, in reality, as a prelude to the obtaining of his consent to a petition to Parliament for a suitable grant of money. Such a petition was presented on the 17th of March, 1802, and was referred to a committee of which Admiral Berkeley was chairman. After proper investigation, the committee reported favorably and Parliament voted a grant of \$50,000. Four years later, 1806, after the Royal College of Physicians had reported favorably on the continued success of vaccination, Parliament voted an additional grant of \$100,000. Five or six years later still, subscriptions were taken up in the East, and those forwarded from the three Presidencies of Bengal, Bombay and Madras, aggregated little more than \$35,000.

In 1808 Dr. Jenner was elected a Corresponding Member of the National Institute. Subsequently he was elected Mayor of Berkeley, and in 1813 he was granted the degree of Doctor in Physic by the University of Oxford, by special decree of the Convocation. His otherwise most happy domestic life received its first shade of sadness from the death of his oldest son in 1810, leaving him still one son and one daughter. But the deeper sorrow came Sept. 13, 1815, when Mrs. Jenner, after a protracted sickness, died. From this time Dr. Jenner lived in practical retirement, having made his last visit to London the year previous, when he was presented to the allied sovereigns and many other distinguished persons then assembled in that city. Though in practical retirement during the last eight years of his life, he not only found serene enjoyment in the fields and groves of his native town, but sufficient occupation also in still gathering facts concerning the results of vaccination particularly as connected with other cutaneous eruptions, and in discharging the duties of physician, naturalist and magistrate.

He published his last paper in 1822, "On the Influence of Artificial Eruptions in Certain Diseases." His last written expression concerning the general subject of vaccination was found on the back of a letter dated Jan. 14, 1823, and is copied by his biographer, Dr. Baron, as follows: "My opinion of vaccination is precisely as it was when I first promulgated the discovery. It is not in the least strengthened by any event that has happened, for it could gain no strength; and it is not in the least weakened, for if the failures you speak of had not happened the truth of my assertions respecting those coincidences which occasioned them, would not have been made out."

Dr. Jenner is reported to have had a mild attack of apoplexy Aug. 6, 1820, from which he quickly recovered. Another and severe attack came suddenly on the morning of Jan. 25, 1823, from which he died the following morning in the 74th year of his age. His body was buried in the chancel of the parish church of Berkeley, Feb. 3, 1823, in the presence of a large concourse of people.

A good picture of him by Sir Thomas Lawrence is given in connection with a biography in Vol. II of the Medical Portrait Gallery by Thomas Joseph Pettigrew, F. R. S., etc. Soon after his death an excellent statue of him by Sievier was placed in the cathe-

dral at Gloucester,¹ and 1858 a more expensive one was erected in London.

In 1808 Dr. Jenner met and formed an acquaintance with Dr. John Baron, then just entering upon the practice of his profession. This acquaintance soon ripened into a most intimate mutual friendship, which continued to the end of their lives. The trustees of Dr. Jenner's estate placed all his papers, manuscripts and correspondence in the hands of Dr. Baron as the most suitable person for furnishing a full and correct biography of the former. He accepted the task with reluctance on account of the pressure of other engagements, but nevertheless completed it in two volumes, published in 1827, with so much painstaking detail, accuracy and candor as to receive from all the highest degree of commendation. Dr. Baron appears to have appreciated not only the permanent value of every fact connected with the great discovery of Dr. Jenner, but he appreciated also his motives, his attainments and his boundless benevolence, and hence his biography was made so complete, that it has furnished nearly all the facts and materials used by subsequent writers when referring to the subject.

During the last fifty years it has been a very common custom for newspaper, magazine and even medical writers to represent the members of the regular medical profession as so conservative, or wedded to preconceived opinions, that every new discovery was received with reluctance and its author generally persecuted into poverty. But I have searched the pages of medical history from the time medicine began to develop a scientific basis in chemistry and anatomy, in the fifteenth century to the present time, without finding any proof of the correctness of this very popular allegation. On the contrary, every important discovery in chemistry, anatomy, physiology, etiology, pathology or therapeutics that was susceptible of proof by any reliable methods of investigation has been accepted and incorporated into our medical literature in less than ten years after its promulgation, and with due credit to its author.

The spirit of conservatism has at no time been more than sufficient to insure a fair examination of the various bearings of any given proposition; and in recent times often not even sufficient for that. One of the most remarkable items connected with the history of the discovery of cowpox vaccination, was the twenty years of the patient, persevering investigation by Dr. Edward Jenner before he deemed his proofs sufficient to justify him in announcing it to the world. And the next most noted event was the rapidity with which it was accepted and practically applied by the medical profession in all parts of the world. As has been previously stated, the announcement of Dr. Jenner's discovery called forth from a few physicians and others strenuous opposition; and the same class of peculiarly constituted individuals have been perpetuated until the present time. They are found filling the ranks of the mind-curists, Christian scientists, anti-vaccinationists, anti-vivisectionists and anti-common-senseists of the present day. But they embrace in their ranks very few regularly educated members of the medical profession. In speaking of medical discoveries it may not be amiss to say, we mean the announcement of such new facts or truths as are capable of demonstration by legitimate or scientific methods, as distinguished from the announcement of mere metaphysical theories or exclusive

dogmas, of which the eighteenth century was peculiarly prolific. The first have always been accepted and incorporated into the proper department of our permanent medical literature, while the latter have with equal uniformity gained popularity for a time, generally in proportion to the mystery in which they were enveloped, and then given place to their successors. This is well illustrated by comparing the present position of the real discovery of Dr. Jenner with the two most pretentious theories of the same century. For it must be remembered that this is not only the centennial anniversary of the discovery of Jennerian vaccination, but it is equally the centennial anniversary of the announcement of the so-called new or phrenological system of mental philosophy by Dr. Gall in his lectures in Vienna, Austria, 1796, and also of the appearance of an "Essay on a New Principle for Ascertaining the Curative Properties of Drugs," by Dr. Christian Friedrich Hahnemann, of Germany, which was the real initiation of the two so-called, universal and immutable laws that "like cures like," and "the greater the attenuation or dilution of the drug the greater its curative power." The new mental philosophy of Dr. Gall, though advocated with the eminent ability of Drs. Spurzheim and Andrew Combe, as destined to revolutionize our ideas of mental philosophy as well as the ordinary principles of education, was so plainly founded on hypothetic or imaginary lines as to admit of no proof either anatomic, physiologic or pathologic and consequently it gained only a partial recognition by medical men, and its advocates were soon induced to make their appeals to the non-professional public. And now at the end of the century its peripatetic lecturers and phrenologic fortune-tellers, can hardly attract anywhere a popular audience sufficient for an evening's amusement. So, too, the purely speculative theories of Hahnemann, being capable of proof by no scientific processes or natural laws, gained so few advocates among the members of the profession, that after the first ten years their author abandoned the ordinary channels of medical literature and appealed directly to the non-professional public and proclaimed them as constituting a new and universal system of medicine. The result is, that the system of Hahnemann now on its first centennial anniversary, has neither legal nor general medical recognition in Europe; and in this country of free fadisms, the number who actually adhere to the practical application of its so-called fundamental laws is not equal to the number of those who may still be found in the ranks of the anti-vaccinationists. And yet its nominal advocates still call it the "new school" of medicine, though born full-fledged an hundred years since; and they attribute its non-acceptance by the general medical profession solely to the stolid conservatism of said profession. Such is the origin of the popular fallacy concerning the reluctance of the medical profession to embrace new discoveries, while, in truth, there is no other class of educated people to be found, whose history proves it more ready to receive and appropriate new facts or real discoveries and to reject mere theoretic dogmas. But my task would be inexcusably defective did I not add to the simple history of the truly great discovery of the protective power of cowpox vaccine virus, some comments on the personal character of the discoverer himself. For, if we may credit the combined testimony of his chosen and most competent biographer, Dr. John Baron, and his contemporaries,

¹ See London *Lancet* for 1881, for an account of statue to Jenner.

the character of Dr. Edward Jenner is one of the most interesting and remarkable to be found on the records of medical history. Born in a quiet country town, of parentage of intelligent and high moral or religious qualities, and spending his childhood and youth under the same influences in the midst of his native groves and meadows it was natural that he should develop a passionate love of nature and a marked reverence for nature's great Architect. And receiving his general education, not in the higher colleges or universities, but in the more quiet though excellent local schools near his parental home, still further tended to foster that fondness for the study of natural history and, indeed, all the natural sciences in which he became proficient in after life. No other environment or influences could have been better calculated to develop into unusual prominence the three most remarkable traits in the character of Dr. Jenner, namely, his love of nature and all that is truthful and good, his benevolence or unselfish desire to prevent or relieve human suffering, and his patient and persevering pursuit of whatever promised to result in material benefit to mankind. The last-named element of his character has been amply illustrated by what has already been said of his more than twenty years of earnest pursuit of a reliable preventive of smallpox, regardless of the indifference of his professional brethren generally, and of the positive jeers of some of those most nearly in association with him. His love of nature and genuine reverence for the author of all good is admirably illustrated in a letter to a friend written when the evidences of the genuineness of his discovery were nearing completion. He says: "While the vaccine discovery was progressive, the joy I felt at the prospect before me of being the instrument destined to take away from the world one of its greatest calamities, blended with the fond hope of enjoying independence and domestic peace and happiness, was often so excessive, that in pursuing my favorite subject among the meadows, I have sometimes found myself in a kind of reverie. It is pleasant to me to recollect that these reflections always ended in devout acknowledgements to that Being from whom this and all other mercies flow."

But the most vivid illustration of Dr. Edward Jenner's unselfish nature and of his noble conceptions of the true objects of human life is found in his answer to the most tempting inducements to leave his native town and enter upon a professional contest for wealth and fame in the great city of London. We are assured by his biographers that after the full demonstration of the truth of Dr. Jenner's discovery by Mr. Cline, the latter urged him to settle in London, promising him £10,000 (\$50,000) per annum as the result of his practice.

To this, however, his deliberate reply was: "Shall I, who even in the morning of my days sought the lowly and sequestered paths of life, the valley and not the mountain; shall I, now my evening is fast approaching, hold myself up as an object for fortune and fame? Admitting it as a certainty that I obtain both, what stock should I add to my little fund of happiness? My fortune, with what flows in from my profession, is sufficient to gratify my wishes; indeed so limited is my ambition, and that of my nearest connections, that were I precluded from future practice I should be enabled to obtain all I want. And as for fame, what is it? A gilded butt, forever pierced with the arrows of malignancy."²

Did the combined temptations of offered wealth and fame ever receive a more fitting reply? And has there ever been penned a more stinging rebuke to the manifest commercial, money-making, fame-seeking spirit pervading the ranks of the profession of the present day. To have an intelligent appreciation of the beauties, the harmonies and the beneficence of nature, with genuine reverence for nature's great Architect; to labor diligently for the prevention and relief of human suffering, and the elevation of the race; and at the same time to be content with a competence sufficient to supply all our real wants, is not only a true exemplification of the letter and spirit of our national code of medical ethics, but it is equally an exemplification of the only sure road to human happiness here or hereafter. Such was preëminently the life and character of Dr. Edward Jenner, one of the noblest benefactors of the human race.

For an account of the present status of vaccination in our country, and the chief obstacles in the way of realizing all the benefits its faithful and universal application would confer, I refer you to the members of the various parts of this widely extended country who are expected to take part in the discussion which is to follow.

However, as the shades of sixty years of professional toil and 80 years of life are already upon me, and I may never again have an opportunity to address you even by proxy, I must be allowed to remind you that I deem this to be the true semi-centennial of this great national Association; and to congratulate you on the substantial accomplishment of the leading object which prompted its formation, namely, the placing of our system of medical education on a broader, more systematic and more efficient basis. I am filled with contentment and thankfulness that I have been permitted to live until this day. And I sincerely thank you for so patiently listening to this address.

ORIGINAL ARTICLES.

SCIENTIFIC RESEARCHES RELATING TO THE SPECIFIC INFECTIOUS AGENT OF SMALLPOX AND THE PRODUCTION OF ARTIFICIAL IMMUNITY FROM THIS DISEASE.

Read at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

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Gentlemen:—A complete review of the experimental researches which have been made with a view to demonstrating the exact nature and biologic characters of the specific infectious agent which by its multiplication in the body of a susceptible individual gives rise to the disease known to us as variola, or smallpox, would require a volume. But at the end of this volume I would be obliged to record as the principal conclusion reached, the fact that the specific infectious agent in this disease has not been demonstrated. It does not follow from this statement that the researches made have been without value. If this were so I might dismiss this portion of my subject without further remark. But the present occasion calls for something more than this: for, while we

² See Vol. II., Medical Portrait Gallery, Port. Edward Jenner.

are here chiefly to celebrate the centennial of Jenner's great discovery and to consider the beneficent results which have followed its extended application in the civilized countries of the world, we must also give attention to the unsolved problems connected with vaccination, and by a brief review of the literature relating to these problems endeavor to ascertain in which direction our efforts should be turned in future, with a view to their solution.

The principal problem which confronts us is the one already stated. What is the nature of the specific infectious agent? That it is a living microorganism of some kind can scarcely be doubted when we consider the general arguments in favor of a *contagium vivum* in infectious diseases, in connection with our exact knowledge of the etiology of a considerable number of these diseases. But it is proper, in this connection, to call attention to the fact that in the group of infectious diseases to which smallpox belongs—the eruptive fevers—no demonstration has yet been made as to the precise nature of the microorganism which we believe to be present in the infectious material by which these diseases are propagated. The demonstration that certain infectious diseases of man and of the lower animals are due to the presence of bacteria, having specific morphologic and biologic characters by which they can be differentiated one from another, led for a time to the inference that all infectious diseases must be due to the presence of microorganisms of the same class. But the negative results which have attended the extended researches already made give support to the view that the eruptive fevers must be due to microorganisms of a different class, inasmuch as our staining and culture methods fail to demonstrate the presence of specific bacteria in the blood or tissues. Bacteria have, however, been found in the blood and tissues, in a certain proportion of the fatal cases, in the diseases of this group; and these were supposed by some of the earlier investigators to bear an etiologic relation to the diseases in question. But the more precise methods of investigation introduced by Koch have made it evident that these bacteria are not directly concerned in the specific disease processes, and that they are to be regarded as accidentally present, or as representing a secondary infection. The bacteria found under these circumstances are for the most part micrococci, and especially the well known pus cocci—*staphylococcus pyogenes albus*, *staphylococcus pyogenes aureus*, and *streptococcus pyogenes*. The frequency with which these cocci are found in the eruption of variola and of vaccinia, both in the vesicular and in the pustular stages of development led to the description, by Cohn, of his *micrococcus vaccinae*. The description, as given in my translation of Magnin, published in 1880, is as follows:

"*M. vaccinae*, Cohn (*Microsphaera vaccinae*, Cohn.) Very small micrococci, $=0.5 \mu$ scarcely, isolated or united in pairs in recent vaccine virus and in the pus of variola pustules. By cultivation, chaplets of from two to eight cells may be obtained, then masses containing sixteen to thirty-two cells of 10μ and more in diameter." According to Cohn the micrococci of vaccine virus and of variola were to be regarded as different races of the same species. Evidently his conclusions were based upon insufficient data and preconceived notions. But it must be remembered that at the time they were formulated Koch had not yet resorted to the use of solid culture media and the

plate method for the differentiation of bacteria; and the essential requirements of a scientific demonstration of the etiologic relation of a microorganism to a specific infectious disease had not been stated by him, or generally recognized by those engaged in bacteriologic researches. Subsequent investigations have shown that various micrococci and bacilli are found in the pustules of smallpox and in vaccine lymph, and that no one of these, when isolated in a pure culture, will cause the development of a typical vaccine vesicle. Researches relating to the bacteria present in vaccine lymph were greatly stimulated by the offer, by the Grocer's Company of London, of a prize of £1,000 for the discovery "of a method by which the vaccine contagium may be cultivated apart from the animal body in some medium or media not otherwise zymotic—the method to be such that the contagium may by means of it be multiplied to an indefinite extent in successive generations, and that the product after any number of such generations shall (so far as can within the time be tested) prove itself of identical potency with standard vaccine lymph." This offer was made in May, 1883, but up to the present time, so far as I am informed, the prize has not been awarded.

Among those who were induced to make researches in competition for the Grocer's Company prize we may mention Dr. John Dougall, Health Officer of Glasgow. His "Competitive Essay" is published in the Glasgow Medical Journal of December, 1886, and January, 1887. He obtained cultures of micrococci from vaccine lymph, in the various media employed in his investigations, and made numerous vaccinations with these cultures. Some of these appeared to be attended with partial success, but his critical review of his own experiments shows that this apparent partial success was due to the fact that "natural and artificial lymphs (cultures) were nearly always used simultaneously, on the same arm, and in close proximity, and it was found that when artificial lymph proved successful (?) the vesicle was nearly always small and imperfect." In his "conclusion" Dr. Dougall says: "The results of this inquiry, based on the foregoing experiments, do not fulfill the terms of success in solving the announced problem. In other words, I have failed to cultivate vaccine lymph in artificial soils." Dr. Dougall, not being an experienced bacteriologist, apparently assumed that the micrococci obtained by him from vaccine lymph were all of one species; at least he gives no account of an attempt to differentiate species by the plate method. This differentiation has been made, however, by other bacteriologists. Thus Copeman (1891) says:

"As it was evident that more than one organism could usually be obtained by the inoculation of lymph into nutrient media, plate cultivations were made with the object of separating out the different varieties present, both gelatin and glycerin-agar being used for this purpose. In this manner I succeeded in obtaining pure growths of various microorganisms, of which those which almost invariably occurred included micrococci apparently much resembling, if not identical with, the following: 1, *M. pyogenes aureus*; 2, *M. cereus flavus*; 3, *M. epidermis* (? *Staphylococcus albus*, Klein).

"In these observations I find my experiments are in agreement with those of Pfeiffer, while doubtless these various micrococci correspond respectively with Buist's so-called orange, yellow, and white vaccine. In addition, I occasionally found another organism,

which from its morphologic and microscopic characteristics, I believe to be streptococcus pyogenes. In order to test what action, if any, these various microphytes were capable of exerting, they were inoculated, both in pure culture and mixed in various proportions, not only on the calf, but on the human being and on the rabbit, since this latter animal is apparently susceptible to vaccination performed in the ordinary manner. Such inoculations, for the most part, produced little or no effect, although inoculations of streptococcus pyogenes alone occasionally caused the appearance of a small circumscribed inflammatory patch around the point at which it was inserted. In one instance, also, a rabbit died, apparently of septicemia, after inoculation of a mixed growth of the various organisms previously mentioned together with a certain amount of broth in which they had been grown. In the whole series of inoculations, nothing resembling a vaccine vesicle was seen, so that it was, apparently, pretty certain that none of the organisms that had been isolated in the manner described could be directly concerned in the causation of vaccinia."

Pfeiffer, in addition to staphylococcus pyogenes albus, which was most constantly present, obtained the following species: Staphylococcus pyogenes aureus, occasionally; staphylococcus cereus albus, very frequently; four species of sarcinae (*S. lutea*, *S. tetragonus*, *S. aurantiaca* and *S. muscopus*), occasionally; proteus vulgaris and certain non-liquefying bacteria, occasionally. He also found occasionally in human lymph, and always in calf lymph, a species of saccharomyces.

Crookshank (1891) obtained from calf lymph the following bacteria: Specimen No. 1 yielded a torula, bacillus pyocyaneus and bacillus subtilis; No. 2, a bacterium, a variety of proteus, staphylococcus pyogenes aureus, yellow bacterium; No. 3, a bacterium, micrococcus, yellow bacterium and torula; No. 4, yellow micrococcus, white micrococcus, white torula, yellow sarcina, white diplococcus, staphylococcus cereus albus, and a mold fungus; No. 5, yellow sarcina, staphylococcus pyogenes aureus, yellow micrococcus, white bacillus, staphylococcus pyogenes albus, large white micrococcus, yellow bacterium, and a white micrococcus. Among the specimens of human vaccine lymph, No. 1, contained a white micrococcus, proteus and staphylococcus pyogenes aureus; No. 2, a micrococcus, a tetracoccus, a white liquefying micrococcus, and a yellow bacterium; No. 3, white micrococcus, yellow micrococcus, staphylococcus aureus and flavus, a bacterium, a white micrococcus, a bacillus resembling bacillus subtilis, staphylococcus pyogenes aureus, and a brown tetracoccus. Crookshank concludes that none of these bacteria are peculiar to vaccine lymph; "there was no bacterium constantly present in human and calf vaccine, and there was not one which could be regarded as the contagium. To sum up, most of them were well known saprophytic bacteria, and some were identical with bacteria commonly found in suppuration."

The experiments of Carstens and Coert (1878) show that the specific virulence of vaccine lymph is destroyed by ten minutes' exposure to temperature of 54 degrees C. And the writer's experiments (1879) show that various disinfecting agents tested—chlorin, sulphur dioxid, nitrous acid—destroy the infective virulence of lymph dried upon ivory points in about the same proportion as is required for the destruction

of some of the best-known pathogenic bacteria. But this does not prove that virulence depends upon the presence of a living microorganism, however probable this appears, for certain toxalbumins are likewise destroyed by a correspondingly low temperature and by the action of various chemie disinfectants.

Nikolsky (1892) obtained from the base of the pustules of smallpox a motile, liquefying, spore-producing bacillus which when introduced into the peritoneal cavity of rabbits is said to have given rise to a pustular eruption; the bacillus was recovered in cultures from these pustules. Grigorijew (1889) in three cases found a small bacillus, twice as long as thick, which slowly liquefied gelatin, and did not coagulate milk. Besser (1893) gives an account of the microorganisms found in the pustules of variola and adds to the list a bacillus found by himself in a single case. This does not grow in gelatin at the room temperature and is more slender than the bacillus of Grigorijew.

The results of the researches of Martin (1891) have been reported by Ernst (1893). He obtained various bacteria from the lymph of vaccine vesicles, and among these was a bacillus which he believed to be the specific infectious agent. This he was able to cultivate upon the surface of sterilized blood-serum of the ox, at 37 degrees C., and his cultures of the ninth generation are said to have produced typical cowpox when inoculated upon calves. He says: "The material 'takes' with the same certainty as the lymph from the vesicle. From the vesicles produced by it upon the calf I have vaccinated a number of children, in every case inducing vaccinia of the most perfect type." He also says with reference to his cultures: "These cultures, however, were not pure, but contained quite a variety of bacteria. In every instance the blood-serum was liquefied." As to the morphology he says: "The bacterium varies in form according to the various conditions of its nutritive environment and the consequent rate of its development. The most constant and prevalent form is a short, fine bacillus with rounded or nearly square ends. Those parts of the culture where the nutriment is apparently exhausted show the same bacilli in short chains, longer bacilli, and bacilli much enlarged at one end or the middle, as if in preparation for spore formation." As Martin's cultures were not pure we have no evidence that his successful inoculations were due to the particular bacillus which attracted his attention. Possibly a microorganism of another class was also present and was carried over from one culture to another. Ruete and Enoch (1893) have also reported successful vaccinations in the calf with a micrococcus which they cultivated from vaccine lymph.

Buttersack (1893) as a result of his researches arrived at the conclusion that there are numerous minute elements in vaccine lymph which do not stain and are sometimes arranged in chains. The subsequent researches of Landmann (1894) and others indicate that the supposed microorganisms of Buttersack are non-living albuminoid granules, artificially produced by his method of investigation. This view is confirmed by the investigations of Dräer (1894).

Guarnieri (1892), Monti (1894), Piana and Galli-Valerio (1894), and Clarke (1895), have observed ameboid microorganisms in the pustules of variola and in vaccine lymph which may prove to be the specific infectious agent in this disease. These are

described by Guarnieri under the name cytorycetes variolæ and cytorycetes vacciniæ. According to Clarke these ameboid parasites belong to the sporozoa. E. Pfeiffer (1895) has studied this parasite by inoculations into the cornea of rabbits, guinea pigs and calves.

Wassermann has recently (1895) reported his failure to obtain microorganisms in cultures from the variola pustules. He says: "At the suggestion of my highly honored chief I have made a bacteriologic examination of the variola pustules in cases 1, 2 and 4. Herr Geheimrath Koch had the kindness to inform me that he himself formerly in numerous cases, in which he made a similar investigation, had constantly found the contents of the pustules sterile. This I am able to verify from my own investigations. Naturally it is necessary to work with aseptic precautions. For this purpose the surface of the pustules was cleaned with alcohol and ether, and the contents then withdrawn with a capillary pipette. In this manner I obtained material from the pustules in all stages of their development, not only serum but also pure pus. This was cultivated upon human blood-agar, serum-agar, serum, and dextrin-serum-agar, both under aerobic and anaerobic conditions, but all of these culture media remained sterile, no microorganisms grew."

In certain cases of hemorrhagic smallpox Koch found constantly in the contents of the pustules a streptococcus—probably *S. pyogenes*—which no doubt represented a mixed infection.

That none of the bacteria which have been cultivated from vaccine lymph have anything to do with its specific virulence is indicated, not only by the fact that the inoculation of pure cultures of these various microorganisms gives a negative result, but also by the fact that vaccine lymph when mixed with glycerin after a time becomes sterile, so far as these microorganisms are concerned, without losing its power to produce a typical result when tested upon a susceptible individual. Copeman, has shown that such admixture, after a time, destroys the vitality of the micrococci and other bacteria present in the lymph, and that virus preserved in this way until it is sterile, as proved by culture experiments, is even more active than when first obtained. Copeman's conclusions have been confirmed by the independent observations of Cambon and Ménard, of Prof. Straus and others. And this method of preserving lymph is coming into general use. It has the manifest advantage of excluding the pus cocci and thus preventing the unpleasant complications which result from inoculating these pathogenic micrococci at the same time with the vaccine lymph. No doubt the excessive tumefaction, erysipelatous inflammation and ulceration which often result from vaccination are chiefly due to inoculation with these micrococci and especially with *staphylococcus pyogenes aureus* and *streptococcus pyogenes*. According to Prof. Straus glycerinated lymph which when fresh gave numerous colonies of various bacteria, including especially *staphylococcus pyogenes albus* and *aureus*, at the end of fifty to sixty days was found to be absolutely sterile. This method of excluding extraneous microorganisms should be employed by future investigators, who will thus have the advantage of conducting their experiments with a, presumably, pure culture of the vaccine microbe.

It seems to me, also, worth while to make some

experiments to determine whether successful vaccination can not be made, with such lymph, by a method which would insure the exclusion of bacteria from the locality into which the vaccine virus is introduced, thus giving an aseptic result. This would be readily accomplished if subcutaneous injection of the glycerinated virus could be substituted for the usual method of superficial scarification. That this may be possible is suggested by the experiments of Chauveau. In a paper published in 1877, eleven years after the publication of the report of the famous commission of which he was president, he says:

"When, in place of inserting the vaccine virus into the rete mucosum of the skin, we cause it to penetrate by way of the subcutaneous connective tissue, the virus manifests its action by two kinds of positive effects common to the three species" (man, horse and cow) "a more or less pronounced local tumefaction is developed, and the subjects acquire the vaccinal immunity exactly as if they had been vaccinated in the classic way."

The experiments of Raynaud (1877) led him to a similar conclusion. He says: "As regards the vaccinal pustule: The evolution of this pustule" (bouton) "is not necessary in order that immunity may be induced. This is produced after a subcutaneous inoculation, even when the development of the vaccine pustule is prevented."

Having briefly reviewed the evidence relating to the presence of microorganisms in the virulent material by which variola and vaccinia are transmitted from one individual to another I must now invite your attention to the second subject included in the title of my paper, viz.: *Scientific researches relating to the production of artificial immunity from this disease.*

In Jenner's "Inquiry," published in 1798, he gives an account of the observations and experiments which led him to the conclusion that cowpox results from the transfer of infectious material from "the heels of a horse affected with the grease"; and that when transmitted to the human subject, by contact in milking with the pustules upon the "nipples of the cows," "the person who has been thus affected is forever secure from the infection of the smallpox; neither exposure to the variolous effluvia, nor the insertion of the matter into the skin, producing this distemper." We now know that Jenner was mistaken in his inference that vaccination protects from smallpox during the lifetime—"forever after"—of the individual. It is generally recognized by physicians that the protection afforded is not absolute and that it is not permanent. Hence the necessity for revaccination, after an interval of several years, when smallpox is prevalent in a community. The fact that a single attack of smallpox is not always protective would lead us to expect that the immunity from vaccination would not be absolute, and experience shows that in every smallpox epidemic a certain number of persons who have been vaccinated fall victims to the disease; but experience also shows that the mortality among the vaccinated is very much less than among the non-vaccinated. The London Board of Health, from thirty returns sent to them—not selected—has given the following table:

	Number of Cases.	Deaths.	Percentage of Deaths.
Natural smallpox in the unprotected	1,731	361	20.85
Smallpox after smallpox	58	22	37.92
Smallpox after vaccination	929	32	3.44

The gradual loss of immunity from vaccination, as determined by revaccination, is shown in the following figures, which are given in a recent (1894) paper by Biedert. In the year 1889 smallpox was introduced into Hagenau, and twenty-one cases occurred. The physician charged with that duty revaccinated all of the school children with the result given below:

Age.	Number Vaccinated.	Successful.	Per cent.
6 to 7	288	94	33.0
7 to 8	292	187	63.8
8 to 9	222	161	72.5
9 to 10	221	176	80.0
10 to 11	306	273	85.8
11 to 12	413	367	88.6

We may remark in connection with this table that in Germany vaccination is compulsory, and all children must be vaccinated before the September of the year following their birth. All scholars who have not had an attack of smallpox must be revaccinated when 12 years old.

Questions relating to the practical application and results of Jenner's method of prophylaxis do not come within the scope of the present paper. But we must give some attention to a question of great scientific interest, which has been repeatedly investigated by the experimental method and upon which, nevertheless, divergent views are still held by members of the profession who have made a critical study of this evidence. The question is whether cowpox and horsepox are modified smallpox, as maintained by those who accept the evidence of successful inoculations, afforded by the experiments of Gassner, Ceely, Badcock and others, or whether these diseases are quite distinct and independent of each other as maintained by Chauveau, Fleming, Crookshank and others, who give reasons for believing that this evidence is unsatisfactory. The arguments in support of this last-mentioned point of view are so concisely stated by Fleming¹ that I shall take the liberty of quoting a considerable portion of his letter to the editor of the *Lancet* (Nov. 20, 1886). He says:

"For many years now, the medical profession in this country seems to be generally agreed that human variola and cowpox are one and the same malady, the latter being merely smallpox modified through transference to the bovine creature. In books, letters and lectures there is evidence of this belief, and the latest proof of its existence is to be found in the Harveian Oration recently delivered by Dr. Pavy, in which we find the following statement: 'It may now be regarded as an accepted conclusion that vaccine lymph is the virus of smallpox, modified by transmission through the cow.' If it be not rank heresy to throw doubts on a conclusion accepted by such high authorities in human medicine as Dr. Pavy represents, will you kindly allow me, a very humble student of animal medicine and comparative pathology, to dissent from this generally accepted conclusion, and to express strong doubts, or even entire disbelief, as to the one malady being merely a modification of the other. The question would not, perhaps, be of so much moment had not at least three serious accidents resulted from carrying the above conclusion into practice; and as more disasters may yet be due to the same notion, I submit that it is high time the supposed facts upon which it is based should be examined in order that the truth may be arrived at. The

most notable authority for the statement made by Dr. Pavy, in this country at least, was my old friend, the late Mr. Ceely, of Aylesbury, who reported that he had succeeded in producing cowpox by inoculating a cow with smallpox matter. But it must be remembered that he, at the same time, was experimenting with vaccine lymph, and the great probability is that he employed the latter when he thought he was using the former. At any rate, he never afterward succeeded in repeating his presumed success, though his subsequent trials were made under the most favorable conditions. The last attempt was undertaken 'not long ago, and only a short time before his death. On that occasion twelve heifers were purchased by the local government board and lodged in the Brown Institution, where they were inoculated by Dr. Klein, under the supervision and direction of Mr. Ceely; and though smallpox matter was literally poured into the incisions and the greatest care was observed throughout, yet cowpox was not developed in any of the animals. Similar failures have attended all other attempts, when these have been made openly and by two or more individuals. I may allude to those of the French commission, which included some of the most distinguished members of the medical profession in Paris, with the able veterinary surgeon, Chauveau, as operator; and the Italian commission, whose labors were carried on at Turin on a large scale and for a long time. All in vain, however, for smallpox could not be converted into cowpox, and the conclusion arrived at was in direct opposition to that which Dr. Pavy asks us to accept.

"Dr. Pavy speaks of the smallpox virus becoming attenuated in the cow, and that this attenuation manifests itself as cowpox. But if inoculation of the former produces the latter, then I contend it is not attenuation, but absolute and permanent transformation of the most startling and complete description, and such as can not be effected with any virus or microbes known. We are required to believe that by one remove of human smallpox—most infectious, fatal and generally eruptive disease—to the cow, we have produced a non-fatal disease, which can only be transmitted by inoculation, with an eruption quite localized at the points of inoculation, and otherwise widely different in its clinical and pathologic features, especially with regard to the eruption. Most astonishing of all, however, is the circumstance that this modified or attenuated smallpox, when carried back to its original soil in mankind, never resumes its original characteristics; no matter though it be carried through countless generations of human beings, it remains forever in its transformed condition. This does not happen with an attenuated virus, nor can any virus, by any artifice of man, become so utterly changed. Again, we all know how readily vaccine lymph, when inoculated in the calf or cow, will produce vaccinia. As I have pointed out, all attempts to develop the latter by inoculating these animals with variolous matter have resulted in failure, when made by those most competent to achieve success, if this were possible."

In support of the opposite and generally accepted point of view, I may be permitted to quote from an abstract of a paper by Copeman,¹ read before the Epidemiological Society of London, April 9, 1893:

"Whatever doubts might attach to some, especially

¹ Geo. Fleming, LL.D., Principal Veterinary Surgeon of the Army.

¹ S. A. Moulton Copeman, M.A., M.D., Medical Inspector, Her Majesty's Local Government Board, etc.

of the earlier attempts, and to those in which there was a suspicion of concurrent retro-vaccination, he was firmly convinced that Badcock, Ceely, Thiele and others in the past, as well as Voight, King, and above all Haccius, within the last ten years had repeatedly succeeded in transforming the lymph of typical variola into the best vaccine by successive transmissions through the bovine organism. In the earlier terms of such series it retained much of the virulence or activity of variola, but was even then essentially changed in being no longer communicable otherwise than by actual inoculation.

"In the cases on which the Lyons school relied in their denial of such transformation of variola into vaccinia the lymph or pus had not been absorbed and consequently was in no way modified, but the very same matter that had been inserted in the calf being afterward inoculated into the child naturally reproduced unmitigated smallpox.

"Haccius' experiments were, however, absolutely conclusive and unimpeachable, proving that vaccinia was but a modification of variola consequent on its cultivation in the cow."

The results obtained by Haccius and Eternod, which Copeman accepts as conclusive, are stated by the authors referred to as follows:

"In the first place, we affirm, that after having inoculated calves with variola virus, from seven different sources, and obtained from cases more or less grave, we have obtained every time, after the second or third generation"—*i. e.*, the second or third successive inoculation—"pustules which differed in no way, in their appearance, from the vaccinal pustules originating from cowpox.

"Our experiments show that the result of inoculations varies according to the method employed for introducing the virus. Scarifications and denudations alone have given useful eruptions, while incisions and subcutaneous punctures, such as are usually practiced, have given no result, or have only given rise to small red nodules, not suitable for propagation.

"It results from these facts that the inoculation of human variola in bovine animals causes two kinds of eruption, one which may be propagated and the other which can not.

"The eruption which can be cultivated does not give at the outset a vaccinal pustule having all of the typical characters. It requires, in general, to be transmitted through several successive generations in order to acquire them."

With reference to the successful results obtained by Badcock and by Ceely, we quote from a paper in the *British Medical Journal* (Nov. 26, 1881) by Dr. Hodgson, as follows:

"Although often failing afterward, it was Mr. Badcock's good fortune to have a first success. Obtaining from the late Sir (then Mr.) Cordy Burrows some lymph from a primary case of human smallpox, he inoculated a cow with it, and produced (in the judgment of Dr. Willis and Mr. Burrows) such perfect vaccine vesicles, that he has induced therefrom to vaccinate his own baby, and with the result again satisfying the medical men that genuine vaccine pocks occurred on the little boy's arm. From these, in turn, a supply of lymph was obtained, and was propagated on other children, uniformly with the same results; many other medical men taking part in the proceedings, or using the new lymph in their practices.

"Mr. Badcock's enthusiasm carried him forward, and led him, notwithstanding many failures and disappointments, to incur considerable expense in keeping up a stock of cows on which to continue his experiments. For twenty successive years did he persist from time to time, as opportunity offered, procuring through medical men fresh supplies of variolous matter, and using it on the cows. Altogether, he practiced on two hundred cows.

"Several of the two hundred animals he inoculated repeatedly. In only thirty-seven instances were satisfactory vaccine pocks considered to result; indeed, in four of these, they were not so finely developed as to encourage a transference from them of their contents. Consequently, the total number of cases in which typical vaccine pocks were produced, and which were considered eligible for vaccinating from (during the twenty years' experiments), was thirty-three. These successful cases were watched, in different stages, by various medical men, many of whom were public or practical vaccinators highly qualified to decide on their merits; and the lymph so obtained has been circulated throughout the civilized world. It continues to be held in high esteem in Brighton, where the three public vaccinators have each of them received gifts from the government three several times for the high standard of their vaccinations.

"The late Mr. Marson used Mr. Badcock's lymph for many years, and so did the late Mr. Ceely. The latter and Mr. Badcock commenced their experiments in the same year, unknown to each other; and Mr. Ceely, having succeeded twice only himself, afterward visited Brighton, and, having satisfied himself of the thorough reliableness of Mr. Badcock's doings, then ceased personally to experiment further—the more readily so, in consequence of the arduousness of his other occupations as a country hospital surgeon and general practitioner.

"Sir Thomas Watson and Dr. Bristowe, in their text-books on the practice of medicine, have both accepted Ceely's and Badcock's investigations, as furnishing the true bearing of cowpox to smallpox; and, as long ago as 1857, in the ponderous 'Blue-book' on vaccination, compiled under the superintendence of Mr. Simon, he thoroughly does the same. These are extracts from his report. 'Researches, subsequent to Jenner's, have settled this part of the question. It has been made matter of familiar experiment that the infection of smallpox may be communicated, by inoculation, from man to the cow, producing vesicles which present the physical characters of cowpox; and that the lymph from these vesicles, if implanted in the skin of the human subject, produces the ordinary local phenomena of vaccination, from which lymph may be transferred to other unprotected persons, all of which human beings will diffuse no atmospheric infection, and will afterward themselves cease to be susceptible to smallpox. The people thus protected are so, because the process has really given them smallpox of the most mitigated kind. The merit of this discovery belongs in the first place, to Gassner, in 1801; and, of corroborating it, in 1840, to Ceely and Badcock. The last mentioned has, during the last seventeen years, again and again derived a fresh stock of vaccine lymph from cows thus artificially infected by himself; has vaccinated with such lymph more than fourteen thousand persons, and furnished supplies of it to more than four hundred medical practitioners.'

The time at my disposal will not permit a more extended review of the experimental evidence; but in view of the positive results already referred to I believe we are justified in accepting it as a demonstrated fact that cowpox and smallpox have a genetic relation and that cowpox may be induced by inoculations with smallpox virus. The negative results which have so frequently attended such inoculations can not be accepted as establishing the contrary view. While this question could only be settled definitely by experimental evidence, we may call attention, as corroborative of the conclusion reached from an examination of this evidence, to the support which it receives from the demonstrated fact that both in man and in susceptible lower animals inoculations with the virus from either source confer immunity from the pathogenic action of the other. This cross immunity, so far as we now know, does not occur in infectious diseases which are not genetically related. Another significant fact is the frequency of cowpox in England at a time when smallpox was prevalent in that country, and its comparative infrequency since, as a result of vaccination, the prevalence of the disease has been greatly restricted.

The genetic relation of smallpox and horsepox is established, indirectly, by the experiments of Jenner and others, which show that inoculations of the virus of horsepox, or "grease," will cause the development of typical pustules of cowpox in bovine animals, and that from these a vaccine virus may be obtained which gives rise to typical results in man. Chauveau says that the horse "has a special aptitude to the natural or spontaneous development of the vaccine disease." Its special susceptibility is shown by the fact that a generalized vaccinal eruption, corresponding with that of natural horsepox, not infrequently results from cutaneous inoculations and also from intra-venous injections of vaccine virus. Such injections, according to Chauveau, "not only confer immunity, but quite frequently give rise to an exanthematous vaccinal eruption, the exact *fac simile* of the natural malady."

The experiments of Copeman, Reed and others, show that the monkey is also susceptible to vaccination and that after a successful vaccination it has acquired an immunity from the specific pathogenic action of the vaccine virus.

Reference has already been made to the experiments of Chauveau and of Raynaud, which show that vaccinal immunity may be produced by the subcutaneous injection of vaccine virus. Raynaud has also called attention to the fact that after such inoculations, as well as after vaccination by the usual method, the nearest lymphatic gland is considerably enlarged. The idea occurred to him that the specific infectious element might be retained in these enlarged glands, but he failed in obtaining any positive results from vaccinations with the juice of such enlarged glands. He also had negative results in subcutaneous inoculation made with lymph obtained from the lymphatic vessels between the point of vaccination and the nearest glands. But several grams of such lymph injected directly into the circulation of a horse caused an eruption of horsepox. In his summary of the results of his experiments Raynaud says: "It is then possible, finally, to detect traces of virulence in the lymphatic system, between the place of inoculation and the nearest lymphatic gland. Beyond this gland it is not found. This circumstance seems to indicate that the

glands may be concerned in the disappearance of virulence and the appearance of immunity, two facts simultaneous and correlative."

That immunity may be induced in the calf by intra-venous injections of small quantities of vaccine virus appears to be demonstrated by the experiments of Straus, Chambon and Ménard (1890). Chauveau had previously shown that the horse may be made immune by such injections.

Both Chauveau and Raynaud obtained negative results from their experiments with the blood of vaccinated animals. In a single experiment made in 1877 Raynaud obtained what appeared to be a positive result in a calf into the veins of which he had injected 250 grams of blood from another calf which had been vaccinated six days previously and in which the vaccinal eruption was fully developed. This animal proved to be fully immune, but subsequent experiments did not give a similar result and Raynaud abandoned the view, which he at first entertained, that immunity in this case was due to the transfusion of blood from a vaccinated calf. More recent experiments, however, seem to show that by the transfusion of a very large amount of blood from a vaccinated calf immunity may be induced. The experiments of Straus, Chambon and Ménard gave a successful result when the amount of blood transfused was as much as five or six kilograms.

Béclère, Chambon, and Ménard (1896) report that in their experiments the vaccinal eruption was considerably modified, in the calf, by subcutaneous injections of serum from an immune animal when the total amount injected was from 800 to 1,500 c.c.; also that lymph from the modified vaccinal eruption was attenuated, as regards its specific virulence. That complete immunity is not produced by the subcutaneous or intravenous injection of amounts varying from 50 to 1,000 c.c. is demonstrated by the experiments of Chauveau, of Raynaud, of Kramer and Boyce, of Beumer and Peiper and of the authors above mentioned.

The successful experiments of Prof. Straus and his associates lead them to conclude that the undiscovered "vaccine microbe" is present in the blood, in very small quantity during the period of eruption—at which time the blood was obtained which served for their experiments. A different explanation of the immunity resulting from the transfusion of so large a quantity of blood suggests itself as more probable, in view of recent additions to our knowledge relating to the production of immunity by antitoxins. If the immunity induced in the experiments referred to was due to the introduction of the vaccine microbe the result would not be likely to depend so largely upon quantity. A microbe capable of self-multiplication, if present in the blood transfused could scarcely fail to be in sufficient numbers to cause general infection when from 250 to 1,000 c.c. of this blood is injected into the veins of a susceptible animal. But in the experiments referred to immunity was not established unless a considerably larger quantity of blood was transfused. The experiments of Béclère, Chambon and Ménard (1896) show that blood collected from a vaccinated heifer some time after the complete dessication of the vaccinal eruption possesses immunizing properties. These results are confirmed by results obtained by Major Walter Reed, Surgeon U. S. A., in experiments on monkeys, made at the Army Medical Museum. Dr. Reed's experiments also show that a considerable

quantity of serum is required in order to establish a complete immunity from the specific pathogenic action of vaccine virus. When the quantity was insufficient a partial effect was noted, the vaccine vesicle appearing at a later date after vaccination, and in some cases showing an imperfect development.

Béclère, Chambon and Ménard have given the following summary of the conclusions reached by them, as a result of their experiments:

"1. The serum of a vaccinated heifer collected ten to fifteen days after vaccination, after the virulent period, possesses immunizing properties.

"2. The immunizing action of the serum of the vaccinated heifer is very rapid. The subcutaneous injection of a sufficient quantity, made immediately before vaccination by numerous sub-epidermic inoculations, modifies the subsequent development of the vaccinal eruption and may cause its almost complete abortion."

"4. The rapidity of the immunizing action of the serum of the vaccinated heifer, compared with the tardy immunity which follows the subcutaneous inoculation of vaccine lymph, demonstrates that the serum owes its immunizing properties to soluble substances and not to the presence of the microbes (still unknown) of vaccinia."

The experimental evidence heretofore referred to seems to support the conclusion last stated and experiments made by the present writer in 1892 show that the soluble substances upon which immunity depends when brought into contact with vaccine virus neutralize its specific virulence—presumably by destroying the vitality of the vaccine microbe. The positive results reported in my paper published (1892) in the *Transactions of the Association of American Physicians*² have since been confirmed by Kinyon and by Reed.

¹ The writer in 1893 made a series of experiments "upon unvaccinated children in two orphan asylums in Brooklyn, with a view to ascertain whether blood serum from an immune calf, or from an individual who had recently suffered an attack of smallpox, if injected into the subcutaneous tissues at the time of vaccination, would prevent the development of a characteristic vaccine vesicle. In these experiments from 1 to 5 c.c. of the serum supposed to contain an antitoxin of smallpox was injected near the point of vaccination, or, in some instances, into the other arm. The result was negative, even when serum was used from an individual who was just convalescent from a severe attack of smallpox. But it may be that a different result would have been obtained if a larger quantity of blood serum had been used, or if it had been injected into the circulation instead of into the subcutaneous tissues. More recent experiments by Kramer and Boyce (1893) and by Landmann (1894) also show that small amounts of serum from immune calves (5 to 10 c.c.) do not prevent the development of the vaccine vesicle; and that blood serum (35 c.c.) from one who had suffered a recent attack of smallpox did not have any noticeable effect upon the development of a confluent case of smallpox in a child 5 years of age (Landmann)."

(Quotation from the writer's work on *Immunity, Protective Inoculation in Infectious Diseases and Serum-Therapy*. Wm. Wood & Co., New York, 1895.)

² The following extract from my paper entitled "Practical Results of Bacteriological Researches," gives details of the experiments referred to:

"These experiments were made with the kind assistance of Dr. Wm. E. Griffiths, of Brooklyn, who has for many years been engaged in the production of vaccine virus, and consequently is an expert in the vaccination of calves and in recognizing vaccinia in these animals.

"Upon visiting Dr. Griffiths and making known to him my desires, I found him quite willing to assist me, and also that he had recently vaccinated, and consequently immune, calf in his stable. This animal had been vaccinated in numerous places upon the abdomen and thighs fourteen days previously. The vaccination was entirely successful, and a large number of quills had been charged from the vesicles which formed. At the time of my visit for the purpose of collecting blood-serum from this animal, dry crust still remained attached at the points where vaccination had been practiced two weeks previously. On the 28th of April I collected blood serum from a superficial vein in the hind leg of this calf. This blood was placed in an ice chest for twenty-four hours, at the end of which time the clear serum was drawn off in 'Sternberg's bulbs.' Four drops of this serum were placed in each of two small, sterilized, glass tubes; in one of these we placed three quills charged with fresh vaccine lymph from a calf. At the end of an hour the quills were removed, after carefully washing off in the serum the lymph with which they had been charged. In the other tube we mixed with the four drops of blood serum an emulsion made from a fragment of a perfectly fresh vaccine crust from the arm of a child; this was crushed upon a piece of glass and rubbed up with a little of the same blood-serum. The two tubes were now placed in an ice chest for twenty-four hours, at the end of which time the contents were used to vaccinate a calf purchased for the purpose. Dr. Griffiths carefully shaved the thighs of this calf and scarified each thigh in several places, as he is accustomed to do in vaccinating for the propagation of lymph. The contents of the tube con-

The experimental evidence recorded appears to me to indicate that the immunity resulting from vaccination, or from an attack of smallpox, is due to the presence in the blood of the immune animal of a substance which destroys the variola microbe, rather than to an antitoxin capable of neutralizing the toxic substances developed during the growth of this hypothetical microbe. As already stated, my own experiments show that direct contact with blood-serum from an immune animal neutralizes the specific virulence of vaccine virus, and I infer that it does so by destroying the vitality of the contagium vivum present in such virus. The antitoxins, as a rule, have no germicidal action; but we have experimental evidence which shows that immunity from the pathogenic action of certain microorganisms may depend upon the presence of a germicidal substance in the blood of the immune animal. Thus Gamaleña, Pfeiffer and others have shown that in animals which have an acquired immunity against infection by the spirillum of Asiatic cholera and against spirillum Metchnikovi there is a decided increase in the bactericidal power of the blood-serum.

If, as we suppose, the immunity resulting from vaccination is due to the presence of a germicidal substance in the blood the source of this substance is a question of great scientific interest, and its solution might lead to important practical results in the treatment of smallpox. Possibly this substance is elaborated by the lymphatic glands and may be obtained from the enlarged glands of a recently vaccinated calf in greater concentration than from the blood-serum of the same animal. This can only be determined by a series of carefully conducted experiments.

Already a limited number of clinical experiments have been made with blood-serum from an immune animal; but the results have not been very encouraging. The ascertained fact that very large amounts

taining lymph from the quills were rubbed into the scarified places upon one thigh, and the contents of the tube containing the emulsified crust into the other. On the 8th of May, nine days after the vaccination, the calf was carefully examined, and it was ascertained that the result of the vaccination was entirely negative.

"Evidently it was necessary to make a control experiment before we would be justified in ascribing this negative result to a neutralization of the virus by some special substance present in the blood serum of an immune calf. Possibly the blood of a non-immune calf might also, after an exposure of twenty-four hours, neutralize the specific virulence of vaccine lymph. The control experiment was made as follows:

"On the 9th day of May we collected blood from a vein in the leg of a non-immune (not vaccinated) calf; this was placed in the ice-chest for twenty-four hours, and the following day clear serum was collected in Sternberg's bulbs. Three quills, charged with fresh lymph from a calf, of the same lot as those used in the previous experiment, were placed in four drops of this blood-serum in each of two small glass tubes. As in the previous experiment, the lymph was washed from the quills at the end of an hour, and the tubes were placed aside in the ice-chest. At the end of twenty-four hours the serum in these two tubes was used to vaccinate the same calf which had served for the previous experiment. Several points were scarified upon the left thigh and upon the left side of the abdomen, which were carefully shaved for the purpose.

"At the same time the animal was vaccinated upon the right thigh and upon the right side of the abdomen with virus mixed with the blood serum from the immune calf. This serum, collected in Sternberg's bulbs on the 28th of April, had since been kept in the ice-chest. One hour before the vaccination four drops of this blood-serum were mixed with one drop of liquid lymph, which had been recently collected by Dr. Griffiths in a capillary tube from a vaccinated calf. At the same time three quills charged with bovine lymph were immersed in four drops of the same blood serum from immune calf. As stated, the animal was vaccinated upon the right side of the abdomen and upon the right thigh with this virus, which had been exposed for one hour to the action of blood-serum from an immune calf. The serum containing the liquid lymph was rubbed into the scarification on the right side of the abdomen, the serum containing lymph from the quills into the right thigh. On the 19th of May, eight days after the vaccination, the animal was carefully examined by Dr. Griffiths and myself, and the following results noted: Upon the left thigh and left side of the abdomen the vaccinations, from quills in non-immune blood-serum after twenty-four hours' contact—were entirely successful, the scarification being surrounded by characteristic vesicles and covered by characteristic crusts. Upon the right thigh, vaccinations from quills immersed in blood-serum from immune calf for one hour—and upon the right side of abdomen—vaccinations with liquid lymph mixed with blood-serum from immune calf, the result was entirely negative. Several of the scarifications had entirely healed; others were covered with a dry scab which was easily detached and under which the scarification was healing without any appearance of vesicles such as surrounded the scarifications upon the left side."

of blood-serum are required to produce immunity in a healthy animal appears to indicate that a specific therapeutic effect can not be expected from the subcutaneous injection of a few cubic centimeters of serum, or even from the transfusion of several hundred cubic centimeters. As already mentioned, the experiments of Chaveau, of Raynaud, and of Prof. Straus and his associates, upon calves, agree in showing that the immunizing dose of blood-serum is several kilograms, and that the transfusion of less than 1,000 grams usually has no appreciable effect.

In two cases of smallpox treated by Dr. Elliott, with serum collected by Kinyon (1895) the result is supposed to have been favorable, although one of the patients died. This patient received in all 60 c.c. of the serum, in doses of 15 c.c., injected subcutaneously. In the second, non-fatal case, 105 c.c. was administered in the same way "during a period of forty-eight hours." Dr. Elliott says: "There was no effect on the eruption in the first case. It is my opinion that the vaccine serum will shorten the course of variola if given in the papular stage of the eruption. The vaccine serum does modify the variolous eruption, even in the pustular stage, but does not shorten the attack. The most serious objection to its application is the largeness of the dose, 15 to 30 c.c., which leads the patients to object to its use."

Landmann (1894) injected 25 c.c. of blood-serum, from an individual who had recently recovered from an attack of smallpox, into a child, 5 years of age, suffering from an attack of confluent smallpox. No noticeable effect was produced.

Auché (1873) had previously reported a negative result from the subcutaneous injection of serum obtained from recent convalescents—6 c.c. in one case and 18 c.c. in another.

Béclère, Chambon and Ménard, in their recently published paper, to which we have already referred, say that they have made clinical experiments to determine the therapeutic value of blood-serum from an immune animal in seventeen cases of variola, and that the results of these experiments will shortly be published. Possibly their report may be more favorable than we now anticipate.

In view of the large quantity of blood serum required to produce immunity, and, by inference, to have a specific therapeutic effect in smallpox, it is evident that an effort should be made to obtain the immunizing substance in a more concentrated form. Already, Dr. Reed has made some preliminary experiments in this direction at the Army Medical Museum, and he has ascertained that a dried precipitate from the serum of an immune calf, obtained by the method of Brieger and Cohn, contains a substance which neutralizes the action of vaccine virus, when brought into contact with it before vaccination. A comparative test showed that the dried precipitate from the serum of a non-immune calf has no such effect.

The conclusions reached and suggestions made in this paper may be summarized as follows:

1. Smallpox, cowpox and horsepox are genetically related, being different manifestations of the same infectious disease in different genera of animals (Man, Bos, Equus).

2. The specific infectious agent of variola and of vaccinia has not been demonstrated. The extended experimental investigations which have been made indicate that it does not belong to the class of microorganisms known as bacteria.

3. Various bacteria are commonly found in the lymph from vaccine vesicles, obtained either from bovine animals or from man. Among these are the well-known pus cocci, and these micrococci are probably largely responsible for the erysipelatous inflammation and other unpleasant complications which frequently result from vaccination with such lymph.

4. Lymph preserved in glycerin after a time becomes sterile so far as the presence of bacteria is concerned, without losing its specific virulence.

5. Immunity may be induced by subcutaneous inoculation of vaccine virus, without the development of a vaccine vesicle; and it is probable that the subcutaneous injection of lymph preserved in glycerin would give protection without any of the septic complications so common as a result of vaccination by the usual method.

6. The blood-serum of immune animals contains a substance in solution which destroys the specific virulence of vaccine virus when brought in contact with it.

7. This substance is not present in sufficient amount to make the blood-serum of immune animals available for the production of immunity in man (or for the treatment of variola?). But it may perhaps be obtained in a concentrated form by chemical methods, and in that case would be likely to prove useful, and possibly specific as a therapeutic agent in this disease.

8. The immunity resulting from the subcutaneous injection of vaccine lymph, like that resulting from vaccination in the usual manner is gradually developed and is not complete until the eighth day,³ depending, no doubt, upon a multiplication of the infectious agent in the body of the susceptible animal. On the other hand, the immunity resulting from the transfusion of a large amount of blood serum from an immune animal to a susceptible animal is an immediate result of such transfusion.

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VAGINAL HYSTERECTOMY FOR FIBROIDS OF THE UTERUS.

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HISTORICAL.

Vaginal hysterectomy is closely associated in its early history with cancer of the uterus. Greig Smith says, that it is probable that incision of the uterus was practiced by the ancient Greeks, but it is certain that it was subsequently forgotten. Soranus, in his book of "Diseases of Women," who lived in Rome a century before Christ, describes the operation as a surgical procedure for prolapsus. The first authenticated description of vaginal hysterectomy subsequent to this was given by Berengarius, of Bologna, in 1507.

In 1560 Andreas A Cruce performed vaginal hysterectomy. J. Schenck a Grafenberg 1617 (Senn) relates a number of cases in which the uterus was removed through the vagina in whole or in part by ignorant persons who had not the faintest ideas to the difficulty or of the extent and gravity of the operation. In 1792 Saunonier removed an inverted uterus below a ligature. Hildanus 1616, Wrisberg 1785, Bernhard 1821 reported cases of accidental or unintentional removal of uteri by the vagina by careless midwives and others. Intentional removal of the uterus by surgeons have been reported by Zwinger, Vicussen, Baxter, Faivre, Alexander, Hunter, Joseph Clark and Jackson. (Senn.)

The real history of vaginal hysterectomy begins when it was deliberately planned and executed for the relief of definite pathologic conditions. To J. M. Langenbeck in 1813 belongs the credit of opening this page of history. He removed the uterus by enucleation, using neither clamps nor ligatures and his case recovered and lived many years. The post mortem demonstrated to his incredulous critics the truth of his claim. Sauter, Jan. 28, 1822; Elias von Siebold, April 19, 1823; Holscher, Feb. 5, 1824; Elias von Siebold, again July 25, 1825; Langenbeck again Aug. 5, 1825; Recamier, July 26, 1829; Langenbeck, again Aug. 18, 1829; Roux, Sept. 20 and Sept. 25, 1830; Recamier, again Jan. 13, 1830; Blundell, Oct. 16, 1830. Siebold 1831, Delbach 1839 are the bold pioneers who followed the lead of Langenbeck in Europe. From 1839 to the revival of Czerny in 1878 there are no records of European cases. In America, however, a few cases were put on record during this long interval. Palmer Dudley reports that Dr. John M. Esselman, of Nashville, Tenn., in September, 1834, removed an inverted uterus by means of the ligature, his patient recovering. This same surgeon repeated the operation successfully in August, 1843, for an inverted uterus containing a fibroid. This is the first vaginal hysterectomy for fibroids of the uterus I find recorded. The first vaginal hysterectomy for cancer deliberately undertaken and successfully executed in this country was performed by Dr. Paul F. Eve, of Augusta, Ga. April 16, 1850. (*Am. Journal of Medical Science*, 1858.) Dr. L. C. Lane, of San Francisco, operated for cancer Nov. 11, 1878, and at a later date in the same year on a second case for cancers. Both cases recovered. Lane executed this operation independently of Czerny, who revived the operation in Europe by performing his first operation April 12, 1878, or seven months earlier than Lane.

From the revival of Czerny and Lane, with the dawn of clean surgery, the operation of vaginal hysterectomy became a legitimate operation. In less than twenty years it has made wonderful strides. It has been performed thousands of times by hundreds of operators, and has, undoubtedly, been the means of adding many years to the sum total of human life.

VAGINAL HYSTERECTOMY FOR FIBROIDS.

It is argued that a patient suffers less real shock, on an average, when submitted to a vaginal hysterectomy than when operated upon by the abdominal route. The only rational explanation that can be forwarded to account for this fact is that the intestines and the peritoneum are not subjected to exposure to the air in the vaginal route, nor are they subjected to the handling which they are liable to receive in the abdominal operations. While in our improved methods, the abdominal contents are exposed and handled to a small degree compared to former times, at the same time we can not help but recognize that there is less shock after a perfect vaginal hysterectomy than after an abdominal hysterectomy in cases of like severity. A vaginal hysterectomy avoids the abdominal scarring which so many patients dread as a brand of mutilation which must be carried through life after an abdominal operation. Many patients I find have this wholesome dread to such a degree that they seem to be no comparison in their minds between the two operations. An abdominal operation contains all the horrors of a most dreaded affair, while

vaginal operation with no sign of mutilation left, is contemplated like a normal labor with dread but resignation. An abdominal scar, it is true, will frequently become the seat of considerable irritation and rarely the seat of severe neuralgic pains. There is always, too, the remote possibility of ventral hernias developing in an abdominal scar. It is also claimed, by not a few operators, that safer and more satisfactory drainage can be obtained, when it is required, through the vaginal route than by the abdominal. However, as soon as we undertake to do a vaginal hysterectomy on anything but the smallest kind of a fibroid, we are hampered by the narrow limits in which we have to do our work, and, therefore, if the tumor is of considerable size, the extra time its proper removal from the vagina requires, off-sets what is gained by non-exposure of the abdominal viscera. So that the rational surgeon must discriminate here, as everywhere else in surgery, and select the operation which best suits the individual case. If he has a small fibroid, or a large fibroid with relaxed ligaments and a large, roomy vagina, he should select the lower route; whereas, if he has a large fibroid high in the pelvis, or a small one with a narrow, contracted vagina and rigid tissues he should do a laparotomy and remove the tumor from above.

Methods.—Vaginal hysterectomy for fibroids may be divided into two grand divisions: 1, removal of the uterus and its fibroid masses as a whole without division, or vaginal hysterectomy proper; 2, removal of the uterus and its accompanying fibroid development in piecemeal or morcellment.

1. VAGINAL HYSTERECTOMY PROPER.

Indications.—Vaginal hysterectomy proper for fibroids must of necessity include only the smallest tumors, or at best fibroid uteri with long, slender subperitoneal projections. The operation is often the ideal method of treating small multiple fibroids, which are so frequently the seat of severe uterine pain and excessive hemorrhage. Fibroids of considerable size may frequently be treated by vaginal hysterectomy, when the uterus is low in the pelvis and the vagina is large and the tissues loose. It is an easy matter to turn a complete vaginal hysterectomy for fibroids into a morcellment should any unlooked for enlargement manifest itself.

TECHNIQUE OF VAGINAL HYSTERECTOMY PROPER.

The patient should be prepared with the same care and manner that I have described in my article on preparatory treatment for laparotomy. Special care should be maintained to render the vaginal tract and external genitalia aseptic. The patient should be anesthetized with ether. She should be placed in the exaggerated lithotomy position with the limbs supported by some mechanical device which will hold them firm and for any required length of time. Otherwise, they should be supported by strong skilled assistants on either side, who will also hold the vaginal retractors. Immediately before the operation begins a nurse or a third assistant should thoroughly scrub the external genitalia and the vagina with green soap. This should be thoroughly rinsed off, and the parts should be thoroughly washed with 95 per cent. alcohol and finally rubbed with 1 to 1,000 bichlorid of mercury and then douched off with sterilized water. Moist sterilized towels are placed around the field of operation. The operator takes a seat at the foot of the table on a small stool. At his right are his instru-

ments with the surgical nurse to do his bidding. At his left is the nurse who superintends the irrigator of sterilized water and handles the sponges.

Operation.—Two small vaginal retractors, with short broad blades, are introduced and held by the assistants so as to retract the anterior and the posterior vaginal wall and expose the cervix uteri. The cervix is grasped by a light pair of vulsellum forceps with four teeth, the uterus rapidly dilated by first introducing a small dilator and then a large strong one, until its interior can be reached and thoroughly explored with a sharp curette. The uterine cavity is thoroughly curetted and then rendered aseptic by washing out with a solution of 1 to 100 bichlorid of mercury. It is then loosely filled with sterilized gauze. Through the cervix, by means of a curved needle, is passed a strong double handling string of braided silk, and this is tied over the os uteri in such a way as to close the canal. The vulsellum forceps are now removed and the strong silk ligature is henceforth employed as

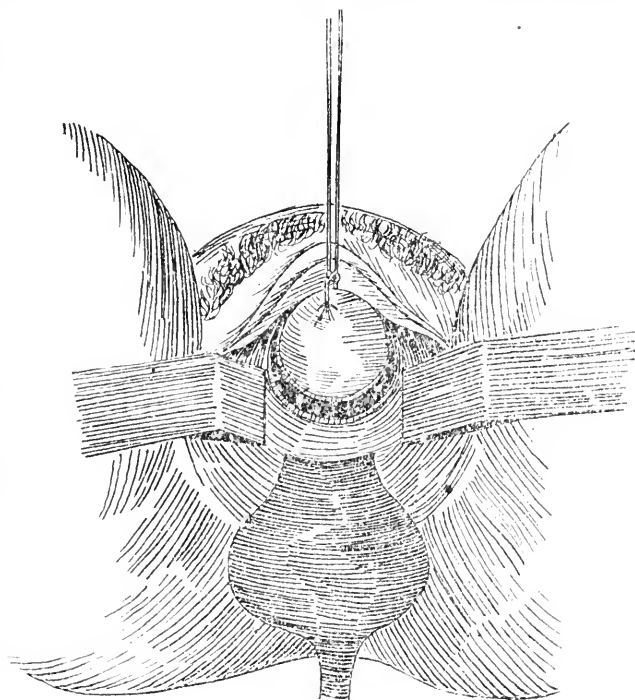


FIGURE 1.

a means of handling the uterus. The uterus is now drawn well down by making strong tractions and the cervix drawn back so as to expose the anterior utero-vaginal fold. With a curved scissors the mucous membrane of the vagina at its attachment to the uterus anteriorly is penetrated and the incisions carried to the right and to the left following the utero-vaginal junction, until the incisions meet posteriorly and the uterus is completely severed from the vault of the vagina (Fig. 1). The assistant now grasps the handling string and makes downward and backward traction, while the operator with the index fingers of both hands carefully separates the bladder from the anterior surface of the uterus. If there are any firm bands connecting the two organs, they should be severed with scissors near their uterine attachment, always keeping the point of the scissors against the firm uterine tissue. As soon as the utero-vesical fold of the peritoneum is reached with the fingers the two fingers should be separated laterally, so as to detach the bladder from the anterior surface of the broad

ligament, and also for the purpose of pushing the ureters, which pass under the broad ligaments near the cervix, well to the sides of the pelvis.

The assistants now draw the cervix forward and the operator separates the uterus from its posterior attachments and the two fingers penetrate through the peritoneum into Douglas' cul-de-sac. The fingers are then separated laterally tearing the peritoneum in that direction. A large dry gauze sponge, with a string attached, is pushed through this opening and spread out above the uterus. The broad ligaments and the appendages are then rapidly examined. The peritoneum in front of the uterus between it and the bladder is now torn through and the broad ligaments are the only attachments left between the uterus and the patient. If the uterus is not too large and the broad ligaments are loose and the vagina large, one pair of strong forceps will secure each broad ligament. The uterus is drawn well down and the operator slips his index finger of the left hand behind the left broad ligament and crowds the appendages toward the uterus until he can hook the finger over the ligament outside of the appendages. With the uterus held well down and steadied by one of the assistants, the other assistant holding the bladder well out of reach

forcing, a small pair of straight hemostatic forceps may be applied to the projecting free end of the severed tissue. Occasionally it is not practicable nor safe to include the whole broad ligament in one pair of forceps because of its width and bulk, while again it may be difficult to place the forceps on the whole ligament at once, because of a too narrow vagina or a highly situated uterus with short ligaments. Here the bulky base of each broad ligament should be clamped first, with short stout catch forceps and the ligaments severed up to within a short distance of the forceps' bite. The uterus then can be drawn down and the remaining portion of the broad ligaments can be secured in one pair of forceps on each side. The last forceps are placed on the uterine side of the first forceps. The forceps are now held by the assistants to their respective sides of the vagina with their handles separated in such a manner as to act as lateral retractors. The sponge is removed from the pelvis and the toilet of the peritoneal cavity is made by drying it with sponges on holders. The posterior retractor is now inserted and the operator seeks the edge of the peritoneum which covers the bladder, grasps it with a catch forceps and draws it down and with a running stitch of antiseptic catgut attaches it to the upper end of the anterior vaginal wall. An anterior retractor is now inserted and the edge of the peritoneum covering the rectum is attached to the upper end of the posterior vaginal wall in the same manner. This insures hemostasis of the anterior and posterior vaginal edges, and covers an otherwise uncovered gap of connective tissue space.

Drainage.—The forceps are widely separated, two narrow retractors hold open the vagina anteriorly and posteriorly, a square piece of sterilized iodoform gauze two feet wide is placed with its center over the vulva, and with a large pair of dressing forceps its folded center is carried well into the vagina beyond the ends of the forceps, so as to form a bag. It is then loosely packed with strips of sterilized iodoform gauze and the edges of the filled bag is left projecting several inches from the vulva. It is folded over the vulva. The handles of the clamp forceps are wrapped in gauze. A liberal supply of absorbent cotton is placed over and around the forceps and over the perineum and vulva, and all held in place by three small perineal bandages, one passing between the handles of the forceps and the other two outside of the forceps handles.

VAGINAL HYSTERECTOMY BY MORCELLEMENT.

Indications. Vaginal hysterectomy by morcellement may be done for fibroids of considerable size, the limit of maximum size on which the operation may be safely undertaken depending on the skill and experience of the particular operator. The writer does not favor the operation where the uterus is too large to deliver easily after bisecting, preferring to undertake such cases by the abdominal route. The operation is now performed every day, however, by an increasing number of skillful men on fibroids of every size, even on tumors reaching well above the umbilicus.

Polk, a firm believer in morcellement for fibroids, lays down the following indications: 1. Whenever the mass is largely within the pelvis, especially if it is fixed therein by adhesions. 2. Whenever the mass

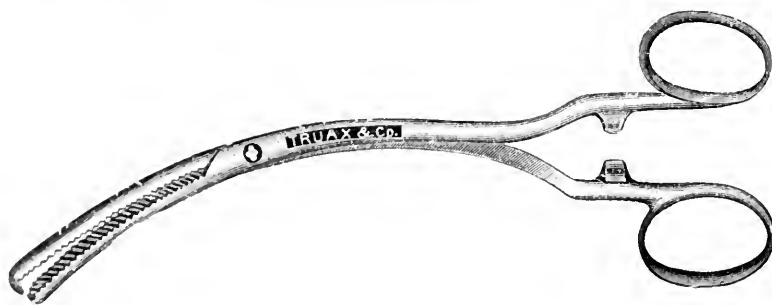


FIGURE 2.

by a long narrow bladed retractor, the operator with his right hand slides a strong pair of Byford's clamp forceps (Fig. 2) over the broad ligament, the posterior blade following the lead of the index finger, which is still holding the ligament, until they include its whole width, and project half an inch beyond its upper edge when they are closed and locked. The jaws of the forceps should be examined carefully to see that they include all the tissues necessary, and that it compresses all portions sufficiently. The locks of the forceps should be securely tied. With the index finger guiding the scissors, the clamped ligament is now severed close to the uterus. If the uterus is not too large and the right broad ligament is long the organ can be delivered as the next step and when delivered the right broad ligament may be clamped with ease outside of the vulva. If this is possible the clamp should be applied outside of the appendages and the uterus cut away. Frequently, however, the uterus can not be delivered until the other clamp is applied and the ligaments severed. Under such circumstances the forceps should be carefully applied exactly like the first one and the ligaments divided with the scissors from below upward while the assistant makes slight traction on the uterus until the organ is free, when it is delivered. The broad ligament forceps are carefully examined now, to be sure that each is doing all the work required of it, viz., including the whole ligament in its grasp and finally compressing every portion sufficiently tight to maintain hemostasis. Should any portion need rein-

is soft and, therefore, compressible as in myoma and fibrocystoma. 3. In all other cases where we have a patient in good condition whose pelvis is shallow, where the vaginal canal is roomy, and in whom the evidence of a pyosalpinx above the pelvis brim are absent. Péan, Segmond, Richelot, Jacobs, Henrotin and others do not make suppurating appendages a contraindication to this method of operating.

TECHNIQUE.

Cases with Uterus only Double its Natural Size.—

In these cases the technique is very similar to that for simple vaginal hysterectomy, with the exception that the uterus is bisected with an antero-posterior incision.

Step 1: The vagina is severed close to the cervix, as in ordinary vaginal hysterectomy, and the uterus denuded until the posterior and anterior cul-de-sacs are opened.

Step 2: Grasp the anterior lip of the cervix on either side with strong bullet forceps or two well embedded handling strings, and making strong traction split the anterior wall of the uterus with strong scissors with the posterior blade guided by the uterine canal

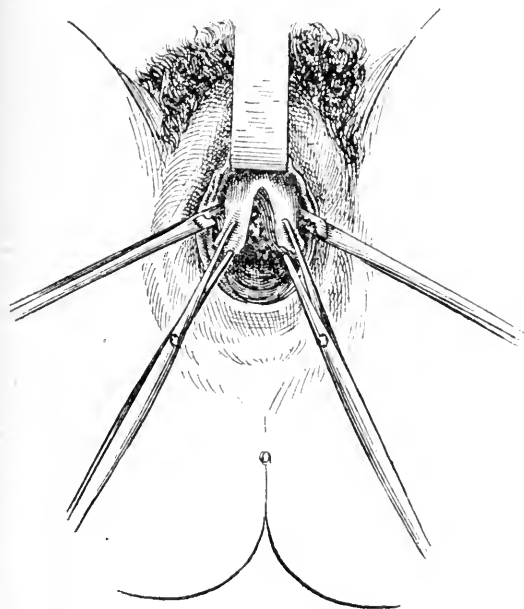


FIGURE 3.

(Fig. 3). When the scissors have reached the limit of exposure of the uterus the edge of the split uterus at the highest point of the incision should be grasped by the bullet forceps, and with this new grasp the uterus should be drawn down still farther and the splitting process continued. When the uterus is usually movable or the broad ligaments unusually long, sometimes at this point the partially split uterus is completely anteverted and the fundus is delivered. As a rule, however, whenever it is necessary to split the uterus at all in order to remove it, the bisecting must be carried to completion.

Step 3: When the bisected uterus is well drawn down, the increased movability of the organ in consequence of being in two pieces enables one to clamp the broad ligaments with one, or at most two forceps, and the respective halves are removed. After one side has been cut away it is an easy matter to clamp and remove the opposite half.

Step 4: Finish operation and apply drainage as in simple vaginal hysterectomy.

Variations of Procedure.—If it is convenient it

is often better to attempt to clamp the broad ligaments immediately after opening the two cul-de-sacs, in order to save the patient as much blood as possible. When it is not possible to clamp the whole broad ligament, the base of the ligaments with the uterine arteries may be secured. As a preliminary every precaution should be observed to render the cavity of the uterus aseptic.

Cases with Uterus More than Double Its Normal Size.—In these cases the uterus must be removed by piecemeal. In order to accomplish this so as not to make a horrible failure, a thoroughly systematic course must be observed by one skilled in the details of pelvis surgery and surgical emergencies. No two cases are alike. Consequently no two operations are ever identical.

Step 1: Circular incisions around the cervix, after first grasping the anterior and the posterior lip of the cervix with strong forceps. The uterus is denuded anteriorly and posteriorly and the posterior

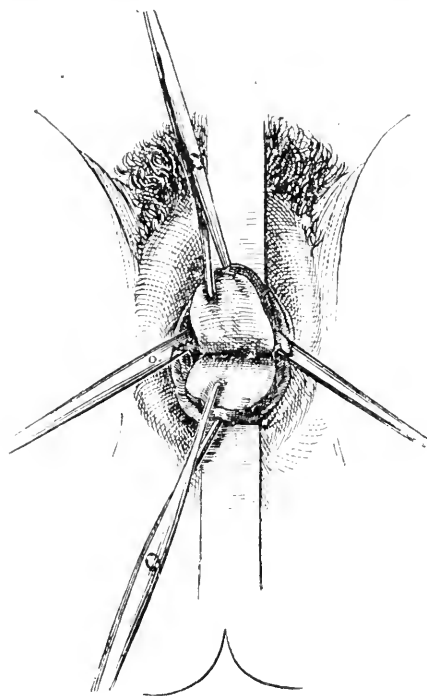


FIGURE 4.

cul-de-sac is opened. An attempt is then made to enter the anterior cul-de-sac.

Step 2: Clamp forceps are now placed on the base of each broad ligament high enough to include the uterine artery and its branches, and the ligaments are cut nearly as high as the point of the clamp.

Step 3: The cervix is split into halves by a lateral incision on the line of the uterine canal with strong scissors or a knife (Fig. 4).

Step 4: With the anterior lip well drawn down and firmly held, the posterior lip is drawn well down and amputated. The remaining stump of the posterior half of the uterus is firmly grasped in forceps, keeping the uterus well down in the field of operation.

Step 5: If the uterus is not too large at this point a single clamp forceps may be placed on the remaining portion of the broad ligament.

Step 6: With hemostasis well secured from this point on the splitting of the uterus is continued and morcellation is proceeded with by amputation of first one-half or a portion of a half and then the other, sever-

ing the broad ligaments by degrees until by piecemeal the whole uterus is removed. Care should be maintained to have a secure hold of the uterus with forceps at some point besides the point of amputation at all times, in order that it may not slip out of the field of operation. As soon as the uterine mass has been reduced sufficiently so that it may be delivered it should be removed. Care must be exerted to secure all large subperitoneal masses which from their situation might by carelessness be accidentally separated from the tumor and escape beyond the reach of the finger or forceps. As the morcellement progresses a finger in the posterior cul-de-sac from time to time learns facts of value to the operator.

Remarks. The care of the forceps and the care of the vaginal and peritoneal edges, after this modified operation, is identical to that after the simple operation. The toilet of the operation field and the drainage is the same. If adhesions exist they must be carefully separated. If the anterior cul-de-sac is elevated so that it can not be entered before amputation is commenced, amputation should be proceeded with and the uterus gradually drawn down until the cul-de-sac can be opened.

Accidents to be avoided.—Wounding of the bladder or intestines and clamping one or both carelessly are accidents which must be carefully guarded against in vaginal hysterectomy of any kind. Severing of important blood vessels before they are securely clamped is another annoying accident, because of the tendency of the unsecured blood vessels to retract into the loose connective tissue of the broad ligament, where they will continue to bleed out of reach of hemostatic forceps. To avoid this accident great care should be observed to securely clamp all tissues before severing, and if there is the slightest doubt about the security of any portion of the divided ligament after it has been cut a second clamp should reinforce the first. To avoid clamping the ureters the forceps should not be applied to the base of the broad ligament until the bladder is thoroughly separated from its anterior surface, until the finger can sweep between it and the broad ligament to the sides of the pelvis. This insures the pushing of the ureters out of the reach of the forceps. This same maneuver insures the integrity of the bladder also. If the bladder is found so adherent at any portion that it is not readily separated with the finger, scissors should be employed to dissect it from the face of the uterus or tumor, great care being observed to avoid wounding the bladder with the scissors by keeping the point of that instrument against the uterus. By following the imperative rule of separating the bladder early and keeping it out of the field of operation by the use of an anterior retractor, it will never be wounded. To avoid wounding the rectum the same care should be observed in entering the posterior cul-de-sac as is exerted in opening the anterior one. If one carelessly opens this pouch, it is an easy matter to strip the peritoneal covering of the bowel posterior to the cul-de-sac and miss entering the peritoneal cavity entirely; while by ignorantly pursuing this false track the rectum may be penetrated. To avoid this embarrassing predicament *stick to the uterus*. If one does strip off a portion of the uterine peritoneum it will do no harm and the rectum is safe.

USE OF LIGATURES FOR VAGINAL HYSTERECTOMY.

By some operators ligatures are employed for secur-

ing hemostasis instead of clamps. In simple, uncomplicated cases ligatures may be employed with ease. In morcellement, where high and excessive manipulation is required the ligatures are impracticable because of the difficulty of applying them, and because of the difficulty of preventing them from becoming loosened by the subsequent manipulation of the parts. When ligatures are employed they prolong the convalescence if they are left long and allowed to ulcerate away. The time required for the accomplishment of that act is from twelve to forty days. During all this time it requires great diligence on the part of the attendant to prevent infecting of the ligatures; in fact, it is seldom prevented. An offensive vaginal discharge bears evidence of the fact, until the ligatures are finally discharged. If ligatures are employed and cut short, with the idea of burying them, it frequently happens that they become infected, even when the greatest care is observed to preserve cleanliness. The reason for this is the necessity for drainage in almost all of these cases. The method of drainage makes the wound practically an open one. Hence the danger of some portion of the otherwise buried ligatures becoming infected. Once infected long months of pus discharge from vaginal fistula is the sequel. This is all avoided when hemostasis is secured by strong forceps, because the means of hemostasis (the forceps) are removed in forty-eight hours, and nothing is left of a foreign nature which may become infected.

AFTER-TREATMENT OF VAGINAL HYSTERECTOMY WITH CLAMPS.

Shock is treated on the lines laid down in my article of two weeks ago. I must, also, refer the reader to that article for the detail treatment of the bowels and care of the patient as regards drink, diet, etc. The bladder is emptied every eight hours with a catheter until the forceps and the first drainage is removed. The catheter should be employed oftener if it is necessary. The nurse employs an aseptic glass catheter with a small nozzle which will run the urine off into a bottle. The urethra is carefully exposed before the catheter is introduced and thoroughly wiped off with a saturated solution of boracic acid.

Forceps.—The locks of the forceps are carefully tied at the time they are put on to avoid accidental unclaspings of their blades. The handles are kept covered with sterilized gauze. If it gets soiled at any time it is changed. At the end of twenty-four hours all but the principal forceps are removed. The string securing the lock is cut, the lock unfastened carefully, the blades opened enough to loosen their grasp on the tissues and then they are carefully removed. At the end of forty-eight hours the main forceps are removed in the same manner. If the tissues in any particular case showed unusual tendencies to bleed at the time of the operation I allow the forceps to remain twenty-four hours longer. When the large forceps are removed they should be opened widely before an attempt is made to withdraw them, and then they should be brought out with a backward motion in order to avoid catching the tissues with the projection on the posterior blade.

Dressing. If the external portion of the drain becomes soiled with accidental discharges of urine or excessive drain fluid it should be removed and replaced with a new external pad of loose sterilized gauze as often as is necessary. Twelve hours after the last

forceps are removed about one-third of the external gauze drain should be removed and a fresh pad of gauze placed over the vulva. In twenty-four hours another third should be extracted, and in twenty-four hours more, or sixty hours after the last forceps are removed, all of the balance should be taken out. When the last gauze is removed an external irrigation should be employed of 1 to 5,000 bichlorid solution followed by a plain water irrigation. A small sterilized iodoform drain should now be carried carefully about three inches into the vagina on a strong pair of dressing forceps, and the end of the drain allowed to protrude from the vagina. Over this is placed an antiseptic absorbent pad. In twenty-four hours this drain is removed and then eighty-four hours after the last forceps are removed, and the peritoneum has had ample time to close, the first vaginal douche is given.

Douches.—This douche must be given with extreme care by a nurse who understands all the responsibility she is entrusted with. The douche point must be made of glass, bulbous, with openings directed only at right angles to it. The patient should be placed on her back at the edge of a bed with feet supported on two chairs. A Kelly pad should be under her buttocks. The reservoir containing sterilized water of a temperature of 105 should be placed but eighteen inches above the patient's hips, in order to have but slight pressure. The nurse after thoroughly preparing her hands, inserts two fingers into the vagina about two and one-half inches, and between the fingers extending to within one-half inch of their extremities is inserted the douche point. The water is turned on with every precaution employed to secure immediate and free return current. The douche is repeated in this way, the nurse introducing the fingers and douche point a little further each time until the vault of the vagina is reached, every twelve hours until the sixth day from the removal of the forceps, when 1 to 5,000 bichlorid of mercury solution may be substituted for the plain douche, always following the bichlorid douche by a plain one. It must be obvious why I insist on the great care in employing this douche. The peritoneal cavity is expected to close in a few hours after the gauze is removed. Frequently, there is no doubt, it is closed off a few hours after the operation is finished. Notwithstanding this tendency to early closure of the peritoneal cavity, carelessness in employing the first few douches, if free return stream was not provided and great pressure employed by placing the reservoir high, might result in breaking up the union of the tissues and fill the abdominal cavity with the fluids and *débris* of the vaginal tract. After each douche the vulva should be covered with an antiseptic pad. After each urination or movement of the bowels the external parts should be douched off with sterilized water and the antiseptic dressing renewed.

Getting Up.—Patients manifest a desire to get up earlier after vaginal hysterectomy than after abdominal operations. There is less prolonged reaction in the way of nervous exhaustion as there is less immediate shock with the vaginal operation. I allow my patients to begin to sit up on the twelfth to fifteenth day. They can leave the hospital from the twentieth day onward.

Results.—I have performed vaginal hysterectomy for uncomplicated fibroids of the uterus forty-one times; one death resulted from the operation. At least twenty of these cases were performed with clamps as the exclusive means of securing the broad liga-

ments. In the balance of cases ligatures of silk alone or ligatures reinforced with forceps were employed. The majority of my cases were small tumors. In two cases there was a troublesome hemorrhage within twelve hours after the operation, from the vaginal edges, which was, however, easily controlled by applying small catch forceps to the bleeding point. I opened the bladder in one of my early cases; it was subsequently closed in a secondary operation. I have never had secondary hemorrhage or the slightest oozing after removing the clamps. I have never had a vaginal hernia. I have never had a troublesome vaginal fistula. In one case where ligatures were used and left long they did not come away for nearly six months.

Dr. Edward Garceau of Boston, to whose writings on vaginal hysterectomy I am indebted in preparing this article, gave in his excellent paper on "Vaginal Hysterectomy as Done in France," in the *American Journal of Obstetrics*, Nov. 3, 1895, the following table of operations with their results, to which list I add my own cases. A list like the subjoined can not be said to represent the average mortality of the operation because it includes the work alone of the most experienced operators in this line in several countries. At the same time it must be remembered that this represents pioneer work in a comparatively new procedure.

Operator.	Cases.	Deaths.
Mayer	1	0
Péan	200	4
Jacobs	22	2
Mangiagalli	8	0
De Ott	100	0
Carle	22	0
Calderini	1	0
Bockel	3	0
Routier	6	0
Richelot	43	1
F. H. Martin	41	1
	447	8

This gives a mortality of 1.7 per cent.

SELECTIONS.

Amount of Carbonic Acid Exhaled from the Lungs.—The *Gaz. degli Osp. e delle Clin.*, March 28, describes an apparatus invented by Mosso for this purpose. Other kinds of apparatus are very complicated and not portable, while this one is comparatively simple and can be easily carried about. It consists of a rubber mask to put over the mouth and nose, terminating in a tube which carries the air through two Muller valves to a rubber bag, connected with which is the register and a water valve, ending above in a T-shaped tube. One end of this tube is connected with a syringe that pumps up the air through the connecting tubes, which contains an aqueous solution of barium hydrate. By removing the tubes the amount of carbonic acid is easily found. The proportions in several half-hour tests were, 11 grams of carbonic acid in 187 liters of air; 10 grams with 172 liters and after a meal, 228 liters with 14 grams of acid. In sleep one trial showed 193 liters with 13½ grams. The inventor proposes to make a comparative study of the elimination of carbonic acid after eating, fatigue and various illnesses.

Abdomino-Perineal Method of Extirpating a Rectal Cancer.—Some members of the Paris Société de Chirurgie have been experimenting with a new method of removing cancer of the rectum, which has as yet only been performed on one living subject, and who succumbed a few days after to accidental dyspnea. The large intestine is drawn out through an opening in the abdomen and a couple of ligatures made, four centimeters

apart, above the extreme limit of the neoplasm, and a section made between. The ends are ligated again and covered with iodoform gauze. An incision is then made in the recto-vesical perineal pocket, and the rectum below the section detached as much as possible. A circular incision is then made at the anus, after which the entire rectum is drawn up and out through the perineal incision which is then entirely closed. An artificial anus is then made from the end of the intestine above. This method is adapted to those cancers which extend from the anus twelve to fifteen centimeters upward, where the rectum can still be made to slide on the neighboring organs. If the growth prevents this slipping of the rectum it is beyond any operation. *Bulletin Médical*, March 29.

Varicella Fatal Through Intercurrent Laryngitis. Drs. Marfan and Halle have reported two cases of severe laryngitis, one preceding, the other accompanying varicella, in *Revue mensuelle des Maladies de l'Enfance*. In both cases it was "Löffler absent," in the second case, the infant being feeble, the attack was fatal. The first case, an infant of 3 years, was brought under observation after an illness of three days' duration. The voice was hoarse and respiration difficult, with the supra- and infra-tracheal depression. The fauces were reddened, but in other respects showed no abnormal condition. After twenty-four hours an injection of 20 cubic centimeters of antidiphtheritic serum was made and cultures taken. The same evening the first vesicles of varicella appeared upon the surface. The laryngeal symptoms increased, and on the following day called for tracheotomy. The first cultures from the throat and later ones made directly from the trachea by way of the canula demonstrated the absence of the Löffler bacillus. After three days the canula was removed and the case went on to complete recovery.

The second case occurred in a weekly infant of 9 months. When brought to the hospital with marked symptoms of laryngeal obstruction, a profuse confluent varicella eruption was noticeable. The throat was free from false membrane and was scarcely reddened, while no trace of vesicles was found upon the buccal mucosa or upon the pillars and uvula. This case was also regarded as probably one of primary laryngeal diphtheria complicating varicella, and an injection of antitoxin was made by Roux. Cultures taken at the same time subsequently showed the absence of diphtheria bacilli. Death occurred on the seventh day from acute diarrhea and bronchopneumonia. The autopsy showed a small, round, deep ulcer at the posterior part of the margin of the right vocal cord.

These two cases of varicella of the larynx determined a stenosis, giving the clinical picture of a true croup, and are in the authors' opinion unique examples. The only case of varicella involving the larynx previously reported is that recorded by Boucheron in his thesis ("Étude sur les complications respiratoires de la varicelle et relation d'un cas de varicelle du larynx," Paris, 1893), in which the affection took the aspect of a spasm of the glottis without symptoms of laryngitis. The case terminated fatally by suffocation during an access of the spasm. The authors conclude that involvement of the larynx in varicella occurs early, about or shortly after the appearance of the eruption, a point that serves to distinguish it from secondary and unrelated infections. Anatomically this laryngitis is characterized by small ulcerations, circular, few in number, seated usually upon the true cords. About these ulcers the mucous membrane may be the seat of hyperemia, more or less intense and extended. These two lesions explain the two forms under which the complication occurs, as is shown by the authors' cases on the one hand and by Boucheron's on the other.

NECROLOGY.

JOHN JOSEPH DALY, M.D., of Rahway, N. J., died April 11, in the forty-fifth year of his age. He was the mayor of that city and the day of his death was the anniversary of his last election to the mayoralty in 1895. He was born in Rahway in 1852, and was graduated from the Medical Department of the University of the City of New York in the class of '73. He practiced medicine and surgery in Rahway with much success. He was first elected mayor of Rahway in 1885, and was four times re-elected, and once defeated. He was city physician of Rahway for several years.

CLARENCE L. FITCH, M.D., died suddenly April 13, in New Haven, Conn., of heart disease. He was born in Walton, N. Y.,

38 years ago, and was graduated from the Dartmouth College in 1882. He had been in New Haven thirteen years and had built up a large practice. A widow survives him.

DR. ALEX. B. ERNST of Covington, Ky., died at his home April 21, from tuberculosis following repeated attacks of la grippe. Dr. Ernst was born in Covington, July 18, 1863, and his parents were one of Kentucky's most distinguished families. He was educated at Chickering Institute, Princeton College, and received his degree of M.D. from the medical college of Ohio in 1888. Dr. Ernst enjoyed a lucrative practice and was a most universal favorite among his associates and a much beloved physician to his patients.

J. B. K. MIGNAULT, M.D., of Detroit, Mich., April 25. He was born in Montreal, Canada, in 1817, and received his medical education at McGill College. In 1850 he went to Detroit after having practiced ten years in Mt. Clemens. After an active term of medical service during the rebellion he removed to Mt. Clemens and established mineral baths. In 1875 he returned to Detroit and retired from practice in 1882.

BOOK NOTICES.

Consumption: Its Nature, Causes and Prevention; with an outline of the Principles of Treatment, for all classes of readers. By EDWARD PLAYTER, M.D. Toronto: Williams Briggs, pp. 340.

We opened this book with an intention of glancing through it hastily, and ended in reading it carefully. It has been written in a clear, concise manner, and is so free from technical phrases that it will be easily comprehended by the non-professional reader. Indeed, it is one of the few books written on this subject that can be safely placed in the hands of the patient. Starting with a definition of consumption and a chapter devoted to the function of the lungs, a considerable portion of the work is devoted to the causation, giving the following among other causes: "The tubercle bacillus is an essential factor in the production of tubercular pulmonary consumption. The tubercle bacillus does not become a cause in the production of the tuberculous state, except in a special condition of the human body in what is termed a suitable soil. Persons with a defective respiratory action from any cause are more liable to have toxic substances formed in the body; and which probably influence the action of microorganisms present therein, including tubercle bacilli. The so-called soil for the pathogenic action of this bacillus in the lungs seems to be invariably furnished by persons with a defective breathing function as particularly evidenced by the 'outdoor' or 'pure air' treatment of the disease, with special lung expansion for increasing the breathing function. Particular stress is laid upon the belief that a defective respiratory function with the retention in the body of waste or excrete substances, and the toxic compounds generated thereby is the actual, immediate or exciting cause of consumption." Heredity, want of the natural body defenses, habits and conditions of life, the infectiousness and communicability of the disease, sources and dissemination of the bacilli, the *de novo* origin of the disease are discussed at length among the causative factors.

Part II is devoted to the consideration of the prevention of the disease, which is named as a special object of the book, being a public question which involves the eventual stamping out altogether, practically, of this most destructive of all diseases. This portion of the book should appeal, not only to the physician, but to every intelligent victim of the dread disease, and for this reason we believe it will be accepted as a book of instruction for our families in which consumption has already found its victim, or in which there is a marked predisposition to the disease.

A few pages are devoted to the climate and prevention, the book closing with a short chapter on a few general principles relating to the treatment.

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SATURDAY, MAY 9, 1896.

ANTHROPOLOGY AS A BRANCH OF MEDICAL EDUCATION.

Anthropology, as comprehensively defined by BROCA, is the science of man. Taken in its widest sense, it comprises not only anatomy, physiology, pathology, psychology, and the other studies usually included at the present day in the medical curriculum, but also archeology, ethnology, biology and allied subordinate sciences, that investigate man as an individual and in the aggregate, both specifically and in his relations to surrounding natural objects.

The study of man can not be separated from zoölogy, the science of all animal life, or of biology, which studies the functions of living beings, without giving rise to narrow, one-sided, and erroneous views. The study of the manifestations of intelligence in the lower animals, and the results attained by comparative anatomy and therapeutics, have thrown much light upon some of the most difficult problems in human pathology and clinical medicine. Pharmacology, indeed, may be said to lay its claims to recognition as a science principally upon physiologic investigations on the lower animals and upon practical deductions from results in the field of comparative medicine.

In a restricted and metaphysical sense, anthropology has been applied to the study of man in his relations to the Deity; but in the present consideration the term will be used only in its accepted scientific meaning, in accordance with the definition given above. Anthropology, in the first place, assigns man to his proper position in the scale of living beings, where he stands "the paragon of animals." It is true that structurally he can not be considered the peer of some of the inferior animals. He has not the physi-

cal strength of the gorilla, the rapid pace of the greyhound, the swimming power of the seal, the flying power of the bird or bat. His special senses are less keen, there are many animals which have superior acuteness of hearing, of sight or of tactile sense. His vitality, the ability to resist disease, to endure fatigue and hardship, are manifestly inferior to animals generally, speaking of them as they exist in their natural state. It is solely the extraordinary and excessive development of the cerebral hemispheres, especially in the anterior lobes, that places man in his elevated position in the scale of creation and separates him widely even from the most highly developed ape. There is also a manifest difference in the quality of the gray matter, as well as in the quantity, which of itself separates man from the anthropoid simians as from all other inferior animals, and to which due consideration should be given in discussing man's affinities and specific traits, and his claims to classification apart from inferior animals.

The question whether there was originally only one race of man or whether there were distinct types of mankind from the beginning, can be discussed more temperately at the present time than it could be at the period when NOTT and GLIDDOX wrote on "The Types of Mankind." Human slavery and the social problems arising from it, no longer invade our halls of science and disturb the philosophic calmness of debate. At present the weight of authority seems to be in favor of the theory of unity of origin. This is really in accord with the statement made by DARWIN himself, who says: "When naturalists observe a close agreement in numerous small habits, tastes and dispositions, between two or more domestic races, or between nearly allied natural forms, they use the fact as an argument that all are descended from a common progenitor, who was thus endowed; and consequently, that all should be classed under the same species. The same argument may be applied with much force to the races of man." This argument from analogy has considerable weight, and, at all events, encounters less opposition than it did a generation ago under different economic conditions.

Some three years ago, PROF. DANIEL G. BRINTON of Philadelphia, wrote a pamphlet on "Anthropology as a Science and as a Branch of the University Education" in which he made a strong appeal for the recognition of the claims of this science as a branch of instruction in our colleges. It would seem as if his arguments could be applied to our great medical schools with even more force than to the secular institutions. It would be a great gain to medical education if anthropology should be commenced in the preparatory course and concluded in a post-graduate course, after having been followed for the whole period of undergraduate study. In this way a systematic, comprehensive and consistent course could

be followed, which could be continued to any desired extent by those who felt themselves especially attracted to this science.

The first school of anthropology, according to DR. BRINTON, was founded by BROCA at Paris in the year 1876. This institution, beginning with five professors, now has ten, the demand for more extended instruction having steadily increased from its inception. It has very close relations to the medical course and the majority of its students are also students of medicine. A second school is now in operation in the same city, in connection with the Museum of Natural History at the Jardin des Plantes. A school has recently opened in Italy known as the Faculty of Anthropology in the University of Rome, under the special charge of PROFESSOR SERGI. There are departments of anthropology in the Universities of Munich, Berlin, Marburg and Buda-Pesth, and instruction is likewise given in this branch at Leipzig and a number of the other chief educational institutions of Europe. The University of Brussels has established a full chair of anthropology and a similar position exists in the Musée Polytechnique at Moscow. In the United States, regular courses on physical anthropology and ethnology have been given by DR. BRINTON, at the Academy of Natural Sciences in Philadelphia, since 1886. The University of Chicago and Clark University at Worcester, Mass., had also given instruction upon this subject, and Harvard University for many years has taught ethnology and allied branches, but up to 1892 no full professorship of anthropology has been established by any educational institution in this country. Since DR. BRINTON wrote, the University of Chicago has established a titular chair and will shortly commence systematic instruction in this department. Last year the University of Pennsylvania appointed DR. BRINTON to a newly created position in the Faculty, Professor of American Archeology and Linguistics, in recognition of his services to this particular branch of science.

The method submitted by DR. BRINTON, as the best one to be pursued by teachers of anthropology, is the subdivision of the study into four associated departments of nearly equal importance:

Somatology.—This studies the physical nature of man, his anatomy, physiology, and biology, so far as these bear on the distinctness of races, peoples and nations. Psychology, so far as it is an experimental and inductive science, belongs to this department.

Ethnology. This is in its methods, historic and analytic. It contemplates man as a social creature. It is more concerned with the mental, the psychic part of man, than with his physical nature, and seeks to trace the intellectual development of communities by studying the growth of government, laws, arts, languages, religions and society.

Ethnography.—This is geographic and descriptive in its plans of research. It studies the subdivisions and migrations of races, local traits, peculiarities, and customs; and confines itself to matters of present observation.

Archeology.—This comes in to supply the material, which neither history nor present observation can furnish. It pries into the obscurity of the remotest times and periods of man's life on earth and gathers thousands of facts, forgotten by historians and overlooked by contemporaries. Often these unconsidered trifles prove to be of peculiar value and furnish the key to the real life of ancient nations.

Necessary adjuncts to the systematic study of anthropology are properly equipped laboratories for practical observation and original investigation. Library labor consisting in courses of reading in the literature of the science, should also form a part of the assigned tasks of the student in this department.

Such a course of study as here outlined would prove especially attractive to those physicians, who take a broad and comprehensive view of the problems of disease from the biologic standpoint.

THE MONEY-COST OF A TYPHOID FEVER EPIDEMIC.

DR. CAMPBELL MUNRO, Medical Officer of Health for Renfrewshire, in his annual report for 1894 takes up the question of the pecuniary loss that follows a prevalence of infectious diseases. The epidemic of typhoid fever in Mid-Renfrewshire in 1893, caused 74 deaths out of 859 cases. As a first item in the bill of expenses, DR. MUNRO estimates that through loss of wages the community lost over \$16,000. The loss through the cost of the treatment of patients is placed at an average of \$25; DR. MUNRO has found that the average cost of a patient treated at the hospital was not less than \$40. On this basis the epidemic caused an expenditure of \$21,000 in treatment. The cost of funeral expenses is estimated at \$1,850, thus making for the three items of loss above enumerated, a total of \$37,850. The next item to be considered, the money-value of the lost lives, he calculates as follows:

"A quotation from the writings of FARR, the greatest authority on the subject, will best illustrate the position of the matter: 'As lands, houses, railways and the other categories in the income-tax schedules are of value, because they yield annual returns, so for the same reason, and on the same principle, the income of the population derived from pay of every kind, for professional or other services, and wages, can be capitalized; not precisely, it is true, unless the income of every person living were returned at least as nearly as incomes subject to income-tax; but sufficiently near to the true value to show that the value of the population itself is the most important factor in the wealth of the country. . . . The capitalization of personal incomes proceeds upon the determination of the present value, at any age, of the *future annual earnings* at that and all future ages.' The value to the community of an individual member is ascertained by deducting the capitalized future cost of subsistence of the individual from his cap-

itized future income. Proceeding upon these lines, FARR arrived at the conclusion that the 'minimum value of the population of the United Kingdom—men, women *and children*—is about \$800 a head; that is, the value inherent in them as a productive, money-earning race.' He estimated the value of the population of the United Kingdom, at the time he was writing, as equivalent to a capital sum of \$26,250,000,000, while the 'capital' of the country (using the term in its ordinary sense) amounted, according to Mr. GIFFEN'S estimate, to \$42,000,000,000.

"Adopting FARR'S figures as a basis for the calculation, I have made a rough estimate of the value 'inherent in' the persons who died in the course of this epidemic 'as a productive, money-earning race.' I find that it amounts to the very large sum of \$68,000 (nearly). So that the pecuniary loss to the community of Mid-Renfrewshire, arising in connection with the epidemic, amounts to the enormous total of \$105,000. A consideration of these figures may well suggest the reflection whether any investment is calculated to yield a better pecuniary return than the expenditure involved in the operations of the Public Health Department, which have for their main object the prevention of epidemics."

MISCHIEF-MAKING JOURNALISM.

In the same issue of our more or less esteemed contemporary, the New York *Medical Record*, in which it affected editorial ignorance of the AMERICAN MEDICAL ASSOCIATION, asking "What is it?" and in the same column is published a statement—"No Pay, No Work"—to the effect that "it has been decided by the Supreme Court of Illinois that the health authorities have no right to require physicians to report contagious diseases or births without pay," and, upon this obviously absurd proposition, proceeded to discuss the nice question: "Whether the physician, whose aim is the prevention as well as the cure of disease, is not morally bound to warn the community of danger when this can be done at a not unreasonable expenditure of time and labor," etc.—*more Bunsbii*.

The proposition was obviously absurd because, at least so far as Illinois is concerned—and the same is true generally of other States—the requirement is a statutory one and not, except in an executive way, a requirement of the health authorities. Nevertheless, and notwithstanding this absurdity, inquiry was at once made of the clerks of the three divisions, and of the official reporter, of the Illinois Supreme Court. The HON. ISAAC N. PHILLIPS, Official Reporter, replies: "No such decision by the Supreme Court of Illinois as that referred to in your letter of the 24th inst. has come to my knowledge." The clerks of the different divisions also assert that no such decision has been filed with them and that they "never heard of it before."

At this stage the JOURNAL had intended to ignore the matter, not anticipating that the statement would be accepted seriously elsewhere. But the current (May) number of the Cleveland *Journal of Medicine* shows what mischief the unfounded publication of the *Record* may work if still uncorrected. The Cleveland *Journal* says:

"An interesting fact apropos of the present discussion by the City Council [Cleveland] of a new health ordinance providing more stringently for the reporting of contagious diseases by physicians is noted in the *Medical Record* of February 22. [April 18]. The Supreme Court of Illinois has just decided that physicians can not be compelled to report on contagious diseases or to render any other public service without pay. This is the more remarkable because in many States there are valid laws compelling physicians to report births and deaths. It must be a peculiarity of Illinois law."

Our Cleveland contemporary is respectfully advised that this "peculiarity of Illinois law" need not embarrass the attempt to secure the new health ordinance in that city; that the "peculiarity" is only a figment of the *Record's* imagination; and that it will do well in the future to look to the carefully edited columns of this JOURNAL for authentic information rather than to the pages of a periodical whose insular prejudices recently betrayed it into making a boast of its ignorance concerning the representative medical organization of the whole country.

The *Record's* minor statement, to-wit: "That there is or was in existence in Connecticut a plan 'whereby the physician would receive twenty-five cents for each notification of a case of infectious disease or a birth,'" is thus contradicted by the veteran sanitarian and statistician, DR. C. A. LINDSLEY, Secretary of the Connecticut State Board of Health:

"Physicians have never been paid for reporting infectious diseases in this State. But they are paid twenty-five cents for each certificate of birth and death rendered to the town registrar, if rendered monthly as the law requires. The legal question of the power of the Legislature of Connecticut to authorize the enactment of ordinances requiring physicians to report infectious diseases without compensation was decided in the affirmative by the Supreme Court in 1887. See report of decision in Annual Report of Connecticut State Board of Health for 1889."

"EIGHTY PAGES IN THIS NUMBER."

Conspicuously displayed on its title page the New York *Medical Record* week by week announces the number of pages in each issue. That of last week reads "Seventy-six Pages in this Number"; that for the week before reads "Eighty Pages in this Number." The inference intended to be drawn is, of course, that these are the specified number of pages of reading matter in the respective issues. As a matter of fact, there were thirty-six pages of reading matter in each of these two numbers, and forty and forty-four pages of advertisements respectively, about one-fifth of which is advertising matter devoted to the interests of the commercial house by which the *Record* is owned. Without venturing to express an opinion on the relative merits of the two classes of matter, reading and advertising, still we can not refrain from speculating upon the mental caliber of the readers of that periodical who, as its editor evi-

dently thinks, can be gulled by such a specious pretence. The JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is publishing nearly 40 per cent. more pages of reading matter in every issue than the *Record*—fifty pages as against thirty-six—and, owing to the size of type and page, fully twice the number of words. That the JOURNAL matter excels as much in quality as in quantity seems to be the verdict of a large and steadily increasing number of unprejudiced jurors.

THE JOURNAL TRAIN.

The JOURNAL train left Chicago at 12 o'clock on Sunday, May 3, by the "Big Four" road as advertised, in charge of MR. MCGINNIFF of that company. The weather was pleasant, the sun shone brightly, and the accommodations were excellent. Engine No. 193 pulled us into Cincinnati at 9:05 P.M., exactly on schedule time. Here we were turned over to the Queen & Crescent, and, as has been remarked by one individual, "Trouble began at this point." We had been informed, and the agreement was made accordingly, that no delay should occur; that our train should run through as a "special" from Cincinnati to Atlanta. Some of the party desired to know whether an opportunity would be allowed to take supper at Cincinnati, but as it was a "special" to run through without change, it was said not to be possible, and after waiting until 10:30 we were informed that it was not the intention to take our train out of the depot until the arrival of the Detroit "Medicine" train, under the charge of DR. MOYER, of Chicago, and DR. WHITMORE, of P. D. & Co. Their party consisted of about thirty-three people, who started over the "Monon" Route, but meeting with an accident were delayed somewhere in Indiana, and our party was compelled to wait for them until about 11:30 P.M. At that hour, becoming restless and impatient, and on representations made to the trainmaster in Cincinnati, the alleged superintendent of the Queen & Crescent Road, a certain MR. STEPHENS, was brought down to interview the passengers, and notwithstanding the desire of the party to proceed on their journey, he flatly refused to accommodate them in any particular. Not only that, upon representations having been made to him that the train should proceed, which by this time was composed of some of the most distinguished physicians of the Northwest and their families, he announced that the cars belonged to them, and that he would move them out of the depot when he got ready, or words to that effect. Arguments, persuasion and entreaties were of no avail to the all-powerful MR. STEPHENS, who finally becoming tired of the importunities, sent the train across the river to Ludlow, Ky., where they completed the allotted period of the detention and were finally joined by the delayed contingent as aforesaid. From

this time forward the train made an excellent run. We arrived in Chattanooga at 10:30 A.M., very tired, considerably disgusted and very hungry. We had a fair breakfast at Chattanooga, which tasted all the better, as some of our party had eaten nothing for twenty-four hours, thanks to the inhumanity of MR. STEPHENS. From Chattanooga we made a splendid run over the Southern Railway. The officers of that company made every effort to make the trip pleasant and speedy. We arrived in Atlanta at 3:30 P.M., where some of the JOURNAL party found the rooms which they had engaged at the Aragon Hotel already assigned to others. The originators of the trouble, including the alleged STEPHENS, were not extremely popular with any of the members of the JOURNAL party.

A number of physicians on the train made up their minds that they had learned something in the matter of travel over certain railroads, and that when it came to advising patients going South for the winter what line to take in order to have the most comfort and humane attention, they would know how to advise them. A more unfeeling and heartless treatment of passengers has seldom been witnessed than that received at the hands of MR. STEPHENS, of the Queen & Crescent.

The following is the list of passengers:

JOURNAL TRAIN LIST.

Dr. Wm. L. Allen, Davenport, Iowa; Dr. C. Abaly, Madison, Wis.; Dr. Jas. P. Boyd, Akron, Ohio; Dr. C. B. Burr, Flint, Mich.; Dr. John R. Brown, Indianapolis, Ind.; Dr. L. C. Cline, Indianapolis, Ind.; Dr. A. C. Cotton, Chicago, Ill.; Dr. D. W. Graham and wife, Chicago, Ill.; Dr. John B. Hamilton and wife, Chicago, Ill.; Mr. Wm. Whitford, Chicago, Ill.; Dr. D. B. Collins, Madison, Wis.; Dr. and Mrs. P. V. Carlin, Denver, Colo.; Dr. R. Beverly Cole, San Francisco, Cal.; Dr. D. H. Cunningham; Dr. Henry Day, Eau Claire, Wis.; Dr. W. B. Hill; Dr. Jos. Eastman and daughter, Indianapolis, Ind.; Dr. W. Eastman, Mineral Point, Wis.; Dr. H. Bert Ellis, California; Dr. and Mrs. D. S. Fairchild, Clinton, Iowa; Dr. L. M. Gregory, Stevens Point, Wis.; Dr. Alonzo Garcelon, Lewiston, Me.; Dr. J. B. Barber, Dunkirk, Ind.; Dr. T. C. Hood, Dana, Ind.; Dr. and Mrs. C. M. Hobby, Iowa City, Iowa; Dr. C. H. Hughes, St. Louis, Mo.; Dr. W. B. Hill, Milwaukee, Wis.; Dr. A. F. Jonas, Omaha, Neb.; Dr. Geo. F. Jenkins and wife, Keokuk, Iowa; Dr. J. V. R. Lyman, Eau Claire, Wis.; Dr. A. S. Lawbaugh, Opeckee, Mich.; Dr. I. N. Love, St. Louis, Mo.; Dr. Chas. McAllister, Iowa; Dr. W. D. Middleton, Davenport, Iowa; Dr. Donald Maclean and wife, Detroit, Mich.; Dr. E. E. Montgomery and wife, Philadelphia, Pa.; Dr. K. D. Mellier, St. Louis, Mo.; Dr. James T. Priestley, Des Moines, Iowa; Dr. Paul Paquin, St. Louis, Mo.; Dr. J. H. Ross, Kokomo, Ind.; Dr. G. William Reynolds and son, Chicago; Dr. E. R. Smith, Toledo, Ohio; Dr. N. Senn, Chicago; Mr. Enno Sander, St. Louis, Mo.; Dr. X. C. Scott, Cleveland, Ohio; Dr. G. W. Sloan, Indianapolis, Ind.; Dr. J. C. Shrader, Iowa City, Iowa; Dr. J. C. F. Thorne, Kokomo, Ind.; Dr. D. J. Townsend, Lehighville, Iowa; Dr. H. D. Thomason, Albion, Mich.; Dr. Fenton B. Turk, Chicago; Dr. Chas. True, Kankakee, Ill.; Mr. Chas. Truax, Chicago; Mrs. M. Watson Thornbury, Redfield, Iowa; Dr. B. F. Uran, Kankakee, Ill.; Dr. Lyman Ware, Chicago; Dr. G. V. Woolen, Indianapolis, Ind.; Dr. J. A. Work, Elkhart, Ind.; Dr. D. C. Wilson, Ironton, Ohio; Mrs. D. C. Wilson, Ironton, Ohio; Miss. V. M. Wilson,

Ironton, Ohio; Dr. P. A. Walling, Park Rapids, Minn.; Dr. J. E. Woodbridge, Cleveland, Ohio; Dr. B. M. Walrath, St. Paul, Minn.; Dr. Geo. W. Webster, Chicago; Dr. A. L. Wright, Carroll, Iowa; Dr. Wm. J. Younger, San Francisco; Dr. Henry B. Young and wife, Burlington, Iowa.

ELECTION OF OFFICERS.

As we go to press we learn by telegraph of the election of PROF. NICHOLAS SENN, of Chicago, to the Presidency of the Association for the ensuing year; GEN. GEO. M. STERNBERG, U. S. A., has been elected Vice-President. Members of the Board of Trustees: DR. E. E. MONTGOMERY, Philadelphia (re-elected); DR. JOSEPH M. MATHEWS, Louisville; DR. C. A. L. REED, Cincinnati; and DR. G. C. SAVAGE, of Nashville, to fill the vacancy caused by the death of DR. JAMES E. REEVES.

The annual addresses will be delivered by DR. AUSTIN FLINT, of New York, on General Medicine; DR. WM. W. KEEN, of Pennsylvania, on General Surgery, and DR. JEROME COCHRANE, of Alabama, on State Medicine.

The next annual meeting will be held in Philadelphia, the birthplace of the ASSOCIATION.

CORRESPONDENCE.

Dr. Reuben D. Mussey.

WILMORE, PA., April 29, 1896.

To the Editor:—I beg the privilege of thanking Dr. Hamilton, through the JOURNAL, for his article on the life of Dr. Mussey. I know of no doctor in the past, or present time, of whom I was so truly glad to learn, of his life and character, as that of Dr. Mussey.

Within the last few months, through the kindness of Dr. Parsons of Portsmouth, N. H., I learned of the life of Dr. Mussey, before his coming to Ohio, as given before the New Hampshire Medical Society, at its one hundredth anniversary, and now I have the excellent article, by Dr. Hamilton, with a good picture of Dr. Mussey; his autograph I have had for a long time, as found attached to my father's diploma, given to him at Dartmouth Medical College in 1835—Dr. Mussey was lecturing on anatomy, surgery and obstetrics at that time.

My father, Dr. Cyrus Blaisdell, who died when I was some six years of age, was a favorite student of Dr. Mussey, it would seem, who after receiving a thorough training in anatomy and surgery under Dr. Moses Sweat of Maine graduated at Dartmouth, remaining after that six months as a private student with Dr. Mussey, where he had the benefit of his teaching and friendship. Dr. Sweat at that time was one, if not the best, of the country doctors in the State of Maine, he having had the assistance for years of Dr. Alexander Ramsey of Edinburgh, Scotland, he having lectured in that city before coming to America. Sweat when an old man, past eighty, said Dr. Blaisdell was the best read student that he had ever had under his care.

In looking over files of letters, in the old leather trunk that did service for two generations of students, at Dartmouth and Brunswick colleges, I find a number of letters, written by Dr. Mussey, one also by Dr. Alcot of Boston, to my father saying that Dr. Mussey had referred him to Dr. Blaisdell for help, on a book he was then preparing on Vegetable Diet.

The letters show him, Dr. Mussey, to be so much like the character given him by Dr. Hamilton, that I can plainly see how true the article is, as written by Dr. Hamilton; the letters

show that he did not regard the practice of medicine the only duties of a doctor, but that there were moral and social duties that were required at his hands, and the letters show how ready he was to give credit for moral and religious worth, as found in his students, and to help them, as he best could by showing their good points to advantage, by calling the attention of those, who were able to judge best in these matters; he must have been a big hearted man, one whose conflict with life had not made him hard or selfish. I find among other papers, a part of a temperance lecture, which must have been delivered shortly after my father had left the medical school; it was about the time Neil Dow was beginning his temperance work in Maine, some sixty years ago. The lecture met with much favor, it would appear, in the rather scholarly town in which he had located. I was surprised, to see how fearless as a young doctor, he handled his subject, neither having fear of foe, or quoting favors, showing plainly the action of alcohol in its various forms on the human system, and its moral and political influence throughout the broad land of ours. It appears to me, although some sixty years have gone by, that he handled his subject with as much skill and force as those of this later day, and now I can see how fully he was prepared to battle with that great evil of all times, intemperance, by having the example and teaching of that great and religious man, Dr. Mussey, who labored so faithfully for the moral good of his students.

How much pleasure it no doubt would have afforded Dr. Mussey, could he have then known in life, that in years long after, when life's work was over, he should be so well remembered, as he is in the article given us by Dr. Hamilton, and it does seem good in these times of rush and push, on and on, when one is forgotten ere he is hardly gone, that one yet finds some, like Dr. Hamilton, who appreciate moral worth, and are willing to bring it before those who are about coming on to the field of action in life, and to whom it will be an incentive to do right, because it is right, without fear or favor.

Very truly,

IRVING C. BLAISDELL, M.D.

It may be One of Those Letters.

GROVELAND, MASS., April 29, 1896.

To the Editor:—I am surprised to find that the medical journal which professes to lead medical journalism in this country, has space to print this attempted slur at the AMERICAN MEDICAL ASSOCIATION. The question—"The AMERICAN MEDICAL ASSOCIATION, what is it?" reminds me of an experience we had in the good old city of Boston not long ago.

Among the heroes of the Civil War was Col. Robert G. Shaw, whose gallantry men who wore the blue or the gray were equally glad to honor. As a slight tribute to his worth, it was proposed to erect a statue to his memory, and the matter came up for discussion in the council. One of the rulers of modern Boston, an Irishman who, I presume, had not been very long in this country, arose and asked, "Who was Col. Robt. G. Shaw, anyhow?"

The AMERICAN MEDICAL ASSOCIATION, for some reason or other which I am not able to understand, has some very bitter enemies, and more the pity of it, among the medical profession of this country.

I greatly regret that I can not be present at the meeting in Atlanta. It would do me good just to look at the manly men, members of the medical profession from all sections of this great and growing country, who expend large sums of money, often denying themselves, to do honor to the ASSOCIATION. So in answer to the question, "The AMERICAN MEDICAL ASSOCIATION, what is it?" I would say for the benefit of those who do not know, that it is an association composed of medical gentlemen from every State and Territory of this Union, who meet for the benefit of medical science to learn how to control disease and be of service to their fellow men. The ASSOCIATION publishes

a journal which in every respect is a credit to American medical genius.

I remember that the editor of the *Record* once said to me that when he had a subject to discuss he would write a letter purporting to come from a hayseed in some way-back town, and then answer it. Perhaps this may be one of those letters.

With best wishes for the success of the AMERICAN MEDICAL ASSOCIATION and of its meeting in Atlanta, together with my sincere appreciation for the able manner in which our JOURNAL is managed and edited, I am, Very sincerely yours,

W. T. PARKER, M.D.

Recurrent Scarletina.

MONTPELIER, OHIO, April 29, 1896.

To the Editor:—The following is to me a unique case, and may prove so to many of the brethren. I therefore desire to report it. Was called some time in January of this year to see a boy 10 years of age, suffering from well defined scarlatina. It ran the usual course, desquamation being complete even to the finger and toe nails. Four weeks ago, being the last of March, saw him again, having scarlatina: case pursued usual course, desquamation as before. He had been up and around about a week, when a third attack seized him: desquamation is at the present time going on. The exfoliation is so complete and followed so soon after the second attack, that patient is rendered extremely sensitive, in some situations blood oozing through the skin.

Five years ago, according to the parents, the boy had an attack of scarlatina and was treated by a competent physician. This makes four attacks in the same person, the last three happening within four months. I should like to know if any of the brethren have similar experiences, or whether this case is particularly unique? Truly yours,

H. M. BYALL, M.D.

To the Members of the Medical Profession.

PHILADELPHIA, PA., May 1, 1896.

My two collective reports which are already published on Ice-cold Applications in Acute Pneumonia give a record of one hundred and ninety-five cases so treated, with seven deaths, or a mortality rate of 3.58 percent.

Being desirous of making as full a report as possible on this subject, I take the liberty of asking those who have tested this measure to kindly give me the result of their experience. Full credit will be given to each correspondent in the report which I hope to publish. Blanks for the report of cases will be furnished by me on application. THOMAS J. MAYS, M.D.

1829 Spruce Street.

Southern Baptist Excursion.

BROOKLYN, N. Y., April 29, 1896.

To the Editor:—I cut the enclosed slip from the *Watchman*: The Southern Baptist Excursion: The Seaboard Air Line will run a personally conducted excursion to Chattanooga, Tenn., for the Southern Baptist Convention to be held in that city May 8 to 14 inclusive. Solid vestibuled train. One fare for the round trip. For particulars address J. Strang, New England Passenger Agent, Seaboard Air Line, 306 Washington Street, Boston.

One would think that the railroad corporations could be, and would wish to be, as liberal to those who care for the physical as for the spiritual welfare of their patrons. I know the JOURNAL is laboring in that direction. This requires no personal reply. Yours truly,

N. W. LEIGHTON, M.D.

SOCIETY NEWS.

Medico-Legal Society of New York. At a meeting of this society held at the Marlborough Hotel, April 15, among the scientific papers read, was one on the Röntgen rays in medico legal surgery, by J. M. Bleyer, M.D.

The "Western Association of Eye, Ear, Throat and Nose Surgeons" was organized at Kansas City, Mo., April 10. Seventy-five surgeons were in attendance. Adolf Alt, of St. Louis, was elected president.

The Tennessee State Medical Society held its sixty-third annual meeting at Chattanooga, Tenn., April 14. President, G. C. Savage, M.D., Nashville. The delegates were welcomed on behalf of the citizens by Mayor Ochs, and by Dr. G. A. Baxter on behalf of the local members of the profession. Among the members who have been longest connected with the association appear the names of Dr. J. B. Lindsley, Nashville, who entered the society in 1845; Dr. T. Briggs and Dr. Thomas J. Maddin, in 1853.

Mississippi State Medical Association.—The twenty-ninth annual meeting of this association convened at Vicksburg, Miss., April 16; President, Dr. R. H. Haralson, of Forrest City. Hon. Murray F. Smith welcomed the association to the city. Dr. T. P. Lockwood, of Crystal Springs, in his response advocated the establishment of a medical department of the University of Mississippi and the erection of a college and hospital. President Haralson and others urged the necessity of such a department.

The Iowa State Medical Society, Dr. David S. Fairchild, of Clinton, President, held its forty-ninth annual session at Des Moines, Iowa, April 16, 17 and 18. The address of welcome was delivered by Hon. Sidney A. Foster, of Des Moines, to which J. M. Emmert, M.D., responded. Many papers on medicine, surgery, hygiene, etc., were presented. The session was well attended and much interest evinced. The officers elected for the ensuing year were: President, E. L. Baker, M.D., Indianola; Secretary, J. W. Cockenower, M.D., Des Moines; Assistant Secretary, C. C. Tuttle, M.D.; Treasurer, Geo. B. Skinner, M.D., Cedar Rapids. The next meeting of the society will be held at Marshalltown, Iowa.

District of Columbia Medical Association.—At the regular meeting of the Medical Association of the District of Columbia held April 7, the following officers for the ensuing year were elected: President, Dr. W. P. Carr; Vice-Presidents, Drs. Hawkes and Scott; Secretary, Dr. J. R. Wellington; Treasurer, Dr. H. M. Deetle; Counselors, Drs. Cook, McLain, Ober, Holden, Acker, Kober, T. R. Stone, Yarnell and D. O. Leech; Censors, Drs. Woodward, Ruffin and Mayfield; delegates to the meeting of the AMERICAN MEDICAL ASSOCIATION to be held in Atlanta, Ga., May 5, 6, 7, and 8, 1896, Drs. J. T. Johnson, Kleinschmidt, Belt, Sothoron, Heiberger, Franzoni, L. Eliot Rich, Woodward, Nordhoff, I. S. Stone, S. Muncaster, Magruder, Acker, Kober, Bowen, Nash, Wellington, C. G. Stone, Cook, Fry, Morgan, W. W. Johnston, Van Rensselaer, Bussey, F. Leech, J. F. Thompson, S. S. Adams, Lincoln, Hunt, McLaughlin, J. D. Morgan, Mayfield, Peter, Suter and Carr.

Medical Association of the District of Columbia.—At a special meeting of the Association held on the 23d ult. the following was adopted:

WHEREAS, There is now pending in both Houses of the Congress of the United States, a bill entitled "A bill for the further prevention of cruelty to animals," which, if enacted into a law will prohibit vivisection or animal experimentation in the District of Columbia, and effectively close the biological laboratories connected with the Surgeon-General's Department of the United States Army, Bureau of Animal Industry of the Department of Agriculture, and Marine-Hospital Service, and prohibit all illustrative experimentation on living animals in the medical colleges of this District; and

WHEREAS, The proposed legislation is being urged with unremitting zeal and persistence by the humane societies and their coadjutors throughout the country, by personal solicitations of Senators and Representatives, by letters and petitions setting forth charges of cruel and atrocious tortures upon dumb animals committed by investigators and experimenters in medical and biologic research, and by misrepresentation and perversion of facts established by biologic and experimental

investigation, to which the science of medicine owes its present stage of advanced progress and wider scope of beneficence; and

WHEREAS, It is not known to this association, or to any member thereof, that such alleged abuses and cruelties are being, or have been, perpetrated in any of the biologic or medical college laboratories in this District, and it is assured by those in charge of such laboratories that such charges are without foundation; and

WHEREAS, The medical profession throughout the country does not seem to realize the significance and importance of such proposed legislation, which, in its direct operation, will be limited to the District of Columbia, but in its indirect effects will add impetus and force to this crusade against the scientific progress of medicine in general, this association appeals to the AMERICAN MEDICAL ASSOCIATION for such expression of the consensus of medical opinion on the subject as it may in its wisdom see fit to promulgate; therefore, be it

Resolved, That the delegates of this association to the meeting of the AMERICAN MEDICAL ASSOCIATION, at Atlanta, Ga., be instructed to present this memorial to that ASSOCIATION and ask a prompt and favorable consideration; secondly,

Resolved, That a copy of this memorial be sent to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, with the request that it be published in the next ensuing issue of that JOURNAL.

W. P. CARR, M.D., J. R. WELLINGTON, M.D.
President. Secretary.

The American Orthopedic Association.—Preliminary program of the tenth annual meeting to be held at Buffalo, May 19, 29 and 31, 1896:

The President's Address. Royal Whitman, New York.

Some practical points in the treatment of Lateral Curvature of the Spine. A. B. Judson, New York.

Some Etiological factors in Lateral Curvature of the Spine. E. G. Brackett, Boston.

Cases illustrating the absurdity of treating ordinary Lateral Curvature (Scoliosis), by Spinal Supports. Bernard Roth, F.R.C.S., London.

The rationale of Gymnastic Exercise and Pressure Correction in the treatment of Scoliosis. L. A. Weigel, Rochester.

The rapid cure of Rotary Lateral Curvature of the Spine and other postural deformities by means of thorough development, and corrective exercises with heavy weights. With a demonstration of the method. (By invitation). Jacob Teschner, New York.

A simple and efficient brace for Lateral Curvature. S. L. McCurdy, Pittsburg.

Congenital Misplacement of the Femur anteriorly. DeForest Willard, Philadelphia.

Further remarks on Congenital Dislocation of the Hip. Bernard E. Brodhurst, F.R.C.S., London.

Report of a case of double Congenital Dislocation of the Hip, treated by the Lorenz method of operation. Reginald F. Sayre, New York.

The Cure of Congenital Dislocation of the Hip by means of the "functional weighing" method, without open operation. Adolf Lorenz, Vienna.

Spontaneous Dislocation of the Hip. William J. Taylor, Philadelphia.

The treatment of Club-foot: (a) When to commence treatment and how. (b) The indications for mechanical treatment. (c) The limitations of mechanical treatment. (d) The indications for operative treatment. (e) Results in 343 operations performed by the writer. A. M. Phelps, New York.

Investigations on Flat-foot. E. H. Bradford, Boston.

Mechanical Support for Flat-foot. John C. Schapps, Brooklyn.

The Anterior Transverse Arch of the Foot. Joel E. Goldthwait, Boston.

Injuries of the Tarsus and the Ankle Joint. J. D. Griffith, Kansas City.

Subtendinous Exostosis. E. G. Brackett, Boston.

The mechanical treatment of Ingrown Toe Nail. Henry Ling Taylor, New York.

The operative treatment of Paralytic Deformities of the Foot with practical reference to Arthrodesis. V. P. Gibney, New York.

Some mechanical problems in the treatment of Pott's disease. John C. Schapps, Brooklyn.

The operative treatment of threatening abscesses in the high dorsal region. E. H. Bradford, Boston.

The treatment of Pott's Paraplegia with a report of two cases. LeRoy W. Hubbard, New York.

Osteomyelitis of the Spine. T. Halsted Myers, New York.

Suppuration in Joint and Spinal disease and its relation to

Tubercular Meningitis. An Analytic study. Samuel Ketch, New York.

A study of the action of Iodoform Glycerin in tubercular osteomyelitis. Harry M. Sherman, San Francisco.

Joint disease in Infancy. Augustus Thorndyke, Boston.

The use of Dry Heat of high temperature in the treatment of Chronic Joint Affections. William E. Wirt, Cleveland.

A theory of the Ultimate Etiology of Deformity and its practical application. Royal Whitman, New York.

The probable cause of the limp in the first and second stage of Hip Joint Disease. Harry M. Sherman, San Francisco.

Femoral Osteotomy for correction of hip deformity in adults, with a report of cases. (By invitation). A. R. Shands, Washington.

A report of cases of Osteosarcoma of the Hip. Arthur J. Gillette, St. Paul.

Division of the hamstring tendons by the open method for correcting malposition and securing rest in Tubercular Disease of the knee. Bernard Bartow, Buffalo.

Tuberculosis of the wrist and carpus. James E. Moore, Minneapolis.

Symptoms and treatment of Slight Knock Knee in children. Robert W. Lovett, Boston.

Two cases of Dislocation of the Patella treated by operation. Joel E. Goldthwait, Boston.

Some notes on Spastic Paralysis in children. F. S. Coolidge, Chicago.

Some recent modifications in the treatment of Congenital Wry Neck. William Adams, F.R.C.S., London.

Contracted Fingers. Arthur J. Gillette, St. Paul.

Congenital Club Hand, the report of a case treated by operation. (By invitation). C. Thomson, Scranton.

Rare cases from Practice. A. J. Steele, St. Louis.

A report of some cases of unusual Congenital Deformities. John Ridlon, Chicago.

Congenital defects of the long bones, a report of cases and operations. B. E. McKenzie, Toronto.

Deformities of the Humerus due to Rickets. Augustus Thorndyke, Boston.

A report of a Family of Anomalies. S. L. McCurdy, Pittsburg.

Readers will please prepare abstracts of their papers, in order that the proceedings of the meeting may be satisfactorily reported.

JOHN RIDLON, M.D., Secretary,
103 State Street, Chicago.

ROYAL WHITMAN, M.D., President,
126 West 59th Street, New York.

PUBLIC HEALTH.

The New York State Board of Health bulletin for month of February gives total deaths in the State 9,825 as against 8,789 as average for series of years for same month.

The Registration of the physicians of Hamilton County (Ohio) showed 790 who desired to practice in Cincinnati. The arrangement made by Dr. Chas. A. L. Reed, whereby registration was made at his office, met with hearty approval and merited the thanks of the profession, for by his action they were saved the trouble and expense of either sending their diplomas and affidavits to Columbus or making the trip in person. Dr. Frank Winders, the secretary of the Board, spent the three days in Cincinnati, and Dr. N. R. Coleman came down for two days to give any desired information. He made important rulings in several questions, among which were, as to whether the internes of hospitals, and physicians from outside the State who held college clinics here, were compelled to register. Both these he decided in the affirmative.

Ignorance of Adulteration no Defense.—In the enactment of the Ohio statute of 1884, "to provide against the adulteration of food and drugs," the supreme court of Ohio says, in the case of State v. Kelly, Feb. 25, 1896, that it was the evident purpose of the general assembly to protect the public against the harmful consequences of the sales of adulterated foods and drugs, and, to the end that its purpose might not be defeated, to require the seller, at his peril, to know that the article which he offers for sale is not adulterated, or to demand of those from whom he purchases indemnity against the penalties that may

be imposed upon him because of their concealment of the adulteration of the articles. In a prosecution under this law, it is not a defense that the accused was ignorant of the adulteration of the article which he sold or offered for sale.

The Water-cooler on Railway Cars and Typhoid Fever. According to the *Insurance Monitor*, the intimate relation of typhoid fever to the water tank of the railway car, was strikingly exemplified a few weeks since by the experience of the medical director of one of our principal life companies. His family had been sojourning for the summer at a popular resort. Very shortly after returning to his home, three children were simultaneously taken down with the disease. No other case had occurred among the numerous guests. The origin was investigated, and it was found that the water tanks on the train returning had been filled from a village well on the way. The fever was raging there among those who were using the water. The trifling quantity drank during the few hours of transit was sufficient to implant the germs of the disease.

Again the Oyster.—Our English cousins are very tenacious of an idea once lodged in their sensoria. They have convicted the oyster of various malefic powers, as in the causation of Asiatic cholera, typhoid fever, etc. And now whenever death follows the ingestion of the bivalve the odds are that it is in some way connected with the fatal result. Thus when Col. John T. North, the famous "Nitrate King," died suddenly a few days since, while presiding at a meeting of the nitrate companies of which he was the head, and it was learned that shortly before the meeting he had eaten a dozen oysters, what more natural than to conclude—*post hoc, propter hoc*—that the oysters had caused the death? We are seriously informed by cable that "the shells have been retained for examination." Those who have seen Col. North within the last few years will have no difficulty in believing that his sudden death was due to fatty heart rather than to his oyster luncheon *per se*, and no true American will be deterred by this untoward incident from indulging, in due season, in the *O. virginica* whatever he may think of the *O. edulis*.

Healthfulness of Buffalo.—The death rates of American cities are among the vexations of the sanitarian and the vital statistician. The total deaths may be known and recorded with substantial accuracy; but as to the population of any given city—well, one man's guess is as good as another's. In New York, for example, up to April 27, 1895, the population was "estimated" at 2,013,723, and the death rate for the week ended on that date—the total deaths reported being 885—was figured at 22.93 per annum in the weekly report of the New York Health Department. In the report for the following week this rate shot up to 25.07, while the deaths reported were 890, or only five more than for the previous week. The explanation is found in a footnote on the first page of the May 4 report: "Police census, April 15, 1895, 1,819,866"—a shrinkage of more than 7 per cent. in the "estimated" population. Similarly as to Chicago, which has been boasting of its "phenomenal healthfulness." Its alleged death rate of 15.24 per 1,000 in 1894, now turns out to be based on a population "padded" 5 per cent. by the school census people of that year; and its death rate of 15.11 for last year is based on a 2.05 per cent. increase over the "padded" school census figures of the previous year. Dr. Gram, Registrar of vital Statistics of the Buffalo Health Department, has chosen a better way. While he does not hesitate to figure out death rates on population more or less "estimated," he also gives a table of deaths reported year by year, showing an astonishing reduction in the past five years, as witness: 1891, deaths 6,001, rate 23.48; 1892, 5,697, 19.98; 1893, 5,711, 19.03; 1894, 5,280, 16.76; 1895, 4,681, 13.95. Assuming that the population has been stationary during this period, here is a falling off of nearly 22 per cent. in the actual number of deaths in five years. Dr. Gram says: "Undoubt-

edly the cause of this great reduction in the number of deaths is mainly due to the decrease in communicable diseases, including consumption, the percentage of deaths in these having decreased from 7.42 in 1891 to 4.04 in 1895." He somewhat ingenuously adds: "This fact [the decrease in the actual number of deaths] has undoubtedly manifested itself to most practitioners when they made a comparison between their present and past book accounts, and no small number have made investigations as to the cause." Verily, the physician who relies for his income on the demand for his services in the treatment and not the prevention of disease, has fallen on evil times. *Sanitas sanitatem, omnia sanitas!*

An Object Lesson for Antivaccinists.—The city of Gloucester, in the west of England, has for years been the center and headquarters of the antivaccination movement in that country. The authorities charged with securing vaccination have for nine years, or more, persistently and successfully resisted all efforts to compel them to do their duty. Naturally and logically, smallpox is now reaping its harvest. During the first three and a half months of the present year 1,300 cases had been notified and at last accounts fresh cases were occurring daily. The population of Gloucester is 42,000, so that during the period mentioned one out of every thirty-two or thirty-three of the inhabitants had already been attacked. In common with the general experience of all smallpox epidemics, as far as records of cases that have already occurred are available, they show amongst other things, that the heaviest percentage of mortality has been among the unvaccinated, and that where unvaccinated patients have not actually died they have suffered severely, and in a great number of cases will be permanently disfigured or blind. The vaccinated infants have escaped, whilst the unvaccinated ones have suffered heavily, and where adults who have been vaccinated, often inefficiently, in their infancy, have been attacked, the severity of the disease has been mitigated, and the attack has frequently been so mild as to be scarcely perceptible.

The *British Medical Journal*, April 25, says: "The epidemic has had a marvelous effect in promoting vaccination throughout the country, and has to a great extent counteracted during the last few weeks the mischief caused by the delay which has been allowed to occur in the issue of the report of the Royal Commission on Vaccination. The guardians of the Gloucester Union, after refusing for nine years to enforce the law, have at last, but too late, repented of their folly, and have issued notices urging parents and others to obtain the prompt vaccination of their children, as 'the only means of promptly stamping out the present epidemic of smallpox.' The result of this change of front, aided by the vigorous action of the Town Council, has been that within a few weeks upward of 25,000 vaccinations and revaccinations have been performed in a population of about 42,000. It is to be hoped that this scramble for vaccination during a panic will not result in the performance of much unprotective vaccination. At the same time, one after another of the apathetic and recalcitrant boards of guardians have resolved once more to enforce the vaccination acts, and to wait no longer for the long delayed report of the Royal Commission."

Health Reports. The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Michigan: Bay City, Detroit, Ionia and Marine City, April 11 to 18, smallpox reported.
Kansas: Leavenworth, March 28 to April 4, 2 cases.
Louisiana: New Orleans, April 11 to 18, 37 cases, 28 deaths.
Florida: Pensacola, April 22, 1 case.

SMALLPOX—FOREIGN.

Bombay, March 17 to 24, 32 deaths.
Buda Pesth, March 25 to April 1, 2 cases.
Cairo, March 11 to 18, 1 death.

Calcutta, March 7 to 14, 6 deaths.
 Callao, March 8 to 15, 5 deaths.
 Cardiff, April 4 to 11, 2 cases.
 Cienfuego, April 5, to 12, 2 deaths.
 Dublin, April 4 to 11, 1 case.
 Guayaquil, April 3 to 10, 4 deaths.
 Hong Kong, March 1 to 14, 2 cases, 1 death.
 Leeds, April 4 to 11, 1 case.
 Madrid, April 1 to 7, 13 deaths.
 Montevideo, March 14 to 21, 1 case, 1 death.
 Odessa, March 28 to April 4, 11 cases.
 Prague, March 28 to April 4, 5 cases.
 Rio de Janeiro, March 14 to 28, 18 cases, 9 deaths.
 St. Petersburg, March 21 to 28, 13 cases, 2 deaths.
 Swansea, April 4 to 11, 5 cases, 1 death.
 Trieste, March 28 to April 4, 1 case.
 Santiago de Cuba, March 30 to April 4, 1 death.
 Southampton, March 28 to April 4, 3 cases.

CHOLERA.

Bombay, March 17 to 24, 3 deaths.
 Calcutta, March 7 to 14, 140 deaths.

YELLOW FEVER.

Rio de Janeiro, March 14 to 21, 638 cases, 459 deaths.
 Sagua la Grande, April 4 to 11, 3 cases.
 Santiago de Cuba, March 30 to April 4, 5 deaths.

ADDITIONAL REPORT RECEIVED MAY 1.

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, April 18 to 25, 69 cases, 20 deaths;
 Shreveport, April 18 to 25, 12 cases in pest house.
 Michigan: Bay City, April 18 to 25, smallpox reported;
 Ionia, April 18 to 25, smallpox reported.
 Ohio: Dayton, April 16 to 30, 2 cases.

SMALLPOX—FOREIGN.

Acapulco, April 11 to 18, 2 cases, 2 deaths.
 Birmingham, April 11 to 18, 4 cases.
 Bombay, March 24 to 31, 47 deaths.
 Calcutta, March 14 to 21, 3 deaths.
 Cardiff, April 11 to 18, 1 case.
 Genoa, April 11 to 18, 1 case.
 Glasgow, April 4 to 11, 1 case.
 Guayaquil, April 10 to 17, 5 deaths.
 Leeds, April 11 to 18, 1 death.
 London, Eng., April 4 to 11, 21 cases.
 Madrid, April 7 to 14, 11 deaths.
 Moscow, April 21 to 28, 1 case.
 Naples, March 31 to April 13, 25 cases, 10 deaths.
 Odessa, April 4 to 11, 13 cases, 4 deaths.
 Paris, April 4 to 11, 1 death.
 Prague, April 4 to 11, 3 cases.
 St. Petersburg, April 4 to 11, 15 cases, 6 deaths.
 Swansea, April 11 to 18, 11 cases.
 Tuxpan, April 11 to 18, 8 deaths.
 Warsaw, April 4 to 11, 3 deaths.
 Alexandria, March 26 to April 1, 1 death.
 Cairo, March 26 to April 1, 3 deaths.

CHOLERA—FOREIGN.

Alexandria, March 18 to 25, 1 death.
 Bombay, March 24 to 31, 8 deaths.
 Calcutta, March 14 to 21, 173 deaths.

BUBONIC PLAGUE.

Hong Kong, March 14 to 28, 83 deaths.

MISCELLANY.

The Iowa Public Health Association will meet at Davenport, Iowa, May 19 and 20.

A Boston merchant, who declines to have his name published, is reported to have given \$100,000 to Harvard University to establish a department of comparative pathology.

Alabama Exempts Dentists from Jury Duty.—A law was passed in Alabama in 1895 providing that all practicing dentists in the State shall be exempt from jury duty.

Burden of Proof as to Insanity in Georgia.—Where insanity at the time of the commission by an adult of an indictable act is set up as a defense, the supreme court of Georgia holds, in *Keener v. State*, decided Dec. 13, 1895, the burden of proving the alleged insanity by a preponderance of the evidence rests upon the accused.

College Commencements.—Commencement exercises of the Maryland University School of Medicine, Baltimore, Md., were held April 16 with sixty-one graduates. Gross Medical College, Denver, Colo., graduated twenty-six new M.D.'s April 9.

Recognition of "Rush."—At a quarterly meeting of the council of the Royal College of Surgeons of England, held April 9, the President, Mr. Christopher Heath, being in the chair, it was resolved that Rush Medical College of Chicago should be added to the list of foreign institutions recognized by the Examining Board for the complete course of study required by the regulations.

Physicians Can Sell Drugs in Alabama.—A law was passed in Alabama in 1895 that all regularly graduated physicians, who have complied with the laws of the State, as they now are, entitling them to practice medicine, are also authorized to fill prescriptions of other physicians, compound medicines and poisons, and sell the same, and to carry on the business of a druggist, or a drug store, or apothecary shop.

Low Patent For Holding Artificial Teeth Invalid.—Feb. 14, 1896, the United States Circuit Court, E. D., New York, held in the case of *International Tooth-Crown Co. v. Bennett*, that the patent, No. 238,940, granted to James E. Low, dated March 15, 1881, for a method of permanently fixing artificial teeth to the mouth by bands around the natural teeth, in dentistry, is void, on account of prior knowledge and use.

Successful Serum Treatment of Leprosy.—*El Monitor Médico*, of Lima, March 1, reports the results of fifteen cases of leprosy treated with serum by Carrasquilla of Bogota. The disease was certainly arrested by the very first dose, and all the local symptoms gradually subsided; sensibility, appetite and cheerfulness returned, and Carrasquilla considers them practically cured.

Coal Mining Not Conducive to Malignant Disease.—According to the *British Medical Journal*, Mr. T. Law Webb, surgeon of two coal fields in Shropshire, says that books of the district registrar show that of all those whose deaths are registered as due to malignant disease during the past thirty years, only two are described as coal miners. This immunity is thought to be owing to the fact that they work underground, and do not drink casual water.

Tracheotomy Tubes for Race-Horses.—According to the *Boston Medical and Surgical Journal*, the prevention of "roaring" in race-horses otherwise valuable, has been a desideratum of horse breeders for many years. It has been accomplished by the simple surgical operation of tracheotomy. The value of this procedure is attested by the fact that in the Selling Steeplechase at the second January meeting at Manchester, England, the horses that finished first, second and fourth, wore silver tubes in their windpipes.

A National Conference of sanitarians, including representatives from all the State boards of health, will convene in Chicago June 10, and remain in session for at least three days. C. O. Probst, M.D., Secretary of the National Board, and John W. Scott, M.D., Secretary of the Illinois State Board of Health, with Commissioner Kerr and Dr. F. W. Reilly of the Chicago health department, have completed plans for the convention. The visiting delegates will be welcomed by Governor Altgeld on behalf of the State and by Mayor Swift for the city. Every State board has been asked to submit propositions for discussion, with the result that all topics of interest in sanitary science will be presented. The program includes excursions to, and inspection of the drainage canal, the cribs and intakes of the city water supply and the stockyards.

Heraldic Devices for Medical Men.—According to the *Brooklyn Medical Journal*, the tribute of a banquet has lately been attended in honor of the veteran galvano-cauterist, Dr. John Byrne. Dr. Shoop, responding to a toast, said he was re-

minded of the time when the late Sir James S. Simpson, the originator of chloroform anesthesia in childbirth, had lately come into his title, and a brand new coach was nearly ready for delivery to the new knight. He was at a loss for a suitable coat-of-arms and legend to put upon the carriage, and in his dilemma he consulted a friend who was somewhat of a wag. "Why, doctor," he replied, "paint on your carriage a new-born babe, and under it place the motto: 'Does your mother know you are out?'"

"Dr. Byrne, if you are in quest of a coat-of-arms paint the form of a lovely woman and inscribe the motto above her: 'Saved as by fire.'"

A Non-committal Certificate of Death.—Dr. Nathaniel K. Whittemore of Elk River, Minn., is regarded by the *General Practitioner* as a kind of local celebrity on account of his certificate of death tendered by him in a will contest case. The certificant was evidently willing to certify to the fact of death, but the cause of death was another matter. The certificate reads as follows: "This is to certify that Sarah Langen, supposed to be single, died on Feb. 8, 1895. I have had no memorandum stating just the cause of death, and I have had more to think about in caring for the living than thinking about the dead. I am quite certain that she is dead, and have certified to that fact at least once before. She was a patient of mine, and that ought to at least give me authority to know whereof I speak: and, possibly, that ought to be sufficient guarantee that she is dead."

Arsenical Fly-paper Used for Suicidal Purpose.—The *Medical Press and Circular* congratulates the Pharmaceutical Society of Great Britain for its energy in prosecuting unlicensed vendors of poisonous preparations, and makes note of the new departure taken in the direction of bringing actions against grocers who deal in poisonous fly-papers. A case of this description was recently heard in respect to the sale of twenty-five fly-papers, the composition of which on analysis showed an average of *eight grains of arsenic in each*. The governmental chemist for the prosecution agreed with the analysis that had been made, and he also pointed out that two grains of arsenic was a fatal dose for an adult. The only defense made was that wallpapers, posters, and various fabrics contained arsenic. But the judge declined to admit this evidence, and gave judgment for the plaintiffs, namely, £5 and costs. In regard to poisonous fly-papers, the use to which they are put for suicidal purposes has been repeatedly brought under public notice, and it is therefore highly essential that their sale should be restricted, at all events to those tradesmen whose business it is to deal in drugs.

An Itinerant Physician not Entitled to Practice. The supreme court of Rhode Island, Feb. 11, 1896, affirmed the decision, in the case of *Evans v. State Board of Health*, that here was a party who was to be regarded as an itinerant doctor, within the meaning of the statute relating to the practice of medicine in that State, which provides that "nothing in this chapter shall be so construed as to authorize any itinerant doctor to register or to practice medicine in any part of this State." He was a domiciled resident of Boston, Mass., and a practicing physician, making a specialty of the treatment of catarrh. His main or regular office was in Boston, and for years past, except when absent from the country or prevented by illness, he had visited Providence in the practice of his specialty on stated days each month. He had no office in Providence except the rooms he had taken in the hotels at which he stopped. He notified his patients of his visits by advertisements in a Providence newspaper, and had met them in his rooms at the hotels at the times mentioned in the advertisements. He had also during this ten years, for greater or less periods, been in the habit of visiting, in the practice of his specialty, Worcester, Springfield, New Bedford and Lowell, Mass., in the same manner as he had visited Providence. On these facts, the court holds that the decision of the State Board of Health, as above, was correct.

Not an Expert on Determining Facts.—A physician was called as an expert witness in a murder case where the defense was insanity. He testified that he had made an examination of the defendant before the trial, with reference to his life with his wife, the beginning of his domestic trouble, their continuance, a trip West and return, his attempt to get into business, his letters that he wrote to different people, his attempt at reconciliation, etc. He was then asked to state his conclusion as to the defendant's sanity or insanity at the time of the tragedy. Feb. 25, 1896, the court of appeals of New York holds *People v. Strait*, that the trial court was right in refusing to allow the question to be answered. It says that the witness was an expert on the diseases of the mind, but he was not an expert on determining the facts, where such facts had to be obtained from the statements of others. It then explains that it was essential that the jury should be informed as to the facts upon which the expert based his conclusions in order to determine whether they were well founded. If the facts were not disclosed his conclusions could not be controverted. He might have been deceived by a false statement prepared for the occasion, and for the purpose of making him a valuable witness upon the trial. This, with regard to information derived by the physician from statements made by others not under oath. But a physician may acquire facts from his own observation. There is much, continues the court, in the actions, conduct and appearance of a person that aids the physician in forming a conclusion as to the difficulty. The facts so acquired the physician may himself give in evidence, at least so far as they can be described.

Acquittal of a Physician Unjustly Accused.—A practitioner of Brooklyn, Dr. Carl F. Gessler, had a narrow escape from a trap prepared for him by an admittedly guilty midwife, abortionist, in conjunction with her servant. The midwife "turned State's evidence" in the expectation of having sentence ameliorated under plea of guilty. The case was one of fatal results after alleged criminal abortion, and the practitioner testified that he had no suspicion of criminality until, after the death of the patient, the midwife ran away. The closing scenes of the trial were replete with interest, because of the number of medical experts who testified in the doctor's defense. Among them were Dr. George R. Fowler, Dr. Francis H. Stewart, Dr. George H. Jeffrey, Dr. August H. Ritter, Dr. Charles W. Brandenburg and others. All were called as experts in different lines, and in answer to the long hypothetical questions said that the patient's death was in their opinion due to exhaustion caused by incessant vomiting; that her case was hopeless from the time that Dr. Gessler was called in, and that his treatment of her was absolutely proper. Each said that any operation performed with criminal intent, must have been prior to the doctor's first visit. The result was an acquittal. The guilty midwife was discharged by the judge, after a severe rebuke. The judge stated that if the law permitted he would with great satisfaction have imposed a sentence of murder, were it not for the fact that the effort of the district attorney to fasten the crime upon the physician made it possible for the midwife to go free.

Did not Show Required Qualification.—The second clause of chapter 1353, section 3, of Public Laws of Rhode Island, of May 16, 1895, the supreme court of that State construes as being intended to apply to physicians who, not possessing a diploma from a reputable and legally chartered medical college, indorsed as such by the State Board of Health, as required by the first clause of the section, had been in practice a sufficient length of time prior to Jan. 1, 1895, and with sufficient success, to have acquired an honorable reputation in the community as practitioners. Satisfactory evidence of possessing this qualification, so as to entitle him to a certificate to practice medicine, the court holds was not furnished, in the case of *Paquin*

v. State Board of Health, decided Feb. 11, 1896, where the testimony showed that the applicant was for several years prior to 1889 engaged in the dry goods and boot and shoe business; that in 1889 he took up by himself the study of medicine, and later in that year began to practice, chiefly, if not wholly, among the French residents of the town; that from the latter part of 1889 he gave his attention exclusively to the practice of medicine, leaving the dry goods and boot and shoe business to be managed by clerks; and that he continued his practice up to Jan. 1, 1892, some of his patients being satisfied with his services, and some not. And, on the ground that there was no evidence that on Jan. 1, 1892, he had come to be regarded by the community in which he practiced as a skillful and successful practitioner, and therefore had acquired the honorable reputation as a physician necessary to qualify him to practice contemplated by the statute, as above stated, the court confirms the decision of the State Board of Health denying a certificate to him.

Dislocation of the Spine and Consequent Hyperpyrexia.—The following case of the above-named complication is given by Dr. C. Lambette in *La Presse Médicale Belge*: A female, aged 40 years, was brought to the hospital at Schaarbeck, who had fallen back in the course of her work from a height of five feet, striking a solid horizontal bar about the region of the kidneys. Her health previously was invariably fine. The fall produced a luxation between the sixth and seventh cervical vertebrae, showing the spinal marrow, as the autopsy disclosed a complete diastasis of the two vertebrae. The lower limbs and muscles of trunk were completely paralyzed, pulse 120, respiration exclusively diaphragmatic. The unusual feature of the case was the sudden and excessive rise of temperature. One-half hour after accident it was 98 degrees. In twelve hours it was 102 degrees and in twenty-four hours it rose to 109.5 degrees when death ensued. Dr. Lambette draws the conclusion from it that there must be some nerve center in the region of the sixth or seventh vertebra which acts with great energy to control or modify the temperature of the organism. Destroyed by some lesion this center ceases to act as moderator of the temperature, which then rises unchecked, as is proved by the hyperpyrexia following this accident so immediately and to such an excessive extent. No possible infection could have occurred in this case and consequently it proves that fever is not necessarily of microbial origin, but may result from some lesion of a calorific nerve center.

Attention to Sanitary Practice in the Rural Districts.—The *Charlotte Medical Journal* editorially calls attention to the duties of the medical profession to their rural constituencies in the matter of disease prevention. That journal says: "While sanitation has made rapid strides in the great cities, it has not in the rural districts and small towns made the same progress. The principal points wherein reform is needed seems to be in the line of water supply, waste disposal and drainage. The complete abandonment of all shallow wells and the substitution of deep tube wells for isolated districts; for towns, a public supply drawn from uncultivated and uninhabited uplands, and the sanitary supervision of all such districts. In the matter of waste disposal, all privies and cesspools should be absolutely prohibited, and when water carriage is not available, the disposal of excreta by means of the ash or dry earth closet is the only proper method. Slop and wash waters are best disposed of by means of surface or subsoil irrigation over neighboring land; kitchen refuse, etc., should be burned in the range, or what is perhaps better, in a simple open-air furnace made of brick. In country houses, where water service is used, surface irrigation of the sewage, over some near-by field, is the plan to be desired. Drainage, both surface and subsoil, has been much neglected, but it is a potent factor in the healthfulness of a locality; it is really wonderful what

changes are wrought on a moist land by careful underdraining—it is the old story of the Pontine Marshes. The proper preparation of a building site is still another point; many houses of the poor are put down without any cellar, and the residual dampness in such a house can not fail to be a factor in disease. A cellar, five or six feet deep, with the walls properly constructed and a floor, underdrained if necessary, and then covered with several layers of bricks, pitch and concrete, make the proper and only proper foundation for a dwelling. How can these advances in sanitation be accomplished? By educating the people to the proper understanding of the value of sanitary affairs, and this rests with—the family physician.

Practical Testing of the Anti-Erysipelas Serum.—The Paris correspondent of the *Medical Press and Circular* states that Dr. Chantemesse has recently reported on the treatment of 501 cases of erysipelas by serum prepared by the Pasteur Institute, with a mortality of only 2.59 per cent. The effects of the serum are both local and general. Locally, at the end of twenty-four hours, a marked decrease of the redness, swelling and pain, is observed. Desquamation sets in at an early hour consisting of thick epidermic scales. Sometimes the lesion continues to spread but is arrested by repeated injections. Suppuration is very rare and where it existed before the treatment it is considerably diminished by the injections. The general condition of the patient improves rapidly a few hours after the injection; if the dose is sufficient the patient experiences a *bien être* well marked; the nervous disturbance and particularly the delirium are favorably influenced. The fever abates rapidly, to disappear altogether at the end of the second day, while the pulse diminishes in frequency and increases in strength. Where albuminuria has already set in, the injections cause it to disappear within forty-eight hours. The gravity and the duration of the affection are diminished by the serum treatment. The ordinary doses of serum varies between six and ten drams.

Alabama's Embalming Law.—One of the laws passed at the last (1894-5) session of the General Assembly of Alabama created a State Board of Embalming. This consists of five members appointed by the governor. They are required to be practical embalmers, having experience in the business and in the care and disposition of dead human bodies. It is made the duty of the board to prescribe a standard of proficiency as to the qualifications and fitness of those engaged and who may engage in the practice of embalming and the care of and the disposition of dead human bodies. Every person desiring to engage in the practice of embalming dead human bodies, must make written application to the board, accompanying same with a license fee of \$5, and then the applicant, having presented himself or herself before the board at a time and place fixed by it, is, upon due examination, to satisfy the board that he or she is of good moral character, is possessed of a knowledge of the venous and arterial systems, the location of heart, lungs, stomach, womb and other organs in the human body; the location of abdominal, pleural and thoracic cavities; the location of the carotid, brachial, radial, ulnar, femoral and tibial arteries; a knowledge of the science of embalming and the care and disposition of the dead, and has a reasonable knowledge of sanitation and the disinfections of bodies of deceased persons and the apartment, clothing and bedding in case of death from infectious or contagious diseases. To such an one the board will issue a license, which is to be registered in the probate judge's office of the county in which it is proposed to practice, and is to be displayed in a conspicuous place in the practitioner's office. The board is to be paid \$2 annually for renewal of registration. Nothing in this act is to apply to or in any manner interfere with the duties of any officer of local or State institutions, nor to any person engaged simply in the furnishing of burial receptacles for the dead; and the act

itself is only to apply to cities and towns having a population of 1,500 or over. The penalty for practicing or holding one's self out as practicing the science of embalming without having complied with these provisions is a fine of not less than \$50 nor more than \$100 for each offense, which goes to the public school fund.

Kitasato's Work in 1895 in Serotherapy.—Dr. Nakagawa writes to the London *Lancet* on the above subject, stating that Kitasato has lately published a detailed report of 353 cases treated at the institute with the serum prepared under his supervision. For those who have no access to the original a few brief extracts may be of some interest. Rate of mortality may be learned from the following: "Kitasato has collected from reliable sources 26,521 cases of diphtheria in Japan previous to serotherapy, with 14,996 deaths (56 per cent.); while of 353 cases treated here from Nov. 1894, to Nov. 25, 1895, there were only 31 deaths (8.78 per cent.). There is reason to believe that the mortality can be lowered if the treatment could be commenced early in the course of the disease. Thus in 110 cases in which injections were made within forty-eight hours after the invasion all ended in recovery. On the other hand, of thirty-three cases treated after the eighth day of the disease eleven were lost. Some of the patients were brought into the institute in a moribund condition, and six children died within five hours after admission, six more within ten hours; altogether twenty-one cases (two thirds of the total mortality) were lost within the first twenty-four hours. As to the effect of the serum on the course of the disease the first to be noted is: 1. The fall of temperature; in many cases the defervescence was almost critical, and, it takes place usually at the end of twenty-four to forty-eight hours. 2. The separation of the false membrane, which takes place as a rule after the return of the temperature toward the normal. Very large casts of the trachea and larger bronchi have been coughed up. 3. Urticaria-like eruptions were observed in very many cases, being in some quite severe and annoying. They, however, disappeared in a few days without any treatment. 4. In four cases marked albuminuria was observed at the time of admission. In these cases albumin disappeared from the urine in the course of the treatment. Pyrexia was accompanied by albumin in the urine, but there was no reason to believe that any renal trouble was caused by the injections. 5. Five cases developed paresis of the soft palate. I wish to note, in conclusion, that microscopic as well as culture examinations were made in every case, and Dr. Kitasato's report only deals with those cases in which Löffler's bacilli were demonstrated to be present."

Localization of the Variolous Eruption.—While smallpox is still prevalent in many parts of the country it may be worth while again to call attention to the procedure which has been more or less frequently resorted to for nearly half a century with a view of localizing the eruption on the trunk of the body and so save pitting of the face as well as reducing the dangers of corneal inflammation. Dr. George O. Butler in the May number of the *Cleveland Journal of Medicine* recounts that his attention was attracted to this method by a confederate surgeon at Frankfort, Ky., during the winter of 1863. His mode of treatment was, so soon as a case was diagnosed variola or varioloid, to apply a cantharidal plaster about ten or twelve inches square upon the anterior aspect of the thorax. As soon as vesication ensued, he would apply a flaxseed poultice, remove the cuticle, reapply the poultice for a day or two, then dress the blistered surface with savin cerate. The discharge from the raw surface was profuse. In addition to this local treatment cathartics, diuretics and diaphoretics were used as required. Dr. Butler observed this procedure in at least fifteen or twenty cases. The papillæ or red pimples, as large and hard as a birdshot, would disappear as soon as the blistered surface discharged freely.

There were no vesicles or pustules observed whenever the cantharidal plaster was applied before or during the papular stage. Two of the cases were treated without the local application, and they developed into typical cases of discrete smallpox. In some few cases vesicles were visible, and would dry up and disappear as would a varicella, the vesicle leaving no scar or pit. The duration of the disease was materially shortened, none being confined to bed longer than one week. During the following winter (1864), the disease appeared in Cleveland in an epidemic form. Dr. Butler had then returned and resumed practice and was fortunate enough to treat some twenty cases at their homes under unfavorable circumstances. He adopted the forgoing treatment, with recovery in each case without pits or scars, excepting upon the blistered surface which presented an immense pitted scar or cicatrix. In only one case were more than five or six visits rendered. Dr. Butler adds that he made some notes during Prof. A. C. Ackley's lecture on smallpox in the year 1853, wherein the application of an ointment composed of croton oil and tartar emetic was recommended for a similar purpose; and also that he was informed that previous to the war of the rebellion the physicians in the West India Islands pursued the blistering treatment with like results. In his history of the smallpox epidemic in Illinois, 1881-1883, the late Dr. John H. Rauch called attention to a case of smallpox reported by Dr. Charles Caldwell, in which two days before the eruption made its appearance the patient had a sore throat and applied a towel saturated with kerosene to the neck. Dr. Caldwell says: "When the eruption came out the pustules were all on the neck. If we only knew at the time that the patient was going to have the disease a blister or other counter-irritant to some part of the body might save the face." In a footnote to this case Dr. Rauch says: This expedient was in use in the Vienna General Hospital in 1863 (Schmidt's *Jahrbücher*, Band 133) and about the same time by Dr. Lyndon a confederate surgeon. (*Medical and Surgical Reporter*, vol. xlvii, 1882.)

Practical Notes.

Chewing-gum the Nucleus for an Appendicitis.—A youth of 18 years, of Peekskill, N. Y., was taken suddenly and seriously ill with an attack that was diagnosticated as appendicitis. An operation was performed and the diagnosis confirmed. The appendix was found to be ulcerated and perforated. It was removed and in it was found a globular piece of chewing-gum, upon the surface of which adhered a vast number of particles of partly digested food, making a lump about the size of a walnut. The recovery of the young man is still in doubt.

Stephen Smith's Amputation at the Middlesex Hospital, London.—The *Medical Press and Circular* gives an abstract of a clinical demonstration at the Middlesex Hospital of the above operation for the relief of thrombosis of popliteal and femoral arteries and gangrene of leg. The patient was a male, aged 57 years, but looking much older. Occupying the middle third of the outer surface of the patient's right leg was an ulcer more than six inches long, extending down to the interosseous membrane, to the tibia and the fibula; this was caused by gangrenous inflammation; the slough had nearly all separated, but the exposed outer surface of the tibia was necrosed. The foot was very edematous. Pulsation was felt in the femoral artery down to the apex of Scarpa's triangle, below which no arterial pulsation could be detected. The leg was removed at the knee-joint below the semilunar fibro-cartilages, the stump being covered in by lateral flaps taken from the leg according to the method of Stephen Smith. The femoral artery was found filled with a dark red thrombus; the arterial wall was not notably thickened or otherwise diseased. Mr. Gould said it was necessary in these days for a surgeon to justify very completely every amputation, but he believed that in this case there

was no other course opened to him to pursue. The existence of the thrombosis, together with the feeble state of the patient, rendered it probable that the ulceration would never heal, but even were healing to be obtained, the man would be left with a useless and troublesome leg. The extensor and peronei muscles were destroyed, so that the foot would be in a condition of paralytic equino-varus; and the anterior tibial and musculo-cutaneous nerves having also been destroyed, the dorsum of the foot would be deprived of all sensation, and would probably become quickly the seat of trophic sores. Having decided to amputate, the question arose as to the best method to adopt. He has chosen Stephen Smith's amputation through the knee-joint because it was attended with less shock and less hemorrhage than any amputation through the lower part of the thigh; if successful it would leave the man a better stump than an amputation further up. In the patient's feeble state Mr. Gould attached great importance to the little shock and trifling hemorrhage (in this case not amounting to half an ounce), and this was the chief reason that had weighed with him in his decision. He was aware, however, that this operation was in this particular patient attended with risk; the flaps of skin and fascia which he had reflected from the leg were very thin, and at the same time were of necessity long, and with thrombosis of the popliteal and femoral arteries there was danger that one or both these flaps would slough. He pointed out that the outer flap, owing to its less free blood supply, was more liable to slough than the inner flap. In speaking of the thrombosis, he drew attention to the probability of its being due to an extension of clot from the anterior tibial artery, the seat of disease, and not to extensive disease of the arterial wall, the disease differing wholly from another he mentioned, in which he recently performed the same operation for gangrene of the leg due to obliterative arteritis, and in which the popliteal artery was found to be filled, not with thrombus, but with organized fibro-cellular tissue.

Detroit.

THE COMMITTEE on medical legislation appointed by the medical societies of this city and State, met May 1. The name adopted was the Michigan League for Medical Legislation. The membership was extended to include any practitioner and the vice-presidents are to be one from each pathy. The second meeting will be held on May 8, for the election of permanent officers.

THE REPORT from the Health Officer for the week ended May 2, gives: Deaths 76, under 5 years 30; births, male 44, female 41. Contagious diseases: Diphtheria, 8 new cases, 2 recovered and none died: scarlet fever, 4 new cases, 11 recovered, none died.

THE DETROIT COLLEGE OF MEDICINE surprised its senior class this year by requiring every member of the class to write upon the final examinations. This was in the face of the fact that the regulations of the college allow that all whose standing for the term reaches a standard of 85 per cent. shall be exempt from final examination and following out this rule, last year's senior class were all allowed to pass except some half dozen men who were obliged to take a final. There were 79 graduates.

THE ANN ARBOR (Mich.) HOSPITAL which is at present crowded will probably remain open during the summer months.

Washington.

HEALTH OF THE DISTRICT.—The following report by the Health Officer for the week ended April 18 is made: The mortality of the District during the past week reached 116. In the previous week it was 112. The death rate was 21.90, as against 22.67 during the same period last year. Both the health and meteorological conditions evinced unusual variations from those of the last report. The mean temperature rose 28 degrees over that previously reported, and stood at a mean of 70 degrees. Accompanying the high temperature was

a high barometrical pressure, with southerly mild breezes, and with an almost even relative humidity. The maximum temperature for the week was 93 degrees and the minimum 37 degrees; range 56 degrees.

THE INEBRIATES BILL RECOMMITTED.—The bill to provide for the care and cure of inebriates in the District of Columbia was reported to the Senate adversely April 17 last and postponed indefinitely. On the 24th ult., a motion to reconsider was agreed to, and the bill was recommitted to the Committee on the District of Columbia.

SMALLPOX HOSPITAL.—The Commissioners have sent to Congress a recommendation that the following proviso be added to the item in the pending deficiency bill making appropriation to complete the smallpox hospital: "That the Commissioners of the District of Columbia are authorized to make rules and regulations for the government of the smallpox hospital, and to charge reasonable prices for the use of private rooms therein (when such use is not rendered necessary by the condition of the patient) and for the accommodation of persons not afflicted with smallpox, but allowed to enter said hospital in company with relatives or friends who are so afflicted."

MEDICAL VALUE OF THE X RAYS.—Prof. J. J. Kinyon, of the Marine-Hospital Service and professor of bacteriology of the medical department of Georgetown University, is conducting an interesting series of X-ray experiments before the medical students of Georgetown University at the medical department.

STAFF OFFICERS AT THE EMERGENCY HOSPITAL.—At the annual meeting of the attending staff of the Central Dispensary and Emergency Hospital, held on the 2d inst., Dr. Swan M. Burnett, was re-elected President, and Dr. W. H. Hawkes was elected to fill the office of Secretary. Both have held the office for the past twelve years.

WOMAN'S CLINIC.—The Board of Directors of the Woman's Clinic held their quarterly meeting at the hospital on the 2d inst. The reports of staff and officers showed the work of the institution to be on a steady increase.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the 246th meeting of the society held on the 1st inst., Dr. John Van Renselaer read a very interesting and instructive paper, with cases, on venesection and infusion of saline solutions in the treatment of uremic coma. A very full discussion followed.

TO ESTABLISH HARBOR REGULATIONS.—Mr. Babcock has introduced a bill in the House to establish certain harbor regulations in the District of Columbia. Under this bill it will be unlawful for any owner or occupant of any wharf or dock, any master or captain of any vessel, or any other person, to throw any dirt, ballast, oyster shells, vegetables, dead animals or ashes into the Potomac within the District limits, or on its shores below high water mark, unless for the purpose of making a wharf, duly authorized by the Commissioners. A violation of the act shall be punishable by a fine in the police court, not exceeding \$100 or imprisonment for six months, or both.

TO REGULATE NEW MEDICAL COLLEGES IN THE DISTRICT.—The Commissioners have returned to the President, with their approval, the bill regulating medical colleges. Under this bill all colleges will be required to first obtain a permit before opening their doors. The bill is aimed at quack institutions, which bestow diplomas without any other requisite save the payment of a small fee.

Cincinnati.

THE CELEBRATED PEARL BRYAN CASE is attracting much attention in the medical profession, owing to the amount of expert testimony being introduced. The questions as to whether the head was cut off before or after death, whether the deed was committed in Ohio or Kentucky, where the body was found, or what rôle the cocaine found in the stomach might play in the murder. The claim being made by the defense that they had administered cocaine to the girl in Cincinnati for the

purpose of producing or assisting in an abortion, and that while under this anesthetic she died, and the defense is therefore only guilty of manslaughter in the State of Ohio, the limit of punishment of which is seven years, while in Kentucky the same crime is a capital offense. The weight of expert testimony tends to prove that on account of the amount of blood found with the body, and the leaves surrounding the same being spattered with blood, the decapitation was done at that spot. It was also claimed that cocaine has not been successfully used to produce an abortion, or to hasten labor, by the profession. Both defendants are dental students.

A CASE IN THE CRIMINAL COURT last week brought out a delicate medico-legal question. A man being charged with shooting another offered the defense that the hospital authorities were responsible for his death, by reason of their negligence in the treatment of the case. The man was shot in the left side of the chest, the ball grazing the sternum, deflecting to the left, penetrated the pleura and lung and shattered a posterior portion of the rib. He died five days after, and the autopsy revealed death from progressive hemorrhage with a consolidation of the lung. The claim is made that had this case been properly operated upon at the time of the accident he would in all probability have recovered.

A CASE OF VARILOID turned up in the city last week and was taken to the Branch Hospital.

A YOUNG CHILD was received at the City Hospital last week suffering from a foreign body in the larynx. Tracheotomy was performed shortly before the child died. The autopsy revealed a large bean at the bifurcation of the bronchi.

THE ACADEMY OF MEDICINE adopted the report of the committee on "Directory for Nurses," and Sister Anna Kypke of the Losanti Sisters has been placed in charge of the registration, under the supervision of a committee consisting of Dr. R. W. Stewart, Dr. D. I. Wolfstein and Dr. G. M. Allen. The registration will be at the "Losanti," and when a nurse is called her name will then be placed at the bottom of the list, thus insuring impartiality in the selection of the nurses for calls.

THE INVESTIGATION of the Dairy and Food Commission by the Senate Committee has been completed and the committee has reported that it has failed to find where Dr. McNeal has neglected to endeavor to enforce the pure food laws, but that the preponderance of evidence goes to show that Amos Dye should be dismissed as counsel for the Commission on account of his connection with Mr. White, of "Paskola" fame, in the matter of a \$5,000 bribe alleged to have been made by Mr. White.

DR. D. W. YOUNG demonstrated before the Academy of Medicine the advisability of making traction in the line of the body in a case of dislocation of the head of the humerus with fracture of the surgical neck.

THE LEGISLATURE has passed the bill permitting the Medical College of Ohio to transfer its property and chattels to the Cincinnati University and become its medical department, thereby losing its identity as a medical college, and the building formerly occupied by the University will be used for the medical department. An important supplementary bill passed during the last day of the Legislature was one enabling the University to charge tuition in all departments except the academic, which must remain free to bona fide citizens of Cincinnati under the terms of its endowment.

THE MORTALITY REPORT for the week ended Friday, February 17 shows: Membranous croup 1, diarrheal diseases 3, diphtheria 2, measles 5, septicaemia 3, typhoid fever 5, other zymotic diseases 1; cancer 1, phthisis pulmonalis 9, other constitutional diseases 6; apoplexy 1, bronchitis 2, convulsions 5, gastritis 3, meningitis 8, nephritis 3, peritonitis 1, pneumonia 21, other local diseases 25; deaths from developmental diseases 7, violence 9; under 1 year 29; from 1 to 5 years 16; from all causes 137; annual rate per 1,000 20.35; deaths during preceding week 112; corresponding week 1895, 115; 1894, 120; 1893, 113.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duty of officers serving in the Medical Department, U. S. Army, from April 25 to May 1, 1896.

Capt. Aaron H. Appel, Asst. Surgeon, is relieved from duty as attending surgeon at Chicago, Ill.

Capt. Julian M. Cabell, Asst. Surgeon, will report in person to the president of the Army retiring board at Ft. Columbus, N. Y., at such time as he may designate, for examination by the board.

First Lieut. Benjamin Brooke, Asst. Surgeon, is relieved from further duty at Ft. Canby, Washington, and upon completion of his examination for promotion will proceed to Ft. Thomas, Ky., and report for duty at that station.

Capt. Guy L. Edie, Asst. Surgeon, will, upon the expiration of his present leave of absence, report for duty at the Presidio of San Francisco, Cal.

First Lieut. George J. Newgarden, Asst. Surgeon, is granted leave of absence for twenty-one days, to take effect upon his relief from duty at Fort Wayne, Mich.

First Lieut. Powell C. Fauntleroy, Asst. Surgeon, is relieved from duty at Ft. Riley, Kan., and ordered to Ft. Grant, Ariz., for duty at that post.

First Lieut. James S. Wilson, Asst. Surgeon, is relieved from temporary duty at Madison Bks., M. Y., and ordered to Ft. Clark, Texas, for duty at that post, relieving First Lieut. Isaac P. Ware, Asst. Surgeon. First Lieutenant Ware, on being thus relieved, is ordered to Madison Bks., N. Y., for duty.

The order detailing medical officers of the Army to attend the annual meeting of the American Medical Association at Atlanta, Ga., May 14 to May 16, 1896, is amended to direct them to attend said meeting from May 4 to May 6, 1896.

Navy Changes. Changes in the Medical Corps of the U. S. Navy the week ending May 2, 1896.

P. A. Surgeon H. N. T. Harris, detached from the "San Francisco," proceed home and granted three months' leave, with permission to leave the United States.

Asst. Surgeon F. M. Shipp, ordered to examination for promotion May 9 at New York city.

Medical Inspector G. F. Winslow, ordered to New London Station May 9.

Surgeon Clement Biddle, detached from the New London Station May 9 and ordered to the "Monongahela" May 14.

PROMOTION.

Asst. Surgeon J. M. Moore, promoted to Passed Assistant Surgeon, April 29, 1896.

Change of Address.

Brainard, B. F., from Kansas City to Martin City, Mo.

Brown, J. S., from Bear Polar to Salisbury, N. C.

Bannister, H. M., residence from Austin to 222 Harvey Ave., Oak Park, Ill.

Connell, D. R., from Chicago to Davis, Ill.

Dobson, S. J., from Chicago, Ill., to Jefferson, Kan.

Eaton, F. B., from Portland, Ore., to care Gordan W. A., San Jose, Cal.

Franklin, W. A., from Omaha to Leroy, Neb.

Gradle, Henry, from 65 Randolph St. to Room 608, 100 State St., Chicago, Ill.

Hayd, H. E., from 78 Niagara St. to 493 Delaware St., Buffalo, N. Y.

Hakanson, A., from 746 Cokes Ave. to 153 92d St., Chicago, Ill.

Harris, M. L., from Chicago Opera House Bldg. to 612 Reliance Bldg., Chicago, Ill.

Jordan, J. D., from Madisonville, Texas, to 819 W. Harrison St., Chicago, Ill.

Kuh, Edwin J., from 3415 Prairie Ave. to 4330 Drexel Boul., Chicago, Ill.

Kleith, Wm., from Chicago, Ill., to Columbus, Ohio.

Lundholm, E. M., from 329 E. 7th St. to 438 Sibley St., St. Paul, Minn.

Nason, J. E., from Sharpsburg to Taylorville, Ill.

McKeedy, W. C., from 2194 7th Ave. to 27 Whitehall St., New York, N. Y.

Maynard, F. B., from Sandy Hill to Brockport, N. Y.

Murrell, T. E., from St. Louis, Mo., to Albuquerque, N. M.

Mullen, T. R., from Omaha, Neb., to Marcus, Iowa.

Northrup, F. A., from Chicago, Ill., to 351 Scott St., Milwaukee, Wis.

Piper, R. J., from 160 State St. to 480 Grand Boul., Chicago, Ill.

Winn, G. L., from 435 W. State St. to 317 Wm. Brown Bldg., Rockford, Ill.

LETTERS RECEIVED.

Atkinson, W. B., Philadelphia, Pa.; American Sports Publishing Co., New York, N. Y.; Alma Sanitarium Company, Alma, Mich.

Burghardt, C. A., Milwaukee, Wis.; Bassett, M. F., Quincy, Ill.; Biddle, G. G., Chicago, Ill.

Canfield, W. B., Baltimore, Md.; (2); Colvin, D., Clyde, N. Y.; Clark, C. & Son, Albany, N. Y.; City Hall Bindery, Hillsboro, Ohio; Cutler, A., New York, N. Y.; Crothers, T. D., Hartford, Conn.

Dolber, Goodale & Co., Boston, Mass.; (2); Doolittle, E. B., Jewellville, Pa.; Daniels, Asa Wilder, St. Peter, Minn.; Dibrell, J. A., Little Rock, Ark.

Farrington, J. M., Binghamton, N. Y.; Frist, H. M., Wilmington, Del.; Gihon, A. L., New York, N. Y.

Hotel Aragon, Atlanta, Ga.; Howle, W. P., Oran, Mo.; Haldenstein, New York, N. Y.

Ingals, E. Fletcher, Chicago, Ill.

Kelly, Howard A., Baltimore, Md.; Kasquiski, J., Chicago, Ill.; Kellogg, J. H., Battle Creek, Mich.

Lehn & Fink, New York, N. Y.; Lyon, S. B., Chicago, Ill.; Ludwig, Henry C., New York, N. Y.

Medlin, P. A., St. Louis, Mo.; Mullen, T. R., Marcus, Iowa; Myers, Ray, Wyanomic, Pa.; Merrick, M. B., Passaic, N. J.; McKesson & Robbins, New York, N. Y.; Miller, Geo. J., New York, N. Y.; Mortland & Co., Advertising Agency, St. Paul, Minn.

Nelson, H. C., Russell, Iowa; Nelson, Chesman & Co., New York, N. Y.; Niles, S. R., Advertising Agency, the Boston, Mass.

Pasteur Anthrax Vaccine Co., Limited, Chicago, Ill.; Payne, E. Mulliken, Mich.; Parke, Davis & Co., Detroit, Mich.; (2).

Reed & Currier, New York, N. Y.; Roy, Philemon, Mason, Wis.

Scherling & Glatz, New York, N. Y.; Schmidt, O. L., Chicago, Ill.

Sharp, W. H., Parkersburg, W. Va.

Woodbridge, J. E., Cleveland, Ohio; Winterberg, W., San Francisco, Cal.; Walesby's, A. E., Newspaper Adv. Agency, Louisville, Ky.

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No. 20.

ADDRESSES.

THE RELATIONS OF MEDICAL EXAMINING BOARDS TO THE STATE, TO THE SCHOOLS AND TO EACH OTHER.

Presidential Address before the National Confederation of State Medical Examining and Licensing Boards, at its Sixth Annual Meeting held at Atlanta, Ga., May 1, 1896.

BY WILLIAM WARREN POTTER, M.D.

BUFFALO, N. Y.

EXAMINER IN OBSTETRICS, NEW YORK STATE MEDICAL EXAMINING AND LICENSING BOARD.

In assuming the duties of this chair my mind instinctively reverts to its first occupant, who as you all well know was the founder and organizer of this confederation, a pioneer in medical educational reform in this country, an earnest and forceful advocate of every reasonable method of advancing the standard in the United States. Though he was our leader he was also our companion and friend, and if he were yet living he would most likely continue to occupy the chair. To be regarded as worthy of the succession is an honor that I fully appreciate. Let us always keep green the memory of John H. Rauch.

INTRODUCTION.

There is food for much thought in assuming the direction of the affairs of this organization. It is a body unique among medical societies. It is without a parallel in medical history and has not even a complete record of its own work. This fault, however, I hope will not occur hereafter. The chief function of the confederation is to discuss questions relating to medical examinations for license, but it can not bind its members to follow its recommendations; nor does it so desire. In order to make the work of such a body effective all adhesion to it must be voluntary in character, not coercive.

There are, however, many collateral questions to consider if not to settle, but everything must be done with circumspection. We are on the threshold of new conditions. We may, therefore, with great propriety adhere to if not adopt for our guidance the ancient maxim, *festina lente*. We are without traditions, without precedents, without heredity. There is much wisdom, then, in making haste slowly that we may proceed to accomplish the end sought all the more surely.

POINTS OF AGREEMENT.

Of one thing I assume we are quite certain—namely, that there are no differences of opinion among physicians even of the several so-called systems of practice recognized by law—intelligent physicians—as to the propriety, even the necessity, of improved methods in medical education and increased standards of acquirements for entrance to the profession of medicine. It has taken considerable time and it has occasioned some severe contention to even reach this first landing-stage, but I think we are all

agreed at last on this point and I also believe the agreement will endure.

As to just what these reforms ought to be may not yet have been determined with unanimity, but I shall assume that all of the class named are of one opinion on some that are necessary. One of these is that there must be a better standard of academic preliminaries; another that ought to bring us together is that four years is quite short time enough to be devoted to medical collegiate training; and still another we ought to be united upon is, that an examination of each graduated physician by the State, separate and apart from the schools, is a necessary condition precedent to obtain a license to practice. These are three cardinal principles it seems to me on which reforms ought to be grounded, and it ought to be possible for all physicians to unite in an effort to secure legal enactments in all the States establishing these essential principles.

PRELIMINARY REQUIREMENTS.

In regard to preliminary requirements for matriculation in a medical school, there may be some difficulty in establishing all at once in every State a standard as high as it should be, but it seems as if we might agree upon a minimum below which no person may enter upon the study of medicine. It is as requisite for a physician to possess an education as it is for him to be a gentleman.

For myself I would insist that a high school diploma ought to be regarded as an index of the lowest limit of literary attainment for the novice. An entrance examination should be required of all who do not possess such a diploma or its equivalent, such examination to be conducted independently of the medical colleges. As I would have the graduate examined by the State for license separately and apart from the college, so I would have the candidate for admission to the study of medicine also examined by the State to determine his qualifications to enter upon that important duty. In other words, the State has the right to determine the qualifications of all who enter upon the practice thereof, and I am in favor of its exercising both functions.

Not until after four years study in a recognized medical college and the receipt of a diploma therefrom should a physician become eligible to license by the State, and then only after due examination by its medical examiners, none of whom should be medical college teachers. It has been claimed by some teachers that State examiners are neither competent to propound proper questions nor to mark them at their true value,¹ but I need not absorb valuable time in the discussion of a question that seems to be already definitely settled in the affirmative.

LIMITATIONS OF STATE CONTROL.

Thus the State again steps in and exercises her right to determine as to the adequacy of the training

a physician has received in the schools, and it issues a license to practice only to those found qualified. Hence, there are three stages of preparation for medical practice: 1. a preliminary training that shall at least equal that of a high school graduate; 2. four years' study in a legally incorporated medical college; and, 3. examination and license by a State board, none of whose members are teachers in a medical college.

In two of these stages the State plays an active part—namely, in the first and the last. The State must determine as to the competency of those who enter upon the study of medicine and also the qualifications of those who are admitted to practice. But this is the limit of the State's authority; beyond this it may not interfere; that is, it is not competent for the State to interpose its authority during the medical collegiate life of the student. Here the teachers are supreme and must be left untrammelled. They must be allowed perfect freedom to teach in their own way. Their function is to teach their students so well that they may pass any of the State boards, and they may be trusted to do it, else they will suffer not only the humiliation of rejected candidates but their classes will diminish in size, and, except in the endowed schools, their incomes will correspondingly shrink. Students will not be slow to detect this nor to select the medical college that will prepare them to obtain the State license with certainty.

While, therefore, the State may not interfere, as we have said, during the four years of medical college training, it yet exercises a watchful care in granting charters to medical colleges, issuing them only where the applicants are shown to be teachers of undoubted competence and men of integrity. A State must also be sure that the number of schools is not too great within its boundaries. Moreover, it should specify the essentials to be maintained, such as laboratories for teaching chemistry, physiology, anatomy, bacteriology and the like; also, that clinical teaching must be pursued and that hygiene, preventive and State medicine, and lastly, clinical midwifery must be taught,—the latter to the extent that each graduate must have attended at least six cases of labor.

SHALL THE EXAMINATIONS BE DIVIDED?

It has been held by some that it would be better to divide the State examinations, and at the end of the second year let students come up before the State board for examination in the so-called fundamental branches— anatomy, physiology and chemistry. This would unload the mind, say the advocates of this plan, of a great anxiety, and thus better prepare students to cope with the practical subjects— surgery, obstetrics, practice, materia medica, pathology and hygiene. It is doubtful if the State can legally lay its hands on a student after he has passed the entrance door of a medical college, even for the purpose of compelling a division of the examination such as has been proposed. The most it could do in the premises would be to *permit* him to take an intermediate pass examination if he so desired; but unless this were made compulsory it would doubtless fail to commend itself to any considerable number and so fail of its purpose. Besides, it could not be made to apply to foreigners or to students from other States. Taken altogether this plan may be said to be not only impracticable but most likely impossible to establish. Moreover, the theory of the State examination is that it is a post-graduate scrutiny and not an undergraduate test.

A QUARANTINE AGAINST THE UNQUALIFIED.

The number of States that in some manner supervise the practice of medicine is now proportionately large² and it is constantly increasing. Ohio is the latest convert and it is a genuine pleasure to welcome her to the fold. Our friends in that great commonwealth have occupied a trying position for some years, but at last have scored a good start and under the discreet leadership of able men who are handling the reins will reach the goal. Under the ratio of progress now making it will not be long before all the States will in some form or other establish a quarantine against unqualified doctors. But the great desideratum is to persuade each and every State to enact laws that shall require separate examination after graduation in order to obtain license to practise. Until each State shall deny the right to practise, except through license obtained on due examination and after graduation from a legally incorporated medical school requiring academic preliminaries and a four years' course, the struggle must continue.

By a law of the State of New York passed March 21, 1896, it is provided that all candidates for admission to the State examination must have studied medicine not less than four full *school years of at least nine months each*, including four satisfactory courses of *at least six months each*, in four different calendar years in a medical school registered as maintaining at the time a satisfactory standard. This section is to take effect Jan. 1, 1898. It is further provided in the same act that New York medical schools and New York medical students shall not be discriminated against by the registration of any medical school out of the State, whose minimum graduation standard is less than that fixed by statute for New York medical schools.

It will be readily understood, in the light of the foregoing extracts from the statute, how impossible it is for New York to recognize the licenses of any State that maintains a standard lower in any respect than its own. Nevertheless, whenever any State shall demand the same preliminaries and equal collegiate training, with a commensurately high final examination, certainly it then will be a pleasure for New York to establish reciprocity with it.

It is not my purpose to forestall the discussion on the question that is to come up later at this meeting, but it is not easily possible to omit some mention of this important subject, inasmuch as it is just now very much in evidence all over the country. New York has been criticised³ by other States for not recognizing their licenses, but her position in refusing to indorse the licenses from States where the standard is lower must be conceded to be impregnable. To recognize licenses from States in which the requirements are less would be to deal unjustly with her own citizens, and to yield advantages over them to those coming from without her boundaries.

A NATIONAL LICENSING BOARD.

Another question that has been raised in certain quarters is the propriety of creating a national licensing board. Dr. C. E. Farnum, of San Francisco, I believe, has suggested that such a board be detailed from the medical corps of the army and navy⁴; and that the licensees of this board receive a degree or title similar to the English F. R. C. S., such, for instance, as "Fellow in Medicine and Surgery."

It seems to me that a national examining and licensing board is not only unnecessary but quite im-

practicable at present, and I doubt if it ever becomes a measure of expediency. Up to the present, Congress has very wisely interpreted the Constitution to relegate police regulations to the several States and has declined to interfere in such matters. The power of Congress to create such a board, even were it so disposed, is seriously questioned by well-informed men both of the legal and medical professions. Moreover, the vast machinery required to carry on the work of such a board in territory of such wide domain as ours, would at once suggest an adequate reason for condemning the scheme even if there were no other. As to the proposition of our friend from the Pacific coast to create a board from the public services that shall have power to confer a special degree, it would appear to most of us, I am sure, that our essential need now is fewer degrees and better education. Furthermore, we need not superimpose this Herculean task upon our good friends of the medical corps of the army and navy in addition to their already burdensome duties and responsibilities.

Let us wait then until the States themselves—those that have not already done so—advance their standards to the line of requiring preliminary education equal to a high school course, four years' medical collegiate training and a separate State examination for license after graduation. When this is done in our fifty-three States and Territories⁶ it will be quite time enough to delegate to the general government the duties and powers now exercised by each State in this matter.

A UNIFORM MINIMUM STANDARD OF REQUIREMENT.

While, therefore, it is practically impossible at present under existing laws to establish a uniform minimum standard of requirements in all the States, there is yet hope that year by year this desideratum may be more nearly approached until ultimately it is attained. Amendments to imperfect laws must be fostered and States without practice laws must be encouraged to enact them, to the end that their citizens may not be discriminated against by the other States.

It has been suggested that a committee of supervision might be created by the examining boards in those States that require examination after graduation for license, forming a syndicate and each appointing a representative to such central body. The duties of this committee merely would be to formulate a uniform standard for the guidance of the State Boards represented in the committee. As fast as States enacted or amended their laws to meet the established grade of requirements, their boards would be entitled to representation on this central committee; so, whereas only a small committee at first would be created, in the end it would comprise a membership equal to the whole number of States and Territories.

RECIPROCITY OF LICENSURE.

Between the States represented in this committee, of course, there would be established a reciprocity of licensure. But let us pause for a moment, to inquire as to the necessity of desirability of reciprocity. I confess that I am not among the number that regard reciprocity as of great importance. Whenever a sufficient number of States shall advance their standards to a common minimum level of requirements, and these shall demand first, a high school course as an entrance minimum; second, four years' medical collegiate training as a condition for a medical degree; and, third, a separate post-graduate examination for license—when, I repeat, these shall be the requirements for

the practice of medicine in at least twenty States, it will by quite time enough for these commonwealths to establish reciprocity among themselves. Until then let the migratory physician pay the penalty of his itinerancy by taking the examination of his new sought State. If he is well equipped he will be perfectly willing to do so; if not then let him seek another occupation. Whenever twenty States shall form such a reciprocal syndicate it will not then be long before the others in self-protection will advance their standards to the minimum these shall have established.

THE STATE SHOULD EMPLOY ONLY LICENSED PHYSICIANS.

It is impossible to create new conditions such as we are entering upon without meting out hardship to some. All border-line students and young physicians naturally feel themselves aggrieved, and they vehemently demand special rulings or statutes to fit each particular case. But we must begin somewhere to draw the line between the old way and the new, and the few ought to yield gracefully to the many. The particular good must not stand in the way of the general good.

The State is ever jealous of her rights and of the welfare of her citizens. She is particularly so of their health, which means economy. She has assumed to decide who shall and who shall not minister to the sick and injured and she especially has determined to administer the laws of prevention with a constantly increasing rigidity. Her public health officers must be men of education and executive capacity. It will not be long, I trust, before no person will be commissioned in any of these great offices who does not possess a State license. If this were made the rule we would soon hear less complaint in regard to the State examination: while, on the other hand every spirited young graduate would be anxious to take it. Such action would tend to remove prejudice against the system and would in many ways strengthen the hands of those who are engaged in this reform.

HOW SHALL FOREIGNERS BE DEALT WITH?

One of the difficult problems confronted is in dealing with foreigners. These men come to this country in large numbers without knowledge of our language, where they are told that everything is as free as air, hence they expect to be admitted to practice at once without let or hindrance. Finding a State examination necessary they plead poverty and demand leniency because of their imperfect knowledge of the English tongue. The question presented may be formulated about as follows: "Shall one rule be established for our own countrymen, and another less rigid for these strangers?" I trust not and I hope the answer will be a unanimous negative. The injustice of such discrimination against our own citizens is too apparent to admit of argument. I would not make one rule for one class of candidates and another for another class, but I would administer the laws with impartiality, governing all alike.

If one of our fellow-citizens should present such examination papers to a foreign board as these men generally offer to most of ours, he would be denied even the semblance of a hearing. His application would be dismissed without ceremony. Let it be remembered in connection with this that the country is not suffering for the want of doctors, and can wait without material injury until these men shall master the English language and otherwise conform to

our rules—until they can place themselves on the same footing in every respect with our own countrymen. When they present themselves in a clear identity, with a legal diploma properly authenticated, and take our examination successfully, then we will gladly issue to them licenses to practice, but they should be made to understand at once that they can obtain them in no other way. This question is attracting the attention of medical journals in different sections of the country and has lately been discussed by one "in a most decided and uncompromising manner.

BOARDS NOT ANTAGONISTIC TO THE COLLEGES.

It has been asserted in certain quarters that the State boards are antagonistic to colleges, that they are setting up standards of their own, and that their rules are oppressive to the schools. Nothing, in my view, could be further from the truth. The real facts are that the boards and the colleges are working along parallel lines to accomplish the same end—namely, an improvement in the quality of physicians admitted to practice in the United States. Moreover, there is a harmony of action between them that is remarkable, considering the radical changes that have necessarily been wrought in methods of teaching as a result of the practice laws. If the schools in many instances have waited for mandatory laws to raise their standards and increase their years of study, that is because the rank and file of a great profession has risen in its might, and through its constituted State medical societies has demanded laws of the several State legislatures that should advance the cause of higher medical education. The examining boards are merely the servants of the people in this matter, are simply instruments through which their will obtains definite expression.

There can be no antagonism against the schools in this needful reform. They are as much interested in it as are we. We are not enemies but friends. The college teachers are more than glad to be relieved of much of the detail of educational reform, and thus to be enabled to address themselves solely to clinical, laboratory, recitative and didactic teaching. They prefer not to concern themselves about entrance examinations, thus avoiding the thousand and one questions that are constantly being put by the students on this and kindred subjects relating to detail. The object of the schools is to see to it that young physicians are properly equipped to practice medicine, while the purpose of the boards is to determine that physicians have been adequately instructed to merit a State license.

In a recent conversation a distinguished teacher in one of the first medical schools in the land remarked: "The faculty of which I am a member desires to teach our pupils so well that they may be enabled to pass any examining board—army, navy or State. If perchance we fail to do so now and then, or if some escape our scrutiny, we are only too glad to have the State board reject such and send them back for further training. We approve of the good work done by the examining boards, and are glad to have them supervise our methods to the end that incompetent doctors may not be sent out from our college." Words of this character coming from such a distinguished source can not fail to do good. They express the entire relationship that ought to exist between the schools and the boards. If teachers all felt this way and so expressed themselves whenever occasion pre-

sented, it would serve to strengthen the hands of the examiners, increase their usefulness, and so benefit the cause of educational progress.

I fear, however, teachers in many instances have engendered in the minds of students a dread of the boards and, by innuendo if not by words, belittled their work.⁷ Students are taught in some schools in a way to lead them to suppose that the only object of colleges is to prepare them to successfully compete for the State license. It is forgotten, apparently, that the real aim should be to teach them how to be good physicians. If they would stimulate in their classes a respect for the boards and instruct them that the State license is a parchment to be highly prized and eagerly sought, it would tend to create an atmosphere around them that would prove of lasting benefit to the cause. It affords me pleasure, however, to refer in this place to two notable exceptions to the condition I have just delineated. Professor Hinkel, of Buffalo, devoted his introductory lecture to a college course, not long ago, to the subject of State examination for license,⁸ in which he fully set forth the system in operation in New York, and instructed the students as to the importance of the measure. Professor Tucker, of Albany, chose as the title of his opening lecture last fall at the Albany Medical College: "State Control in Medicine."⁹ He, too, carefully analyzed the new system and gave deserved credit to the examining boards. There are undoubtedly many similar instances where teachers have taken occasion to speak well of examinations by the State for license, but I need not refer to this subject in greater detail at this time.

MEDICAL JOURNALS ARE AIDING.

It is a satisfaction to know that the medical periodical press is very nearly unanimous in its support of the principles advocated in this paper. Moreover, it is an active ally that is constantly busy in disseminating information on the subject, and urging on the most efficient and highest order of reform. While it is true that at first many were skeptical, some were lukewarm, and a few were open enemies of the scheme, now it is a pleasure to affirm that there is not a single medical magazine, weekly or monthly, between New York and San Francisco and from Maine to Texas,¹⁰ which is not an aggressive coadjutor, while many are propagandists of the faith. These magazines are leaders in thought and molders of opinion, and under their influence we may hope soon to advance and unify standards until all States and Territories of the Union will practically establish the same requirements for obtaining license to practice.

A VOICE FROM THE TRANSVAAL.

A strong argument for uniformity of methods and standards throughout the Union is presented, incidentally, in a recent letter addressed to the *Medical Record* by Dr. Gordon Messum, chairman of the Transvaal Government Medical Board. The rule followed there is for the board to register only such physicians as present diplomas which entitle the legitimate holders to practice in the whole of the country where such diploma has been issued, and for which a minimum of four years' medical study is required. The board finds it difficult, writes Dr. Messum, to decide on the merits of the various diplomas issued in the different American States (is there special wonder?) and asks information on the following points:

1. Are there State universities or colleges whose degrees are recognized as giving the right to practice throughout the whole of the United States of America?

2. Can we obtain a list of universities or colleges which demand a four years' course, and can the approximate date be given when such four years' course became compulsory in such college?

3. Is there a list of the universities and colleges whose degrees are recognized by the medical board of the United States of America?

4. Are there registers of the qualified men in each State, or is there a general register for the whole of the United States of America on which the name of every qualified man can be found?¹¹

Here is the South African republic refusing to admit to practice any physician with less than four years' collegiate medical training, while many States in the Union yet hesitate to establish that minimum. When this confederation has made adequate answer to the voice from the Transvaal it will have accomplished a very essential part of its mission.

A CONDITION OF UNREST.

The fact must be apparent to every one who has given the questions arising out of State licensure much thought, that many of the difficulties which we are meeting, some of which I have considered, arise from the fact that we are in the midst of a period of unrest. The doctors are clamorous, legislators are feverish and students are excited. Nearly everybody having to do with the subject directly or indirectly seems to be uncertain as to opinion and unstable in action. Many appear to be standing on tiptoe all agog, waiting to hail something newer and stranger than that which went before. It is not unlike the excitement that follows upon the discovery of a new bonanza, but a period of quietude will soon follow if this confederation assumes its appropriate place and wisely exercises the functions that properly belong to it. It must begin now to take cognizance of our environment and make suggestions for its betterment.

It is this restless spirit that gives birth to so many incongruous and untimely suggestions. Now, it is a proposition to divide the State examination; then, to create a national examining and licensing board; again, a demand for reciprocity of licensure, and at another time legislatures are appealed to to reduce the barriers to entrance upon the study of medicine, as recently happened in the State of New York. These and other propositions are hurled at us one after another, singly or in groups, with a rapidity that would dismay any but the intrepid, and with an audacity worthy of disciplined ranks. And this before the State boards have fairly formulated their work, or, at any rate, before any tangible results of the system are manifested. But let it be remembered that "thrice is he armed that hath his quarrel just," and so we may take much comfort in the thought that the people, though slow to arouse themselves to reforms, when once they determine on a line of policy that is just and needful, are seldom turned aside until their full purpose is accomplished.

CONCLUSION.

But I detain you too long from the enjoyment of the intellectual feast that awaits you. The recent action of Harvard University in giving notice that a degree will soon be required for an entrance to its medical school,¹² and the statement that the University of Pennsylvania will raise her standard¹³ indicate

that a movement has commenced of a most substantial nature. Though there is a vast field before us in which to labor for the advancement of educational standards there is every reason for encouragement from the support that medical teachers, medical journals, educators and many other people of intelligence are affording us.

This organization ought to be the means of hastening on the work to a considerable degree. An interchange of thoughts and methods through the annual conferences of this body will tend to unify and standardize much of the work that otherwise would be without system or harmony. This body, to borrow the thought of another, ought to act as a kind of professional clearing house,¹⁴ and I trust it will soon come to be so regarded by all interested in educational progress. Let me also suggest that the *Bulletin of the American Academy of Medicine* be made the medium during the intervals of our meetings for an interchange of thought on all matters of interest to the confederation. It has been made, by formal action, the official journal of this body, and its columns are open to all its members. The American Academy of Medicine, and the Association of American Medical Colleges, are to be regarded as our allies in the field in which we labor. It is fitting, therefore, that these three bodies should record their work in the pages of the same magazine, which is a journal devoted especially and exclusively to improvement in medical education.

Finally, let me urge united action by all the friends of medical progress everywhere throughout the land to the end that the education of American physicians may be brought to a standard that shall be high enough at least to make them the peers of their European confrères. The reproach cast upon us through a refusal to recognize our diplomas in Europe can not be overcome until we rise in our might and determine to wage a relentless war against ignorance, which shall not cease until an American State license to practice medicine is recognized as a passport to good professional society in every civilized country in the world.

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WAS GOLDSMITH A PHYSICIAN?

Delivered before the Johns Hopkins Hospital Historical Society.

BY JOHN MORRIS, M.D.

BALTIMORE, MD.

The great difficulty in tracing out the history of the medical education of Goldsmith, particularly that portion of it which he is said to have acquired at Leyden and Padua, is due to the fact that no biography of him was written by his contemporaries. It is a remarkable circumstance that the greatest genius of his age, indeed one of the greatest of any age, should not have had a biographer until fifty years after his death, when Prior, his countryman and admirer, favored the world with his most interesting life of Gold-

smith, the material of which was gleaned from many obscure and imperfect sources. This is more remarkable when we remember that he was pronounced the greatest poet of his time by Sir Walter Scott; that he had written the best novel of the century, according to Goethe; the best history in the opinion of Dr. Johnson (no mean critic); essays that were and still remain the charm of every household; a natural history the most delightful and instructive in the English language up to his day; plays that will last all time when those of the 17th and 18th centuries will be forgotten, and still more those of the 19th; biographies charming in diction, purity and simplicity of style—that this man, only equaled in history as a writer by Voltaire, should have been overlooked by his contemporaries and allowed to depend on the sympathy and love of an after-generation for the perpetuation of his memory. Even the place of his birth has been disputed. Four counties claim him as their own.

Septum urbes certant de stirpe insignis Homeri,
Smyrna, Rhodes, Colophon, Salamis, Chios, Argos, Athenæ.

Even Dr. Johnson, in the celebrated epitaph which many of us have seen in Westminster Abbey, places the year of Goldsmith's birth as 1721 when it was actually 1728, and names Elphin as his birthplace, whereas it was Pallas or Pallasmore.

His first teacher was Mrs. Elizabeth Delap, who pronounced him one of the dullest boys ever placed under her charge, in fact, "impenetrably stupid." Dr. Streat says "he was considered by his contemporaries and schoolfellows, with whom he conversed on the subject, as a stupid, heavy blockhead, little better than a fool, whom every one made fun of."

At the age of six he was placed in the hands of Thomas Byrne, the village schoolmaster, a most original character, whom he has immortalized in the *Deserted Village*. This man Byrne had a very chequered career. He believed firmly in all the folklore of his time, fairies, brownies, elves, good people, witches, etc. He was a great authority with the villagers who were amazed by his learning.

"And still they gazed, and still the wonder grew,
That one small head could carry all he knew."

No doubt that Paddy Byrne, as he was familiarly called, left his impress on the life of his pupil and imbued him with that love of wandering and adventure, vagabondage it might be termed, which characterized his career.

At this time he read with great avidity what were termed the "Cottage Classics of Ireland." This collection embraced such stories as the *History of the Irish Rogues and Rapparees*; *Lives of Celebrated Pirates*; *History of Moll Flanders*, of Jack the Bachelor (a notorious smuggler), of Fair Rosamond and Jane Shore, of Donna Rozena, the Spanish Courtesan; the *Life and Adventures of James Freney*, a Famous Irish Robber; *Ovid's Art of Love*, *The Devil and Dr. Faustus*; *Parisinus and Parisinus*; *History of Witches and Ghosts*; *Montelea, Knight of the Oracle*; *Seven Champions of Christendom*; *Mendoza's Art of Boxing*; the only good volumes to be found in the series were several excellent spelling books.¹

¹ The poet in after years, speaking of this time, said: "Happy could so charming an illusion still continue. I find that age and knowledge only contribute to sour our disposition. My present enjoyments may be more refined but they are infinitely less pleasing." The pleasure the best actor gives me can no way compare with that I have received from a country wag who imitated a quaker sermon. The music of the finest singer is dissonance to what I felt when an old dairymaid sung me to

After passing through Paddy Byrne's curriculum, Goldsmith was put under the charge of the Rev. Mr. Griffin, the schoolmaster of Elphin, and entered upon studies of a higher character. He was first intended for mercantile life, but his fond mother thought him a genius. The plans were then changed and he was fitted by Mr. Griffin for the University. His career under this gentleman was not a brilliant one. It was marked by his usual characteristics, indolence, negligence and recklessness. He was afterward removed to the school of the Rev. Patrick Hughes, a classical scholar. Here, strange to say, he made considerable progress in the classics, thus fitting himself in some degree for his mission at the University.

Goldsmith never wished to enter the University, if we may judge by what he says in a letter written to his brother long afterward: "A boy who understands perfectly well Latin, French and the principles of the civil law, and can write a fine hand, has an education that may qualify him for any undertaking."

He entered Trinity College as sizer on June 11, 1745. There are five classes of students in Trinity, a sizer being the lowest, noblemen, noblemen's sons, fellow commoners, pensioners taking precedence. A sizer is compelled to perform menial duties in consideration of getting his commons and tuition free. The indignities and humiliations of such a position no doubt affected Goldsmith's whole character, as well as the brutality of his tutor, Mr. Wilder. Dr. Wilson, who was his fellow student, thus writes: "While he resided in the college he exhibited no specimens of that genius which in his maturer years raised his character so high. Squalid poverty and its concomitants, idleness and dependence, probably checked every aspiring hope and repressed the exhibition of his talents, and the savage brutality that shone so conspicuous in the truly amiable gentleman (Mr. Wilder) who was to rule his studies under the notion of a tutor who was far better calculated to frighten than allure. I well remember, for he was in the class below me, that his tutor examining him in the senior sophomore class, commenced his judgments with a *male* and ended them with *valde bene*. It was a mistake that the good doctor (the tutor) often fell into, to think he was witty when he was simply malicious. Possibly the world is obliged for his (Goldsmith's) works to his idleness and miscarriages in the college, which deprived him of all hope of rising in the church to a curacy, on which he might have comfortably starved to a good old age."

Goldsmith's great love of the classics and hatred of mathematics may have been in a great measure due to his dislike of Dr. Wilder, who was a great mathematician and afterward published several able works upon the subject. Goldsmith said that mathematicians were men of inferior intellect, a sentiment which many persons will accept. Ovid and Horace were his delight, as readily might be supposed from his character and temperament; even Livy and Tacitus, after he managed the difficulties of the latter, became to him charming reading. This was no doubt owing to the descriptions of emotions and events which harmonized with his taste for travel and adventure. For Cicero he had no liking and for this I do not blame him, for Cicero is an author who only has charms for legal and theological prigs.

It is scarcely necessary to dwell on the four years

tears with 'Johnny Armstrong's Last Good Night,' or the 'Cruelty of Barbara Allen.'

college life of Goldsmith. His career at the University was not at all creditable and he got into many difficulties and was at one time about to be expelled. Stunned by the cruel and bitter taunts of his tutor, he determined not only to leave the college, but his native country, and for this purpose he sold his books and clothes and started for Dublin, intending to embark at Cork for America. He loitered about Dublin, spent all his money, and was compelled to return penniless and humiliated to his friends, who by their entreaties secured his reëtrance to the University.

At length he took his final degree as Bachelor of Arts in 1749 and left the scene of all his trials, sorrows and disgrace. There was some difficulty in proving in after years that he had secured this degree, on account of some of the college records having been lost, but Prior, after the greatest amount of laborious research, finally procured sufficient evidence of the fact.

It was then determined by his friends, much to his disgust, that he should prepare for holy orders. This required two years of probation. These two years he spent in absolute idleness. Most of his time was passed with his boon companions at the "Three Jolly Pigeons." His companions at this hostelry are supposed to have been Tony Lumpkins and his associates: "Dick Muggins, the exciseman; Jack Slang, the horse doctor; little Aminidab, that grinds the music box, and Tom Twist, that spins the pewter platter."

At length the two years transpired and Goldsmith appeared before the Bishop of Elphin to apply for ordination. On this occasion he was brilliantly arrayed, in his usual taste, in a pair of scarlet breeches. He was rejected. After this he made a second attempt to sail to America and see the world. He took passage from Cork, but was detained there three weeks by the weather, and the ship sailed in the night without him. Penniless, and after many adventures, he returned again to his friends on an old hack called Fiddle Back, a sorry sight indeed.

It was then determined that he should study law and £50 was advanced by his dear old uncle Contarine for that purpose. He set off for London to enter on his studies at the Temple, but, as was generally his fate, he fell into bad company at Dublin, was beguiled into a gambling house and thus stripped of his £50. After a time his friends brought him back. It was then determined, after a consultation among them, that, inasmuch as he had failed in divinity and law, the one thing left was the profession of medicine. A purse was again made up and in the autumn of 1752 Goldsmith made his appearance in Edinburgh as a medical student. He attended the lectures and attached himself to a medical society composed of students. It is not necessary to dwell upon his habits here. The same old rôle, and Edinburgh was at that time the worst place in the world for a man of his temperament. The tavern was the Areopagus, and as the greater number of Goldsmith's intimates were unfortunately Irish students, we may clearly judge of the character of their pursuits and pastimes.

I will relate an incident which as it has a medical bearing may not be uninteresting. At one of these *séances* (orgies would perhaps be the better word), a dispute arose in regard to ghosts, some of the company contending for the possibility of spirits returning to their former homes. One of the disputants sailed the next day for London, but the vessel had to put back through stress of weather. This was not

known excepting to one of the believers in ghosts who, in concert with the returned student, concocted a trick ("put up a job" is the modern term) to play on the unbelievers. That night at a meeting of the students the discussion was renewed. One of the most active opposers of the ghost theory was asked whether he would doubt ocular demonstration. He still continued his argument. Some kind of hocus-pocus maneuvers were gone through and the student who had sailed for London immediately made his appearance. The doubter fainted, became insane afterward and ended his days in a madhouse. This incident is related by Dr. Farr, who was a fellow-student of Goldsmith.

After spending two winters in Edinburgh in idleness and dissipation Goldsmith prepared to finish his studies on the continent. As usual Uncle Contarine's purse was emptied. He wrote to his uncle as follows: "I intend to visit Paris, where the great Farhein, petite Du Hamel de Monceau instruct their pupils in all the branches of medicine. They speak French and consequently I shall have much the advantage of most of my countrymen as I am perfectly acquainted with that language, and few who leave Ireland are so." This last statement is amusing in the extreme, for all the French Goldsmith knew was what he picked up from the Irish priests in his neighborhood, who were at that time, owing to the penal laws, educated in France. He said himself that when he left Ireland he only took away "his brogue and his blunders," and I am sure that the French that he took with him was a very insignificant quantity. "I shall spend the spring and summer in Paris and the beginning of next winter go to Leyden. The great Gaubinus is still alive there, and 'twill be proper to go, though only to have it said that we have studied in so famous a university." Whilst it would appear that the acquirement of knowledge was the *motif* for his visit to the continent it was in truth a mere pretext to get away for the enjoyment of travel and adventure.

Among the professors at that time at Edinburgh was Moiro, professor of anatomy, whom Goldsmith pronounced an able orator; Plume, professor of chemistry, who, Goldsmith says, understands his business well, but delivers himself so ill that he is but little regarded; Alston, professor of materia medica, speaks much but little to the purpose. The professors of theory and practice, he continues, say nothing but what we may find in books (which he never consulted) and speak in so drowsy and heavy a manner that their hearers are not many degrees in a better state than their patients.

Among his fellow students were men who afterward attained considerable distinction, viz., Dr. Joseph Fenn, Sleight and Mr. Lauchlan Maclean. The Letters of Junius were at one time attributed to Maclean. Another fellow student with whom Goldsmith kept up an intimacy in after life was Dr. William Farr, Fellow of the Royal Society, who had been educated under the eminent Dr. Doddridge; Meade was also, I believe, a fellow student.

It is not necessary to dwell upon the many escapades and troubles that befell Goldsmith on his way to Leyden. He was arrested and put in prison before leaving England: the ship that he proposed to sail in was lost at sea, but he finally arrived safe at Rotterdam, whence he journeyed on foot to Leyden. He writes from here, "Physic is by no means taught so well here as in Edingburgh; and in all Leyden there

are but four British students, owing to all necessities being so extremely dear, and the professors so very lazy (the chemist professor excepted) that we don't much care to come hither." Among the British students mentioned was Dr. Ellis, who afterward became a famous physician, and who always befriended him by loans of money and a great deal of good advice which was not heeded. To eke out his slender resources Goldsmith undertook to teach the Hollanders the English language, but as he did not understand a word of Dutch and had but a smattering of French, picked up from the Irish priests at Ballymahon, he met with indifferent success and soon abandoned the enterprise.

He remained about a year at Leyden, attending the lectures of Gaubius on chemistry, and Albinus on anatomy. I think his attendance at the lectures was merely nominal for the reason that he devoted himself almost entirely to general literature. He obtained no degree at Leyden, according to the statement of all his biographers. Almost penniless he left Leyden to journey to Paris. He started on this romantic journey with one spare shirt, a flute and a single guinea.

"Blessed," says one of his biographers, "with a good constitution, an adventurous spirit, and with that thoughtless, or perhaps, happy disposition which takes no care for to-morrow, he continued his travels for a long time in spite of innumerable privations." Some incidents of this journey may be gleaned from *The Traveler*, and the philosophic vagabond in the Vicar of Wakefield. It is believed that he stopped at Louvain, and Glover, one of his friends, says that Goldsmith obtained the degree of M.B. at this well known university. None of his biographers, however, give credit to this statement.

His journey from Louvain to Paris was characterized by many romantic adventures. His flute was his main reliance, if not his sole support. His performance on this instrument was not highly artistic. He describes it himself:

"How often have I led thy sportive choir,
With tuneless pipe, beside the murmuring Loire!
Where shading elms along the margin grew,
And freshened from the wave the zephyr flew;
And haply, though my harsh touch, faltering, still,
But mock'd all tune and marred the dancer's skill,
Yet would the village praise my wondrous power,
And dance, forgetful of the noontide hour."

At Paris he attended the lectures of Rouelle, a famous chemist of that day. Rouelle was the first to discover the composition of the diamond by submitting it to combustion. Goldsmith claims to have mingled in the best society in Paris, and to have made the acquaintance of Voltaire. In his biography of this distinguished Frenchman, written many years afterward, he gives a most interesting account of a discussion on a literary subject which took place between Voltaire and Fontenelle. This controversy lasted until three o'clock in the morning. There is a great deal of doubt concerning the acquaintance of Goldsmith with Voltaire, and some of his biographers believe it to be purely imaginary.

Goldsmith, leaving Paris, wandered through Germany and Switzerland and we next find him in Geneva. He thus speaks of the Germans: "But let the Germans have their due: if they are often a little dull, no nation alive assumed a more laudable solemnity or better understands all the little decorums of stupidity. Let the discourse of a professor run on never so

heavily, it can not be irksome to his dozing pupils, who frequently lend him their sympathetic nods of approbation. I have sometimes attended their disputes at graduation. On this occasion they often dispense with learned gravity, and seem really all alive. The disputes are managed between the followers of Cartesianism, whose exploded system they call the new philosophy, and those of Aristotle. Though both parties are wrong, they argue with an obstinacy worthy the cause of truth; *Nego, Probo*, and *Dislinguo* grow loud. The disputants grow warm, the moderator can not be heard, the audience take part in the debate, till at last the whole hall buzzes with erroneous philosophy."

At Geneva Goldsmith became tutor to a mongrel English youth, but after traveling some weeks together they quarreled and parted at Marseilles. Again he started on foot in old vagabond way to journey through France, Piedmont, and some of the Italian states and finally reached Padua. On this pilgrimage Goldsmith's flute served but little purpose in procuring him food and lodging, as in that beautiful land every one is a musician. He says, however, that he had acquired another talent, that is skill in disputation, by which he secured a living from day to day. In all the foreign universities and convents there were upon certain days philosophic theses maintained against every disputant, for which if the controversialist managed his argument well, he could claim a gratuity in money, dinner and a bed for one night. Goldsmith was kindly received by the inmates of these universities. "With the members of these universities," said he, "I could converse on topics of literature, and then I always forgot the meanness of my circumstances." This happy custom came down from the middle ages, and obtained even in England up to the time of Henry VIII.

He remained but a few months at Padua and there is no proof at all that he obtained a medical degree at the famous university of that city, a university which many of the greatest men in history had attended and secured degrees, including the renowned Albertus Magnus and the immortal Harvey. The great teacher in Harvey's time was Acquapendente, who taught the doctrine of Sarpi in regard to the office of the valves of the veins. In a life recently published of Fra Paoli Sarpi it is claimed that Harvey got his first views in regard to the circulation from the teachings of Acquapendente.

Leaving Padua, Goldsmith once more turned his face toward England. His wonderful flute, as formerly, supported him during his journey through France and finally, after two years absence, he landed at Dover in the early part of the year 1756. He complains at this time of the difficulties he had to encounter in getting employment, being without friends, recommendations, money, or impudence and, above all, the fact that he was an Irishman. He applied to a country apothecary for a situation, but all the learning of Leyden and Padua could not secure him the place.

His medical career in England I shall dwell on very briefly. After reaching London, then as now, the great *refugium*, he was reduced to many straits. He first secured a position as *usher*. He held this but a short time. In the Vicar of Wakefield he gives an amusing account of the requisites for an usher. "Have you been bred apprentice to the business?" "No." "Then you won't do for a school." "Can you lie three in a bed?" "No." "Then you won't do for

a school." "Can you dress the boys' hair?" "No." "Then you will not do for a school." "Have you a good stomach?" "Yes." "Then you will by no means do for a school." "I have been usher in a boarding-school myself, and may I die of an anodyne necklace, but I had rather be under-turnkey at Newgate. I was up early and late; I was browbeaten by the master, hated for my ugly face by the mistress, worried by the boys." Goldsmith said afterward speaking of this time: "After all the fatigues of the day, the poor usher of an academy is obliged to sleep in the same bed with a Frenchman, a teacher of that language to the boys, who disturbs him every night an hour, perhaps, in papering and filleting his hair, and stinks worse than a carrion with his rancid pomatums when he lays his head beside him on the bolster."

After vacating the place of usher he was employed by a chemist named Jacob, who took compassion on his destitute condition. Here he remained for a few months. Hearing that his old Edinburgh friend, Dr. Sleigh, was in London, he called on him and was received with the greatest kindness, though Dr. S. did not recognize him at first on account of the shabbiness of his appearance. Through the friendship of Dr. Sleigh and other friends whom he found in London, Goldsmith was able to establish himself as physician in a very humble way, in Bankside, Southwark. He practiced here for a very short time. The poor flocked to him in numbers, but the rich gave him an extremely wide berth. He lacked the polish, the address, the *savoir faire* necessary to secure their favor. At that time in England, nor for many years afterward, as there were no registration laws in existence, a medical degree was not necessary. Dr. Farr gives a very amusing account of his appearance as a physician, dressed in a professional suit of black, to which added a wig and the gold headed cane, indispensable in those days. The coat was a second-hand one of rusty velvet with a patch on the left breast. Goldsmith always pressed his three-cornered hat on this patch to hide it, and the efforts of his poor patients to relieve him of his hat and his efforts to retain it were very amusing.

He soon abandoned the practice of physic and took charge of a classical school in Surrey, kept by the Rev. Dr. John Milner. Leaving this school he applied for a place as surgeon's mate in the East India service, no doubt influenced by the example of Grainger and Smollett, who had served in the navy as surgeons, but to the utter horror of his friends, he failed to pass his examination at Surgeon's Hall. From the records of the College of Surgeons it appears that Goldsmith underwent his examination on Dec. 21, 1758.

I now come to the last episode in Goldsmith's medical career. He had written many essays and sketches and a great variety of hackney work, which gave him only bread and a "lodging next the sky," when *The Traveler* appeared, the first publication which bore his name, and which at once gave him a place among the first literary men of the time. "I was glad," said Sir Joshua, "to hear Chales Fox say it was one of the finest poems in the English language." "Why were you glad?" rejoined Langton: "you surely had no doubt of this before." "No," interposed Johnson, decisively; "the merit of *The Traveler* is so well established that Mr. Fox's praise can not augment it, nor his censure diminish it."

As his fame augmented, under the advice of his friends, Goldsmith attempted to secure a more regular and certain support by resuming the medical profession. He started out in great style; hired a man servant, purchased a new wardrobe at much expense; and procured the professional wig and cane, purple silk small clothes, and a scarlet roquelaure buttoned to the chin; a not unfitting garb for a medical man of that period, though rather unsuited to our own day.

He did not practice very long. A lady of that time describes him as strutting into the apartments of his patients swaying his three cornered hat in one hand and his cane in the other, and assuming an air of gravity suited to the solemnity of his wig. The last scene I quote from Irving, who, in turn, quoted from Prior, and is as follows: "He soon, however, grew tired and impatient of the duties and restraints of his profession; his practice was chiefly among his friends, and the fees were not sufficient for his maintenance; he was disgusted with attendance on sick-chambers and capricious patients, and looked back with longing eyes to his tavern haunts and broad convivial meetings, from which the dignity and duties of his medical calling restrained him. At length on prescribing to a lady of his acquaintance who, to use a hackneyed phrase, 'rejoiced' in the aristocratic name of Sidebotham, a warm dispute arose between him and the apothecary as to the quantity of medicine to be administered. The doctor stood up for the rights and dignities of his profession, and resented the interference of the compounder of drugs. His rights and dignities, however, were disregarded; his wig and cane and scarlet roquelaure were of no avail; Mrs. Sidebotham sided with the hero of the pestle and mortar; and Goldsmith flung out of the house in a passion. 'I am determined,' said he to Topham Beauclerc, 'to leave off prescribing for friends.' 'Do so, my dear doctor,' was the reply; 'whenever you undertake to kill, let it be only your enemies.'"

Finis coronat opus!—It would be to me the highest pleasure could I truthfully claim this great man, for so Dr. Johnson terms him as a member of our profession; but after very faithful research, with an honest hope that I could discover proofs of his having obtained a medical degree, I am constrained to declare that his education did not fit him for a professional life or that any university, under the most lax conditions, could have granted him a degree; therefore, the verdict must be in Scotch fashion, "not proven."

ORIGINAL ARTICLES.

ONCE MORE ON ANTITOXIN.

BY CARL STRUEH, M.D.

CHICAGO.

In the issue of the *JOURNAL* of January 25 of the current year, there appeared a short article of mine entitled "Criticism of the Antitoxin Treatment from a Different Standpoint," in regard to which I received a very interesting letter from my friend Dr. X. at St. P., in which letter the doctor opposes in a most instructive manner some remarks which I have made in my article. As Dr. X. apparently represents the opinion of the majority of the advocates of the antitoxin treatment, I am very much indebted to him for giving me the permission to discuss the contents of his letter in the *JOURNAL*.

Dr. X., in short, says: 1, that the statistics we have, at the present time, command of are made from such cases which were proven to be diphtheria from a bacteriologic examination, and that these statistics in comparison with those we had under the old treatment are so much in favor of the antitoxin that we must ascribe the lower mortality to the latter; 2, that he believes in the efficacy of the drugs for local and general treatment, so that he does not think the exclusion of the drug treatment is the cause of the lower mortality; 3, that he has seen most surprising changes in the course of the disease, which changes he could only ascribe to the serum treatment; 4, that he has never seen any ill effects from the antitoxin; 5, that he saw some recoveries from croup under the serum treatment without intubation or tracheotomy having been required; 6, that he does not agree with my saying that "it is not the rule that from a child being sick with diphtheria the majority of the family becomes infected," and he believes that by immunization many a child can be protected against diphtheria; 7, that he believes we will have a serotherapy for typhoid in the future as we have for diphtheria now.

I am well aware that it is not an easy task to successfully contradict these statements. Still we will see what can be said against them.

In regard to the first statement I fully admit that we possess quite a number of statistics which give very much credit to the antitoxin. I undertook to inquire about the death rate with the serum treatment from the health commissioners of different cities in the United States, and received a great number of statistics, some of which show the following figures:

NEW YORK CITY.

Diphtheria and croup; case fatality, first, second and third quarters of each year, 1891 to 1895 inclusive:

Year.	Cases.	Deaths.	Percentage.
1891	3,686	1,349	36.59
1892	4,158	1,540	37.04
1893	4,721	1,763	37.34
1894	7,446	2,284	30.67
1891 4	20,011	6,936	34.66
1895	7,921	1,543	19.43

Reduction in death rate first second and third quarters of 1895, as compared with average death rate for corresponding periods of previous four years, 16.23 per cent., or a reduction of 43.94 per cent. of the previous rate.

Case fatality, fourth quarters of 1891 to 1893 inclusive, and 1895.

Year.	Cases.	Deaths.	Percentage.
1891	1,678	621	37.01
1892	1,126	566	50.26
1893	2,400	795	33.13
1891 3	5,204	1,982	40.13
1895	2,465	433	17.52

Reduction of death rate, fourth quarter of 1895, as compared with average death rate for corresponding periods of the years 1891-1893 is 22.61 per cent. or a reduction of 56.31 per cent. of the previous rate.

Table showing case fatality in diphtheria and croup in New York city for the period Jan. 1, 1895, to Oct. 6, 1895 (during which antitoxin was employed), as compared with the period between Jan. 1, 1891, and Oct. 6, 1891. The figures denote the percentage in periods of four weeks.

	1894	1895	1896
January 27	43.30	25.77	
February 24	39.43	24.43	
March 24	34.20	20.31	
April 21	36.00	20.68	
May 19	35.96	20.76	
June 16	30.50	20.58	
July 14	27.06	12.23	
August 11	30.51	19.63	
September 8	33.15	23.74	
October 6	29.76	18.93	
November 2		16.66	
November 30		21.02	
December 28		16.32	
January 25			15.97
Total cases	6,876	7,475	3,373
Total deaths	2,337	1,582	580
Average case fatality	33.93	21.16	

INDIANAPOLIS.

Report for the seven months ending Jan. 31, 1896.
Before using antitoxin:

1895	Cases.	Deaths.
July	4	3
August	26	6
September	70	27
October	132	25
Total	232	61

Showing the per cent. of deaths to the number of cases to be 26.29 in a hundred.

After using antitoxin:

	Cases.	Deaths.
November, 1895	93	10
December, 1895	65	12
January, 1896	44	5
Total	202	27

Showing a death rate of 13.36 per cent. to the hundred cases.

ST. LOUIS.

In the first six months of 1895 there were reported to the health office 645 cases of diphtheria of which 164 proved fatal, which was a mortality of 25.4 per cent. In the last six months of 1895 there were reported 2,233 cases, of which 355 proved fatal, which was a mortality of 15.8 per cent. The record of diphtheria in St. Louis for the past ten years is as follows:

Year.	Cases.	Deaths.	Percentage.
1886	2,826	719	25.44
1887	3,108	927	29.82
1888	1,658	564	34.01
1889	1,240	345	27.82
1890	667	185	27.73
1891	771	249	32.29
1892	671	208	31.00
1893	613	242	39.47
1894	751	238	31.69
1895	2,878	519	18.03
Total	15,186	4,196	

MINNEAPOLIS.

The total number of cases reported in 1895 was 569, with 114 deaths (mortality 20 per cent.). In 131 cases antitoxin was used, with 11 deaths (mortality 8.4 per cent.). The previous year the total number of cases was 191, with 54 deaths (mortality 28.2 per cent.).

Statistics similarly favorable are reported from a large number of places where antitoxin has been used. And yet I doubt that these reports, even if they were all unobjectionable as such, are appropriate evidence already for deciding definitely, as a great number of physicians do, upon a question of such comprehensive

signification. In the first place, we must not forget that statistics as such are most unreliable, because every individual case differs from others so that we always compare unequal values. Furthermore, endemic, epidemic and other circumstances cut such a figure that it at the least seems very risky to decide upon the value of a new remedy from the experience of one or a few years. In the Children's Hospital at Basel, for instance, the mortality in 1876 was 34 per cent., in 1886 only 6 per cent. Had they used any new remedy during the latter year, the decrease in the mortality would undoubtedly have been ascribed to the new treatment.

How much the statistic results of the serumtherapy must depend upon other influences we learn from the difference in the mortality, which various observers claim, as is shown in the following percentage figures:

Stockholm 2, Holland 7, Minneapolis 8.4, Chicago, 8.93, Paris Children's Hospital (Lebreton and Magdelaine, 330 cases) 12, Rumpf 12, Ganghofer 12.72, Baginsky 13, France 13, Indianapolis 13, Bokai 14, Washburn 14, Hungary 14.3, Italy 14.4, Soltmann 14.6, Germany 14.8, Austria 14.9, St. Louis 15, Berlin 17.4, New York City 19, Constantini 22, Vienna 22.8, Kossel 23, England 23, Widerhofer 24, Roux, Martin, Chaillou 26; Milwaukee 27, Waingen 28, Körte in grave cases 58.2, medium 29.8, light 3.3, Gnädinger 40, Trieste (252 cases) 63.

So we see that the mortality ranges from 2 per cent. to 63 per cent., a difference hardly possible if the treatment were a "specific." There are other reports from which we learn that the difference in the mortality before and after the use of antitoxin does not at all give proof of the value of the serum. The Friedrichshain statistics, for instance, show the following mortality:

1888, 32 per cent.; 1889, 34 per cent.; 1891, 1892, 1893, 38 per cent.; 1894 (February to November, serum period), 33 per cent.

So in 1888, when no antitoxin was used, the mortality was lower than during the serum period in 1894.

I note the same feature in the Milwaukee statistics. In 1891 the death rate is lower than during the serum period in 1895.

MILWAUKEE.

Year.	Cases.	Deaths.	Per-centage.
1890	827	241	29.13
1891	1,480	400	26.79
1892	1,193	400	33.53
1893	620	209	33.71
1894	436	175	40.13
Total.	4,565	1,425	31.19
February, 1895 ¹	433	117	27.02

Very important are the statistics which show the actual number of deaths from diphtheria and croup in the city of Berlin, viz.:

1881, 1,953; 1882, 1,913; 1883 (severe epidemic), 2,561; 1884 (severe epidemic), 2,446; 1885, 1,802; 1886, 1,535; 1887, 1,304; 1888, 1,070; 1889, 1,252; 1890, 1,549; 1891, 1,057; 1892, 1,405; 1893 (serum period), 1,643; 1894 (serum period), 1,430.

This table shows that the antitoxin did not cause any decrease in the actual number of deaths from diphtheria whatever, even allowing for the increase in population.

There are also reports which show an equal or even lower death rate by the use of other treatments than is claimed for the antitoxin treatment. So in Basel the average mortality in 4,479 cases which were treated during 17 years, was 12.6 per cent.

Dr. S. Schwarz, of Constantinople, recommends treating diphtheria by insufflations of sozodol-sodium and

flowers of sulphur, besides giving for internal use chlorate of potassium (15.22 gr. : 3vi, a tablespoonful every hour) and ext. of nux vomica (2 to 3 times daily) right from the beginning of the disease in order to prevent post-diphtheritic paralysis. Under this treatment he claims to have a mortality of 8 to 10 per cent. and only 2 to 3 per cent. (!) if the cases comes under treatment at an early stage. (*Wiener medicinische Wochenschrift*, 1895, No. 43.) I should think that without this nefarious treatment the death rate would have been considerably lower.

Dr. N. Rosenthal, of Berlin, reports 271 cases which were treated (locally and generally) with sol. of sesquichlorid of iron, a mortality of 8.2 per cent. resulting. (*Therapeutische Monatshefte*, 1895, No. 11.) On the other hand we possess reports showing an increased mortality under the serum treatment. The *Lancet* of Oct. 26, 1895, states that "the mortality from diphtheria in London was more than 40 per cent. in excess of the corrected average for the fortieth week of the last decennial period," in spite of the antitoxin. We also must consider that those statistics which are so much in favor of the serum treatment, are not all unobjectionable. In regard to the statistics of Behring, the main representative of the serum-therapy, for instance, I refer to an article, Serum-therapy and Statistics by Dr. A. Gottstein, Berlin, which appeared in the *Therapeutische Monatshefte*, 1895, No. 11, and in which Behring's statistics is criticized in a very illucidating way by Gottstein presenting authentic figures which were furnished by the Royal Health Department of Berlin, and which relate to all Berlin hospitals and to all cases which were reported by local physicians, so that these figures represent a collective statistic of all Berlin. According to Gottstein the lower mortality must in a great measure be ascribed to the fact that since the introduction of the serum-therapy almost twice as many cases were reported as before, so that Behring does not go by the real number of cases which occurred, but by the number reported. Since 1884 there is existing in Berlin an ordinance making it obligatory for physicians to report diphtheria cases, and in 1887 disinfection was made compulsory. Everybody who knows to what inconveniences the general practitioner subjects his patients and himself in complying with these two ordinances, will understand that perhaps the majority of the physicians ceased to report all of their cases, that in other words the number of reports decreased.

In 1894, two Berlin physicians were indicted for not having reported diphtheria, and the state's attorney motioned for punishment by imprisonment, a circumstance which caused a rapid increase of the reports. Behring's own table shows this fact. There were reported:

	1st Quarter.	2d Quarter.	3d Quarter.	4th Quarter.
1889	978	945	1,075	1,243
1890	1,120	1,019	1,136	1,237
1891	830	763	763	1,086
1892	879	822	875	1,267
1893	1,027	952	1,107	1,275
1894	1,114	1,085	1,058	2,028

So the fourth quarter of the year 1894 shows almost a duplication of the number of cases which were reported. Or does Behring believe that twice as many cases occurred? "If he does," says Gottstein, "we can claim with the same right that the introduction of the serum-therapy was the cause of the increase of diphtheria."

¹ The month in which antitoxin commenced to be used in Milwaukee.

If, however, twice as many cases were reported as before, it is not surprising that the death rate decreased for the figures undoubtedly include many mild cases which previously were not reported.

A statistic which, it seems to me, does not carry much weight, is the one which emanates from our Chicago Health Department and which I find reported in the periodical *The Clinique*, 1895, February 15, No. 11. It is stated in this statistic that since the introduction of the serum-therapy the mortality has decreased from about 52 per cent. to less than 9 per cent., a change which we should all welcome with delight were it not for the fact that the compilers of this report compared a statistic of 1,047 cases treated with antitoxin to one of only 61 cases treated without it. Such a report is absolutely worthless, for the reason that comparative statistics should always relate to an almost equal number of cases. Besides the report fails to enlighten us as to what (drug) treatment was employed in the sixty-one cases.

I was very much surprised when in a Chicago daily paper I read an article which was written in commendation of the serum treatment and in which all the figures favorable to antitoxin were given as I find them recorded by the health department, that no mention at all was made of those sixty-one cases to which the 52 per cent. relate. The statistic as I find it in *The Clinique* is as follows:

Total number of cases of diphtheria visited	1,221
At request of attending physician	1,169
Charity patients (no physician in attendance)	52
Total number found convalescent on arrival	63
Total number found dead on arrival	50
All other cases	1,108
Total number suffering from diphtheria	1,108
Total number treated with antitoxin	1,047
Total number in which antitoxin was not used	61
Total number recovered under antitoxin treatment	961
Total number died under antitoxin treatment	86
Death rate under antitoxin treatment 8.93 per cent.	
Total number in which antitoxin was not used	61
Total number of these known to have died	32
Death rate when antitoxin was not used 52.46 per cent.	

A statistic similar to that of Chicago was some time ago reported from Boston, where the mortality was said to have decreased from about 50 to 16 per cent. the latter relating to sixty-nine cases of which eleven died, quite a good percentage for a "specific." If I should lose every sixth patient I would hardly feel as though I had a specific. From the few statistics I have cited as examples, we see that they are so contradictory, objectionable and depending upon other influences that we certainly can not yet rely upon them very much. We must also consider that when a new remedy has once gained favor, in the first flood of enthusiasm those practitioners having favorable results are always more anxious to report their cases than those having unfavorable ones. And yet one of the latter amounts to more than ten of the former, because it shows the limits of the efficacy of the treatment. Even those unfavorable reports already existing are not sufficiently considered by the antitoxin enthused physicians. We must, therefore, extend our observations over a greater length of time and wait for other epidemics, before we can form a definite opinion, as far as the statistics are concerned, if we insist on laying so much weight on them.

I personally believe that the mortality has decreased under the antitoxin treatment, but I largely ascribe this decrease to the exclusion of the drug treatment,

² "Not used" either because the case was hopeless when seen (?), or the administrator feared the result of its use—as, for example, on the fourth day or later, or because the family or the attending physician changed attitude after calling on the department and refused its use. I should not think they would declare a case hopeless until they used their "specific," especially if it is, as they claim, harmless.

as also good results were obtained in the tuberculin treatment after creosote had been excluded.

The report from the Kaiser and Kaiserin Hospital at Berlin seems to support this assertion. "The average mortality in this hospital was in the neighborhood of 50 per cent. before the use of antitoxin, but upon its introduction the death rate was reduced to below 10 per cent. Then during two months (July and August) the supply of serum having failed, the death rate rose to the former general average, again to fall to the low rate upon the renewal of the antitoxin treatment."

This report deserves consideration in so far as we can exclude endemic conditions as being the cause of the decrease of the death rate. It would, however, be very interesting to know what local and general treatment they used before the introduction of the antitoxin treatment and at the time, when the supply of serum failed. They certainly did not leave the cases without any treatment. If it was the old drug treatment, we can easily explain the fluctuation in the mortality. Even Virchow who was made an advocate of the serum therapy by these "brutal figures," does not seem to have taken into consideration the effect of the interim treatment. It seems to me that the average practitioner does not sufficiently consider the harmfulness of the drug treatment, for we often hear a physician say that he used no other treatment besides the antitoxin and that he obtained splendid results, which, therefore, in his opinion could only be ascribed to the serum. I think quite differently; just because he had not used any other treatment, he had such good results. Again, there are physicians who use antitoxin with their entire former treatment and claim to have obtained better results than before. But this does not prove much either, as apparent good results can be obtained even by a harmful treatment, if the endemic, epidemic and other conditions are favorable, as we see, for instance, from the report of Dr. Schwarz to which I have previously referred. Still I find as a rule that the drug treatment is either entirely excluded or applied in a modified form, when antitoxin is being used. This brings us to statement No. 2 concerning the drug treatment. First I wish to say a few words in regard to the local treatment which is mainly based upon the principle of antiseptics and which is carried out by the following five manipulations: Gargling, spraying, insufflating, swabbing and cauterizing. Now, supposed, but not admitted, that the bacilli diphtheriae were the main part in the disease, and supposed that these bacilli were not burrowed in the mucous membrane, but were located right upon the diphtheritic membrane and could easily be reached by our manipulations, I do not understand what effect these manipulations could have. We know, and this has been proven by experiments, that a bacillus must be exposed to an antiseptic solution of a certain concentration for a certain length of time in order to be destroyed. If the antiseptic solution is not of the necessary strength or if the bacillus is not exposed to the antiseptic for the necessary length of time, our efforts toward destroying the bacillus will be futile. I refer to Sternberg's manual of bacteriology (1893), in which he gives extensive tables of the effects of different antiseptic solutions upon the various bacilli.

We must also consider that a far stronger solution than is required to kill bacilli will be necessary to destroy the spores. We must also consider that in presence of organic material in association with bacte-

ria the disinfectant can be neutralized before the living bacteria are destroyed. For instance, the cholera bacillus in bouillon is destroyed in one-half hour by a solution of HgCl 1 to 6,000, while in blood serum 1 to 800 was required to destroy it in the same time. These facts make our local treatment by antiseptics absolutely worthless and teach us that our raid on the bacilli by these means is all in vain. As far as gargling, spraying and insufflating are concerned I think it impossible to reach the bacilli by these manipulations; even if it were possible the effect of the antiseptic would be of too short a duration to destroy the germ. Still I use gargling and spraying (merely with pure water) not to affect the bacilli but only for cleansing purposes and as a tonic to stimulate the circulation in the fauces. The other two manipulations, swabbing and cauterizing with antiseptics, astringents, etc., oppose the first law in the treatment of acute diseases, viz., to give absolute rest to the diseased organ. Instead of doing so we keep up a continual irritation and congestion to the locus morbi. Furthermore I think it entirely wrong to remove the diphtheritic membrane which is only the local manifestation of general toxemia. That the membrane is an inseparable factor of the process of the disease, although there is no satisfactory explanation for its existence, we see from the fact that as long as the fever and the general symptoms exist, it quickly returns when removed, while after their disappearance the dissolution of the membrane quickly follows. So it appears to me that our local treatment as such is merely illusory and valueless; it is based upon theoretical principles which are derived from experiments on bacterial cultures and which can never be carried out in practice. But the local treatment is not only worthless in itself, but very harmful otherwise. I have already mentioned the harm done by the continual irritation and congestion caused by swabbing and cauterizing, the removal of the membrane and the destroying of the tissue. Furthermore we must consider that a part of the applied solution is always swallowed and absorbed into the system. And will we say that these drugs after having been absorbed do not cause toxic effects before we can ascertain these from outward appearances? But even if the drugs did not produce any direct toxic effects, they would disturb the natural healing process which represents those complex symptoms we generally call disease. They must be eliminated from our system, and this elimination depends in the last instance upon the vital energy which at the same time is engaged in overcoming the disease and in eliminating the products of the same. And it depends upon the severity of the infection and the amount of vital power the body possesses, whether the patient recovers in spite of the two-fold demand or if he succumbs, because his vital energy was not sufficient to cope with both disease and drugs. I need not say that I think the internal medication with antiseptics such as chlorate of potassium and the like just as injurious and illusory as the local treatment, for we will never succeed in making the blood an antiseptic solution to kill the bacillus or its products without destroying the blood itself. As great as the discovery of external antisepsis is, there will never be an internal antiseptic, and the sooner we entertain this idea, the better for ourselves and our patients. Why I discredit those other drugs we use for internal medication, such as sesquichlorid of iron, tincture of iodine and others, I will explain more elab-

orately in a future article in which I will state my position concerning the drug treatment in general.

I still maintain that the drug treatment in diphtheria is merely imaginary and only produces ill effects which undoubtedly have a great influence upon the mortality and the course of the disease. And I do not see why the exclusion, even if only partial, of this treatment shall not give better results than we obtained before. The better results with the present treatment of typhoid for instance, are also not due exclusively to the hydropathic treatment, but in a great measure to the exclusion of the drug treatment.

As long as no extensive investigations have been made into the combined drug and antitoxin treatment of diphtheria, my assertion that the exclusion of drugs is partially accountable for the better results, is not contradicted. Whoever has had sufficient experience with physiologic therapy, will not at all be surprised at the lower mortality which is claimed for the antitoxin after excluding the drugs. He will only be surprised that not more patients died from diphtheria under the old drug poisoning, a treatment which evinced the wonderful capacity the vital power possesses and which showed how much a human being can endure.

In regard to the third statement I do not doubt a moment that many physicians have seen very favorable changes in the course of the disease under the antitoxin treatment, and I believe that such favorable changes lead more physicians to become followers of the antitoxin treatment than the statistics do. But the question is: Are these changes, even could we exclude endemic and epidemic conditions, to be ascribed exclusively to the serum? If we leave nature alone and do not disturb her wise provisions by applying drugs, the good results of which are merely imaginary and which only manifest toxic effects upon the system, we can see many most remarkable changes in the course of the disease, changes which we formerly made impossible by our drug treatment, and which we therefore can accomplish more readily by substituting the less harmful antitoxin.

It is surprising to note what great effect any such unexpected favorable change has upon the medical attendant. I know physicians who were opposed to the serum treatment, but who became most enthusiastic promoters of it, having injected antitoxin in but one or two cases in which they could observe some improvement afterward. If, however, a physician once believes in the efficacy of the serum, he will meet with enough cases in which he can find some advantageous changes, such as decrease in temperature, improved general condition, more rapid dissolution of the membrane, and so on, which he can ascribe to it. Any other less harmful treatment, if used in every acute disease of which fever is a pronounced symptom, would show the same efficaciousness as the serum treatment for diphtheria does to-day.

It would be a thousand times better to pay more attention to those cases in which the antitoxin failed to succeed than to be so much enthused over those showing some good results which are merely incidental in many instances. We can not sustain the infallibility of the serum-therapy in those cases which terminate in death, by saying that death was due to a mixed infection, or that the cases did not come under treatment early enough. The latter excuse, it appears to me, is made too often, and not always in a very logical way. If we inject antitoxin into a child who

perhaps was sick for four or five days, and this child dies, the treatment came too late, while if it recovers we are surprised at the wonderful efficacy of the remedy. I think this is a very illogic way of reasoning. If no fatally ending case injected on the fourth or fifth day proves anything against the antitoxin, no case which recovers, under the same conditions, is proof of the efficacy of the remedy. Beside, it is not at all proven that the antitoxin is an almost sure cure when injected the first day, as some enthusiasts claim. We can corroborate this by numerous reports, for instance: Dr. J. Winters, in the *New York Medical Journal* of Feb. 15, 1896, states that in the Willard Parker Hospital, in 1895, they injected antitoxin on the first day of the disease into 108 children with a mortality of 10.09 per cent.

Furthermore, most of what has been claimed for the antitoxin as, for instance, decrease in temperature, improvement in the general condition, more rapid dissolution of the membrane, and so on, has already been abandoned. I refer again to the report of Dr. Winters, stating that in the Willard Parker Hospital in April, 1895, it was left to the patients, respectively their parents, to decide whether antitoxin should be used or not. Those cases which were not treated with serum proved to take just as good a course, if not a better one, as those in which antitoxin was used. A similar report is made by Prof. Soerensen of Copenhagen (*Therapeutische Monatshefte*, March, 1896).

As far as the fourth statement is concerned, I consider the serum-therapy less harmful than the former drug treatment; still its employment does not seem to be altogether devoid of danger. I only wish to call attention to the very valuable investigations of Dr. James Ewing, who found that the antitoxin caused a diminution of the red blood corpuscles and extensive changes in the leucocytes, and he concludes that these changes are likely to lead to obstructions in the capillary circulation, to changes in the kidneys, to necrotic foci in the liver, to pneumonia areas in the lungs, to obstructions of the cerebral circulation and possibly to convulsions.

In regard to the fifth statement I doubt whether our short experience of only two years is sufficient to decide the value of the serum treatment in membranous croup, as the type of laryngeal diphtheria varies too much. In some epidemics almost every case of croup ends in recovery, while in others most of the cases terminate in death. A severe epidemic may teach us quite different from what we believe to-day. That the praise of antitoxin, as far as its use in croup is concerned, is not so unanimous as is claimed, we see from numerous reports. Vierordt, for instance, claims a mortality of 40 per cent. under the serum treatment.

Beside, it is difficult to understand what effect the antitoxin should have in a case of diphtheria in which the general symptoms scarcely attract our attention and in which the localization of the membrane and the mechanical occlusion of the glottis are the only danger. And also I do not understand why the antitoxin should be timely enough in croup, a diphtheria which perhaps existed four or five days or longer, while in other cases we require the antitoxin to be injected on the first or second day in order to be of benefit to the patient. By the way, I believe there are quite a number of cases diagnosed as membranous croup which in fact are but catarrhal croup, because it usually is impossible to make a laryngoscopic exam-

ination in a child. Even if the patient shows diphtheritic membranes on the tonsils a croup can be spasmodic. I lately was called to a 12 year old boy who showed a slight rise in temperature, severe general symptoms, swelling of the maxillary glands, a small membranous spot on the left tonsil and an "exquisite" croupy cough. The parents requested me to use antitoxin, which I declined. I made a laryngoscopic examination and convinced myself that the boy had no diphtheritic but only catarrhal croup. Had the case concerned a younger child in which a laryngoscopic examination had been impossible, and had I used antitoxin, I would have taken the case to be membranous croup and would have ascribed the recovery to the influence of the serum. But even if a physician had the opportunity to employ the antitoxin in a large number of cases of croup during a longer period and in different epidemics, I would not summarily ascribe his better results to the serum, unless I would know the kind of treatment he formerly employed and now excludes under the serum treatment.

I do not see why the dissolution of the membrane in the larynx, which is only a part of the whole healing process, should not be benefited by the exclusion of the drugs just as much as the dissolution of the membrane in the pharynx does.

I finally wish to call attention to the report of Bertin (*Gazette médicale de Nantes*, 1895, No. 4), who used plain horse serum in three cases of membranous croup, all recovering which leads me to believe that antitoxin is not a specific. These cases were as follows: 1. Five year old girl. Diphtheria of pharynx; membranous croup; swelling of the maxillary glands; Löffler bacillus found; 20 c.cm. of not immunized horse serum injected on the third day of the disease. Rapid improvement. On the sixth day all symptoms have disappeared. On the ninth day severe urticaria over the whole body which heals gradually. 2. Nineteen year old girl. Diphtheria of pharynx; membranous croup; swelling of the maxillary glands; Löffler bacillus found. On the second day 20 c.cm. of not immunized horse serum injected. On the following day peeling off of large pieces of the membrane. Urticaria and alarming general symptoms. Complete recovery twenty-two days after the onset of the disease. 3. Four year old boy. Croup and symptoms of suffocation; Löffler bacillus found. In the evening of the second day 16 c.cm. of not immunized horse serum injected. Great improvement the following day. Complete recovery in the course of four days. Urticaria after another week.

As to the sixth statement, I can only say that Dr. X.'s experience is different from mine. I do not say, of course, that there are instances in which most of the members of a family get infected from a case of diphtheria. But looking over my experience, and I judge from this only, I must say that extensive contagion occurred but in the minority of my cases. To show that I am not isolated in my opinion I wish to call attention to a very instructive treatise (Bacteriological Investigations of Diphtheria in the United States) by Dr. Wm. Welch, Professor of Pathology at the Johns Hopkins University, which appeared in the *American Journal of the Medical Sciences*, October, 1894. Welch found in a group of 113 cases of pseudo-diphtheria (which differs from true diphtheria only by absence of the Löffler bacillus) occurring in 100 different families, that only in nine families the

disease affected more than one member, and in a group of 70 cases of true diphtheria occurring in 50 different families, in only 13 families was more than one member affected.

The question whether the immunizations have such a great prophylactic value as is claimed, is, it seems to me, not yet settled. Hilbert, who favors the prophylactic use of antitoxin, states that in 64 children whom he immunized, he saw "but" 7 infections, which equals 11 per cent. To judge from my own experience I hardly think that in more than 11 per cent. of my cases contagion took place—without immunization. But even if the antitoxin had an immunizing effect, this effect would be of short duration only and might do more harm than good. It does not appear to me that the large dose of carbolic acid injected with the serum, should be so indifferent. It also seems very peculiar to think that an agent which, like the antitoxin, is said to possess the power of neutralizing such a pernicious poison as the toxins of diphtheria are, should be so harmless.

Concerning the seventh and last statement, I firmly believe that for typhoid we will never have a serum-therapy which will amount to very much, because typhoid runs a more regular course than diphtheria does, so that we do not come in contact with so many unexpected favorable changes as we do in the latter disease. Still, very industrious efforts have been and are being made to discover an antitoxin for typhoid; I only refer to Fränkel, who has largely experimented for this purpose. Lately Dr. Klemperer of Strassburg thinks he has discovered an antitoxin against typhoid and has made experiments with it on dogs. He even employed it on five patients, and is of the opinion that he obtained a good result in so far as the disease took a mild course (*Berliner Medizinische Wochenschrift*, 1895, No. 28). But in spite of these industrious investigations, I do not believe that there will ever be a serum-therapy for typhoid which will be superior to the hydropathic treatment, as far as the mortality, the course of the disease and the *restitutio ad integrum* are concerned.

What I have said in the foregoing lines is, of course, only my personal view of the matter. If I should be mistaken in every or any part, I would be thankful to have some one refute my assertions. The subject is of such great importance that it ought to be discussed from every possible standpoint, and whosoever is opposed to the serum treatment, no matter what his reasons may be, should come forward and proclaim himself, though he may not receive the attention paid those who boast of the wonderful efficacy of the new remedy, an efficacy for which they have no more scientific proof than they have for the efficacy of most of the drugs. What do we know of the antitoxin and its action? Nothing. Nobody knows what antitoxin is. For what does it matter, if we are told that "the antitoxins are products of bacteria formed in the blood of the animal body, though we do not know the process of the formation of these antitoxins and their chemie nature," or if, as Roux believes, "the antitoxins are produced by cells, but not by the white blood corpuscles." Similar philosophic explanations are given in regard to the action of the antitoxin, but of what benefit is it if, as Roux believes, "the injection of antitoxin will not cause neutralization of the bacterial poison, but a rapid process of immunizing." Another explanation, for which we hardly can give any positive proof, is that of Pohl. Pohl says "the

greatest part of the albumin in the alimentary canal is transformed into lymph cells inside the lymphatic tissues of the intestinal wall; that means it is organized into a living form of albumin. Those leucocytes which have been so formed in the intestinal walls are thrown into the circulation and perish inside of the circulatory channels and in the tissues. So that a few hours after each meal active albumin will be present in solution in the blood. If now we inject into rabbits or sheep pure cultures of erysipelas, for instance, the streptococci will perish in the animal body in great numbers, and it is very probable that the albuminous part of their bodies will combine with the active blood albumin, the immune protein, and form immune proteidins which kills anthrax bacilli."

Others claim that the antitoxin causes an increased leucocytosis, but this explanation is also objectionable. We know that leucocytosis in an acute disease sets in only after the acute stage is passed, a fact which proves with undoubted certainty that it dare not set in before. If we, therefore, should succeed in producing it at an earlier stage, we would disturb the healing process in which every single cell has its definite place and time and function. Again, others explain the effects of the antitoxin by the amount of carbolic acid injected with the serum.

It is also claimed that there is nothing specific in the diphtheria antitoxin, but that it only produces a stronger reaction. This idea seems to be supported by Bertin, who had good results with non-immunized horse serum, and by Emmerich, who reports excellent effects in diphtheria from injections of erysipelas antitoxin.

To judge from my experience, I think there is nothing which can equal the physiologic treatment in producing a powerful reaction which, by the way, is superior to the one caused by the antitoxin, inasmuch as no ill effects are produced, as is the case in the serum treatment.

The serum-therapy stands on the same footing as the drug treatment, being only a matter of belief, and as long as a physician believes in the latter, he can not be blamed for believing in the former. But those practitioners are to be blamed who in their enthusiasm go so far as to call other physicians criminal, because these do not follow their way of jumping at any new treatment which is presented. The day will come when this order of things will be reversed, and those using the serum treatment will be placed in the same light as those not using it to-day. And the adroitness with which those enthusiasts of to-day will extricate themselves from the affair will only be equalled by the facility with which they will take up the next fad that comes along. If there were a hundred diseases which could be treated on the principle of the serum-therapy, and in ninety-nine this treatment would prove to be a failure, there would yet be physicians who would try it in the hundredth, although their experience in the other ninety-nine diseases should have taught them that the system they followed was erroneous.

The serum-therapy will undoubtedly be the prevailing treatment in diphtheria for a long time, because it is used in an acute disease in which any treatment has a good chance, especially if it is much less harmful than the drug treatment. The serum treatments we have had and will have in chronic diseases, will only be of short duration. But also the antitoxin treatment of diphtheria will not last forever. Some severe epidemic may occur in which the diphtheria antitoxin, alone or in conjunction with the streptococcus antitoxin, will be

found wanting in spite of a timely employment. And then it will go the same way the other inoculations and vaccinations for syphilis, anthrax, cholera, hydrophobia and tuberculosis went. Yet I want to say that I am far from thinking that those industrious investigations which have been and are being made concerning the serum-therapy, are in vain. On the contrary, they will be of great benefit to mankind, for they will finally convince us that we can not rely upon the blood serum of a horse or any other animal, not even on that of another man, but only upon our own individual serum.

And they will teach us that only by a hygienic way of living can we immunize ourselves; that means, improve the physiologic functions of our body and the bactericide power of our blood. They will also teach us that in disease we can rely upon the same agents only, on which natural immunization is based and of which physiologic treatment consists.

643 W. 12th Street.

GENERAL SEPTIC PERITONITIS TREATED WITH SEPTICEMIC SERUM.

BY W. A. MACFARLANE, M.D.

CHICAGO.

Mrs. H., age 30; general health fairly good; eight years ago gave birth at the eighth month to a healthy child; it lived three days. She became pregnant in about one year and at end of third month miscarried. About five years ago was called to see her for the first time. On examination found os dilated to some extent, with double laceration of cervix; most extensive on left side. Found patient had had considerable hemorrhage. Decided to prevent miscarriage if possible, as they were anxious to have children. Succeeded in stopping the hemorrhage to some extent before leaving. Was called the next morning in great haste; found her considerably prostrated from loss of blood and flowing profusely. Decided at once to dilate and deliver, which was done as rapidly as possible, but not until she was very much prostrated, being obliged to use a number of hypodermic injections of digitalin, strychn. sulph., glonoin and brandy. Found great difficulty in removing all of the placenta as it was considerably adherent. Left her resting well and heart acting as well as could be expected. Called next morning and curetted, removing some small pieces of membrane, washed out uterus with sol. bichlorid, 1 to 2,000, and repeated several days, patient making fairly good recovery.

Treated her after for some time, getting her in general good health and advised her to submit to an operation for lacerated cervix, as I decided that would be the only hope of her ever going through to full term. Could not find any hereditary taint as far as could be ascertained, although could not get perfectly clear history, as she was very young when leaving Europe. She continued in very excellent health for over two years and became pregnant again, continuing so without any apparent danger until end of seventh month, when I was called suddenly and found her in true labor; delivered her of a large, healthy child, apparently perfect in every way. Used every means possible to save the child; died the fifth day. Patient made good recovery and became in good health again and continued so up to Jan. 3, 1896, being two years since last premature labor and enjoying as good health as could be desired, except occasional visits to my office

complaining of some slight stomach derangement. January 3, was called and on examination found os slightly dilated with considerable hemorrhage. Prescribed tinct. opii, gtt. x in water every three to four hours; visited her at 9 P.M., hemorrhage slight, resting quietly, without any pain. January 4, 10 A.M., patient stated to me that at 5 A.M. she had had profuse hemorrhage and strong pains from 5 to 6 and that everything had come away. On my making examination found that there were still some placental remains. Removed a large piece, all that I could find; concluded that I had removed all. January 5, 9 A.M., temperature 99.6, pulse 90, hemorrhage normal, patient stating that she was feeling well, taking considerable nourishment and had rested well during the night. Examined again for placental remains, found os still slightly open, but could not find any indication of remaining membrane. January 6, 9 A.M., temperature 100, pulse 96; patient had rested well during night, taking considerable nourishment, principally milk. Discharge normal. January 7, 10 A.M., found patient not so well; temperature 102, pulse 108. Gave her intra-uterine injection sol. bichlorid 1 to 2,000 and prescribed salophen and phenacetin $2\frac{1}{2}$ grs. each in one powder every three hours; tr. nuc. vom., 3 m.; digitalin, gr. 1-80; tr. capsica, 2 m.; quinia sulph., 2 gr. in syr., one teaspoonful every three hours; brandy every two hours. Called at 9 P.M., temperature 101.5, pulse 102, sweating freely. Was called at 2 A.M. by husband, stated over telephone that patient was in very severe pain and had chills and pains over lower portion of abdomen. Ordered druggist to put up morph. sulph. 1 gr., and divide into four powders, to be given every three or four hours in a little water. Flaxseed meal, stramonii fol. in hot poultice to be applied over pelvis. January 8 visited patient at 8 A.M., and found her suffering severe pains; temperature 105.4, pulse 132 and thready, and in profuse perspiration; features pinched and sallow and frightened expression of face, loss of all hope, marked tympanites over whole of abdomen, complaining of the pain being most severe and extending up sides of abdomen, vomiting continuously; had not been able to retain anything on stomach since 4 A.M., not even a teaspoonful of water; small pellets of ice being dissolved in mouth would cause severe retching. Decided to curette at once, which was done, assisted by Dr. P. T. Burns, getting considerable broken-down tissue, odor very great. Washed out uterus with as hot water as could be borne, mopping out uterus with pledgets of absorbent cotton and applying to inner surface of womb sol. equal parts carbolic acid and iodine and placing over external part absorbent cotton pad; applied poultices of flaxseed meal and stramonii fol., which relieved pain to some extent. Prescribed small doses of dilute phos. acid in a little water at frequent intervals, and bromo-caf. to allay irritation of stomach, ordering small doses of mag. calc. as soon as condition of stomach would permit. Did not attempt to give anything in way of medicine or nourishment for several hours and then began with small amounts of liq. peptonoids and champagne. In fact, she was not able to retain anything of any consequence on the stomach for the next twenty-four hours. I telephoned at once to Truax & Co. for septicemic serum, Dr. Burns agreeing with me that there was not the slightest hope for her unless there might be some benefit to be derived through the aid of septicemic treatment and we had at that time but little faith in it. I

secured the serum at 7 P.M. and gave her 20 c.c.; temperature still over 105, pulse 130, and sweating profusely; vomiting very severe; occasionally retaining a little champagne and water in teaspoonful doses. Symptoms but slightly, if any, improved from morning. Remained until 9 o'clock. At that time temperature 105.6, pulse about the same as at 7 P.M. January 9, 9 A.M., was very much surprised on examination to find such marked improvement: temperature slightly less than 102, pulse 112, stronger and quite full; pain very much lessened with less tympanites; had been able to retain medicines, stimulants and some considerable nourishment; had slept possibly two or three hours during the early morning, being disturbed, as she stated, by bad dreams; gave her the remaining 5 c.c. and procured another bottle 25 c.c., and gave another injection, 10 c.c., same evening. January 10, 9 A.M., patient much improved in every way: temperature 101.5, pulse slower, stronger and more compressible, perspiration free, pain slight, tympanites lessened; had not vomited for twenty-four hours, but had occasional slight nausea. Returned at 8:30 P.M. and gave 10 c.c., making 45 c.c. in all: temperature 101.5, pulse improving, patient hopeful, pinched expression of face and sallowness less marked; stomach could now retain all nourishments, oatmeal gruel, buttermilk, sweet milk, broths and beef peptonoids, etc. Pushed medicines that had been set aside since beginning of nausea, which was gradually diminished as she improved from day to day, until dose three times a day was given. January 11, 9 A.M., temperature 101, pulse 108, stronger and fuller, still sweating profusely, especially while sleeping; rests fairly well, but broken by dreams; stomach in good condition, taking large quantities of nourishment; does not suffer pain except occasionally; hot poultices still applied every three or four hours to the abdomen; and intra-uterine injections of hot water given every day (10 to 12 quarts); sol. of bichlorid 1 to 2,000 (2 quarts) given immediately after. January 12, 9 A.M., temperature 102, pulse more rapid; otherwise apparently doing as well as when I saw her the morning previous. January 13, temperature and pulse as on the 12th. January 14, temperature 100.5, pulse 104. Temperature after this date never rose above 101 at any one time, but usually remained between 99 and 100 for several days. heart apparently showing the effect of the sepsis longer. January 16, temperature 99; patient states that she feels well but very weak. Asks to be allowed to sit up; sweating lessening each day; has been given alcohol baths twice a day; still sweats considerable while sleeping; her rest is not now so much disturbed by dreams. Removed poultice and gave an alcohol bath. Two thicknesses of cotton wool placed over whole of abdomen and fastened by wide bandage, drawn tightly over lower portion. January 17, 10 A.M., she sat up about an hour; temperature about normal; complains of weakness, stimulants and tonics have been given freely, taking large quantities of milk and gruel, buttermilk principally, sufficient amount of mag. calc. to keep bowels active, has been given throughout the course of the disease. Kidneys have acted well since stomach being enabled to retain fluids. January 20 visited her for the last time: temperature normal, pulse 90; sitting up several times each day.

Summary.—This case undoubtedly demonstrates the efficacy of the serum in cases of septic peritonitis. Even after thorough curetting, swabbing with iodine

and carbolic acid and irrigating the uterine cavity the temperature did not vary one degree, but the first injection of serum brought all of the symptoms below the danger line in twelve hours and quieted the extreme irritation of the stomach, enabling it to retain medicines and nourishment, which we had not been able to do, in twenty-four hours from 4 A.M., January 9, to about the same hour January 10, twelve hours after injection of serum. It also produced continuous and profuse perspiration. This latter condition was without doubt instrumental in draining the system of vast quantities of sepsis and being now enabled to take in unlimited quantities of fluids; there was no special drain on the vitality of the patient. Thorough action of kidneys and bowels, no doubt, also assisted in the process of elimination.

Another great feature in this treatment is the surprisingly rapid convalescence of the patient. No sooner was the infection conquered when the patient appeared to be at death's door than within twenty-four hours the change was from a dying woman to one asking to sit up. Had her heart been in relation to her temperature I could have discharged her as cured three days earlier.

REPORT OF RESULTS AND RECOVERIES OBTAINED BY THE USE OF ANTI- TUBERCLE SERUM.

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The results I have obtained from the use of Paul Paquin's Antitubercle Serum are as follows:

Case 1.—My first case was one with large cavities in left lung, hepatization of the lower portion of right lung; had a great many hemorrhages, sputum contained large quantities of bacilli: weight 120 pounds. Treatment commenced May 10, 1895. In three months tubercle bacilli disappeared from sputum entirely, and it has remained free from them ever since. The cavities in left lung healed up, with great contraction of the chest on that side, three or four inches, which has remained so. The patient ceased to expectorate heavy sputa. Has had no hemorrhages since treatment began. He has weighed 140 pounds for the last six months: rides a bicycle, eats well and commences his duties as assessor to-morrow. After the first three months, I gave him from one to two ounces, only at intervals of one and two months. I am satisfied that he would have been dead long before this if he had not had the serum.

Case 2.—A young man 25 years old. Family history was that of tuberculosis. His sputum contained quantities of tubercular bacilli: weight 110 pounds: had been West without being benefited. He had night sweats, fever and all symptoms of the dread disease. I commenced his treatment Sept. 8, 1895. Gave him 56 daily injections of 35 ms. each. Tubercular bacilli disappeared from sputum and he gained ten pounds in weight. January 20 I commenced again and gave him 16 more injections, during which time he gained five pounds, which is more than he had ever weighed in his life. He is still in splendid health and says he is feeling better than he ever did. I advised him, to-day, to take another ounce of the serum, to guard against relapses.

Case 3.—A young man with long standing hip-joint disease. I gave him one ounce in January, 1896, during which time he gained sixteen pounds and improved greatly in general health. He then stopped for two weeks, during which time he ceased to gain in flesh. He again commenced taking the serum, taking one ounce more, and gained ten pounds. His health has been much improved since.

Case 4.—Patient was a man aged 40. Several brothers had died of tuberculosis. He was taken sick in November, 1895, with cough, night sweats and fever. His family physician treated him until January, 1896, when I was called. He was much emaciated, no appetite, had night sweats, fever, etc. While he coughed almost incessantly, he did not expectorate. I failed to find any lesion of lungs in physical examination.

His liver failed to act well (chalky evacuation, etc.). His family physician had treated him faithfully, without results, and was satisfied that the patient was suffering with tuberculosis of the liver and other glands. I advised the use of serum, stating to patient that if his trouble was tuberculous he would be benefited; if not, it would do him no good. He consented and we started on the treatment. The improvement commenced at once and in sixteen days he had gained sufficient to get up and walk a square to a grocery and get weighed, and found that he had reached 150 lbs., his usual weight. We then stopped the treatment for ten days, at which time the patient requested me to commence again, saying that his appetite was not so good and that he was having night sweats again. I ordered another ounce of the serum, but before commencing treatment I had him weighed and found that he still weighed but 150 lbs. After taking the sixteen days' treatment I found that he weighed 170 lbs., a gain of 20 lbs. He is now at work and says the serum saved his life. After I commenced the serum, I stopped all other medication.

I have a case of laryngeal tuberculosis that has just finished the second ounce—thirty-two days' treatment. She has gained in weight, is a better color, and Dr. Lehardy, a throat specialist, who has been examining her larynx, says the ulcers on vocal cords are improved.

I have one lady patient with acute tuberculosis of lungs, who has taken two ounces, thirty-two days' treatment. She gained during the first two weeks, since which time she has lost, and at present her condition is not any better than when I commenced her treatment. However, she has a mixed infection.

I am also treating another lady who has pulmonary tuberculosis. She has taken $1\frac{1}{2}$ ounces, twenty-four days' treatment, and is improving very rapidly. I am satisfied that she will recover.

All my cases have been diagnosed by the presence of tubercular bacilli in the sputum, as well as by physical examination, except the one with tuberculosis of the liver. Diagnosis in that case was based on family history and physical signs, together with the fact that he went from bad to worse in spite of the best medical treatment.

I will stick to the serum treatment, at least until something better is found. It has proved much better, in my hands, than any other therapeutic agent in tuberculosis.

A CASE OF ASTASIA-ABASIA.

Report read and patient presented before the Philadelphia Neurological Society, April, 27, 1896.

BY AUGUSTUS A. ESHNER, M.D.

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Astasia-abasia may be accepted as a convenient designation for a clinical condition characterized by inability to stand or to walk, but not dependent upon actual paralysis. Blocq (*Revue générale de Clinique et de Thérapie*, 1889, No. 11, p. 165) proposed the explanation that patients thus affected had lost the memory of the specialized movements requisite for the performance of those acts. As a rule sensibility, muscular power and coördination are preserved, though the disorder may be associated with hysteria or organic disease of the spinal cord.

I wish to add a further case to the not very large number already contributed to the literature of the subject. The patient was a married woman, 46 years old, who was a housewife and whose husband was a cigar-maker. She was born in Philadelphia and her family history presented a number of interesting features. One of three of her sisters living was paralyzed for three years after taking a sea-bath and was cured by the "laying on of hands." She married four years later and never had any return of the motor

disturbance. A second sister was described as "extremely nervous." Another sister was dead in consequence of "dropsy of the brain," it was supposed. The patient had had measles, whooping-cough, chickenpox and intermittent fever in childhood and articular rheumatism at the age of 18 years. Menstruation appeared at 15 and ceased at 42, and was unattended with difficulty. The woman had borne an illegitimate child, which died at the age of 21 months of marasmus. For four months afterward she suffered from pains resembling labor pains. She admitted having lived the life of a prostitute between the years 1870 and 1872, though she was not aware that she had ever been infected with venereal disease. It was during the period named that she married. In 1871 upon the suggestion of her husband she smoked a cigar in the hope of relieving toothache. She found that she liked the sensation and she continued to smoke cigars or a pipe until 1892, when, as she reminded me, I first saw her at the Jefferson Medical College Hospital. I fail to recall the details of her condition at that time, but I believe a diagnosis of nicotineism was made.

In 1878 "speech was partially paralyzed," the disturbance having set in abruptly and being unattended with any concomitant disease. For ten minutes the woman was totally unable to speak and only with difficulty for two or three hours more. At the time of certain shocks later to be referred and under other conditions not readily defined, such as bad weather and when the patient speaks rapidly, speech becomes somewhat thick.

In 1887 the patient fell upon the ice, striking the sacral region. Improvement followed local applications. Later she fell again, striking the same place. Some of her present symptoms followed an attack of influenza in 1890.

In 1892 the patient lived in a damp, moldy house for three weeks, and suffered from cough, together with numbness of the feet, which gradually extended upward to the level of the stomach. Upon change of residence the sensation descended and finally disappeared. Later, however, there were present for a time girdle-sense and numbness of the toes. The woman then passed through a period of nine months quite free from all symptoms.

In 1893 the patient observed that contact of the hands with cold water and exposure to drafts of air would cause her to fall. Already in 1892 with the numbness in the toes there had been difficulty in walking, which has grown progressively worse, so that in the past two years the patient has been unable to walk alone and without support. She has also at times a peculiar sensation, compared to pinching, referred to the umbilical region and which both she and her husband were fearful was due to the presence in the stomach of some animal swallowed with drink. A similar sensation is referred to the nape of the neck when the hands are put in cold water or the patient is exposed to a draft of air. The patient complains irregularly of icy coldness of the feet, extending half way up the legs, and at times of a sense of burning in the same parts. She is as a rule obstinately constipated and has noticed a new symptom this year: She can not distinguish between the desire to defecate and that to urinate, that is, she may feel a desire to evacuate the bowels and may only pass water, and vice versa. She thinks the rectal and vesical sphincters weak. Digestion is poor. In the last year sneezing

induces a sense of chilliness. The appetite is fairly good. The tongue was slightly coated and dry. The teeth are stained black. Sleep is good and refreshing. Rarely there is headache, which when present is supra-orbital and vertical. Occasionally there is vertigo. On inclining the body forward and flexing the trunk after meals vomiting results. Sometimes, it was reported, food returns without entering the stomach. The patient is annoyed by a sense of the presence of hair in the throat. She has never had a convulsion or lost consciousness. She suffers a good deal from flatulence, which sometimes precedes a diarrheal discharge.

The patient appears quite unable to walk unsupported. When asked to make the attempt she throws her arms about herself rather incoördinately and sways upon her feet. She is unable to stand at all with her feet together. She maintains that the right leg feels heavy. She can walk up and down stairs with the aid of the banister. She volunteers the information that she does not fall when her feet are warm, and that she does not topple over in her own room. The knee-jerks are greatly exaggerated and ankle clonus is represented by a few contractions of the foot upon flexion. So far as can be determined there is no other derangement of motility and the muscles used in walking and standing possess the power of performing other acts. Sensibility appears generally preserved. The right pupil is a little smaller than the left; both are regular and react to light. The patient is rather pallid and of poor nutrition.

With great preciseness the patient related, as she did all the details of her case, that she had suffered from three shocks, one on Jan. 30, 1894, in which she lay helpless, though conscious, for half an hour; a second on Jan. 1, 1895, in which the same condition persisted for an hour and a half; and a third on Feb. 10, 1896, lasting for ten hours. She subsequently recalled that she had a fourth attack on Feb. 15, 1896, lasting for twenty hours. The patient has also at different times passed unusual substances from the bowels; on one occasion what she describes as a kind of tube; on others small white bodies looking like eggs, also hairs; again something resembling a small animal supplied with many feet; on still another occasion something having a white head and black eye. Two specimens of such substances submitted to me as having been passed, respectively, Nov. 20, 1894, and March 29, 1896, presented gross and microscopic appearances of vegetable fiber.

After taking a pill of aloes and asafetida for several days the patient found that she always fell backward whenever she approached a receptacle containing water. She pointed out a small spot as large as a pin-head upon the left ear which for two or three months has from time to time been the seat of intense burning. She stated further that a sister with whom she slept for a time had suffered from cold feet and she wondered if she might not have derived the coldness of her own feet from that circumstance.

The patient is extremely detailed in her account of herself, and in this she is ably supported by her husband, who supplements by suggestion or otherwise such facts as the patient herself may have failed to mention. At times they may differ in their respective versions, but altogether they are quite in accord.

The case impresses itself upon me as clearly an hysterical one, all of the symptoms and attendant cir-

cumstances, including the family history, supporting such an opinion. It must none the less be viewed with a good deal of seriousness and the prognosis must be guarded. If the patient could be removed from her present surroundings, if the current of her life could be entirely changed, the prospect might be more hopeful. This case and allied ones can not be viewed as a manifestation of merely functional disturbance. It is far more probable that there have taken place nutritional changes, which become more and more pronounced with the progress of the case, and which in time may lead to structural alterations. When only the nutrition of the nervous system suffers the prognosis is good under favorable conditions, but when changes in structure have resulted permanent and perfect cure is beyond the range of hope.

REPORT OF THREE CASES OF POLYMYOSITIS ACUTA: WITH REPORT OF POST-MORTEM ON ONE CASE.

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The report of a case of polymyositis acuta, by Dr. J. B. Herrick, in the *American Journal of the Medical Sciences* for April 1896, and his reference therein to the literature of the subject especially as to its bearings upon its etiology and the evident interest taken by the profession, relative to this feature of these cases, leads me to make the following brief report, which I take in the form of an abstract from my individual case report book, of the history of three cases, occurring simultaneously in the same locality, of what I at the time considered typical cases of polymyositis acuta. Subsequent study and observation of this class of cases have only tended to confirm the diagnosis made at the time. One of these cases terminated fatally within seven days after my attention was first drawn to the patient's condition; the remaining two terminated in a rapid convalescence and uninterrupted recovery. Most observers of this morbid condition have held it to be of an infectious origin, the case reported by Senator,¹ being of especial interest, where the patient was affected following the ingestion of stale crabs. Hitherto all efforts at isolating any specific organism or germ to account for the manifestation of this disease have proven futile; but the history of the cases I am about to relate makes it appear, that it is certainly due rather to a certain infective specific entity, in all probability belonging either to the class of toxin or to the gregarina. If there be anything of a contagious nature about these cases, then surely the conditions under which my cases developed, and ran their course, would certainly have had a tendency to produce the same disease in other members of the same group of men numbering forty-four who occupied the same sleeping quarters with these men all through the duration of their illness.

The histories of these cases are briefly as follows: In the month of July, 1893, the writer, while in the employ of a steamship company engaged in the New York, Cuban and Mexican trade, in the capacity of surgeon of a large 8,000 ton steel steamer, with one hundred and seventy-five firemen, coal-passers and

¹ Senator: Ueber acute und subacute multiple neuritis und myositis. Zeit. für Klin. Med., 1888, XV; and Ueber acute polymyositis und neuromyositis. Deut. Med. Woch., 1893.

water-carriers, exclusive of non-commissioned and commissioned officers on board, was lying in the closely land-locked harbor of Havana, Cuba. Two or three days after we had come to anchor, the first officer of the vessel, notified me, that one of his men was ill, and asked me to go to the fore-castle and examine him. I did so. On reaching that part of the ship I found two men, instead of one ill, of which the following are the brief histories:

Case 1. A. M., aged 23 years, a native of Savoy, France, states that last night on retiring to his bunk, and just as he was in the act of stretching out his limbs after reaching the recumbent posture, he felt a sharp, sudden stinging pain in the calf of his right leg as though he had been bitten by a spider. As we had been engaged during the day in loading the vessel's hold with bananas in the bunch, visions of huge centipedes came before him, and he very hurriedly kicked off his blanket and got out of the bunk to look for the insect, but failed to find any evidence of its presence, and a close inspection of the limb in the region of the pain, failed to disclose any wound, such as would be made by the bite of a centipede or any one of the several large and poisonous insects that live in this semi-torrid region. Feeling considerably relieved, he returned to his bunk and went to sleep, awaking about mid-night suffering with considerable dyspnea and pain in the left pectoral and cardiac area, the pain darting in short sudden stabs from the apex region around the chest to a point below the inferior angle of the left scapula. No disturbance of the stomach or bowels was present, while the kidneys acted normally throughout the illness. Upon examination the following day at 9 A.M. I found the right leg markedly swollen in the region just inferior to the popliteal space, the skin giving an edematous, harsh, branny sensation to touch, while upon the cutaneous surface was an eruption having features of both measles and an urticaria. This eruption was found on both extremities but only upon the flexor surface. A careful examination of the chest revealed some moist bronchial râles, the remnant of an old bronchitis; but otherwise the respiratory murmur was normal. Great interest was attached to the heart: percussion revealed the fact that the apex beat was removed at least an inch and a half farther to the left than was normal, while auscultation showed that the heart muscle was undoubtedly involved in some morbid process. The first and second sounds of the heart were strangely blended, instead of either being at all distinct, they gave forth a combined booming sound and reminded me more strongly than any other sound I had ever heard of a vessel upon the high sea, firing a salute with her big guns at a distance of from six to eight miles. The individual sounds were very indistinct and yet the combined murmur was at least three times as voluminous as it should have been. This sound was transmitted a great distance up the arterial system: I could distinguish it plainly in the carotid vessels and also in the subclavian, and here the sound had precisely the same characters as when heard in the cardiac area as though the sound was transmitted through a non-conductor of sound. The heart's pulsations in the erect posture was 120, in the recumbent 100 per minute. No apparent irregularity was noticeable. The pupils reacted to light normally, while the tendon reflex was slightly exaggerated. Ankle clonus was present also to a certain extent. None of the lymph glands were enlarged, and the patient denying any specific history, a thorough search failed to reveal any evidence of an old sore. Abdominal examination revealed a slightly enlarged spleen and liver, the latter though to a very small extent. Examination of bladder, rectum and prostate revealed them in a normal condition. Six hours later I saw the patient again, his left forearm was now involved, and if anything far more painful than the affected leg. Here especially the supinator longus and pronator radii teres were affected, the bellies of these muscles were badly swollen, while the skin covering them had the same edematous, hard, branny feeling to the sense of touch, as that on the leg. As the supinator approached its tendinous insertion, it was seen to be swollen to at least three times its normal volume, and so exceedingly painful was pressure of any kind on the affected leg, chest and arm, that the patient even dispensed with a blanket for covering his person, he stating that its weight produced pain. At this time I excised a small portion of the supinator longus for microscopic examination, which under the lens presented the usual evidences of acute muscular inflammatory action. Muscle striation had almost and in some places completely disappeared, while the individual muscle fiber were many of them greatly swollen, and presented, some a granular condition, others a hyaline degeneration. Between the muscle fibers could be seen

many large cells with large nuclei, believed to be proliferation cells: the blood vessels of the part seemed to be greatly enlarged, in some localities presenting evidences of a developing periarteritis. In one place could be seen a white blood corpuscle engaged in the emigratory act, passing through the vessel wall, into the surrounding inter-fibrillary spaces. All efforts along the line of forming cultures from the fluid exuded by pressure from the muscle sections were absolutely futile, resulting in each instance negatively.

As it is a notorious fact, that sailors and others leading a seafaring life, live almost exclusively upon pickled and salted pork, hence a very careful search was made for trichinae, but resulted negatively. This man continued to grow worse, until owing to pressure paralysis of the palato-pharyngeal muscles, he was unable to swallow, even liquids returning through his nose on attempting deglutition. His temperature remained throughout his illness, which was of six days duration, at about 100 degrees F., except just previous to his death, when it rose instantly to 106 degrees. The patient gradually progressed from bad to worse, until death came to his relief, apparently due to paralysis of the respiratory muscles.

Post-mortem, ten hours after death: Body well developed and nourished; considerable hypostatic congestion. Eruption on skin has totally disappeared; abdominal adipose abundant. Brain is in a normal condition; venous sinuses full of blood; lungs nil. Heart muscle found to be greatly swollen, the thickness of its muscle being greatly increased. Microscopic sections of cardiac muscle, intercostals, supinator longus, pronator and gastrocnemius, revealed simply the same pathologic conditions as were found in the examinations of the muscle section removed from the supinator previous to death. The stomach, liver and bowels were normal in appearance; the spleen was markedly enlarged and considerably softened. Sections of it placed under the lens, revealed a vast number of leucocytes far beyond the number usually found in the spleen in health; the parenchyma of the spleen also presented a granular and in some locations, a hyaline degeneration. Periarteritis was also a prominent feature of the pathology of the spleen. The bladder, rectum, prostate gland and associated glands presented no deviations from the usual normal condition. Death in this case was undoubtedly caused by paralysis of the respiratory muscles, caused by an enlargement in their bulk, to the degree that the ensuing pressure caused a paralysis. I have stated that all efforts in the direction of isolating a germ or special forms of bacteria to account for the disease by cultures or gelatin or agar, resulted in a failure, so after death was it likewise in several separate experiments made with the tissues and the juices expressed from the cut sections from six different locations. While it is doubtless due to the presence in the blood of either a toxin or one of the different forms of gregarina, the various methods of precision which science has placed in our hands to date, are not sufficiently efficient to demonstrate their presence in the tissues or the blood.

Case 2. At the same time that I was called to see A. M. I found B. F., aged 26 years, an American by birth, lying in his bunk, groaning considerably from pain in the region of the hip. Upon examination I found the right gluteal region greatly increased in size; the cutaneous surface had the same tense, hard edematous feeling that was found in A.M.'s case. A markedly papular eruption soon developed upon the right buttock; this swelling and eruption gradually extended to the extent of three inches below the major trochanter. Five hours after first seeing this patient I cocaineized a small area in the affected region, and removed a small piece of the gluteus maximus muscle. Upon making the incision into the muscle a quantity of sanguinous fluid, approaching two drams in amount, poured forth from the cut section. This I managed to collect in a small porcelain spoon, previously rendered aseptic. The muscle was deeply injected and well vascularized. Under the microscope this section of muscle

presented the same features as the section taken from A. M.'s case, only that the number of polynuclear cells was much larger, while the individual muscle fiber was far more granular in appearance, and in several localities the part presented simply the detritus of a previously preëxisting muscle fiber. Efforts at isolating germ life or bacteria upon either gelatin or agar resulted fruitlessly as they did in the previous case. Under the application of an active embrocation and iodid of potassium internally, the disease gradually disappeared, and in a few days the patient was as well as usual. I will add that this patient utterly denied all history of syphilis, and as he presented no signs of adenopathy his statement must be accepted.

Case 3.—S. S., aged 27 years, an Englishman by nativity; was almost precisely similar to Case 2, except in so far that the location of the inflamed muscle is decidedly different. This case did not develop until after twenty-four hours had passed after the previous cases were brought to my notice. The next afternoon following the day on which I saw the first two cases, the second officer called my attention to this man, saying his feet were swollen so badly he was unable to get his shoes on. I immediately went to see him and found his right foot badly swollen, especially just anterior to the tarsal arch. Here the tendons which can usually be so easily distinguished in this portion of the human anatomy, were swollen to the size of whip-cords, each tendon being at least one-third of an inch in diameter beyond its normal size. The movements of extension and flexion of the toes were greatly circumscribed and decidedly diminished, and any movement along this line gave rise to great pain, the patient crying out and resisting actively when I volunteered an effort at flexion and extension myself. The eruption was exceedingly characteristic in this patient. In some places could be seen the papulous eruption of a bluish coloration, such as is often seen in measles, while in other places would be found the large semi-circular, crescentic wheals so often found in urticaria. In two places only did I succeed in finding any of the eruptions which had progressed to the vesicular stage, and I was very careful to withdraw their contents, with a hypodermic syringe, previously rendered perfectly aseptic, for the purpose of ascertaining whether they contained any germ life. All work along this line resulted as all previous efforts in this direction had done, the fluid proving to be perfectly sterile without any evidence of germ life whatever.

What I have observed in these three cases, but other witnesses are silent on, so far as I can ascertain, is as to the site of the eruption. Invariably in these three cases the eruption was found upon the flexor surfaces of the limbs, and even when the pain would extend to the extensor surfaces and muscles, the eruption did not present itself in these situations. Whether this is because of the well-known anatomic fact that the cutaneous structure is much more delicate and thinner on the flexor than the extensor surface, I can not venture to assert. That it is true, is attested by the histories herewith given of the three cases.

Causation: The causation of these three cases has always been held to be very obscure. Senator,¹ quoting Herrick,² says: "Three hypotheses can be advanced as to its cause: 1, that it is due to a specific microorganism (vegetable parasite); 2, that it is due to a chemie poison (toxin); 3, that it is due to an animal parasite (gregarina)." In investigating the causes of the three cases presented above, the sanitary conditions of the city of Havana, and its closely land-locked harbor must be considered. Here is a city of 350,000 inhabitants, the poorer class of which are extraordinarily filthy in their habits and manner of living, with yellow fever an epidemic at the time referred to within the confines of the city, the registrar of vital statistics reporting a daily mortality of from fifteen to twenty deaths; while in addition to these there could be added thereto dozens of deaths occurring each week from the pernicious forms of malarial fevers. Typhoid fever was at this time especially

fatal throughout the entire island, following the encampments especially of the newly arrived Spanish soldiers. As is well known, all of the large sewers which carry off the excrementitious discharges from this populous city discharge their contents directly into the waters of the harbor, and the latter being virtually land-locked, having but one mode of ingress and egress, viz., a small channel not many yards in width between Moro Castle and the Fortress of Cabaniss. The amount of current which flows in and out with the flow and ebb of the tide is very small indeed. While there is some removal of the immense amount of excreta that is cast into the harbor each twenty-four hours, nevertheless a sufficient amount remains to be decidedly instrumental in developing yellow fever and other forms of malignant fever, as the history of the fever-ridden city of Havana ever since the year 1600 fully attests. Hence if this infected water will so affect the inhabitants who live on the shore close to its confines, what of the finny inhabitants who have their homes in the coral caverns in the deep bottom of this bay? On several occasions when our steamer had been anchored in toward shore, in close proximity to the mouth of one of the large sewers, I have observed different shoals of fish swimming along lazily close to the surface of the water, being apparently narcotized by some poisonous element in the water, as on casting an object toward them which ordinarily would cause them to instantly disappear, they would pay no attention to it whatever. It has been a habit with mariners and sailors while in this and various Mexican ports to catch fish, and by thus giving them a change of diet, the catch would form a very welcome addition to their mess. Upon the day previous to my being called to see the first of these three cases, A. M. succeeded in killing a large, twelve-pound red snapper that was floating in an apparently aimless manner close to the port opening. After stunning the fish with a blow he had no difficulty in hooking it with a pole-hook and drawing it aboard. Securing his prize, he cleaned it carefully and invited the other two individuals who were affected to assist him in disposing of the catch. That this fish was undoubtedly ill when struck and killed, anyone at all conversant or familiar with the habits of that denizen of the deep water known as the red snapper, will fully realize. As a rule, this fish rarely if ever approaches nearer the surface than six or eight feet, even though food in the form of bread and meat be thrown to them from the ship's deck. They will seldom dash to the surface and grab the morsel as will the more bold and fearless sea bass but will rather wait until the natural weight of the food causes it to descend to their level. It is so well known among sailors that the red snapper is a difficult fish to take that when a man is successful in catching one he is usually envied by his comrades. What was the physical condition of this fish? This is a question which in the absence of all parts of the piscine body, which had we preserved but a small portion, a microscopic section, several cultivations might have revealed some pathologic condition with special features, resulting in the isolation of a specific bacteria or some new form of germ life previously undescribed and unobserved, and would thus have provided us with a rational explanation of the morbid condition found in these men. The fish was probably narcotized by the ingestion of some of the poisons thrown out with the sewer discharges, whether this special poison

² Herrick, Dr. J. B.: Polymyositis Acuta, *American Jour. Med. Sciences*, April, 1893, p. 414.

belonged to the class of toxins or to that of the *gargarina*, it is certainly difficult to say. That it is true that the morbid condition found in these three cases was due to the ingestion of particles of this fish is evident from the fact that no more nor no less than the number which ate of the fish were affected, while forty-four other men all subjected to the very same conditions of daily life as those affected and occupying the same compartment with them as sleeping quarters, remained during the entire voyage utterly free from any contagion or infection.

ABDOMINAL HYSTERECTOMY FOR FIBROIDS OF THE UTERUS.

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HISTORY.

Dr. Gilman Kimball of Lowell, Mass., was the first to deliberately plan and execute an abdominal hysterectomy for fibroids of the uterus. The operation was performed in August, 1853. On June 25 of that year, Dr. Walter Burnham of the same city removed a portion of the uterus for this disease. Ten years later, December 19, 1863, Koeberle did his first hysterectomy for fibroids, with external fixation of the stump of the uterus. He employed a metallic ligature with a special device for tightening it. Péan soon followed Koeberle and supplementing the latter's work by the free employment of force-pressure, and by publishing a systematic technique, which included the employment of steel pedicle pins over the metallic ligature for maintaining the pedicle extra-abdominally; his name became inseparably associated with hysterectomy by the extra-peritoneal method. Dr. M. M. Latta, Goshen, Ind., completed abdominal hysterectomy by tying the broad ligaments in sections down to vagina July 6, 1876. The elastic ligature for temporary ligation was first employed by Kleeberg, of Odessa, July, 8, 1878. In August, 1878, Martin recommended the provisional elastic ligature. Hegar about the same time recommended the elastic ligature for permanent intra-abdominal ligation of the pedicle.

In the evolution of abdominal hysterectomy many methods have been adopted and at different times each have had their advocates. The yearning for perfection has made confusion, owing to great efforts in many directions. In the early history of the operation the best results came with the extra-peritoneal method of treating the stump. This continued until the last few years when, with improved technique, greater experience, and to avoid unpleasant sequela the pendulum is irresistibly swinging toward the intra-abdominal pedicle. The history carries us through the following methods: 1, extra-peritoneal or Péan's; 2, intra-peritoneal or Schroeder's; 3, complete hysterectomy or Eastman's; 4, vaginal fixation or Byford's; 5, ligation of arteries outside of uterine tissue with intra-peritoneal stump or Stimpson-Baer method.

1. *Extra-peritoneal Method.*—The extra-peritoneal method as originally carried out by Péan, consisted in clamping the neck of the tumor with a wire clamp or *serre-nœud* including the broad ligaments with the appendages, preventing slipping of the constrictors with pedicle pins, excising of the tumor, fixation of the pedicle in the lower angle of the abdominal wound, and closure of the abdominal wound closely down to the stump. Joseph Price of this country

has improved this method until it is well-nigh perfect. His success with it has been phenomenal.

Hegar and Kallenbach modified it by carefully securing the pedicle after Schroeder's method and uniting it in the abdominal incision extra-peritoneally but beneath the closed incision.

Kelly and independently Van de Walker modified it by making temporary fixation, like Péan, until liability to hemorrhage had ceased, when the wire was removed and the pedicle allowed to contract into abdominal incision.

2. *Intra-peritoneal Method.*—This, as practiced by Schroeder, consisted primarily in constricting the pedicle with the Kleeberg rubber band, removing the tumor, paring down the stump, taking from its center a wedge-shaped piece of the bulky tissue, cauterizing the canal, closing the stump by strongly sewing together the edges of the wedge-shaped incision and finally sewing over all the peritoneal edges. The stitching of the stump was intended to be secure enough so that all subsequent oozing was made impossible after the final removal of the rubber ligature. The pedicle was then dropped, as is the pedicle after ordinary ovariectomy, and the abdomen closed.

This method was modified by Olshausen, Charles T. Parkes, Zweifel, Hofmeier and others.

(a) Olshausen modified by securing the pedicle with a rubber ligature, and sinking the whole by sewing over it the peritoneum.

(b) Charles T. Parkes modified it by ligating firmly with strong silk and cauterizing the tissues of the pedicle to firm bone-like condition with the actual cautery over a temporary clamp.

(c) Zweifel tied the pedicle firmly with a strong multiple ligature of silk, securing it in this manner in several parts.

(d) Marey of Boston, 1881, secured an intra-abdominal stump by sewing from the outer edge of one broad ligament to the other with thirteen cobbler's stitches; including in the process ovarian arteries, broad ligaments, uterine arteries and the stump of the uterus formed by the cervix uteri.

(e) Hofmeier carefully ligated the pedicle in its circumference without closing the cervical canal, and closed its abdominal end by covering with peritoneum. Drainage could take place into the vagina through the patulous canal.

(f) Goffe and Albert independently employed treatment similar to Hofmeier's, with the addition of applying a capillary drain through the open cervix into the vagina.

3. Complete Removal, Eastman's methods.

(a) In 1888 Dr. Mary A. D. Jones removed the entire uterus, including the cervix, by employing long hemostatic forceps for the lower portion of the broad ligament, and severing the cervix from the vagina.

(b) Joseph Eastman's method, 1889: The broad ligaments are tied off, including the appendages, the vagina opened posteriorly by elevating it by means of a special staff constructed for the purpose, which is held by an assistant, the vaginal edges are ligated with long ligatures which afterward serve to invert the edges into the vagina, and the cervix and stump progressively cut away. The peritoneum is sewed over the inverted vaginal edges, the abdominal wound is closed, and the vagina packed with gauze. The mass of the tumor, if cumbersome, may be cut away, previous to opening the vagina, by putting on a temporary rubber ligature.

(c) Eastman in 1884 enucleated the stump without first tying the uterine arteries by peeling the pedicle portion of the uterus with a serrated gouge, keeping inside of the uterine arteries in their course up the side of the uterus.

4. *Vaginal Fixation, Byford's Method.*—The broad ligaments are tied with silk and severed. The cervix is secured with provisional rubber ligature, the tumor cut away, the pedicle firmly tied with multiple silk ligatures, left long, the stump trimmed and closed with long silk ligatures, an opening made into the vagina in front of the cervix, the ligatures securing the pedicle carried through it by traction on them, the stump inverted into the vagina, the peritoneum over the inverted cervix closed by stitching the bladder peritoneum to that covering the pedicle, closure of the abdominal wound, and finally placing a special hemostatic clamp on the inverted pedicle in the vagina.

Meinert, independently of Byford, suggested pulling the pedicle into the vagina through Douglas's cul-de-sac, but is not known to have accomplished it.

Polk, of New York, has removed the entire cervix, stitching the vaginal stump to the abdominal wall.

Thus briefly do we get an outline history of the development of the technique of this important operation. From the beginning the struggle was in the direction of accomplishing complete hemostasis of the pedicle without the necessity of invariably fixing it in the abdominal wall. It was soon demonstrated that no pedicle comprised of cervical or uterine tissue could be made bloodless by any amount of ligating with non-elastic ligatures which could not from time to time be tightened as the tissues shrunk. Hence with silk, steel or clamp hemostasis it was necessary to fix the pedicle externally in order that they might be tightened in case of necessity. Elastic ligatures, while they accomplished perfect hemostasis, experience soon demonstrated were not safe ligatures to bury, because they frequently gave rise to suppuration when the strangulated pedicle was dropped. At last it seemed inevitable that external fixation of the pedicle was to be the only safe method of accomplishing abdominal hysterectomy. The displacement of the tissues necessary for abdominal fixation and its distressing sequelæ—bladder pressure, painful cicatrix, dragging pain, herniæ, depressed cicatrix, etc., made surgeons slow to accept that means as final, while at the same time there seemed no other alternative. The vaginal fixation of Byford's which came in late in the race, solved many of the difficulties, and if something better had not speedily followed, it would have become the ideal method of pedicle fixation. But when the struggle was at its height the whole problem was suddenly solved by the application of a simple little principle described by Stimson in 1889 and practiced by others and redescribed and emphasized by Baer, of Philadelphia, in 1892. The principle consists in obtaining hemostasis of the uterine stump by ligating its blood supply outside of the uterine tissue before it reaches its substance; or, in other words, by ligating the uterine arteries at either side of the cervix. Eastman had practically accomplished the same thing in his old operation of complete removal of the uterus the same year Stimson announced it, but none of us recognized the principle involved, nor did he announce with sufficient emphasis why he succeeded. So Stimson and Baer get the credit of promulgating and establishing a great but simple principle, and the

uterus is removed every day now, partially or wholly, and the pedicle dropped with perfect impunity.

5. *Ligation of Arteries at Side of the Uterine Tissue with Intra-abdominal Stump; Stimson-Baer Method.*—This method is accomplished by ligating the ovarian arteries with or without the broad ligament, severing the broad ligaments after placing hemostatic clamps on the uterine side down to the uterine arteries, ligation of the uterine arteries, severing the uterus at the cervix, cauterizing the cervical canal, trimming the cervix, closing the stump with catgut or silk, burying the pedicle with peritoneum, closing the broad ligaments with a running stitch of catgut, and closing the abdominal wall.

Senn modifies this operation by stripping the tumor of its peritoneum in front and behind for three inches, severing the tumor at its bottom so as to leave the peritoneum like a cuff and then fixing this cuff open to the lower angle of the abdominal wall, draining it with iodoform gauze until all danger of hemorrhage has ceased, when the gauze is removed and the cuff closed by closing the abdominal wound by tying sutures inserted at the time of the operation. Stimson-Baer principle when thoroughly carried out makes Professor Senn's precautions superfluous.

INDICATIONS FOR ABDOMINAL HYSTERECTOMY FOR UTERINE FIBROIDS.

Successful abdominal hysterectomy is the only absolutely sure cure for large fibroids of the uterus. Ergot, electricity, ligation of the blood supply will cure a certain percentage, but hysterectomy removes at once every vestige of the tumor and with it the uterus on which it propagates.

The operation of abdominal hysterectomy, in its present condition of perfection, in the hands of experienced operators should be the operation of selection in all fibroids which can not be removed by vaginal hysterectomy when the patient is in a physical condition which will not jeopardize her immediate recovery from the operation.

Multiple intramural fibroids of every kind which are producing distressing symptoms should be submitted to hysterectomy because there is no absolute cure for them by any other means.

Subperitoneal fibroids when from multiple developments can only be removed by abdominal hysterectomy; no other treatment will reach them.

Interstitial fibroids of large size, of hemorrhagic nature, if the patients are in a fair physical condition, should always be treated by abdominal hysterectomy.

Cystic fibroids can only be cured by hysterectomy. Any form of treatment less radical only aggravates these cases.

Suppurating fibroids imperatively demand hysterectomy.

Fibroids complicated with pelvic suppurations, pyosalpinx, suppurating ovaries or appendicitis, should be removed at the same time that the pelvis is cleaned out.

Large fibroids complicated with pregnancy where there is the slightest doubt of a successful normal ending of the condition of pregnancy, demand abdominal hysterectomy.

ABDOMINAL HYSTERECTOMY—TECHNIQUE.

Uncomplicated Case.—The writer adopts the Stimson-Baer operation for uncomplicated hysterectomies for any cause. The abdomen is opened with a liberal incision which will allow of easy delivery of the

tumor. The lower end of the incision is carried well down to within an inch of the symphysis pubis. If the bladder is unusually high the incision at the lower end need not include the peritoneum. The tumor should next be delivered by lifting it out with the hand or a strong pair of vulsellum forceps fixed in the fundus of the uterus or top of the tumor. It is very necessary that the tumor be delivered at this point in order to continue the work of removal intelligently. As soon as the tumor is outside of the abdomen the general peritoneal cavity should be shut off with liberal packs of dry sterilized gauze. If the intestines are inclined to protrude the abdominal incision may be closed above the pelvis with a temporary silk suture. The broad ligaments are next clamped with a strong pair of long jawed hemostatic forceps far enough away from the uterus so that another forceps of the same character may be placed between it and the uterus, and low enough to include all the upper portion of the broad ligament with the ovarian arteries. The broad ligaments on either side are next severed between the forceps to the lower limit of their bite. This frees the uterus well down to the cervix and the region of the uterine arteries.

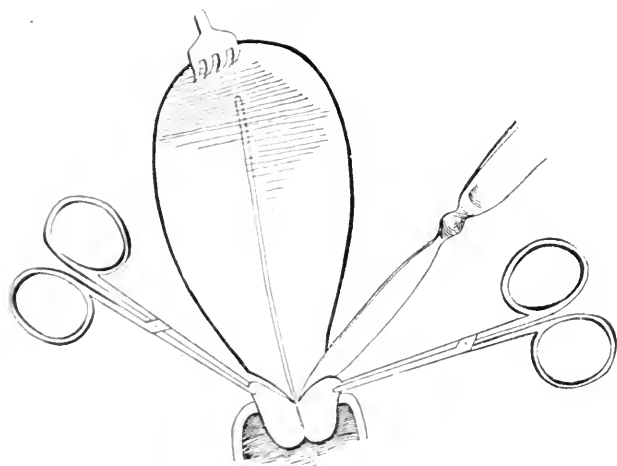


FIGURE 1.

The peritoneum on the anterior surface of the uterus is severed at the utero-vesical fold transversely, the ends of the incision ending at the two provisional forceps placed on the uterine end of the severed broad ligament. The cervix is then stripped of its peritoneum anteriorly, care being exercised to separate the bladder from it, thoroughly. After the uterus is well denuded of its peritoneum below the point marked off by the knife, and the bladder is well separated a gauze sponge of small size may be placed temporarily on the denuded surface. It is well at this point, too, to peel off a small flap of peritoneum from the posterior surface of the lower portion of the body and cervix, beginning an inch above the point at which the stump will be made, and denuding to a point just below it. The uterus is now drawn well to one side, retractors placed on the opposite side and the uterine artery is secured by placing around it a strong silk or antiseptic catgut ligature. The artery is securely tied and the ligature left long. A pair of artery forceps is placed on the tissue secured by the ligature between it and the cervix, and the tissue severed between the forceps and the uterus. The opposite side is treated in the same manner. The uterus is now removed by severing it at its neck. The inci-

sion is begun about an inch above the vaginal attachment anteriorly and posteriorly and carried toward the uterine canal in such a way as to leave the uterine stump, a hollow wedge with the apex at the cervical canal, and the sides of the wedge the anterior and posterior surfaces of the stump, which when approximated, form flaps which completely shut off the cervical canal and the cavity of the pedicle from the abdominal cavity. The uterus can be severed from the cervix best with a knife. As soon as the flaps are begun posteriorly and anteriorly the stump should be steadied and controlled by securing these flaps in strong lock forceps. (Fig. 1.) As the uterus is severed great care should be exerted not to infect the abdominal cavity with any septic matter which may be in the uterine canal, and the cervical canal must be immediately cauterized or otherwise rendered sterile.

The stump is now closed by uniting the two flaps with inversion sutures of antiseptic catgut. The simplest and most satisfactory method of suturing for this purpose in my opinion is the one employed by Prof. A.

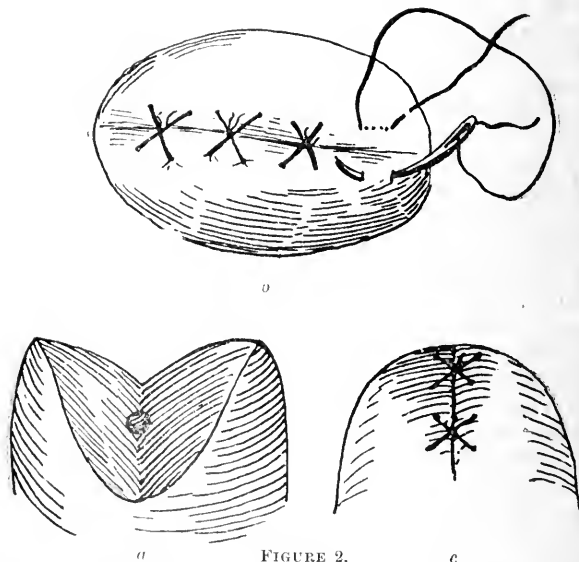


FIGURE 2.

Method of suturing the pedicle in hysterectomy: a, pedicle unclosed; b, pedicle and method of introducing inversion stitch; c, the completed pedicle.

H. Ferguson, Fig. 2. The stitch is an interrupted one as shown in the drawing, and completely closes the flaps without penetrating their cut surfaces. Prof. Ferguson uses the stitch in bowel surgery to take the place of the Lembert suture. When the pedicle is closed it is dropped.

At this point the upper portion of the broad ligament upon which the provisional hemostatic forceps were placed must be cared for. It contains the ovarian artery as it passes along the broad ligament parallel to the infundibulo-pelvic ligament which should be securely tied. Next if the pedicle of the broad ligament is long enough so that it can be easily included in the ligature left long after ligating the uterine artery without undue tension, it should be so included, securing the ligature from slipping by taking a turn around the infundibulo-pelvic ligament. When the ligament is in place ready to be tied the forceps should be removed from it and the ligature firmly tied, with a treble knot, and forceps attached to the pedicle outside of the ligature. The opposite side is treated in the same manner.

Everything is now finished about the pedicle except

closing the peritoneum over the stump. This is accomplished by stitching together with a running suture of antiseptic catgut the two edges of the peritoneum which was stripped off the anterior and posterior surfaces of the uterus before amputating the uterus. When this is done the pelvic peritoneum is perfectly closed, and as soon as the toilet of the cavity is completed, the abdominal wound should be sutured, the dressings applied and the patient put to bed.

Remarks.—The Trendelenburg position may usually be used with advantage immediately after the uterus is amputated in order to expose the bottom of the pelvis. Some operators place their patients in this position from the beginning of the operation. Drainage is not necessary after a normal case.

COMPLICATED CASES.

Unfortunately in the surgery of fibroid tumors uncomplicated cases are not the rule. The most common anomalies are the following: 1, pedunculated tumors; 2, tumors developed into the broad ligament; 3, interstitial tumors involving the cervix; 4, tumors complicated with diseased appendages; 5, suppurating fibroids; 6, tumors complicated with pregnancy; 7, extra-peritoneal fibroids.

1. *Pedunculated Tumors.*—Tumors of varying sizes with small pedicles are occasionally found growing from some portion of the uterus. If they represent a distinct tumor and the uterus is not involved with separate or other centers of fibroid development, and the appendages are not involved, the operator should seek to remove the tumor without interfering with the uterus proper. In order to accomplish the removal of these pedunculated masses, and secure a pedicle which may be safely dropped a definite line of procedure should be followed. If the tumor is only partially pedunculated so that a portion of its bulk is buried in the uterus necessitating enucleation, I prefer to remove the uterus, as I consider that the only absolutely safe procedure under the circumstances. If the tumor, however, is pedunculated, so that a pedicle of peritoneum, connective tissue, and the blood vessels feeding the tumor, without tumor tissue or uterine tissue, can be secured after its removal, I do not hesitate to ligate and drop the pedicle any more than I would hesitate to drop the pedicle of an ovarian cyst.

Method: The tumor is delivered. A pair of strong hemostatic forceps is clamped on the pedicle between the tumor and uterus, unless the tumor encroaches upon the pedicle too much to make a clamp effective after the growth has been enucleated, when instead of a clamp a provisional rubber ligature should be used. The tumor should now be cut away. If the pedicle is long and not involved by the tumor it should be severed close to the tumor, thus leaving abundance of tissue external to the clamp. If the pedicle is short and encroached upon by the tumor, the incision should extend around the base of the tumor at a distance of at least two inches from the provisional rubber ligature, involving the peritoneal coat and connective tissue capsule of the tumor (the pedicle edges of the incision being caught on three sides by hemostatic forceps to control the stump and prevent slipping of the ligature), and the tumor is enucleated, leaving a pedicle of connective tissue, blood vessels and peritoneum.

The pedicle is treated in both cases alike. If blood vessels of considerable size are found in the free end they should be ligated separately close down to the

provisional clamp or ligature. Then a strong antiseptic catgut or silk ligature should transfix the pedicle near its edges, and, after tying the first knot the provisional clamp or ligature should be removed and the ligature securely tied, so as to secure every portion of the pedicle. If care has been observed to eliminate all uterine or tumor tissue from the pedicle it will be as secure now as an ordinary pedicle of an ovarian cyst. The pedicle should be trimmed down to within an inch of the final ligature.

The writer has removed two pedunculated fibroids of large size in this manner, one of ten pounds and another of eight pounds, in which pregnancy existed, the women both going on to term afterward and giving birth to their children without complications. One of these conceived afterward. Another case of this kind in which a tumor of large size was removed, afterward conceived and gave birth without complications to a living child.

2. *Tumor developed into the broad Ligaments.*—It is not a rare complication to find these tumors of the uterus developed in the folds of the broad ligament to such an extent that the ligament is spread out over the growth and its folds tense. Frequently it will be impossible to deliver the uterus until the portion has been enucleated from the broad ligament. The line of procedure here is: First, enucleate the tumor from the broad ligament, and second, deliver the uterus as in uncomplicated cases and complete the toilet in the same manner.

First step: Tie if possible the ovarian artery near the outer edge of the tumor near the pelvic walls. If more convenient a provisional forcep may be used to secure the vessel.

Second step: Split the tense peritoneum which represents the broad ligament, the folds of which have been eradicated by the burying tumor, by drawing a scalpel over it at its most prominent point in a direction from the uterus to the side of the pelvis. Then with the fingers or some blunt instrument the tumor is gradually peeled from its subperitoneal bed, constant traction being exerted on it until the uterus and tumor are delivered.

Third step: Completion of the operation as in a normal case.

3. *Interstitial Tumors involving the Cervix.*—When the fibroid has developed low in the substance of the uterus so as to occupy the cervix, some management is required in order to secure a proper pedicle. Two methods may be pursued; first, complete enucleation of the fibroid tissue from the cervix, and second, complete removal of the cervix.

When it is possible, I prefer to enucleate the tumor from the cervix in order to preserve that portion of the uterus for a pedicle and a key to the abdominal floor.

The first part of the operation is conducted as in a normal case or if any portion of the tumor is subperitoneal as in the last method described. When the region of the large cervix is reached, a blunt instrument should be employed to completely enucleate it from all surrounding tissue, the bladder in front and all lateral tissue in order to insure perfect security of the ureters. This can only be done by keeping the point of the enucleating instrument well against the uterine tissue. If there is difficulty in securing the uterine arteries definitely, because of the necessary distortion of the tissues, two strong Tait pedicle-pins should transfix the cervix, at right angles to each

other, their ends being supported by the abdominal walls, and beneath these a provisional rubber ligature should be placed. The tumor is then cut away, down to the pedicle-pins, and the uterine arteries are sought and tied. After insuring hemostasis, the elastic ligature is removed and the fibroid tissue of the cervix carefully peeled out of its capsule. From this point the case is treated as a normal hysterectomy.

Removal of the cervix: Occasionally it may seem best to remove the entire cervix when it is the seat of the fibroid invasion. The same course should be pursued here as when the cervix is to be retained. The uterus may or may not be severed above a provisional elastic ligature, before ligating the uterine arteries. When the cervix has been thoroughly stripped and the vagina rendered aseptic, the vagina should be opened at the anterior or posterior cul-de-sac close to the cervix, and one blade of a curved pair of scissors slipped through into the vagina, and the cervix completely severed from its vaginal attachment by following the circumference of the cervix with the scissors. A guide in the vagina in the form of a staff may be employed in making the first vaginal incision. If there are any small bleeding points on the vaginal edges they should be tied with catgut or twisted with hemostatic forceps. The vagina should be loosely packed with sterilized iodoform gauze from above so as to just reach to the upper end of the severed vagina. The tissues in the bottom of the pelvis naturally fall together. With abundant drain in the vagina I simply allow the upper end of the vagina and the other severed tissues to fall together naturally, contenting myself to close the peritoneum alone with a running antiseptic catgut suture, exactly as when the cervix is allowed to remain.

4. Tumors complicated with diseased Appendages.—Diseased appendages are a frequent accompaniment of fibroids of the uterus. When fibroids demanding a hysterectomy are complicated with diseased appendages the disease of the adnexia should be treated in the ordinary way, and then the hysterectomy should be carried out on the lines best suited to the case.

Cysts of the ovary, without adhesions, scarcely complicates a hysterectomy for fibroids. The pedicle of the tumor is at once ligated with strong silk or clamped with strong forceps and the tumor removed. If it is of considerable size it may first be emptied with a trochar.

Pyosalpinx should be attacked as though no fibroid existed. If there has been bilateral disease of the appendages with extensive peritonitis and numerous adhesions, the adhesions should be carefully separated and the diseased pus tubes and ovaries carefully enucleated and removed. Then the uterus is removed in the ordinary way. The matter of drainage should be dealt with here exactly as when no hysterectomy follows, except that it may oftener be more convenient to drain through the vagina. If enucleation of the appendages has been such that large peritoneal adhesions have been separated and there is considerable unavoidable oozing from raw surfaces, some form of drain is imperative. As the most dependent portion of the pelvis is Douglas's cul-de-sac, one should select that point from which to make vaginal drain. Fig. 3 crudely represents an instrument I have devised for opening the cul-de-sac and guiding my drainage gauze into the vagina. The lower instrument (b) represents a staff which is placed in the vagina as a guide, with a tubular end which will act as a counter pressure for the

pointed dressing guide which penetrates the cul-de-sac from the pelvic cavity. The upper instrument is a hollow forceps with pointed blades, which when they have penetrated into the vagina guided by the staff are opened and a strip of gauze of any size may be pushed between them and drawn through from below. The tubular forceps may also act as a guide for a rubber drainage tube. Those who have attempted to place drainage tubes or gauze without a proper guide will appreciate the advantage of this instrument.

So after the uterus is removed a roll of sterilized strip gauze about the size of the index finger should be drawn through the cul-de-sac into the vagina, the vagina loosely packed with gauze below and a packing left in the lower part of the pelvis sufficient to take care of any oozing from the peritoneal surfaces, Fig. 4. The toilet of the peritoneum is completed as in ordinary cases and the abdominal wound closed. The dressing used as a drain is removed as soon as it no longer soils the dry dressings which are placed in contact with it at the vaginal outlet, usually from twenty-four to forty-eight hours.

5. Suppurating Fibroids.—Infected fibroids in which there is extensive interstitial suppuration are extremely rare. I have not seen more than two such cases in my experience. One of these I removed. The tumor had been infected more than a year before I operated on it. Several abscesses formed at intervals in the interior of the walls of the large uterus

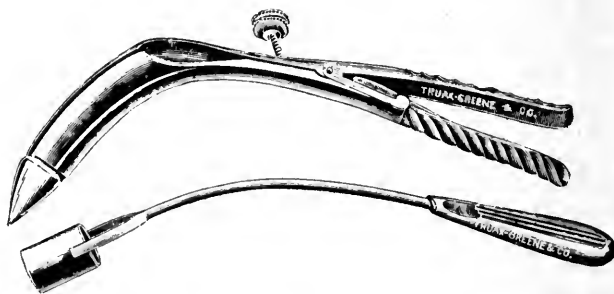


FIGURE 3.

and then discharged through the cervix. The case failed to successfully drain after several operative procedures which I attempted through the cervix. Finally I decided to do a complete abdominal hysterectomy, one which would also include the infected cervix. The operation is performed practically as described above for the complete removal of the uterus including the cervix. Extreme care must be maintained to protect the abdominal contents and peritoneum from the infected contents of the uterus. If the vaginal track is employed for drainage, it should be thoroughly cleansed first by a competent assistant who is not allowed to further participate in the operation. All drain gauze should be drawn from above downward, never the reverse.

6. Tumors complicated with Pregnancy.—Fibroid tumors of large size complicated with pregnancy demands the sacrificing of the product of conception and the removal of the uterus.

Symptoms: The symptoms of pregnancy are usually all present in an exaggerated form. Menstruation which has heretofore been excessive and frequent on account of the fibroid will cease abruptly. The tumor will begin to grow rapidly. Pressure symptoms are much exaggerated. The bowels and bladder will become crowded and sacralgia and dysuria will result. In a word, all the ordinary symp-

toms of growing fibroids of the uterus minus hemorrhage, and all the classical symptoms of pregnancy, will become magnified to a painful degree.

Pedunculated fibroids of the subperitoneal variety, with small thin pedicles complicating pregnancy may be removed in the manner described in this article under the head of pedunculated fibroids, without disturbing the contents of the uterus. If the tumor involves the uterine walls to any marked degree and the tumor is so large that it will prevent full development of the fetus or its development to the point of viability, or the tumor's position is such that it will interfere with the pregnancy taking its proper course, the entire uterus should be removed with the tumor, if it is considered necessary to remove the tumor at once. If pregnancy is known to exist before an operation is determined on for the removal of the tumor, as a rule it would be safer to empty the uterus as an early preliminary measure, if it is feasible, reserving the operation on the tumor for a time after convalescence from the abortion is accomplished.

Operation: However, if it actually becomes necessary to remove a fibroid uterus complicated with pregnancy, either as a matter of choice, or accident from

severed at its point of deflection from the tumor on to the parietes. The tumor should then be grasped with strong blunt toothed vulsellum forceps and while traction is being made to deliver the tumor the fingers should carefully enucleate the growth from its bed. Great care should be observed in order to enucleate it perfectly and free it absolutely from the ureters or the rectum walls. By following the enucleation the tumor will finally lead to its pedicle which will be the uterus. The cavity from which it is enucleated should be packed temporarily with sterilized gauze sponges in order to check serious oozing. When the tumor is finally enucleated and removed, together with the uterus, in the ordinary manner, the work of making a pelvic floor must be accomplished. If there is not peritoneum enough left to cover the floor of the pelvis and a large raw surface is inevitable, this should be drained into the vagina by a roll of gauze an inch in diameter with a packing in the pelvis sufficiently large to cover the denuded surface. Occasionally the cavity from which the tumor is enucleated may be packed with gauze and drained into the vagina as a subperitoneal pocket and the peritoneum closed over it. As a rule these cases require drainage.

SOCIETY PROCEEDINGS

Medical and Chirurgical Faculty of Maryland.

Abstract of the Proceedings of the Ninety-eighth Annual Session, Baltimore, Md., April 25 to May 1, 1896.

FIRST DAY.

DR. CHARLES G. HILL Presided; DRs. JOHN S. FULTON, ROBERT T. WILSON and W. G. TOWNSEND, Secretaries.

DR. CHARLES G. HILL delivered the address on the subject of
SOME OBSERVATIONS ON THE EFFECTS OF THYROID FEEDING
IN THE INSANE.

After referring to the literature on the subject he said he had used the treatment in forty cases, some of which were acute, some chronic and some in old persons. He had the following results: Unimproved 8, improved 12, greatly improved 14, cured 5, died 7. He then reviewed a few typical cases and spoke of the effects of the treatment in general. In some there was elevation of temperature, gastric disturbance and albuminuria.

DR. E. N. BRUSH read a paper on the

DIAGNOSIS OF INSANITY BY THE GENERAL PRACTITIONER.

He spoke of the ignorance of the average physician in matters pertaining to insanity. He said the laws of commitment varied in the different States; that in New York, Pennsylvania and Maryland a written certificate was necessary to commit a person to an insane asylum and two physicians were obliged to sign the papers. Some of the diagnoses were quite absurd. He divided the insane into two classes: 1, those due to inherent brain defects under which we class idiocy with certain degenerative forms of insanity, of which paranoia was the great type; 2, conditions due to the diseases of the brain or to disturbances of the physiologic function by disease of other organs of the body. Under the second head are included melancholia, mania, dementia and general paresis. It is difficult to get a careful and correct history of a case. Persons will deny any family taint and try to deceive the physician. The general practitioner is usually not skilled in asking such questions and may be deceived. Even where there is no hereditary history of insanity, the phthisic taint on one side and the neurotic on the other may produce insane offspring. It is well to learn as much as possible of the patient first before seeing him and then examine him afterward. An insane person is usually shrewd and crafty and the examiner must use tact. Note the patient's attitude. Is he ill at ease? Is he quiet? Examine the skin, tongue, eyelids, hair, etc. There is rarely a clear complexion in the beginning of insanity. Persons insane often give the most lucid and sane answers, and paranoiacs who act in the most intelligent manner, until their hobby comes up, are frequent.

DR. HENRY M. HURD said that the general practitioner was

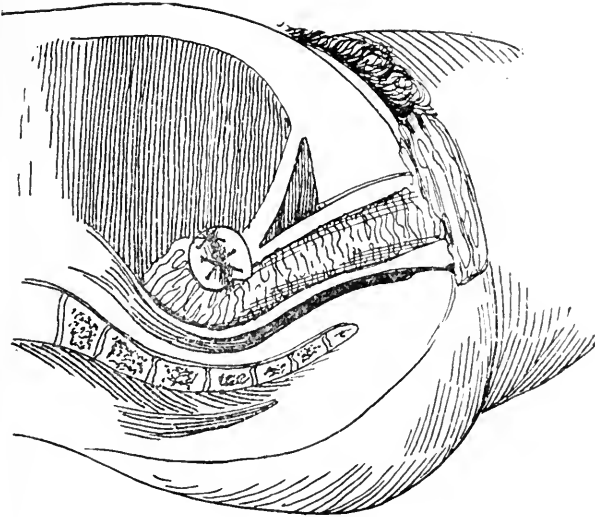


FIGURE 4.

mistaken diagnoses, the operation is proceeded with exactly along the lines of an ordinary abdominal hysterectomy. As a rule under these circumstances, the broad ligaments are loose, and the uterus freely movable making a hysterectomy comparatively easy. Any complication should be dealt with as in ordinary cases.

7. Extra-peritoneal Fibroids.—It is not infrequent that one will find in multiple fibroids that one or several of the centers of growth have developed low in the pelvis and in their increase in size they have gradually elevated the peritoneum and grown beneath it until they have become actual extra-peritoneal growths. The degree of such complication vary much in different cases, from a small nodule growing beneath the peritoneum from the cervix to a tumor weighing several pounds elevating the peritoneum in an irregular manner and distorting all the organs of the pelvis.

Method of Procedure: These cases are all subject to removal if they are handled in the proper manner. They must be enucleated. The peritoneum covering the abdominal surface of the tumor must be carefully

not usually familiar with the technical terms of insanity. Another difficulty arises from the fact that many definitions of insanity are legal and not medical, and the mistake is that the physician tries to show that the patient is legally and not medically insane.

DR. LLEWELYS F. BARKER made remarks on "Some Aspects of the Study of the Human Nervous System with Particular Reference to its development." He spoke of the neurons and types of cells, and said that these cells were separate and yet connected in a way that was too complex to explain. The development of the nerve cells depends on simple mechanical principles. They grow out and send there branches in the direction of least resistance. The neuron is the morphologic and physiologic unit. The study of the nerve anatomy of recent years would necessitate a recast of our knowledge of this subject. There are four varieties of skin sensation, sense of pressure, heat, cold, and pain. There are also definite sense areas in the brain. The newborn baby has a cerebrum with no medullated fibers. There is a great field for investigation in nerve study with the microscope since the newer methods of staining have been introduced.

DR. G. J. PRESTON spoke of the great advances made in neuro-histology in the last ten years.

DR. J. D. BLAKE asked if the collateral branches of the axon were real branches or were they simply fibrillae passing down from the cell with the body of the axon for a certain distance and then branching off? He also asked if Dr. Barker had not said that the fibers in the pyramidal tract did not cross, how he explained crossed paralysis?

DR. BARKER replied that the lateral pyramidal tract does cross over but the direct tract does not.

DR. H. J. BERKLEY made some remarks on the "Physical Nerve Cell in Health and Disease." He explained the different shapes of the cells. Some were pyramidal, some like whetstones and others were irregular. The branches of these cells have small lateral branches. In poisoning from alcohol, ricin, etc., the nerve cells and branches show thickening.

DR. A. K. BOND asked how wasted nerve cells could be affected by the thyroid treatment in twenty-four hours.

DR. BERKLEY replied that the thyroid extract caused a congestion around the nerve cell and a temporary improvement. The nerve cell degenerates in a short time, and as it is a complete substance in itself it does not recover. He is not pleased with the thyroid treatment.

DISCUSSION ON DIABETES MELLITUS.

DR. WILLIAM H. WELCH in speaking of the pathology of this disease said that no lesion was universally present in diabetes; nevertheless it is hardly correct to say that there is no lesion characteristic. There is one which is pathognomonic, but it stands in no relation of cause and effect. It is constant in this disease and is found in certain cells in the kidney. Armani described it in Cantani's book about twenty years ago. It was supposed to be a dropsical affection, but now we know it is a glycogenic metamorphosis of the cells. The epithelial cells lose their clearness, but the nucleus is clear. This is found chiefly in the ascending arm of the tube. If the specimen is so prepared that the glycogen is still there it can be easily seen under the microscope. The specimen is put in boiling water, absolute alcohol or water with iodine. These cells are filled with glycogen, and in all cases which he has examined the glycogen is present. The diagnosis of this disease can always be made at the autopsy, but there is no reason to suppose that it is a cause, but more probably a secondary effect. The causal lesions which we know are of two classes, of the central nervous system and of the pancreas. Bernhard von Mering and others first described lesions in the medulla oblongata. These have been found in many cases. Bouchardat, Lancereaux, Frerichs and Senator, all understood this disease and antedated the experimental work, and, indeed, this was known in the last century. It is only in the last seven years that more attention has been given to the pancreas in this connection. The total extirpation of the pancreas in dogs has caused diabetes. This is not due to a lesion of the surrounding part, but to the interruption of the function of the pancreas. The proportion of cases of diabetes associated with pancreatic lesion is at least 50 per cent. The lesions of the pancreas vary in their character. Hansemann says that one lesion which is invariably associated with diabetes, is granulation atrophy of the pancreas. It has its analogy in the granular nephritis. There is an increase of the connective tissue, a thickening of the walls of the vessels and a diminution of the glandular substance. There is no other lesion which destroys the function of the pancreas that will cause it. Calculus of the duct and new growths may cause conditions almost similar. These facts may not be so reliable when we consider that the pancreas is

examined at the post-mortem in every case of diabetes, but is rarely looked at in other diseases. He holds that all cases of diabetes are due to changes in the pancreas. There is no characteristic lesion of the liver; indeed, it is not often affected at all. Some lay great stress on the dilatation of the blood vessels of the liver. This is not demonstrable and not important. In some cases the liver cells are changed and there is a glycogenic metamorphosis of the nucleus of the cells. He does not believe that the sympathetic nervous system has anything to do with the cause of the disease. There is some change in the blood. Glycogen has been seen inside the leucocytes. Diabetics are especially predisposed to complications, especially to infection from pyogenic organisms, boils, carbuncles, etc. Senator says that lobar pneumonia is a rare complication; Osler says that it is very common. Klemperer says that it is not common probably because the organism of pneumonia does not grow well in the presence of sugar, but Welch says, on the contrary, that the presence of sugar favors their growth. In these cases colon bacillus is found.

DR. JOHN S. FULTON then spoke of the etiology of this disease. When the food supply of carbohydrates is excessive the glycogen reservoir is overtaxed. If the ingestion of sugar goes beyond the physiologic line glycosuria appears for a short time. Heredity, age, sex, social condition, geographic position, race, contagion, temperament and certain diseases are all predisposing and determining causes of diabetes.

DR. WILLIAM OSLER then spoke of the "Varieties and Clinical History of Diabetes." Three questions are asked by the physician: 1. Has the patient sugar in his urine? He referred to a case of alkaptonuria. A man was rejected for life insurance because he was supposed to have glycosuria; further investigation of this case in 1887 showed the absence of sugar and the presence of a substance called alkapton. Dr. Osler had a case last year which was supposed to be diabetes; Fehling's and other tests showed the presence of sugar, but the fermentation test and polariscope showed that no sugar was present. This man also has alkaptonuria, and strange to say, was a brother of the first case referred to. 2. Is it true diabetes or is it a transient glycosuria caused by an excess of starchy food, by nervous trouble, or is it a toxic form of glycosuria? 3. Given a patient with diabetes, is it a mild or severe case? In a mild case all we have to do is to cut off the carbohydrates for three days and put the patient on an ordinary meat diet and the sugar will disappear in from one to three days. Most cases we see are in men between 45 and 50 years old. The disease can be controlled by diet. He gave instances in which an excess of starchy food increased the amount of sugar very markedly, but on a strict nitrogenous diet the sugar was kept within bounds and the man could follow his business. A case in which you exclude the carbohydrates for three days and the sugar still remains is a grave case. The disease runs a rapid course in children. Adults can stand it much longer and in exceptional cases they have been known to live many years with the disease.

DR. H. FRIEDENWALD then spoke of the "Ocular Manifestations of Diabetes." Diabetic affections of the eye are due either to general debility, to disturbances of the nutrition or to the production of the toxic substance in the blood. Visual disturbances are general enfeeblement depending upon weakness of the external ocular muscle and still more to the muscles of accommodation. The affections probably due to nutritive disturbances are cataract, retinitis and hemorrhages within the eyeball.

DR. T. C. GILCHRIST then spoke of "Cutaneous affections in Diabetes." In diabetes the skin is perhaps more affected than any other organ of the body. The most characteristic cutaneous lesions are found in the genital regions.

DR. I. E. ATKINSON then spoke of the "Prophylaxis and Treatment." From the variety of its pathology we would have no way of treating it etiologically. Measures for prevention can only be taken in a few cases. In hereditary cases, in obese and gourmandizing person and in those who have recovered from one attack we can take measures to prevent its recurrence. The medicinal treatment is unsatisfactory. Arsenic occasionally benefits. The latest remedy recommended by West of England is uranium nitrate, 20 grains three times a day. One drug, to speak of, is opium; it has very little influence over the disease, but it checks the glycosuria and polyuria. Codeia and morphia are the best forms to give opium. The habitual use of opium in this disease is not desirable. The suggested treatment with pancreatic extract is of no special advantage. The most satisfactory treatment is by diet. Diabetic patients are as untruthful as opium eaters and very little confidence can be placed in their word. Aleuronat bread and peanut flour bread have been highly recommended. Mineral waters are also used. He must have fat or alcohol to

make up for the loss. Never put the care of a patient in his own hands. He should have his food arranged for him so as to insure variety of diet.

DR. A. K. BOND said that diabetes in children was rapidly fatal and that treatment seemed to be of little avail.

SECOND DAY.

DR. R. PERCY SMITH then exhibited a patient who had a "Compound Fracture of the Skull with Loss of Brain Tissue." The boy had been kicked by a horse in the forehead. Dr. Smith injected nitroglycerin and gave digitalis. The boy's condition improved. He removed some bits of bone, treated the wound antiseptically, gave careful diet and the boy entirely recovered, with a loss of only one ounce of brain substance. The tablet of bone is still depressed.

DR. R. WINSLOW thinks there may be danger yet and that the bone ought not to be left depressed.

DR. J. C. HARRIS said that the injury was near the supra-orbital vessels of the nerves and an operation might be dangerous.

DR. SMITH said, in conclusion, that the family opposed an operation.

DR. L. M. TIFFANY then spoke of "Operative Measures for the Relief of Facial Neuralgia." He said one could not say what the result of the operation would be. Many operations are done with entire relief to the patient and little loss of power. There have been about eighty five to ninety-five cases recorded. The mortality was larger than was usually supposed. He had ten cases himself. One had died on the twenty-fifth day from sepsis. He had operated on one case twice; he had had cases in which the nerve and ganglion had both been removed and yet the pain remained. In one case the man had entire sensation in the skin of the forehead and yet his nerve was in a bottle. He has had no recurrence of the pain in any case. After section of the nerve and removal of the ganglion the sensation will gradually come back and the sense of heat and cold, but not motion and no pain.

DR. J. M. T. FINNEY referred to several cases, one got well, had a slight return of the pain, and one died the day of the operation.

DR. R. WINSLOW related a case of removal of the fifth nerve and its branches and a part of the nerve behind the ganglion, and now he has pain on the other side of his face and a double operation would cause paralysis of the muscles of mastication on both sides.

DR. I. R. TRIMBLE then related three cases of "Injuries to the Kidney with Surgical Treatment."

DR. RANDOLPH WINSLOW made some remarks on "Surgical Diseases of the Kidney."

DR. J. M. T. FINNEY spoke of the "X Rays in Surgery."

DR. HOWARD A. KELLY then made some remarks on the "Use of the Renal Catheter in the Diagnosis of Stone in the Kidney." He showed plates and explained how easy it was with his cystoscope and head mirror, with woman in the knee-chest position, to introduce the catheter into the bladder and into either ureter at will. The presence of stone in the pelvis of the kidney could be thus detected. He used a hard rubber bougie coated with dental wax, applied to the bougie by dipping it into the melted wax. He thus obtained a smooth, glistening surface which showed the slightest scratch from the stone. He sometimes found it better to add a little olive oil to the wax. He also used a catheter, coating its tip with wax except at the eye, through which he could draw at will fluid from any part of the kidney or ureter. He had made the diagnosis of stones in the kidney of many cases in this way and he showed several specimens. In introducing the bougie or catheter covered with wax, care must be taken that it does not strike the cystoscope or any other object which might scratch its surface and deceive the surgeon. He brought this before the society and hoped that no surgeon would attempt to operate on stone in the kidney in woman without first attempting a diagnosis in this simple way.

THIRD DAY.

DR. R. TUNSTALL TAYLOR read a paper entitled "Treatment of Lateral Curvature of the Spine." This was caused by faulty position. Cases come from long standing, carrying heavy school books, violin playing, sitting at school on improperly made chairs and benches and other causes. Too many physicians do not treat these cases at all, but turn them over to the instrument maker and to those using Swedish movement. He then gave directions as to exercise, gymnastics, class drills, baths, and showed the apparatus with plaster jacket for the correction of the various deformities and the strengthening of the muscles.

DR. W. S. HALSTED then made some remarks on the "Oper-

ative Treatment of Gallstones." The surgery of gallstones of the duct and gall bladder is still in its infancy. As in other branches in surgery the time will come when we will not operate at all for many conditions for which we do now. Langenbuch's idea was to extirpate the gall bladder, but this is not done often. Another operation soon to be given up is the Winiwarter's cholecystenterostomy. Another form of operation which has been abandoned is the two-act operation. At the first operation explore all the ducts if possible. It is not always easy to explore the cystic duct, but one can explore the common duct. It can be done by cutting through the mesocolon and drawing the omentum up and the duodenum out and the common duct will be seen. It may be necessary to excise the ends of the lower rib, but this is not desirable as the cut ends cause great pain. An osteoplastic operation might be an improvement. All the operations should be done at one sitting. Special needles for sewing up the gall bladder should be used. They must be small No. 12 to sew up the walls of the common duct. The walls are usually very thin, but when a stone has been there for years the walls are thicker. There is not much experience in common duct surgery. He related one or two cases. Not all cases need to be operated on, but it is well to operate before the stone gets into the common duct.

DR. S. T. EARLE then reported "Two Cases of Tuberculous Fistula in Ano," and his manner of operation, and his object was to show the importance of a microscopic examination.

DR. HALSTED said that he had never seen a case of primary rectal tuberculosis. He had seen cases of primary vaginal tuberculosis where the disease occurred nowhere else in the body except a beginning peritoneal tuberculosis. He had once an interesting case of laryngeal and pharyngeal tuberculosis which he had cured by cauterization of the mucous membrane.

DR. EARLE in 1884-5 had made 160 autopsies and had found no tuberculous ulceration of the rectum.

DR. H. H. BIEDLER then exhibited a case of "Trephining for a Local Paralysis with Cure." He had undertaken this operation with very little knowledge of the cause of the trouble and with little expectation of such good results.

DR. WM. S. THAYER then made some remarks on "Gonorrheal Endocarditis." Since Neisser in 1885 discovered the gonococcus many troubles which were formerly obscure had been now shown to be caused by this organism. There may be a pure infection or there may be a mixed infection or the gonococci may enter and make a way for other organisms, or pyogenic organisms may find their way in and drive out the gonococci. Also these local processes may be non-bacterial. He had seen at the Hopkins Hospital two cases of gonorrheal endocarditis, both of which died. In the first case the cultures were made from blood taken from the arm. From the growth obtained the gonococcus was suspected: in the second case it was found and examination of the blood and also of the clot on the valve of the heart verified the diagnosis.

DR. J. D. BLAKE then reported sixteen cases of "Laryngeal Croup treated by Intubation and With Antitoxin." The oldest was seven years, the youngest four months. Twelve recovered and four died. In one case the antitoxin was used on the second day and in another on the ninth. In two cases no organisms were found in the throat but they can carry contagion. He then showed a simple but very effective instrument for removing the tube.

DR. GEO. J. PRESTON then read a paper entitled "The Gastro-intestinal Manifestations of Hysteria." He first spoke of contraction of esophagus causing rejection of the food. Blood was often vomited: this was bright red in character and simulated other affections. Many cases of so-called vicarious menstruation were really hysterical. Hysterical anorexia was common, hysterical patients seemed to be able to live on very little food and often go an incredibly long time with little to eat. They will often attempt to deceive by starving in public and stuffing in private. They suffer greatly with distension of the bowels with gas.

DR. HEMMETER said this paper was read from the standpoint of a neurologist. All the symptoms related seem to come from the nervous system. Certain forms of these troubles are intestinal and are due to auto-intoxication.

DR. PRESTON replied that we can not classify the pathology of neuroses, hence we have to run the gamut of all the specialties. In so many cases we can find no evidence of a pathologic lesion.

DR. SOLOMON SOLIS-COHEN, of Philadelphia, in the evening delivered the annual oration. His subject was "The Path of Progress in Modern Therapeutics." After this the portraits of Dr. Geo. W. Miltenberger and Dr. H. P. C. Wilson were presented to the society with appropriate addresses by Dr. S. C. Chew and Dr. T. A. Ashby.

FOURTH DAY.

DR. JOHN C. HEMMETER then read two papers, one on the "Possibility of Intubation of the Duodenum," and the other on the "Effects of Persistent Intestinal Putrefaction Upon the Kidneys."

DR. JOSEPH T. SMITH then reported several cases showing the importance of a careful Examination of the Urine in Suspected Diseases of the Kidney.

DR. HEMMETER referred to the importance of examining the patient on both sides before any operative treatment on the kidney and referred to a case in which one kidney had been removed and it was found out afterward that it was the only kidney the man had.

DR. E. M. SCHAEFFER then read a paper entitled "The Physical Director of the Second and Nineteenth Centuries," and advocated a wider recourse to the natural therapeutics of the old Greek gymnasia or modern sanitarium.

DR. JOHN G. CLARK then spoke of "The Prevention of Thirst following Operations upon the Abdominal Cavity." Thirst is severe after operations, often as a result of the anesthetic. Many methods have been suggested, some to give water freely several days before the operation. He had tried enemata of salt solution, 0.6 per cent. immediately after the operation. By comparing patients treated in this way with those given no water the former were found to pass a larger amount of water the first three days while the latter the last three days, so that by the seventh day they had passed about the same amount. He finds the routine use of this injection of great use in preventing thirst.

DR. T. A. ASHBY then reported a case of "Accidental Rupture of a Pregnant Uterus: Hysterectomy; Resection of Eight Inches of Intestine: Recovery."

DR. J. W. WILLIAMS then read a paper on "The Frequency of Occurrence of Contracted Pelves in Baltimore," in which he reported the results of the measurement of 100 women. His conclusions from these studies were that the pelves of Baltimore women were much below the normal.

DR. THOS. S. CULLEN read a paper on "Adenomyoma of the Uterus."

DR. W. W. RUSSELL read a paper on "Post-operative Recurrence and Metastasis in Carcinoma of the Uterus."

Other papers were read by title.

Officers for 1896-7: President, Dr. Wm. Osler; First Vice-President, Dr. Wilmer Brinton; Second Vice-President, Dr. Randolph Winslow.

SELECTIONS.

Eucasin, the New Preparation of Casein.—Professor Salkowski of the Patholog. Institute, Berlin, announced a while ago that casein possesses all the nutritive value of albumin, while free from the disadvantages of the albumoses. He has recently been making a series of experiments on dogs with it in the form of a readily soluble powder, the eucasin prepared by Majert and Ebers of Grunau, accompanying a diet of bacon and rice. He found that from 95 to 98.84 per cent. of the nutrients were taken up by the organism, with corresponding increase in weight and general improvement, with no deleterious results. He also experimented with the recently lauded somatose at the same time, but found that only 60.49 per cent. of the nutrients were taken up in this case. The animal also had diarrhea and grew thin on somatose. He put the same animal afterward on the eucasin, when health and spirits revived and the animal gained 410 grams in the two weeks of the experiment. A two days' experiment on a healthy young man also showed a similar large percentage of nutrients retained in the organism. The details of the experiments are given at length in the *Deutsche Med. Woch.*, April 9. Salkowski recommends eucasin therefore to the profession as a most valuable article for nutritive purposes stirred into soups, etc., and especially indicated in arthritic cases or wherever there is an excessive secretion of uric acid, as there is no nuclein in casein as in albuminous substances.

Bacteruria Complicating Gonorrhea. This disorder requires special treatment, and yet it is often neglected, as the symptoms are apt to be misunderstood. It is caused by an invasion of the bladder, urethra or prostate gland by coli bacilli, flourishing in the lesions of the gonorrhea, even after the gonococci have disappeared. The urine has a milky appearance, with a

peculiar odor different from the ammoniac odor of an ordinary cystitis. If the infection is located in the prostate, the disturbance of the urine is intermittent and occurs especially after defecation. If the patient urinates then into three receptacles, the first will contain the traces of gonorrhea, the second may have globules of pus, and the third will be distinctly milky, owing to the coli bacilli forced out by the contraction of the peri-prostatic muscles. Bacteruria is usually accompanied by general symptoms and a special urethral discharge, appearing suddenly, perhaps long after the other discharge has ceased. It resists all the usual gonorrheal remedies, an important point in diagnosing. If the bladder only is involved, a cure will usually follow instillation of nitrate of silver into the bladder, preceded by copious irrigation with boric acid water. If the prostate is affected it must be treated manually through the rectum, the prostatic end of the urethra cauterized and salicylic preparations administered internally. The prognosis in such cases is doubtful, and if there exists any communication between the prostate and the rectum, it is absolutely unfavorable. The bacteruria alone need not prevent matrimony, as there is no record of its transmission in this way.—Schlifka, Vienna, in the *Semaine Médicale*, April 1.

Warm Baths in Diffuse Bronchitis in Children.—Renaut has been treating for ten years those forms of bronchial catarrhal inflammation involving the entire bronchial system except the bronchioles, with systematic warm baths, according to Brandt's method. He has treated over a hundred cases and has not seen a single case develop capillary or fatal symptoms. Whenever the rectal temperature, taken every three hours, reaches or passes 102, he proceeds to put the child in a bath at 101.5, leaving him in the water seven to eight minutes, keeping the head wet with water at the temperature of the room. When the child is over 2 a little champagne or brandy and water is given in the middle of the bath, and he is wiped rapidly with hot towels. The bathing is to lower the fever and prevent the toxic thermogenetic effects, and would be as beneficial for adults if they could be lifted and handled as easily as children. Renaut gives at the same time quinin in suppositories, 15 centigrams of the sulphate, or better still, the hydro-bromid of quinin, morning and evening, under 2 years, increasing with age up to 25 centigrams for a young adult, continuing it several days after the fever has subsided. If called late in the case ipecac may be needed, but Renaut exclaims: "Never a particle of antipyrin or anything of the kind. They may produce a deceptive improvement, but it is merely superficial and weakens the very organs most needed." The only objection to this treatment is the protests of the family, but Renaut refuses to consider this, merely suggesting that the physician superintend the first bath himself.—*Bulletin de l'Académie de Médecine*, March 24.

The Causation of "Schluck-pneumonie."—In the recent discussion before the New York Academy of Medicine on the apparent increase of deaths by pneumonia, in diphtheria, since the introduction of the antitoxin treatment, and the use of the above term was heard by many for the first time. In a recent issue of the *London Lancet*, the etiology of this affection is discussed as follows: "'Schluck-pneumonie' and 'Inhalations-pneumonie' are terms used in Germany to denote that variety of pneumonia which is in most cases brought about either by the inhalation of septic particles originating in disease of the mouth or tongue or by the accidental entrance of foreign matter, such as particles of food, into the air passages. It may also follow surgical operations on the mouth. In Professor Gussenbauer's wards Dr. Kneibich has examined twenty-eight cases, comprising twenty of 'Schluck-pneumonie' and eight of lobular pneumonia, in which the origin by inhalation was not satisfactorily made out. *Diplococcus pneumoniae* (Fraenkel-Weichselbaum) was found in twenty-three cases, and in fourteen of these a typical *diplococcus pneumoniae capsulatus* was present. *Streptococcus pyogenes* was observed in three cases, *staphylococcus pyogenes aureus* in four, *micrococcus pneumoniae* in three, *bacillus pneumoniae* in two, *bacterium coli* in seven, and *sarcina* in one. Broncho-pneumonia, and especially 'Schluck-pneumonie,' are due to the *diplococcus pneumoniae*, but the *bacterium coli* may also give rise to lobular pneumonia in man. After the inhalation of the septic matter the *diplococcus* sets up pneumonia and the bacteria penetrating with the *diplococcus* into the bronchial ramifications, but not into the pulmonary tissue, produce toxins by the continuous irritation of which the exudative inflammation is changed into induration."

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SATURDAY, MAY 16, 1896.

THE ATLANTA MEETING.

There have been few meetings in the history of the ASSOCIATION which have passed off more harmoniously and more pleasantly in all respects than that just concluded at Atlanta. In other columns we publish the minutes of the meeting, from which details of the routine proceedings will be seen, and the papers will be published in full as fast as possible.

The selection of Philadelphia¹ as the place of the next meeting (which was originally suggested by DR. S. C. BUSEY of Washington in a letter to the JOURNAL last year) was made by acclamation. Both the President and first Vice-President were elected without a ballot, and there was no particular friction or trouble in the election of other officers.

We might add in this connection that the record showed it to be about the first time in the history of the ASSOCIATION that the report of the Trustees was received without criticism or adverse comment, and it may be said truthfully that unity prevailed on nearly all questions, except the perennial one of change of Secretary.

The places of meeting provided for the Sections, at Atlanta, were ample and easy of access, and the papers read at the meeting (as may be seen by the program) were of exceptionally high order.

The election of PROFESSOR SENN to the Presidency, was a proper recognition of his scientific attainments and great contributions to surgery; while that of GENERAL STERNBERG to the position of Vice-President, was in the same way a testimonial to his vast erudition and scientific ability, and those selected to give the annual orations—FLINT, KEEN and COCHRANE—are respectively at the very head of the branches on which the address will be delivered.

Socially, the Southern hospitality which is always conspicuous at these gatherings, made itself felt in such a way as to make every delegate feel at home. The visit to the charming home of the THOMPSONS at Brookwood, the Georgia barbecue, and the receptions at the houses of DRs. CALHOUN, RIDLEY and TODD, are occasions to be long remembered. Indeed, if there is any criticism it is that DR. WESTMORELAND and the committee of arrangements and citizens did too much to make the visit of the members agreeable and pleasant.

Truly, the forty-seventh annual meeting of the ASSOCIATION should be marked with a white stone, as one of its *Dies Memorabiles*.

¹The origin of the ASSOCIATION is as follows: The New York State Medical Society, in February 1846, appointed 16 delegates to attend the proposed convention and accepted the invitation of the Faculty of the New York University to hold the convention in their college. The convention met in New York, May 5, 1846 with 119 delegates present. The convention then resolved to institute a National Medical Association, which was held in Philadelphia in May 1847. A constitution was adopted and the name AMERICAN MEDICAL ASSOCIATION chosen. N. S. DAVIS, now of Chicago, then of New York, is the originator of the plan.

VITALITY.

The question of a vital force is an old one that up to within a few years back was considered by the average follower of the physiologic leaders as one that was unworthy of serious scientific discussion. It was largely the fashion to treat all vital phenomena as manifestations of what must be some form of chemic or physical action, mainly, it would appear, on the assumption that it could not possibly be anything else. It was often confidently claimed that physics and chemistry would yet reveal all the secrets of vitality, and that to acknowledge anything special and mysterious, such as an unknown and possibly unknowable vital force or principle, was unscientific and reactionary. Within the last ten or twelve years, however, there has been a rather marked change in the general trend of views on this subject, as has been pointed out by DR. MCKENDRICK, and vital processes are recognized as supplementing chemic ones. This movement is at present led by some of the ablest of physiologists and physicists, and LUDWIG and HELMHOLTZ, who with others were largely responsible for the common rejection of the "vitalismus" doctrine, lived themselves long enough to see the reaction from the tendencies of which they were, in a sense at least, to some degree the originators.

At the present time biologists are actively speculating upon the properties of matter which are due to what we call vitality. They recognize this last as a fact, but can only offer theories to explain some of its workings; its peculiar essence is beyond their comprehension and may always remain so. Why matter at one moment should possess a certain something which we call life, which endues it with properties

and capacities that are clearly above and to some extent subversive of chemie and physical laws, and then at another moment, without manifest change in composition, be deprived of these endowments, is and possibly always will be a mystery.

The assumption, however, of a special vital "force" is uncalled for, unless we are to understand by the term force something differing from everything else to which the word is applied. Vitality is not convertible itself into motion or correlated with any of the physical forces, mechanic, chemie, thermic or electric, but overrides and controls them in what we know as living as distinguished from dead matter: no chemie or physical laws can account for the processes in the simplest living cells, much less the possibilities of heredity in the spermatozoön or the ovum. We can perhaps speak, as does MINOT in the latest issue of the *North American Review*, of a "special vital power which is not necessarily identical with any form of physical energy, though it may be conceived to cause the transformation of energy," but that is an entirely different thing from calling it a force in the legitimate signification of the term. It would be better to adopt the name "vital principle," which was a favorite term of the late PROF. JOSEPH HENRY, one of the most prominent physiicists of his time, thoroughly competent to give the limitations of the term force as properly understood, and also a believer in the reality of the distinction of vital from physical and chemie processes. The term certainly better expresses the relations as they exist and leaves us sufficiently uncommitted and free to accept any future, more positive knowledge that can be gained. It is at all events safer and less presumptuous to admit that there is a vast field that remains beyond our ken and power of comprehension in the commonest physiologic processes, than it is to attempt to extend the known laws of matter into and over the unknown and possibly the unknowable. And with the apparent present tendencies of physiologic thought, it would seem possible that those who still make such assumptions will be soon considered as decidedly behind the times.

TREATMENT OF GOITRE BY THYROID EXTRACT.

An important paper was recently read before the Berlin Medical Society by DR. STABEL on the above treatment in eighty-three cases. As reported in the *Medical Press and Circular* the writer stated that these cases were treated partly by fresh glands and partly by tablets from the Dresden Hofapotheke. Of the cases treated by the fresh glands, only twenty-five were brought forward, as only those cases that remained four weeks under treatment were made use of in the paper. For determining the size of goitre a measurement was made at the level of the vertebra prominens. The dangerous symptoms attributable to thyroid feeding were due to decomposition of the

gland. Although the glands were employed fresh, in the warm weather changes set in very rapidly, and sometimes gastric disturbances were produced; these symptoms did not come on when a better means of preservation was adopted. BAUMANN had succeeded in isolating the active part of the thyroid substance, had found it associated with iodine, and given it the name of thyroïdin. In all the twenty-five cases of feeding with fresh substance a positive result was obtained, but in almost all of them it was to the extent of considerable improvement. A cure or total disappearance of the goitre was only obtained in four cases. Two cases only could be considered as permanently cured: 8 per cent. of the cases, therefore, were cured, and 92 per cent. improved. The cases considered to be cured had remained well nine months. The amount of diminution in size brought about by treatment was not kept up after the treatment was stopped, but a gradual enlargement again took place.

A slight acceleration of the pulse was almost constant. In struma it was never necessary to stop the treatment on account of the increased pulse rate. Dangerous symptoms were never observed. In slighter cases, especially in young girls, a slight loss of weight was observed. A large number of cases were treated by tabloids when feeding with fresh substance was stopped, and in these the struma never increased in size in consequence of the change. In many a slow diminution took place. The results of the treatment by the Dresden tabloids were not so good as when the fresh extract was employed, the reason being that so large an amount could be given without threatening symptoms supervening. Three tabloids was the maximum dose given, in seven days, therefore, only three grams of the active substance could be given, whilst with the fresh substance five times as much could be given. The tabloids, in addition to being less active, had a much more unfavorable influence on the heart. The medicine had to be interrupted on account of increased cardiac activity caused by them. Especially in chlorotic and neurasthenic girls threatening symptoms supervened: acute dilatation of the heart was never observed under these circumstances. If the heart's action was once accelerated, this effect was kept up for weeks together. The tablets ought not to be articles of trade; cases were increasing in which they had a disastrous effect. A man aged 50, who was taking them for obesity, was suddenly attacked with a psychosis with a delusion of persecution, and died in a few days with cerebral edema.

The assumption appeared justified in this case that intoxication has been produced by the tablets, and the more so, as the speaker had observed three similar cases where delusions of persecution had also occurred. He added also three cases of morbus Basedowii treated as out-patients. Two soon ceased attending, as the nervous symptoms grew rapidly worse. In one patient vomiting came on and lasted a week, with great prostration and the symptoms returned three months later, when the treatment was recommenced. The second patient attended MIKULICZ'S klinik, where she was given thymus extract to loss of consciousness and maniacal attacks, and in this condition was brought back to Berlin. The third patient was treated with large doses for three months—three to four grams daily. No change had been observed, however, although a subjective improvement took place. Seven cases of morbus Basedowii had been treated with tablets, but even with large doses no other result had been obtained than an accelerated pulse up to 116 and upward. In the older cases with exophthalmus the nervous symptoms got rather worse than

better, and the ocular symptom was not affected. The treatment was directly contraindicated in Basedow's disease on account of the effect on the heart. In one case of vascular goitre with edema, swollen pendulous lips, etc., considerable improvement took place. The goitre became smaller, and no souffle could any longer be heard. In fourteen days she looked quite different, the face had become quite youthful, she felt quite well and could work hard. Subjectively she was quite contented and the struma had quite disappeared. One hundred and forty days after the treatment was stopped she returned on increasing size of the neck. Rapid effect was produced by thirty tablets daily, but the symptoms returned when the medicine was left off.

In the discussion of this subject continued to a subsequent meeting of the society, some more favorable results were reported, one of which was a patient of DR. SILEY. This patient was first treated in SENATOR's clinic with arsenic, but without result. The patient got worse from week to week although she was sent away into the country. On coming home again she showed all the symptoms of the disease, GRAEFE's sign, exophthalmus, trembling of the hands, and she could only drag herself up the steps with difficulty. A lady made her a present of three boxes of German thyroïdin tablets, of which she took six tablets a day. Although attending the polyclinic occasionally, she continued taking the tablets on her own responsibility, and at the present time, after about four months of the treatment, she could be pronounced nearly well. The circumference of the neck was reduced from 35 to 33 cm., the cardiac murmur had disappeared, and scarcely any trembling remained. It had to be looked for carefully before it could be noticed. The subjective condition was good.

DR. EWALD remarked that DR. SILEY's experience did not stand alone. A number of such cases had been described, especially in English literature. The majority of the observations were, however, unfavorable. He himself had seen no good results. In his case related at the last meeting the symptoms returned in an exaggerated form, and the thyroïdin was no longer of any use.

THE RESPONSIBILITY OF SEXUAL PERVERTS.

The question of responsibility of sexual perverts has been raised in our courts on various occasions within the past few years and has figured in several rather notable cases. That of ALICE MITCHELL, a few years ago, and the more recent one of GUY OLMSTED in Chicago, which has been written up by HAVELOCK ELLIS and TALBOT in the *English Journal of Mental Science*, are instances. When such a case is for any reason, the circumstances of the crime, the social position of the offenders, etc., prominently brought before the public attention, the question of insanity is likely to be raised, and it is a matter of some importance that prejudice and misinformation should not cloud the judgment and work against the interests of justice and the public welfare. With the

partial enlightenment, the little dangerous knowledge that leaks into the minds of the laity from the modern publications on the subject—there is altogether too much opportunity for the spread of misleading ideas.

No alienist will deny that sexual perversion may be entirely pathologic, and that it may entail a greater or less degree of irresponsibility for the aberrant and criminal acts it induces. To extend this however to all these acts or to create a presumption of irresponsibility from the acts themselves is carrying the theory altogether too far into practice and is liable to pervert justice and tend to a demoralization of public opinion. Even with those morbidly constituted individuals who are originally or congenitally aberrant in their sexual impulses, provided intellect, will and ability to recognize moral distinctions exist, there is no need of admitting entire irresponsibility. They are unfortunates to a certain extent, but there is no legal or moral reason why they should be permitted to indulge with impunity in acts that are contrary to good morals and that the public conscience condemns. Even when they are proven to possess the evidences of physical degeneracy, or even a family history of abnormal tendencies or insanity it does not necessarily follow that they themselves are absolute victims of their morbid constitution or heredity, though these facts when sufficiently pronounced may sometimes raise a reasonable doubt in favor of their irresponsibility. There is no normal appetite, however, that is more readily perverted than the sexual one, and the necessary organization of society and the restrictions placed upon its normal gratification are themselves often the cause of its abnormal tendencies with a certain proportion of those who indulge in them. Vicious education and associations are also responsible for a proportion, and abnormal sexual gratifications are the last resource of exhausted debauchees for whom the normal indulgence has lost all its satisfaction. According to JEANNEL, and others who have investigated the matter, they are almost invariably practiced by prostitutes, who belong more properly to the criminal than to the degenerate class in any normal social classification. In certain ancient civilizations and many modern barbarous peoples they have been or are customary and not considered reprehensible, and there is no good reason why their occurrence should be among us reckoned as a *prima facie* evidence of mental abnormality and consequent irresponsibility, as seems to be sometimes the tendency. It is carrying theory a little too far to assume the fact of the commission of a certain class of crimes, as evidence in itself of criminal incapacity and irresponsibility. With this as with other criminal acts for which irresponsibility is plead, each case must stand for itself and all the evidence of morbidity must be considered; previous record and character, associations, habits, as well as the family history and the mental and physical stigmata of degeneracy. Sexual

perversion may be a symptom of senile dementia, or of congenital or acquired mental weakness, but it often is only an indication of prolonged vicious habits and associations.

There is another aspect of the case that has been treated of in a recent article by DR. ALLEN McLANE HAMILTON (*Am. Journal of Insanity*, April, 1896) viz., the civil responsibility of sexual perverts. He shows how, in certain cases, homosexual attachments may lead to serious property complications, or to blackmailing operations of a peculiar kind. There are many instances of these and he reports some striking ones. Civil and criminal responsibility are not altogether equivalent and one may exist where the other is absent or impaired. The question of undue influence over a weak or defective individual is an important one as is also that of blackmail, and the morbid attachments that are free from actual sexual crime may yet figure in the courts in this connection.

The division of sexual perverts by DR. HAMILTON into three classes seems to be a correct one. He recognizes, first, those in whom the condition is connected with or a result of insanity, where loss of power of restraint exists, with consequent irresponsibility; second, those in whom it is simply a vice, and who are responsible, and third, those with whom it is the result of a more or less defective or erratic organization, but whose responsibility is a question that must be decided, as to its existence and degree, in each individual case. The first and second of these two classes are legally recognized and each is apt to be over-estimated according to the predilections and point of view. The last is too generally legally ignored or unrecognized although it probably forms a not inconsiderable proportion of the whole of this type of offenders against law and morality. And entirely apart from the criminal side of the question, there is much force in DR. HAMILTON'S view that homosexual attachments carried to the point that some of them are, afford a strong presumption of a state of affairs that "greatly militates against the proper exercise of free disposing and contracting power," and should, in the interest of families and heirs, be legally broken up, even if commitment to some restraining establishment is necessary for the purpose.

VIVISECTION IN CONGRESS.

Notwithstanding the protest of the AMERICAN MEDICAL ASSOCIATION and numerous other medical and scientific societies, the Committee on the District of Columbia has reported a bill to restrict vivisection in the District of Columbia. SENATOR GALLINGER (homeopathist) of New Hampshire, who has charge of this matter is on record in favor of absolute prohibition and will probably push it to a final consideration. The time has come, therefore, for the profession throughout the country to awaken to the gravity

of the occasion. It must act and act speedily. No one should delay for a single day to file his individual protest with the Senators and Representatives from his own State.

In our minutes of the ASSOCIATION meeting the resolutions of the ASSOCIATION will be found, clearly setting forth the opinion of the great representative body on this subject.

ASSOCIATION NEWS.

AMERICAN MEDICAL ASSOCIATION.

OFFICIAL REPORT OF THE PROCEEDINGS IN GENERAL SESSION, OF THE FORTY-SEVENTH ANNUAL MEETING, HELD IN ATLANTA, GA., MAY 5, 6, 7 AND 8, 1896.

MAY 5—FIRST GENERAL SESSION.

The Association met in the Grand Opera House, and was called to order by the President, DR. R. BEVERLY COLE, of California, at 10 A.M.

He was supported by Vice-Presidents, DRs. J. C. LEGRANDE, Alabama; A. P. CLARKE, Massachusetts; T. P. SATTERWAITE, Kentucky. The permanent Secretary, DR. WM. B. ATKINSON, Pennsylvania; Assistant Secretary, J. MCFADDEN GASTON, Jr., Georgia, and the Treasurer, HENRY P. NEWMAN, Illinois, were present.

Prayer was offered by the Rev. Dr. F. McDonald.

DR. FRANK M. RIDLEY, of LaGrange, Ga., delivered an Address of Welcome on behalf of the medical profession, and the Hon. John Temple Graves one on behalf of the Governor and the people of Georgia.

The Chairman of the Committee of Arrangements, Dr. Willis F. Westmoreland, of Atlanta, then announced the invitations and entertainments that would take place from time to time during the meeting. He also offered the official program of the meeting and its sections as the report of the Committee.

The President then delivered the Annual Address, which was punctuated with applause throughout its delivery. (See JOURNAL, page 889.)

The permanent Secretary announced the presence of Professor J. P. Remington, and Mr. F. W. E. Stedam, of Philadelphia, as delegates from the American Pharmaceutical Association, and, on motion, they were accorded the privileges of the floor.

DR. H. A. HARE, of Philadelphia, Chairman of the Committee on Business, asked that the several sections appoint temporary members to represent them in that Committee in the absence of the regular members.

By request of Dr. I. S. Stone, of Washington, D. C., the permanent Secretary read preamble and resolutions adopted by the Medical Association of the District of Columbia relative to a bill before Congress to prevent the practice of vivisection in the District, and, on motion, the President appointed a Committee of five to consider the communication and report on Wednesday.

The President appointed on this Committee Drs. N. Senn, of Illinois; J. McFadden Gaston, Sr., Georgia; Wm. Osler, Maryland; Geo. M. Gould, Pennsylvania; and Roswell Park, New York.

DR. H. O. MARCY, of Boston, moved that Thursday afternoon be devoted to the carrying out of the program of the Jenner Memorial Committee.

The President having invited Dr. Marcy to talk from the platform, Dr. C. A. L. Reed, of Cincinnati, rose to a point of order that the rules did not allow speeches from the platform.

PRESIDENT COLE decided this out of order, saying it was his prerogative to invite a speaker to the platform.

After some discussion, Dr. Westmoreland rose to a point of order, saying that this (Dr. Marcy's) motion was not in order as it had been arranged for.

The President decided it in order.

After further discussion, on motion of Dr. C. H. Hughes, of St. Louis, it was agreed that the Jenner program should be pursued on Thursday morning after the regular order of business.

The Chairman of the Committee of Arrangements presented a number of members by invitation, who were then elected.

DR. C. A. L. REED, of Cincinnati, offered the following:

Resolved, That the Committee on Nominations be and is hereby instructed to report to the general session on Thursday a list of delegates

to represent the American Medical Association at the Second Pan-American Medical Congress, to be held in the City of Mexico, Nov. 16, 17, 18 and 19, 1896, providing that the delegates thus chosen from any State or Territory shall not exceed in number the ratio of 1 to 10 of the members of the American Medical Association resident in such State or Territory.

Resolved, That the Secretary be and is hereby authorized to supplement such nominations within the numerical limit above specified, with appointments of members of this Association in good standing who may indicate an intention to attend the meeting in Mexico and who may apply for such credentials.

On motion, the resolutions were adopted.

DR. JOHN B. ROBERTS, Chairman of the Delegation from the Philadelphia Medical Society presented the following:

At a meeting of the Philadelphia County Medical Society, held April 15, the following preamble and resolutions were adopted:

WHEREAS, The American Medical Association completed its organization and commenced its actual existence in the city of Philadelphia during the first week of May, 1847;

Resolved, That a Committee be appointed by the Chair to publicly urge that the Association celebrate in 1897 its Fiftieth Annual Meeting with ceremonies appropriate to its long and successful career;

Resolved, That the delegates of the Philadelphia County Medical Society to the meeting of the American Medical Association at Atlanta be instructed to extend to the Association a cordial invitation to hold its semi-centennial meeting in Philadelphia, the city of its birth.

T. B. SCHNEIDEMAN, Secretary.

On motion of DR. REED, the resolutions were referred to the Committee on Nominations.

DR. I. N. LOVE, of St. Louis, alluded to the absence of a motion made by him to amend the Constitution to elect the Secretary annually, saying that it did not appear on the printed program, and asked that it be put on the list of amendments.

The President decided that this matter must be brought up at the proper time for consideration of amendments.

On motion of DR. HENRY HOLTON, of Vermont, the President was requested to appoint a committee of five to consider the recommendations in the Presidential Address.

Seconded by DR. BISHOP and carried.

DR. H. A. HARE, of Philadelphia, urged that the Committee on Nominations make its report before Friday, but the President thought it impolitic to fix the time.

DR. HARE then moved that the Committee be asked to report on Thursday. Seconded.

DR. JOHN B. HAMILTON, of Chicago, moved as a substitute that the Committee on Nominations report as soon as practicable as to the place of meeting.

Seconded and adopted.

The President after having announced that the various delegations would meet to select their members to represent them on the Committee on Nominations immediately after adjournment, the Association, on motion, then adjourned.

MAY 6—SECOND GENERAL SESSION.

PRESIDENT COLE called the Association to order at 10 A. M., after which the permanent Secretary read the list of the Nominating Committee.

The Minutes were about to be read when, on motion, further reading of them was dispensed with.

DR. E. D. FERGUSON, of Troy, N. Y., moved that the Nominating Committee meet at 9 P. M. to-day.

DR. WESTMORELAND announced that the Committee could meet at Lithia Springs this afternoon. This was accepted by Dr. Ferguson and the motion was then adopted.

On motion of Dr. Westmoreland it was agreed that the Association should adjourn at noon.

The permanent Secretary read an invitation from the Louisiana State Medical Society for the members to meet the Society at New Orleans.

On motion, the invitation was accepted.

The permanent Secretary read a number of other announcements from the Committee of Arrangements.

VICE-PRESIDENT DR. J. C. LE GRAND, of Alabama, took the Chair. He appointed as the Committee on the President's Address, Drs. Nicholas Senn, of Illinois; A. Garcelon, of Maine; Joseph Taber Johnson, of Washington, D. C.; E. S. Lewis, of New Orleans, and Dudley S. Reynolds, of Kentucky.

DR. J. COCHRAN, of Alabama—If it is in order, I desire to make a motion. I am, as you doubtless know, Mr. President, Chairman of the Committee on National Department of Public Health. This Committee has only three or four members in attendance here, and as the Committee is a small one and its work very important, I am instructed to ask that the Committee be increased so as to include one member from each State, and I make that motion.

Seconded and carried.

DR. COCHRAN was directed to appoint as many members as might be needed.

The Committee on Business presented, through Dr. E. F. Ingals, a resolution from the last meeting urging the publica-

tion of the program in future at least two weeks before the meeting.

On motion, this was adopted.

DR. I. N. LOVE—I rise, sir, for information. Last year—and I trust it is not necessary for me to make an explanation—the Nominating Committee at Baltimore in the list of officers reported a new Secretary, after careful discussion and consideration. When the report was brought before this Association, an exception was taken to that part of the report, and the point was raised that the Constitution precluded any change in the Secretaryship. I think the ruling at that time paralyzed everybody, consequently a proper consideration was not given to the question. I know it paralyzed me, and I do not easily paralyze. (Laughter). In the main, the impression was that this Association could not elect a new Secretary when it desired, which was a surprise to me. And, Mr. President, I now call for the reading of the section of the Constitution pertaining to the office of Permanent Secretary.

The Permanent Secretary read the portion of the Constitution pertaining to his office.

DR. LOVE—That covers the point. That is what I wished to elicit. I would like to know, if possible, when that part of the Constitution was adopted. Was it in the original Constitution, as adopted?

THE PRESIDENT—It was not, sir, but it was amended some years ago. I have forgotten the date.

THE SECRETARY—It was adopted in 1864 at a meeting held in New York City.

DR. LOVE—At the meeting of this Association at Baltimore, following the action of the Nominating Committee, an amendment to the Constitution was presented, which provided that this Association be permitted to elect its Secretary annually. This amendment was received and passed as having been read. There was no ruling to the contrary. It does not appear upon the printed program with the other amendments that were offered at Baltimore, and I would call at this stage for the reading of the minutes of the Baltimore meeting.

THE PRESIDENT—Are you willing to suspend this question for a little while, until Dr. Osler has delivered his address?

DR. LOVE—With the greatest of pleasure, sir. It is not my desire to bring this matter up at all.

DR. ELLIS—I move that the amendment to which Dr. Love refers be made the special order after the reading of Dr. Osler's Address.

Seconded and carried.

THE PRESIDENT—We will now listen to Dr. Osler's Address.

DR. WM. OSLER, of Baltimore then delivered the Address in Medicine, entitled, "A Study of the Fevers of the South."

DR. HOLTON—I move, sir, that the thanks of the Association be tendered to Dr. Osler for his able and interesting paper, and that it be referred to the committee on publication.

Seconded and carried.

THE PRESIDENT—The question before us for consideration now is the matter of the amendment referred to by Dr. Love previous to the delivery of Dr. Osler's Address.

DR. LOVE—Mr. President, it is antagonistic to my personal wishes to bring this matter before the Association, but I do so at the request of many of the members. In my previous remarks I made the point that an amendment to the Constitution was presented in regular form last year at Baltimore providing for the election of a Secretary annually. Said amendment does not appear upon the printed program under the head of "Amendments Offered." I desire to present a copy of it and to have the Association vote on it, if they desire to do so, or have it considered as coming up for a second reading.

ARTICLE IV. OFFICERS.

Second paragraph reads as follows: "Each officer, except the Permanent Secretary, shall hold his appointment for one year, and until another is elected to succeed him. The Permanent Secretary shall hold his appointment until removed by death, resignation, or a vote of two-thirds of the members present at a regular annual meeting."

DR. LOVE—My motion is that each officer shall hold his appointment for one year, and until another is elected to succeed him. I want this to be considered a second reading, and that it be taken up in proper form to-morrow morning at 10 A.M. Seconded.

DR. E. D. FERGUSON—I notice that our ex-President, Dr. Maclean, is on the stage, and I would like to ask him as to what his recollection was as to the disposition of this amendment last year—what his ruling upon it was at the time.

DR. DONALD MACLEAN—At the conclusion of the meeting last year I laid down with a great deal of satisfaction, gratitude and feeling of relief all the honors and responsibility of the high position to which you elected me. I now decline to

re-assume those honors and responsibilities. (Applause.) More than that, I wish to avoid everything that would bring about acrimonious debate on this occasion. I want to have continued the reign of peace the foundations of which were laid for us on the beautiful shores of the Pacific Ocean at San Francisco, and in the hope of accomplishing that object I now suggest that Dr. Love's motion be put to the meeting and let the Association decide what it will do. I do not wish to go back and assume responsibility. I do not think it is fair to ask me to put myself in that position now after having been so completely relieved of it. Therefore, I think the best solution that can be made of this question is to let the Association decide for itself whether this is the first or the second reading of that resolution.

DR. I. N. QUIMBY—As this is an important subject and there is doubt about it, I move that the whole subject be laid upon the table for another year. Seconded and carried.

There were ninety in favor of tabling Dr. Love's motion, and sixty-eight against it.

DR. H. B. ELLIS inquired why his amendment was not on the list.

The Secretary attempted to read the amendment, but Dr. John B. Roberts, of Philadelphia, objecting, it was not done.

DR. C. H. HUGHES, of St. Louis, asked for the reading of the minutes of the last day in 1895.

The Secretary attempted to do this, but owing to objection was compelled to desist.

DR. W. T. BISHOP, of Pennsylvania, moved that the reading of the minutes be continued, when a motion was made to adjourn, and the President declared the Association adjourned.

MAY 7—THIRD GENERAL SESSION.

The Association was called to order by the President at 9:30 A.M.

The Permanent Secretary read the minutes of the preceding Session, which were approved as read.

DR. ELLIS—I move that the Secretary read the minutes of the last day's session at Baltimore. Seconded.

THE PRESIDENT—The Secretary was engaged in the act of reading the minutes of this session when a motion was made to adjourn, and therefore it will be a continuation of the last session or we will have to begin *de novo*.

DR. ELLIS—The point is raised as to whether the minutes as they occur in the transactions of the American Medical Association JOURNAL are official or not.

THE PRESIDENT—If I were to express an opinion upon this subject, I should decide that they are not the official minutes. I am of the conviction that the only official minutes must be kept in a book of record, and from that book only can they be considered official, unless there is a law, of which I have no knowledge, that the reporter of the JOURNAL is an officer, or that his record is considered as official and legal. Of this matter I am not well informed.

DR. DONALD MACLEAN—It seems to me, Mr. President, that the objection to reading the minutes from the JOURNAL of the American Medical Association last year is of a rather hair-splitting nature. To expect the Secretary to produce here at any moment the written records of this Association from its inauguration to the present time, is to expect an absolute impossibility. It is the business of this Association to either confirm or reject its minutes day by day. When the minutes are adopted by the Association they are recorded in the published transactions or the JOURNAL, and if anyone wants to know at any meeting what was done with regard to a certain motion brought before this body, all he has to do is to go to his library shelves and consult the published volumes. This was done until the proceedings were published in the JOURNAL of the American Medical Association. Do you want to have produced here the stenographic report of the meeting or do you want to accept the report as published in the JOURNAL where you can read and understand it? It seems to me to make any objection on this score is unfair and is, to say the least, of a hair-splitting nature, and is hardly worthy of this Association.

THE PRESIDENT—The motion is on the reading of the minutes.

DR. DUFF, of Pittsburg—Is not the JOURNAL of the American Medical Association the official organ of this body?

THE PRESIDENT—It is unquestionably, but whether or not these reports are official is a nice question, and one that has never before been presented before to my mind. There are so many possibilities of errors creeping into the minutes that it would seem to be a very nice point when we come to consider it as an exact official record, and we would have to take the written record in the book of records. But if the Association recognizes the JOURNAL as its official organ, and that any reports appearing therein the Association is responsible for, it is another matter altogether. If you insist upon an actual

positive evidence of the original minutes, you have got to take it from the book of records.

DR. L. S. MCMURTRY, of Louisville—I do not wish to participate in any of the personal bearings of this subject. The gentleman from California (Dr. Ellis) desires to have stated to the Association the reason why an amendment that he had offered has not been presented in due form. We do not know what the amendment is. Objection was made to its reading. It seems to me the gentleman from California has a right to know something about what has become of his amendment inasmuch as it did not receive recognition upon the Secretary's minutes, and to which any member of this Association is entitled. There is no way to revise the minutes of the last day's session, unless it is done at the succeeding session. If a man is a member of an organization and presents a resolution, it makes no difference what it is, he ought to receive the customary recognition which is due him in all parliamentary bodies from the Secretary. (Applause.)

DR. W. T. BISHOP—All amendments to the Constitution must be specific, and the points clearly stated. If we admit that Dr. Ellis' motion was a part of the minutes, we would be correcting the minutes. To prevent any further confusion, I move that the question of minutes be laid upon the table, and that the JOURNAL report be regarded as the official minutes, provided they have not been corrected.

Seconded and carried.

DR. W. T. BISHOP—I now move that the minutes of all previous meetings as published in the JOURNAL be adopted as the official record. Carried.

THE SECRETARY—I rise to a question of personal privilege. I would like this Association to know how I keep my minutes. I will detain you but a short time. I write out my minutes every evening before I retire, and the editor of the JOURNAL publishes the minutes direct from my copy. If it is necessary, in the future, I will have these minutes open for inspection and recorded in a large book, but I do not think it is essential because such a book would be too cumbersome to carry around from place to place.

DR. GEORGE H. ROHÉ—I would ask whether the minutes of this session have been read?

THE PRESIDENT—Yes, sir; and approved.

DR. ROHÉ—I am glad to hear it.

DR. E. E. MONTGOMERY—I wish to make the point that the minutes to which Dr. Rohé refers have not been read. They are the minutes of the last day's session at Baltimore.

THE PRESIDENT—Dr. Montgomery is in error. Dr. Rohé asked if the minutes of yesterday's session had been read, and the Chair replied that they had been, and approved.

DR. ROHÉ—That was not what I intended to convey; I had reference to the minutes of the last day's session of the meeting at Baltimore.

THE PRESIDENT—You did not so express yourself. (Laughter.)

DR. ROHÉ—I would like to know whether this Association is willing to go on from year to year having its minutes published in the JOURNAL with no opportunity of making any corrections. The secretaries of all associations occasionally make mistakes. I think probably the members of this Association sometimes commit errors. I made one this morning myself. (Laughter.) But I acknowledged it. Most secretaries usually acknowledge when they make mistakes, but in this case no such acknowledgement has been made to my knowledge.

DR. HIBBERD, of Indiana—It seems to me, Mr. President, we are wasting a good deal of time, and I do not think there is any motion before the house.

THE PRESIDENT—No sir, not at this time, and we must proceed with the business of the Association.

The report of the Board of Trustees was then read by Dr. E. E. Montgomery of Philadelphia, as follows:

ANNUAL REPORT OF THE BOARD OF TRUSTEES FOR THE EIGHT MONTHS ENDING DEC. 31, 1895.

Gentlemen: The Trustees beg leave to present the following report for eight months ending Dec. 31, 1895.

This report covers but eight months owing to the change of the fiscal year:

	RECEIPTS.	
On hand May 1, 1895,	- - - - -	\$ 123.96
Bank collections,	- - - - -	1,047.42
Advertisements,	- - - - -	10,307.67
Office subscriptions,	- - - - -	1,280.31
Reprints,	- - - - -	1,328.01
Sales and presswork,	- - - - -	1,059.65
Total,	- - - - -	\$15,147.02
Treasurer,	- - - - -	9,459.93
		\$24,606.95

DISBURSEMENTS.

Deposited with Treasurer, -	\$ 557.00
Pay-roll (mechanical department) -	8,177.94
Paper, - - - - -	3,988.61
Rent, - - - - -	1,000.00
Office salaries, - - - - -	3,790.00
Editorial account, - - - - -	1,915.89
Postage, - - - - -	1,020.51
Reporting, - - - - -	402.40
Binding, - - - - -	184.00
Commission, - - - - -	638.85
Express, - - - - -	23.75
Miscellaneous (insurance, taxes, light- ing, etc.) - - - - -	1,624.17
Engraving, - - - - -	274.79
	<hr/> \$23,597.91
Balance on hand, - - - - -	\$1,009.04
Treasurer had a balance Dec. 31, 1895, of -	9,075.94
Making a total balance of - - - - -	<hr/> \$10,084.98

We feel confident you will agree with us that this is a most excellent showing, when we consider the financial condition of the country and the radical change in the policy of the JOURNAL instituted at the last meeting. A careful analysis has demonstrated that this policy has reduced the amount which would have been received from advertisements something over three thousand dollars, but we are gratified to report that the measures to secure new members which have been instituted by the trustees, and so ably carried out by the JOURNAL editor, have more than made up this deficiency. The members of the ASSOCIATION, May 26, 1894, numbered 4,032; May 1, 1896, 4,989. The regular issue of the JOURNAL at the former date was 4,876, at the present 6,548, making a gain in membership in two years of 950 and requiring an increased issue of 1,672. At present there is due the JOURNAL from subscribers \$1,400; from advertisers \$2,400.69. Since the first of the year the JOURNAL office has been moved to the Occidental building at 61 Market Street, an excellent fire-proof building, where it occupies commodious quarters upon the third floor. The previous quarters were dark, did not afford sufficient space for the work, and the property was constantly subject to danger of loss from fire. The present quarters entail an increase in cost for power of nearly sixty dollars per month. A careful study of the situation caused the trustees to feel that this change was a wise as well as a necessary one. Since the beginning of the year it has been necessary to procure an electric motor at a cost of \$350, new type at \$900, and a folder has been ordered which will cost \$1,200. The trustees have under consideration an increase in size of the JOURNAL some eight pages which will permit a review of the American medical literature, as is now done of foreign material, and other important improvements which will add to its value. The trustees feel that it will not be amiss to direct the attention of your body to the fact that all the printing and stationery for the ASSOCIATION is now furnished through the JOURNAL office. The expenses of the 1893 meeting were \$1,526.85; 1894, \$2,134.91; 1895, \$981.85; the greater part of this large reduction in expenses has been due to the changed policy and the more careful supervision of the disbursements.

The improved outlook, the increasing revenue and the lessening need for equipment renders it desirable that steps should be taken to secure permanent quarters. With this object in view, the Trustees would respectfully request that permission be granted them to establish a Building Fund, into which should be paid such portion of the surplus at the end of each fiscal year as may be deemed by the Trustees wise and expedient. Such sums to be invested until a sufficient amount has been secured to enable them to procure suitable property.

We would suggest that members of the ASSOCIATION who have been upon the list for forty years and over should be entitled to be made life members and receive the JOURNAL free of cost.

The Board has to place on record in this report, their appreciation of the valuable service of their late colleague, Dr. James E. Reeves, and their deep regret at his untimely death.

In conclusion, the Trustees would express their appreciation of the untiring efforts of the Editor and the JOURNAL employes to advance its interests.

Respectfully submitted,

A. GARCELON, President,	JOS. EASTMAN,
E. E. MONTGOMERY,	J. T. PRIESTLEY,
E. F. INGALS,	D. W. GRAHAM,
J. E. WOODBRIDGE,	I. N. LOVE,

THE PRESIDENT—You have heard the report of the Board of Trustees. What disposition will you make of it?

DR. I. N. QUIMBY—I move that it be adopted. Seconded and carried.

As the report proposed to have life members, Dr. J. T. Roberts, of Pennsylvania, asked if this could be adopted unless the Constitution was amended.

THE PRESIDENT—The Association has just voted upon the report and adopted it.

DR. ROBERTS then appealed from the decision of the Chair.

DR. D. W. GRAHAM, of Chicago, having explained the matter to the satisfaction of the Association, Dr. Roberts withdrew his appeal.

DR. DONALD MACLEAN, of Detroit—I have a brief resolution to present. It will take only a few moments to read it, but I think it requires a little explanation. I have attended the meetings of the Association for a great many years, and no man in it takes a deeper or more heartfelt interest in its welfare than I do, and it is therefore on that account that I venture to present a resolution, and in presenting it no thought of reflection or of censure is intended in any direction whatever. There never has been a meeting of this Association during which we were not greeted with the utmost cordiality and hospitality wherever we have met. If there has been any complaint it has been, that we have enjoyed too much hospitality, and arrangements have always been made with the utmost regard for the feelings of the members and the interests of the Association, and what I have just said applies to this beautiful city of Atlanta, as much as to any others where we have met. I am sure there is not a single member of the Association who will not return to his home with his heart laden with feelings of gratitude for the people and profession of this city. Having said this much, I will now present my resolution and allow it to take its course, meeting whatever fate the gentlemen of the Association may accord to it.

DR. MACLEAN's resolution is as follows:

Resolved, That it is the sense of this meeting that in future the Committee of Arrangements of the place of meeting shall be expected to avoid all entertainments and excursions which interfere with the regular work of the Association or that of the various Sections.

Seconded.

DR. MACLEAN—In following, as I have done, the peregrinations of this great and noble Association, it is only to be expected that I, like other members, would gather certain mental impressions. Certain opinions gradually form and develop and finally take definite shape. I believe that some very useful members of the Association, men who would be very desirable, have been deterred from attending the meetings from the impression that has gone forth, namely, that there is too much junketing, too much enjoyment, and too little actual scientific work. Now, I do not believe in all work and no play. That has always a bad effect. For my own part, I have always been an advocate and a practitioner of convivial enjoyment. (Applause.) No man can enjoy the pleasures of social intercourse more than myself, and I want to be the last man to put any obstacles in the way of any such enjoyment. At the same time, so far as the American Medical Association is concerned, I feel that its work is too vast, too important and too grand to be overshadowed even by convivial enjoyments, much as I like them, and therefore, Mr. President and gentlemen, I have presented this resolution in all sincerity and with none other than the purest and highest motives.

THE SECRETARY—The Executive Committee has placed in my hand the following resolutions:

Resolved, That hereafter the Secretary of the Association shall see that the Committee of Arrangements shall not provide any entertainments that will interfere with the regular work of the Association or its Sections.

Resolved, That it is desirable that the first evening of the Session be left unoccupied so that the Section dinners may then be held, and it suggests that the Association pass a resolution instructing future Committees of Arrangements to keep the first evening free for this purpose.

DR. E. F. INGALS, of Chicago—I move that the resolutions of the Executive Committee, as read, be substituted for the former resolution. Seconded.

DR. MACLEAN—I am perfectly willing to accept the resolutions of the Executive Committee. I had no idea that any such resolutions were in contemplation. I therefore withdraw my resolution.

DR. INGALS' motion was then put and carried.

DR. W. T. BISHOP—I move that these resolutions be put on the program of every annual meeting in the future.

Seconded and carried.

DR. GEORGE H. ROHÉ, of Maryland, in the absence of Dr. A. L. Gihon, read the report of the Rush Monument Committee as follows:

REPORT OF THE TREASURER OF THE RUSH MONUMENT COMMITTEE.

BALTIMORE, May 1, 1896.

The accretions to the Rush Monument Fund during the

year have been \$771, of which \$550 were derived from subscriptions and \$156 from interest on investments.

The total amount now on hand is \$3,787.64. Of this there are invested in

1 mortgage at 5 per cent.	\$2,000.00
1 mortgage at 5 per cent.	1,000.00
Deposited in City Savings Bank, Baltimore (4 per cent.).	556.00
Current deposits in bank.	194.00
Cash in hand.	37.00

Total \$3,787.64

Of the total amount subscribed during the Baltimore meeting only a small amount has been paid up. The treasurer hopes that no further reminder to those who have promised contributions will be necessary.

The names of those contributing and the amounts subscribed have been published at intervals in the JOURNAL of the American Medical Association and in other journals.

GEORGE H. ROHÉ,

Secretary and Treasurer,

On motion, the report was received and filed.

DR. HENRY D. HOLTON, of Vermont, offered to be one of forty to give \$100 toward the Rush Monument fund.

The Nominating Committee then made a partial report, namely, on the place of meeting, Philadelphia, first Tuesday in June, 1897. Unanimously adopted.

DR. HOLTON—I move you, sir, that the Trustees be authorized to establish a building fund. Such fund to be so hedged about and guarded and securely invested as shall guarantee the Association from loss. Seconded and carried.

VICE-PRESIDENT LE GRAND then took the Chair, and Dr. Nicholas Senn, of Chicago, delivered the address in surgery. Dr. Senn selected for his subject, "Some of the Limits of the Art of Surgery." (See JOURNAL, page 905.)

DR. MACLEAN—I move that the cordial thanks of the Association be tendered to Dr. Senn for the very able address which he has presented to us, and in doing so I wish as an humble student of surgery and as a practitioner, to say, that I consider this address the clarion note which will be echoed and re-echoed as far as surgery is practiced and known and studied. I believe that it is one of the very highest functions of this Association to encourage and promulgate such addresses as we have listened to to-day. If its results are not beneficial, then I know nothing of surgery or of the interests of humanity. (Applause.) Seconded by Dr. Marey and unanimously carried.

THE PRESIDENT Before we proceed further I wish to conclude the business of yesterday under the head of "Unfinished Business," and I will now call for the report of the Committee on Benevolent Organization, of which Dr. Elmer Lee, of Chicago, is Chairman.

Dr. Lee not being present the report was passed.

THE PRESIDENT We will now listen to the report of the Secretary.

SECRETARY ATKINSON then read his report as follows:

REPORT OF THE SECRETARY.

The Secretary respectfully reports that he issued about five hundred notices to the delegates present at Baltimore, notifying them of their appointment as additional members of the Rush Monument Committee.

In obedience to your order, he also sent to the President of the United States, to the Secretary of the Navy and to each member of Congress, a circular letter informing them of the resolution adopted by your body relative to the subject of rank in the medical corps of the navy. A few replies were received, but no assurance as to approval of our action. All of which is submitted. W. B. ATKINSON, Permanent Secretary.

DR. E. D. FERGUSON I move that the report of the Secretary be accepted and placed on file. Seconded and carried.

THE PRESIDENT The report of the Treasurer will now be in order.

The Treasurer, DR. HENRY P. NEWMAN, of Chicago, presented the following report:

TREASURER'S REPORT.

In offering my second annual report as treasurer of the American Medical Association, I feel that very little is required by way of prologue or of peroration.

The figures I shall present are eloquent in their own behalf and testify most solidly that the credit and financial standing of this Association is steadily and surely increasing; and as our chief source of revenue is in our membership subscription, they also evidence that we are not only one of the most prosperous medical bodies in existence, but the largest and most progressive.

Our annual reunions with their helpful fellowships and encouragement for permanent coöperation do much to promote this growth and success, but the foundation upon which our continued strength and stability most surely rest is the publication and circulation of our JOURNAL.

For the efficient manner in which he has managed this publication the thanks and the congratulations of the Association are due the able editor, Dr. John B. Hamilton, and his coadjutors, the Trustees.

At the Baltimore meeting, one year ago, I recommended in my report a change in the fiscal year, which has heretofore dated from one annual meeting to the next, to correspond with the regular calendar year.

This was unanimously approved by the Association and by order of the Trustees has been in effect during this past year.

The good results are already apparent and will be yet more evident when the slight confusion incident to the transition period is over.

There have been about eight hundred and fifty (850) new members added to the Association since May, 1895, exclusive of those joining at the Baltimore meeting. It will also be observed that our actual paid membership has more than doubled during the past year and that the annual balance in the treasury has never been so large as to-day.

H. P. NEWMAN, M.D., Treasurer, in account with the American Medical Association.

RECEIPTS.

1895.		Dr.
May 1.	Balance on hand.	\$ 4,381.28
" 2.	Checks from former Treasurer, Dr. Dunglison.	135.00
" 10.	To cash, Journal A. M. A.,—advertising, subscriptions, reprints, presswork and sales.	13,677.10
" 17.	To cash, registration fees—Baltimore meeting.	4,610.00
Dec. 31.	To cash, dues paid by members.	12,055.00
" 31.	To cash, exchange.	1.30
Total		\$34,859.68

DISBURSEMENTS.

1895.		Cr.
May 14.	By cash, National Bank of Illinois, check returned. \$	6.29
" 14.	By cash paid Secretary, as per resolution of Association, for fiscal year of 1895.	300.00
" 14.	By cash, Dr. A. Garcelon, Trustee, expenses of attendance at annual meeting, Baltimore.	100.00
" 14.	By cash, Dr. J. T. Priestley, Trustee, expenses of attendance at annual meeting, Baltimore.	73.00
" 14.	By cash, Dr. E. E. Montgomery, Trustee, expenses of attendance at annual meeting, Baltimore.	22.00
" 14.	By cash, Dr. J. E. Woodbridge, Trustee, expenses of attendance at annual meeting, Baltimore.	66.68
" 14.	By cash, Dr. D. W. Graham, Trustee, expenses of attendance at annual meeting, Baltimore.	31.00
" 14.	By cash, Dr. E. Fletcher Ingals, Trustee, expenses of attendance at annual meeting, Baltimore.	36.00
" 14.	By cash, Dr. P. H. Millard, Trustee, expenses of attendance at annual meeting, Baltimore.	65.00
" 14.	By cash, Dr. John B. Hamilton, Editor, expenses of attendance at annual meeting, Baltimore.	31.00
" 14.	By cash, Dr. H. P. Newman, Treasurer, expenses of attendance at annual meeting, Baltimore.	59.20
" 17.	By cash, expenses of Baltimore meeting.	981.85
" 27.	By cash, B. F. Pettibone & Co., book for Sec'y. A.M.A.	9.00
June 12.	By cash, Dr. Ira J. Williams, reporting at Baltimore.	60.00
" 12.	By cash, Dr. D. W. Graham, Trustee, expense of attendance at annual meeting, Baltimore.	68.60
" 29.	By cash, honorarium of Treasurer, as per resolution of the Association, for fiscal year of 1894.	300.00
" 19.	By cash, dues refunded, duplicate payments at Baltimore.	35.00
July 26.	By cash, H. O. Reik, stenographic report of Section at Baltimore.	80.00
" 26.	By cash, W. T. Watson, stenographic report of Section at Baltimore.	80.00
" 26.	By cash, J. J. Linney, stenographic report of Section at Baltimore.	68.75
Sept. 17.	By cash, William Whitford, stenographic report at Baltimore.	80.00
Oct. 12.	By cash, sundry expenses, Secretary's office.	11.80
" 15.	By cash, sundry expenses, Treasurer's office.	11.95
Nov. 5.	By cash, typewriting machine and desk, Treasurer's office.	98.13
" 12.	By cash, Treasurer's clerk hire to date.	180.00
" 18.	By cash, Dr. J. E. Woodbridge, Trustee, expenses of attending Trustees' meeting.	30.00
" 18.	By cash, Dr. I. N. Love, Trustee, expenses of attending Trustees' meeting.	32.00
" 18.	By cash, Dr. J. T. Priestley, Trustee, expenses of attending Trustees' meeting.	34.40
" 18.	By cash, Dr. H. Garcelon, Trustee, expenses of attending Trustees' meeting.	60.00
" 18.	By cash, Dr. Joseph Eastman, Trustee, expenses of attending Baltimore and Trustees' meeting.	65.00
" 31.	By cash, National Bank of Illinois, exchange on collections.	6.70
" 31.	By cash, postage.	120.00
" 31.	By cash, paid on Journal expense account.	22,580.08
" 31.	By cash, balance on hand.	9,075.94
Total		\$34,859.68

On motion of Dr. Clarke, the report was accepted and placed on file.

The following preamble and resolutions were offered by Dr. Senn, Chairman of the Committee on Vivisection:

WHEREAS, the members of the American Medical Association recognize the fact that the developments of scientific medicine have resulted largely from experiments upon the lower animals, and

WHEREAS, anesthetics are habitually administered to animals subjected to painful experiments; and

WHEREAS, restrictive legislation is in our opinion unnecessary and opposed to the continued progress of medical science; and

WHEREAS, it is an unjust reflection upon the humanity of those engaged in animal experimentation to enact laws requiring them to use anesthetics and appointing inspectors to see that they do so; and

WHEREAS, far more unnecessary pain is constantly being inflicted upon the lower animals for sport and for game than in biologic and pathologic laboratories, and

WHEREAS, no evidence has been presented by those who advocate restrictive legislation showing that abuses exist in the District of Columbia; and

WHEREAS, results of great practical importance have been obtained by experiments on the lower animals made in the Government laboratories in the District of Columbia;

Therefore, Be it Resolved, that the American Medical Association earnestly protest against the passage of Senate Bill No. 1552, entitled "A Bill for the further prevention of cruelty to animals in the District of Columbia," or any modification of this Bill, unless it shall first be shown by an impartial investigation that cruel and unnecessary experiments are being performed in the District of Columbia, and that existing laws do not provide suitable punishment for cruelty to the domestic animals.

Resolved, that copies of these Resolutions, attested by the signatures of the President of the American Medical Association and of its Committee appointed to draft these resolutions, be sent to the Chairman of the Committees in the District of Columbia, the House of Representatives and Senate of the United States.

(Signed)

DR. NICHOLAS SENN,
DR. WM. OSLER,
DR. GEO. M. GOULD,
DR. J. McFADDEN GASTON,
DR. DONALD MACLEAN.

DR. E. D. FERGUSON moved that the resolutions be adopted. Seconded.

DR. KLEINSMIDT, of Washington, moved, as an amendment, that copies of the Resolutions be sent to the Commissioners of the District of Columbia. He said that the Commissioners were the parties to either approve or disapprove of any of the Bills of the so-called Humane Society presented before Congress. Seconded.

DR. ALONZO GARCELON—Geographically the District of Columbia is but a little speck of the territory of the United States, and they have the power within their own limits to establish such police regulations in regard to the cruelty of animals that every other State has in the United States, and it seems to me that the subject is entirely unnecessary.

DR. STERNBERG, of Washington—As to the necessity for some action on part of the medical men here, I would say that a very earnest effort is now being made in the District of Columbia by residents of that District, and the Humane Society, aided by people in other parts of the country, have entered upon a crusade against those engaged in scientific research work. They have been very active, have interviewed members of Congress, and many other persons outside of the District have written letters to members of Congress, but our profession has not been heard from to any considerable extent. I beg to inform the gentleman that it is not a matter of police regulation in the District. There is an Act before Congress to regulate all such matters. The object of introducing this Bill is to obtain legislation in the District of Columbia in regard to vivisection, in order that we may subsequently urge and have similar legislation in the States. It is only the commencement. I think that it is very important that the profession should realize that and do their very best to stop any unnecessary legislation on this question on the part of the Humane Society. The resolutions asked for a thorough and impartial investigation before any legislation is enacted. We are all quite willing to have this impartial investigation made, and if there are abuses in the District of Columbia, then they can be corrected.

DR. A. H. WEST, of Texas—I wish to state Mr. Chairman, that this matter was brought before the State Medical Association of Texas, and unanimous action was taken instructing our representatives in Congress, the Senate and House, to oppose the action of the so-called Humane Society in the District of Columbia, and I believe similar action ought to be taken by this body.

The motion as amended was then put and carried.

The Secretary read the names of a number of members by invitation who were, on motion, admitted.

On motion of Dr. Willis F. Westmoreland, the program for the Jenner Centennial Memorial was made the order of business for the day.

The Secretary read the following communication from Dr. N. S. Davis, of Chicago.

CHICAGO, ILL., March 25, 1896.

W. F. Westmoreland, M.D., Chairman Committee of Arrangements of American Medical Association.

Dear Doctor:—As Chairman of the Committee appointed by the American Medical Association to devise and report a suitable program for celebrating the centennial anniversary of the

discovery of the protective virtues of cowpox vaccination by Dr. Edward Jenner, May 17, 1896, the same to occupy one entire day of the annual meeting to be held in May, 1896, I furnished a copy of the program as agreed upon by the committee to Dr. W. B. Atkinson, permanent Secretary, about the first of January last. I requested him to communicate the same to the Committee of Arrangements, which he promised to do, and he also advised me to furnish a copy to the JOURNAL of the American Medical Association. I did so, and I presume you have noticed the same in the JOURNAL of the Association for January 11, 1896, page 93. In assuming to name Thursday, May 7, as the day to be devoted to the centennial, and specifying three sessions—morning, afternoon and evening—it was not the purpose of the committee to dictate to the Committee of Arrangements, but rather to suggest. By referring to the program in the JOURNAL you will see that it embraces four important papers, each expected to be followed by more or less discussion. If the discussions were to be omitted the four papers could well be presented in two sessions. The paper or address expected by me is now complete, and its proper reading will not occupy more than forty-five minutes. I think the other three papers will certainly be ready and will be of great value.

As the By-Law of the Association makes it the duty of those intending to read papers or make reports to notify the Committee of Arrangements of the same at least one month before the expected meeting, I make this communication, and shall be much pleased to hear from you regarding the proposed program. Yours truly, N. S. DAVIS.

DR. E. E. MONTGOMERY moved that the recommendations of the Board of Trustees be referred to the Executive Committee. Seconded by Dr. Atkinson and carried.

The Secretary read the following from the Judicial Council:

ATLANTA, May 7, 1896.

In the matter of the Cleveland Medical Society.

This case having been referred back to the Association by the Ohio State Medical Society at its annual meeting May 11, 1895, your Judicial Council reports that the applications for membership of those persons belonging to said Cleveland Medical Society are still suspended, whether coming as members from said Cleveland Medical Society or any other medical society, and your Council has instructed its Secretary to notify said Cleveland Medical Society to appear before said Council to answer the charges which have been preferred against its members at the next annual meeting of the Association.

Respectfully yours,

H. D. DIDAMA, President.
X. C. SCOTT, Secretary.

The Secretary read the following from the New York County Medical Association:

Resolutions adopted at a meeting of the New York County Medical Association, held April 20, 1896.

Resolved, That this Association declares its continued attachment to the Code of Ethics of the American Medical Association, and deprecates any management of the affairs of that Association except by the various State and County associations and societies in affiliation therewith, by their regularly appointed delegates.

Resolved, That delegates appointed by this Association to the meeting to be held in Atlanta, Ga., be instructed in accordance with this action.

P. R. PORTER, M.D., Recording Secretary.

On motion of Dr. Quimby, the resolutions were received and placed on file.

DR. H. D. DIDAMA, of New York, read the address of Dr. N. S. Davis, the opening paper of the Jenner Centennial (see JOURNAL, page 915), after which the Association adjourned until 3 P.M.

AFTERNOON SESSION.

The President, Dr. Cole, in the Chair.

DR. C. F. MCGAHAN, of Minnesota, read for Dr. C. N. Hewitt, of Red Wing, Minn., a paper entitled "A Tribute to the Memory of Edward Jenner" by title.

DR. J. COCHRAN, of Alabama, followed in discussion by reading a paper.

DR. GEO. M. STERNBERG, of Washington, D. C., read a paper entitled "Scientific Researches Relating to the Specific Infectious Agent of Smallpox and the Production of Artificial Immunity in this Disease." (See JOURNAL, page 919.)

DR. H. D. DIDAMA, New York, presented by title a record by Dr. D. H. Stoner, Rhode Island, of the memorials, medals, etc., of Edward Jenner.

DR. FRANCIS E. MARTIN, of Boston, read a paper entitled "Propagation, Preservation and Use of Vaccine Virus."

DR. EUGENE FOSTER, of Augusta, Ga., read a paper entitled "Statistical Evidences of the Value of Vaccination to the Human Race."

On motion of Dr. James F. Hibberd, of Indiana, it was

Resolved, That the papers read at this Jenner Centennial celebration be referred to the Jenner Centennial Committee for revision, and selection of those deemed proper to be published in book form, and in such number as the Committee may believe there will be demand for.

Carried.

On motion of Dr. Didama, the thanks of the Association were tendered to the writers of the preceding papers.

On motion, the Association adjourned.

MAY 8—FOURTH GENERAL SESSION.

The Association was called to order at 10 A. M. by the President.

The minutes of the preceding session were read by the Secretary and approved.

The Address on State Medicine was next in order, but before delivering it Dr. Geo. H. Rohé, of Maryland, read the following telegram from Dr. Albert L. Gihon:

"Announce that the Navy Department assigns a site for Rush monument in park facing Naval Museum of Hygiene."

Dr. HOLTON moved that a vote of thanks be tendered to the Naval Department for its generous offer.

Seconded and carried.

Dr. ROHÉ then delivered the Address on State Medicine. He selected for his subject "The Purification of Water Supplies."

On motion of Dr. Ellis, a vote of thanks was extended to Dr. Rohé for his able paper.

Dr. QUIMBY—I move that the Address on State Medicine be printed in pamphlet form for distribution throughout the States. This is one of the most important matters that can come before the people at this time. I hope the Association will see fit to have at least five or six thousand reprints of this Address issued for distribution among each municipality throughout the country.

Dr. W. T. BISHOP—It certainly seems to me that this number is entirely inadequate. There is no doubt but that the people of this country are very much interested in the purification of water supplies, in the different States, and that this subject is attracting the attention of city councils.

Dr. D. W. GRAHAM, of Chicago—I move as a substitute that the editor of the JOURNAL of the American Medical Association be instructed to furnish copies of this Address at cost to all who may apply. Seconded.

Dr. QUIMBY—I accept the substitute.

The substitute was then put by the Chair and carried.

Dr. BULKLEY, of New York The Executive Committee report the following resolutions and recommend their adoption:

Resolved, That in accordance with the standing rule of the Association, the Committee of Arrangements for the next session is requested to arrange the meetings of the Association and prepare the program for the Sections so that they will not conflict. It is suggested that if the general sessions on Wednesday and Thursday be called at 11 o'clock it may remedy the difficulty.

Dr. LOVE I think the resolutions are all right, but they specifically suggest that the Committee of Arrangements prepare for the next meeting. I would suggest for all future meetings.

THE PRESIDENT I presume that was contemplated.

Resolved, That the Committee of Arrangements for next year and hereafter be directed to prepare signs for each State and Territory, also for the District of Columbia, and the Army, Navy and Marine Hospital Service, and to locate them in the hall of meeting that the delegates shall meet beneath them for the selection of members of the Nominating Committee.

Resolved, That the elections for such members of the Nominating Committee shall only be legal when held in these localities.

Resolved, That elections shall be held not sooner than 10, nor later than 30 minutes after adjournment of the first general session of the Association.

Dr. J. T. PRIESTLEY, of Iowa Supposing a delegate arrives here on the second day, how is he going to get representation on the Nominating Committee?

THE PRESIDENT He must try to get here on the first day. The resolutions were then adopted.

Dr. BULKLEY The President in his Annual Address spoke of our not having a Council such as the British Medical Association, in order that action on matters that are referred to it might be taken between the sessions. Your Executive Committee has had this point under consideration and have prepared the following:

Resolved, That there be made an Executive Council of five consisting of the three officers of the Executive Committee, and two members chosen by election. Of this Council of five, one must belong to the section on Practice of Medicine, and one to the section on Surgery and Anatomy. To this Executive Council shall be delegated all the duties of the Executive Committee during the intervals between its meetings.

The President asked whether this resolution interfered in any way with the operation of the Constitution, to which the Secretary replied: No.

Dr. X. C. SCOTT It strikes me that this is an amendment

to our By-Laws and, therefore, it must lay over until next year.

Dr. I. N. LOVE—We already have an Executive Committee to conduct the business of the Association, which is made up from the various sections, and it seems to me that this Committee, being democratic and representative in its character, is all-sufficient. It is not desirable to complicate our records by too many resolutions, and I therefore move that this resolution be laid on the table. Seconded and carried.

Dr. BULKLEY—As this resolution has been thought to be an amendment to the Constitution, I offer it to-day through the Executive Committee as an amendment.

THE PRESIDENT—To be acted upon next year?

Dr. BULKLEY—Yes, sir.

The Executive Committee called the attention of the Association to the By-Law requiring titles of papers and abstracts to be sent to the Secretaries of Sections one month previous to the date of the annual meeting and asks that it be enforced.

Dr. JAMES F. HIBBERD, of Indiana—What means have we of enforcing this By-Law?

Dr. BULKLEY—The Chairman of each Section should be directed not to receive papers later than thirty days prior to the time of meeting. For example, I finished my program and sent it to the JOURNAL almost three weeks before the meeting. It seems to me there is no good reason why the titles of papers can not be sent in two or three weeks prior to the meeting, also abstracts of the same.

Dr. HIBBERD—Are we to understand that unless papers are received thirty days preceding the meeting of the Association, that they will be excluded from presentation?

THE PRESIDENT—I do not so understand it. It is simply a call upon those who contemplate furnishing papers to have them ready thirty days before the meeting.

Dr. HIBBERD—Supposing the papers are not ready at this time, are they to be accepted?

THE PRESIDENT—That remains with the officers of the various sections.

Dr. HIBBERD—A regulation that has nothing to enforce it, is good for nothing, sir.

THE PRESIDENT—That is quite so, sir.

Dr. BULKLEY—We have not offered any resolution at all, but have simply called attention to a By-Law. It is an old By-Law and heretofore it has not been enforced. I move, therefore, that the Secretaries and Chairmen of Sections and the Local Committee of Arrangements, and all who are concerned in the preparation of the program, be directed not to receive and put the titles of papers on the program unless the authors of such papers comply with the rules, namely, thirty days before the meeting. Seconded and carried.

PERMANENT LOCATION OF JOURNAL.

Dr. GARCELON, of Maine—I have in my hand a resolution which I wish to present in order to save time. The resolution is as follows:

WHEREAS, This Association has authorized the Trustees to establish a building fund; and,

WHEREAS, The question of a permanent location for the JOURNAL has never been decided by a vote; therefore be it

Resolved, That the Trustees be and are hereby instructed to cause a vote by ballot to be taken, and on this question all members shall have the right to vote. That ballots may be received from and after June 1 until July 31, when the ballot shall close. No ballot shall be counted in favor of any particular place, unless the name of the member voting shall be signed thereto. The ballots shall be preserved by the Trustees until the next annual meeting of the Association, but the result shall be published in the JOURNAL when the count shall have been completed.

Seconded and adopted.

The report of the Committee on National Department of Public Health was then read by Dr. J. Cochran, as follows:

REPORT OF THE COMMITTEE ON DEPARTMENT OF PUBLIC HEALTH.

Our committee was appointed in 1891 with the object in view of securing the passage of a law creating a National Department of Public Health with a Secretary of Public Health at the head of it with a seat in the Cabinet of the President of the United States. The bill which was prepared for presentation to Congress was extremely crude and indefinite in its provisions, and gave this proposed high official very little important work to do. It was indeed found to be so defective that last year the effort to have it enacted into a law was abandoned.

In the meantime, the Marine-Hospital Service, which in 1890 had already been invested with some important health functions, was by the Act of 1893 converted into a National Health Department with very large and far-reaching powers and abundant means. It is not called a department of public health, but is a Department of Public Health in fact.

Since 1893 until the effort was abandoned last year, our Committee has been engaged in the hopeless and unwise enterprise of endeavoring to induce Congress to establish another depart-

ment of public health—a very weak and inconsiderable department by the side of a very powerful department. Such an effort could not succeed. Such an effort did not deserve to succeed.

It seems to us to be a fundamental proposition that we shall have but one National Department of Public Health. This being conceded, one of three courses remain open to us:

1. We may devise and advocate a plan to deprive the Marine-Hospital Service of its public health functions, and for the establishment of an entirely new department; or,
2. We may accept the Marine-Hospital Service just as it stands as a department sufficient for our present use; or,
3. We may endeavor to improve the Marine-Hospital Service and make it a more satisfactory National Health Department than it now is.

It would seem that this last method promises to be the most fruitful of beneficent results; and the question then arises as to the modifications that may be wisely made in the existing law.

In arranging any scheme of national public health supervision it would seem desirable that nothing should be done to discredit and weaken the various State Boards of Health. But that contrarywise the effort should be to strengthen the State organizations, and to foster and facilitate their further evolution. If this principle is conceded it is at once made evident that the National Department of Public Health should act in and through the State Boards of Health, in coöperation and harmony with them, and not outside of them and independent of them. If the National Department acts within the States independently of the State Boards, and assumes the work that ought to devolve upon the State Boards, then the State Boards become comparatively useless institutions and will fall into disfavor. Some of the State Boards are still weak institutions, and any rivalry between them and the National Department in State work would doom them to speedy destruction. In this direction it would seem that additional legislation is needed, and the simplest plan to reach the desired reconciliation would embrace two provisions:

1. That the National Department should act within the States by and through and in coöperation with the State Boards.
2. That the head of the National Department should call annually to meet in the city of Washington an Advisory Council to be composed of one representative from every State Board of Health. This would bring about mutual understanding and coöperation and reciprocity of action, and would virtually constitute a great central school of public hygiene.

Such a scheme as this would probably command the approval and support of the National Conference of State Boards of Health, which Conference is quite as deeply interested in movements of this character as is the American Medical Association.

As the conclusion of the whole argument, we recommend that we be authorized to draw up a new bill along the lines we have indicated, and that we be authorized to invite the coöperation of the Conference of State Boards of Health and of the American Public Health Association in our endeavor to have the proposed bill enacted into law.

All of which is respectfully submitted.

JEROME COCHRAN, M.D., Chairman Committee.

DR. HIBBERD—I move that the report of the Committee be accepted, the plan outlined adopted, the Committee continued and enlarged by the appointment of a member from each State. Seconded.

DR. I. N. LOVE—If I understand the proposition rightly, it provides for a Department of Public Health built upon the present foundation of the Marine-Hospital Service. I am therefore in favor of it. It is an elaboration, a building up in a stronger and more definite shape of the public health department and quarantine service which we already have. When we consider that every other department of life is represented in our National Conference Board, or Cabinet, and yet public health is not represented, surely the dignity of medicine and the best interests of the health of the community demand such recognition, and I think the most practical way in which to accomplish this great and good work is by building up that which we already have and crystallizing it in the shape of a more dignified body.

DR. SUMMERS, of St. Louis—I think, sir, it is time for this Association to demand of the United States of America that it should be represented in its Cabinet at Washington. We can learn a great deal from the old Christian mythology, where Gabriel was the Secretary of State, Michael the Archangel or Secretary of War, and Raphael the Secretary of Health, who flew with his wings close to the earth and shed healing in his path. Now, I say, the time has come when this Association in its power and dignity should rise and demand of the govern-

ment of the United States that it create a department of public health, as has been done in all governments of the world. This is the solution of the question. Twenty-five years ago I joined Dr. Cochran in his efforts in public health matters in Alabama, and it brought out the fact that it was possible for the State to take hold of medicine and govern it accordingly.

The report was then adopted.

The Secretary then read some resolutions referred to the General Session by the Section on Materia Medica, Pharmacy and Therapeutics, as follows:

Resolutions on the adoption of the metric system of weights and measures.

Resolved, That it is the sense of the American Medical Association that the general adoption and use of the metric system of weights and measures in the United States is very desirable, and would prove a great benefit to the people; that our trade relations with other nations would be stimulated by the unity of weights and measures.

Resolved, That this Association respectfully prays the Honorable Senate and House of Representatives in Congress assembled to pass such laws as will make the metric system of weights and measures the legal system of weights and measures in the United States.

Resolved, That the Secretary of this Association be directed to forward a copy of these resolutions to the Hon. C. W. Stone, Chairman of the Committee on Coinage, Weights and Measures, House of Representatives, Washington, D. C.

On motion the resolutions were adopted.

DR. N. SENN, of Chicago—As Chairman of the Committee to consider the recommendations contained in the President's Address, I wish to make a partial report. Our action has been anticipated by the Executive Committee in reference to one of the recommendations. We were unable to secure a full attendance of the Committee, but with the consent and support of one of the members, Dr. Garcelon, I wish to offer the following resolution:

Resolved, That the Secretary be instructed to notify the Secretary General of the International Medical Congress, that unless the English language be recognized, the American Medical Association declines to send delegates.

VICE-PRESIDENT LE GRAND put the motion to adopt the resolution, and it was unanimously carried.

The report of the Committee on Nominations was now in order and was read by Dr. H. A. West. The report is as follows:

REPORT OF COMMITTEE ON NOMINATIONS.

Your Nominating Committee presents the following names for office during the ensuing year:

President, Dr. Nicholas Senn, Illinois.

First Vice-President, Dr. Geo. M. Sternberg, Washington, D. C.

Second Vice-President, Dr. Edmond Souchon, Louisiana.

Third Vice-President, Dr. J. B. Thomas, Pennsylvania.

Fourth Vice-President, Dr. Willis F. Westmoreland, Georgia.

Treasurer, Dr. Henry P. Newman, Illinois.

Assistant Secretary, Dr. T. B. Schneideman, Pennsylvania.

Librarian, Dr. Geo. W. Webster, Illinois.

Chairman of Committee of Arrangements, Dr. H. A. Hare, Pennsylvania.

Trustee to fill vacancy, Dr. G. C. Savage, Tennessee.

Trustees, Dr. E. E. Montgomery, Pennsylvania; Dr. J. M. Mathews, Kentucky, and Dr. C. A. L. Reed, Ohio.

Judicial Council, Dr. Geo. W. Stoner, U. S. Marine Hospital Service; Dr. C. W. Foster, Maine; Dr. J. McFadden Gaston, Georgia; Dr. I. N. Quimby, New Jersey; Dr. H. Brown, Kentucky, and Dr. X. C. Scott, Ohio.

Address in Surgery, Dr. W. W. Keen, Pennsylvania.

Address in Medicine, Dr. Austin Flint, New York.

Address in State Medicine, Dr. J. Cochran, Alabama.

On motion, the report of the Nominating Committee was unanimously adopted.

The President then appointed Drs. Holton and Quimby as a Committee to escort the President-Elect to the platform.

DR. HOLTON—Your Committee appointed to wait upon the President-Elect and to conduct him to the Chair have performed this pleasant duty and take pleasure in presenting Nicholas Senn, of Illinois, as the next President of the American Medical Association. (Applause.)

PRESIDENT COLE—Gentlemen of the Association: I believe that I can speak for my dear friend upon my left. I believe I am expressing the sentiments of Dr. Senn when I say that this is the proudest moment of his life, and next to that measure of joy and pleasure that he experiences, it is the greatest pleasure of my life, next to that which I passed through on a similar occasion, to have the opportunity of introducing to you your next President. (Loud applause.)

DR. SENN was received with round after round of applause, and when quiet was restored, spoke as follows:

“Esteemed Colleague and Members of the Association:—Every American-born patriotic youth has a desire to become

some day the President of the United States, and although this opportunity only comes every four years, the progressive physician, who has the interests of his profession at heart, should make every legitimate effort to some day occupy the highest position in the gift of the greatest Medical Association in the United States. (Applause.) Few men reach the goal of their ambition. I have occupied a number of chairs, large and small, hard and soft, but I approach this, the greatest medical Chair, not only in this country but in the whole world, with a great deal of diffidence.

"This Association next year will celebrate its golden wedding. I believe we shall have the largest meeting in its history. My attendance upon the meetings for the last twenty-two years has made me painfully aware of the fact that frequently in the General Sessions the proceedings have resembled a political caucus rather than that of a scientific body. (Applause.) I hope that in this respect the next year will witness a much needed reform. This position has been made hard by the impatience of some men on the floor with selfish motives, inviting the disquietude of both the President and the rest of the audience. Let us witness few such incidents in the future. We have lost much valuable time in attacking the most sacred document in the possession of the American Medical Association—the Code of Ethics, a Code that breathes the same spirit and inculcates the same teaching as the Constitution of the United States. All of us are ever ready to die, if need be, to uphold it, to strengthen it. Without the Code of Ethics this great body would degenerate into medical anarchy, without God, without law, without order. Let us preserve the cornerstone of this great institution lest it may totter, tumble and crumble into dust. (Applause.)

"The political part of the work of this great Association should be done not upon the open floor, where we need every moment of our time to discuss the great medical questions of the day. Let us hope that in the future we may have ample committees to attend to the business part of the proceedings, and if they are found insufficient let new committees be created in order that the Sections may devote time to the objects for which this Association was founded—the advancement of American medicine and surgery. (Applause.)

"In conclusion, I desire to thank you heartily for the distinguished honor conferred upon me, and I will promise you my best efforts in performing the duties of this office." (Applause.)

The next thing in order was the appointment of delegates to the British Medical Association, the Pan-American Medical Congress, and the International Medical Congress.

Dr. D. W. GRAHAM, of Chicago—Mr. President: Did we not adopt a resolution refusing to send delegates to the International Medical Congress to be held in Moscow?

THE PRESIDENT Yes, sir. Your point is well taken. By the adoption of the report read by Dr. Senn upon the President's Address we have conditionally declined as an Association to send delegates to Russia, and therefore the President and Secretary of this Association can not issue certificates or credentials.

Dr. H. BERT ELLIS, of California, offered the following amendment:

Article 9 of the By-Laws is entitled "condition excluding representation," and reads as follows: "No State or local medical society, or other organized institution, shall be entitled to representation in this Association that has not adopted its Code of Ethics, or that has intentionally violated or disregarded any article or clause of the same."

I hereby give notice of a motion to amend so that it shall read:

"Art. IX. Condition for Further Representation. Any state or local Medical Society, or other organized institution whose Rules, Regulations and Code of Ethics agree in principle with those of this Association may be entitled to representation on the advice or agreement of the Judicial Committee."

The officers elected for the various sections, as far as they could be ascertained, are as follows:

For State Medicine, Chairman, Dr. Elmer Lee, Chicago.

Secretary, Dr. L. F. Bishop, Morristown, N. J.

Member of Executive Committee, Chas. H. Shepard, Brooklyn.

Section on Neurology and Medical Jurisprudence, Chairman, Dr. W. T. Herdman, Ann Arbor, Mich.

Secretary, Dr. Chas. H. Hughes, St. Louis, Mo.

Members of Executive Committee, Drs. J. G. Kiernan, Chicago; D. R. Brower, Chicago; and T. D. Crothers, Hartford, Conn.

Section on Dental and Oral Surgery, Chairman, Dr. R. R. Andrews, Cambridge, Mass.

Secretary, Dr. Eugene S. Talbot, Chicago.

Executive Committee, Dr. Younger, San Francisco; Dr. Geo. T. Carpenter, Chicago; Dr. R. R. Andrews, Cambridge, Mass.

Section on Obstetrics and Diseases of Women, Chairman, Dr. Milo B. Ward, Topeka, Kan.

Secretary, Dr. Geo. H. Noble, Atlanta, Ga.

Section on Laryngology and Otology, Chairman, Dr. Wm. E. Casselberry, Chicago.

Secretary, Dr. Braden Kyle, Philadelphia.

Executive Committee, Dr. E. Fletcher Ingals, Chicago; Dr. J. F. Fulton, St. Paul; and Dr. G. V. Woolen, of Indianapolis.

Section on Surgery and Anatomy, Chairman, Dr. Reginald Sayre, New York.

Secretary, Dr. Bayard Holmes, Chicago.

Section on Materia Medica and Pharmacy, Chairman, Dr. Warren B. Hill, Milwaukee.

Secretary, Dr. Frank Woodbury, Philadelphia.

There was no meeting of the Section on Physiology and Dietetics, consequently no officers were elected.

On motion of Dr. Quimby, the thanks of the Association were extended to the ladies, to the citizens, and to the local profession of Atlanta for their kindness and hospitality; also to the Southern Railway Company for its liberality.

Dr. Greenley, of Kentucky, moved that the thanks of the Association be tendered to the retiring President for the efficient and able manner in which he had discharged his duties.

Seconded and unanimously carried.

On motion of Dr. Scott, the Association then adjourned, to meet in Philadelphia, the first Tuesday in June, 1897.

SOCIETY NEWS.

Second Pan-American Medical Congress.—Dr. John B. Hamilton has been appointed Vice-President of the Auxiliary Committee at Chicago, to coöperate with the Committee of Management at Mexico. We have received at this office a number of circulars, etc., to distribute to those interested. All are in English.

We add the Secretary's appeal to the profession at large:

MEXICO CITY, January, 1896.

DR. —, *Dear Sir:*—On behalf of this Committee and in my capacity of Secretary, I have the honor to address you, begging that you will kindly contribute to the success of the Second Pan-American Medical Congress with your valuable personal assistance, beside that which you may be able to obtain in your illustrious country.

Presuming on your consent to the above, I would feel sincerely obliged if you would have the kindness to address the different medical societies, universities and schools of medicine, as well as the prominent men who are disposed to cultivate medical science, inviting them to attend this coming Congress, which will be held in the city of Mexico on the 16th, 17th, 18th and 19th of November of this year, sending also delegations whose members will forward their papers with the anticipation that is required by the accompanying regulations.

You will easily understand, and I have no doubt will impress on your countrymen, the desirability of union amongst all the nations that form the Western Hemisphere, with a view to combined labor in scientific matters, taking advantage of the facilities that we enjoy for investigation in the New World that we inhabit. With an area that covers all latitudes in two hemispheres, it is washed by the two great oceans, and consequently presents all the physical conditions that could be desired to give an immense scope to scientific investigation.

It is an undoubted fact, that the collective efforts are not the sum of the unities of which they are composed, but rather of their multiplication. If all the physicians of the American Continent and surrounding islands, were to work simultaneously in order to lay before the world at any given moment the conditions under which life is developed in each of the districts where they live; the influence of latitude, altitude and all other climatic conditions on the development of the human species, on the duration of life, on the manner in which disease presents itself, on the manner in which the organism reacts in each one of these districts, according to the conditions of the locality; the resources which each district offers to therapeutics under the varied circumstances of its climate, flora and fauna; we would be able to offer to the scientific world, and in one sole table, the medical geography, the climatology, the physiologic evolutions and all the vital data that pertain to the enormous length of the American Continent. This Congress will at the same time form a criterion of the degree of culture that has been reached by the different nations forming the great American family.

A Pan-American Medical Congress will furnish means for

studying most of the precautionary measures to be taken against epidemic and epizootic diseases; for obtaining uniformity in the nomenclature of the diseases, in order to prepare tables of mortality; for proposing uniform methods of preparing medical statistics; and in short, for giving uniformity and solidarity to all medical labors in the Western Hemisphere.

I do not doubt that your illustrious nation will contribute to this great work, sending to the Second Pan-American Medical Congress the largest personal contingent possible and a due proportion of scientific works, and I therefore hope that you will kindly notify me in answer, of the persons who propose to attend the Congress, and in due time forward me their works. I remain,

Yours very truly,

E. LICÉAGA, Secretary.

Address: Al Dr. EDUARDO LICÉAGA, Secretario de la Comisión Organizadora del 2º Congreso Médico Pan-Americano, Ciudad de Mexico, D. F. Calle de San Andrés núm. 4. República Mexicana.

The following are the

SPECIAL REGULATIONS FOR THE SECOND PAN-AMERICAN MEDICAL CONGRESS.

Article 1. In order to be properly enrolled, each member of the Congress will pay to the Treasurer thereof in the City of Mexico, the sum of five dollars in gold.

Art. 2. There will be one opening session, one closing and one intermediate session of a purely scientific character.

Art. 3. The opening session, which will be of a solemn character and presided over by the Supreme authority of the Nation, besides being attended by the members of the Congress, will also be attended by the members of scientific societies, and other distinguished persons who may be invited. The session will be opened with the report of the General Secretary.

This will be followed by a speech of welcome, pronounced by the President of the Congress.

Two members will then speak on scientific subjects, and they will be followed by a speech from the President of the Republic. It is strongly recommended, that the scientific speeches should be of short duration.

The intervals between the speeches will be filled up with musical performances.

Art. 4. At the closing session, the General Secretary will notify the place designated by the Congress for holding the third meeting.

Art. 5. The Treasurer will present his accounts to the Congress, showing the disbursement made of the funds entrusted to his care.

Art. 6. A scientific speech will be delivered and a short speech by one Representative of each one of the nations attending the Congress.

Art. 7. In the intermediate session, four speeches will be delivered on general matters, by persons who are highly distinguished in medical science, and who, having been in due time invited to do so, have accepted the commission: one of these speeches being pronounced by a Mexican physician, who shall be invited to do so by the Committee of Management.

Art. 8. No discussions will be held in the General Sessions.

Art. 9. These sessions will be held from 9 to 12 A.M. and from 3 to 5 P.M., in the places that may be designated by the Organizing Committee. They shall be presided over by the President of each section, alternating with the Vice-Presidents of each one of the nations that are represented in the respective sessions.

Art. 10. The person who may be appointed by the Committee of Organization, will be the ex-officio Secretary of each section, and he will fill his post alternately with the Secretaries of the nations who may be represented in the sections; but should the latter not be present, their places will be supplied by the President in office.

Art. 11. The President will direct the discussion in accordance with the order of the day, and will decide all questions that may arise, and that may not be provided for in these regulations.

Art. 12. The ex-officio Secretary will make out the minutes, and for that purpose, besides his own notes, will collect those of the Secretaries who may have acted in the section. He will also collect from the persons who may have spoken, the written extracts referred to in Art. 19.

Art. 13. All questions relating to the debates which are not provided for in these Regulations, will be decided in accordance with general parliamentary practice.

Art. 14. The voting will be by name or by putting the question.

Art. 15. All papers will be presented in writing.

Art. 16. Each author will forward to the Secretary of the Organizing Committee in the City of Mexico and before the

first day of August of the present year, an extract not exceeding 300 words, of the paper to be presented by him. These extracts will be printed in English, French and Spanish and will be distributed to the members of the Congress, before the session in which they are to be read.

Art. 17. No paper will be announced which is not accompanied by this extract; but the authors who comply with these conditions, will have a right to have their work published intact in the transactions of the Congress.

Art. 18. The reading of the papers in the sessions must not last more than 20 minutes; when the papers are so long that they can not be read within that time, the authors will give extracts from them, either in writing or by speech; but they will be published intact in the transactions of the Congress and in the language in which they have been written.

Art. 19. The extracts referred to in the preceding article, will be delivered at the same time as the papers, to the Secretary of the Section to which they pertain.

Art. 20. The members of the Congress who may take part in the discussions in any section, will present their speeches in writing at the termination of the sessions, to the respective Secretaries of such sections, and they will also be published in the transactions.

Art. 21. The papers which have been announced for reading in the order of the day in each section, will serve as subjects for discussion. In such discussions, no speaker will be allowed to speak more than once and for five minutes; but the author of the paper under discussion, will be allowed to reply, if he considers it necessary, in one sole speech, which will not go beyond ten minutes.

AUXILIARY COMMITTEES IN THE MEXICAN REPUBLIC.

Art. 22. These Committees will be appointed by the Committee of Organization, and will be composed of one member for each Local Medical Society, or in their absence, of one physician for every center of population. They will co-operate with the Committee of Organization in promoting the success of the Congress. Said Committees will be appointed during the first months of the present year.

EXECUTIVE COMMITTEE.

Art. 23. In order to form this Committee, the Organizing Committee will appoint seven members, including the President, Secretary, Treasurer, and the Mexican representative in the International Executive Committee, and such member will attend to everything relating to the business of the Congress, in accordance with the regulations that they may adopt for that purpose. DR. MANUEL CARMONA Y VALLE, DR. E. LICÉAGA, DR. RAFAEL LAVISTA.

Mexico, January, 1896.

Medico-Legal Society of New York.—Report of Committee of the Section on Railway Surgery on the Railway Hospital System. [From advance sheet of *Medico-Legal Journal*.]

TO THE OFFICERS AND MEMBERS OF THE SECTION ON MEDICO-LEGAL SURGERY:

Gentlemen:—Your committee to whom was referred the subject of the economy and utility of the Railway Hospital System, beg leave to submit the following summary as the result of their labor, as a report:

We are of the opinion that the experience of those railways who have established and conducted the system of hospitals, under charge of a chief surgeon, in connection with the surgical service of their lines, have been so universally successful, that we regard the following propositions as established beyond the domain of argument or question:

1. The Railway Hospital System affords by far the best means for the treatment and cure of not alone the sick among the employes, but of all sustaining injuries in the railway service, by accident or otherwise.

2. Of its economy in administration, the testimony of the managers of the railways who have adopted it, is entirely unanimous; and if established on a proper basis, where its entire cost is defrayed by the employed, who are to such an extent its beneficiaries, that in all cases they are the class most desirous of its establishment, and evince the highest appreciation of its usefulness.

3. It is practically without cost to the railway, when it is in its highest state of excellence.

4. Aside from the economy to the railway, its principal benefits may be thus classified.

a. A railway system is much stronger and in far better relations with its employes, where by the establishment of a proper hospital system, the men are sure of proper medical and surgical attention, at the nominal cost of fifty cents a month, deducted from their wages, in a service where the risk of acci-

dent and casualty is necessarily greatly increased over other avocations.

The railway employe needs protection by reason of the extra and hazardous risks he assumes, outside of and beyond his own ability to guard against.

As a matter of high policy, it is the duty of railways to thus protect its employes by all reasonable means in their power.

b. The hospital system strengthens the railway, because it gives to the sick and injured of its own employes the best medical service, restores them sooner to their duties, protects the men against careless and negligent medical treatment, and guarantees and insures them for its beneficial provisions, at such a trifling cost per capita, distributed over all its employes, as to make it in no sense burdensome or onerous to any, and it is well known that employes favor it.

c. It protects the railway against false and fraudulent claims in damage cases, to an extent that can be best appreciated by comparative results between the railway systems that have adopted it and those who have not.

d. It enables railways to offer free surgical service to its employes, or those injured by accident, which experiment has demonstrated to be of great benefit to the railway, in reducing the aggregate losses on claims for injuries.

e. In cases of accident it enables the surgeons of railways, in a large majority of cases of injury, to treat, care for and cure the injured, without cost to the railway or injured, and greatly reduce and diminish the claims for damages; and experience has shown that it is a wise preventative against fraudulent claims by unscrupulous parties.

We therefore submit the following recommendations:

1. That the establishment of railway hospitals by railways, and especially by large railway systems, have been demonstrated to be the best, most economical and beneficial for the care, cure and treatment of the sick and injured upon railways, for both the employes and the general public.

2. That experience has shown that the best hospital system, taking into consideration the wants and needs of all its beneficiaries, are those established and maintained upon the railways, under the supervision of a chief surgeon with proper medical assistants and service: the cost to be maintained by a nominal assessment upon all employes.

3. That surgical service in the hospitals be made absolutely free and without charge to all employes and all injured by accident or otherwise.

Dated April 15, 1896.

Respectfully submitted,

W. S. Outten, M.D., Chairman, St. Louis, Mo.; Clark Bell, Esq., New York; Frank H. Caldwell, M.D., Sanford, Fla.; Charles K. Cole, M.D.; Granville P. Conn, M.D., Concord, N. H.; B. F. Eads, M.D., Marshall, Texas; J. B. Murphy, M.D., Chicago; Payette H. Peck, M.D., Utica, N. Y.; J. F. Valentine, M.D., Brooklyn, N. Y.; Committee.

CORRESPONDENCE.

A Mark of Appreciation—Vote of Thanks.

CHICAGO, May 13, 1896.

To the Editor: For genuine Southern whole-souled hospitality and courteous treatment, the complimentary trip afforded by the Southern Railway Company to its invited guests and the members who participated in the excursion from Atlanta to Chattanooga, Lookout Mountain, Tate Springs, Hot Springs and Asheville, N. C., after the adjournment of the Atlanta meeting last week, excels anything in that direction that I have ever known or experienced, or indeed anything approaching it, except it be the occasion when our Association held its annual meeting at St. Paul, Minn., in June, 1882, when we were accorded similar courtesies by the Northern Pacific and Great Northern Railroads. This complimentary trip embraced about 750 miles, and the pleasant duty was assigned me to transmit the subjoined preamble and resolutions regarding the above detour trip, to the JOURNAL with the request that same be published in the current number of our JOURNAL. It is needless for me to state that they were vociferously applauded and unanimously adopted May 10, 1896, while en route, Asheville to Atlanta, and were signed by the following grateful M.D.'s on board our train. The ladies accompanying us were, however, just as much interested, and

our host was in great demand by the single members of the fair sex who accompanied us.

Ex-President Cole was the spokesman for the occasion, and right royally did he execute his duty.

WHEREAS, In the course of human events, exceptional occasions arise, which seem to demand a more formal statement of the sentiments and emotions which fill our hearts and minds than are afforded by ordinary conventional terms; and

WHEREAS, The courtesies extended by the Southern Railway Company to the undersigned members of the AMERICAN MEDICAL ASSOCIATION, especially through and by Dr. C. M. Drake, Chief Surgeon of the Company, both during the recent meeting of the Association at Atlanta and on this special excursion to Lookout Mountain, Tate Springs, Hot Springs and Asheville, demand such proper acknowledgment and statement of our sentiments, be it

Resolved, That we, the undersigned members of the AMERICAN MEDICAL ASSOCIATION and guests of the Southern Railway Company, hereby give most cordial, though imperfect, expression of our feelings in unanimously tendering the Southern Railway Company and Dr. C. M. Drake our heartfelt thanks for most generous hospitality and unremitting personal attention which we have enjoyed among scenes that, during life, will never fade from the memory of any of us who have been privileged to participate in this special excursion from the "Gateway of the South" to the "Land of the Sky."

Signed by: R. Beverly Cole, A.M., M.D., M.R.C.S. (Eng.), Ex-President AMERICAN MEDICAL ASSOCIATION, San Francisco, Cal.; A. Garcelon, M.D., Lewiston, Me.; Chas. H. Hughes, M.D., St. Louis; W. B. Atkinson, M.D., Philadelphia; Chas. W. Allen, M.D., New York; J. W. Grosvenor, M.D., Buffalo; Francis C. Martin, M.D., Boston; A. Walter Suiter, M.D., Herkimer, N. Y.; William Dougall, M.D., Joliet, Ill.; C. A. Wheaton, M.D., St. Paul, Minn.; A. D. Price, M.D., Harrodsburg, Ky.; Liston H. Montgomery, M.D., Chicago; Everett Flood, M.D., Baldwinville, Mass.; Dunbar Roy, M.D., Atlanta, Ga.; William S. Foster, M.D., Pittsburg, Pa.; G. A. Fleming, M.D., Baltimore, Md.; E. H. Squibbs, M.D., Brooklyn, N. Y.; F. E. Stewart, M.D., Detroit, Mich.; Herbert Harlan, M.D., Baltimore, Md.; Geo. W. Stoner, U.S.M.H.S., Baltimore, Md.; James D. Spencer, M.D., Watertown, N. Y.; Louis H. Jones, M.D., Atlanta, Ga.; William Warren Potter, M.D., Buffalo, N. Y.; W. F. Westmoreland, M.D., Atlanta, Ga.; R. B. Granger, M.D., New York; H. Bert Ellis, M.D., Los Angeles, Cal.; J. A. Quinn, M.D., St. Paul, Minn.; T. C. Gilchrist, M.R.C.S. (Eng.), etc., Baltimore, Md.; Frank Woodbury, M.D., Philadelphia.

Dr. Drake responded feelingly in a few well chosen words to the foregoing resolutions, which, by the way, will in the near future be followed by the presentation to him of something more material in the nature of a "loving cup" for the mantelpiece in his office, as a further testimonial of the high personal esteem and regard entertained by his friends who were on this trip. Drs. A. Walter Suiter and Frank Woodbury constitute the committee having this detail in charge.

Especial thanks are also due Assistant General Superintendent W. A. Vaughan, and the Knoxville Division Superintendent of the Southern Railway Company, who accompanied us, for courtesies extended us on the trip, which was an event of a lifetime and always to be remembered.

Very sincerely yours,

LISTON H. MONTGOMERY, M.D.

Unchastity and Credibility.

BALTIMORE, MD., May 4, 1896.

To the Editor: In the Miscellany of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for Feb. 29, 1896, there appeared an item under the head of "Unchastity and Credibility," reporting a decision of the supreme court of Missouri, that unchastity in a man does not affect his character for truth, while it does that of a woman. The decision struck me at the time as piling one injustice upon another, basing a legal discrimination against the weaker of the two parties in the act of prostitution upon the original injustice to women of a double standard of morals. I am glad to see my view sustained by the London *Personal Rights*, of April 15, 1896.

As you published the decision, will you kindly publish this

criticism of it in the interests of justice and of sound morality on the only possible basis, a single standard for both sexes.

Very truly yours,

HOWARD A. KELLY.

"UNCHASTITY AND CREDIBILITY.—'For a considerable time,' says the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 'the rule permitting a witness to be impeached by proof of general reputation for unchastity was confined, in Missouri, to females. Then the supreme court of the State held, in two cases, that the rule applied alike to both sexes, and that such reputation might be shown to discredit a male as well as a female witness. Now, in the case of State v. Sibley, the court, with three justices dissenting, overrules those two cases and reverts to its original position. Especially in a case where the defendant's character for chastity is directly involved, does the court think that such evidence is inadmissible for the purpose of impeaching his character as a witness. It is a matter of common knowledge, the court goes on to say, that the bad character of a man for chastity does not even in the remotest degree affect his character for truth, when based on that alone while it does that of a woman. It is no compliment to a woman to measure her character for truth by the same standard that you do that of man's, predicated upon character for chastity. What destroys the standing of the one, in all walks of life, has no effect on the standing for truth of the other.'

"This decision appears to us an abominably bad one. Either the court should decline to entertain the question of chastity in man or woman—and this would be by far the most equitable solution—or it should entertain it in both. To base upon the fact that woman's conduct is gauged by one moral standard and man's by another, a still further injustice, by which a woman who does that which is disregarded when done by a man is made a semi-outlaw, appears to us monstrous. In what the court speaks of as matter of common knowledge, it confounds reputation with character. The whole edifice of constructive credibility and incredibility in courts of justice ought to be swept away. It is not long since every atheist or agnostic was constructively held to be a liar; though as John Stuart Mill said, the tribunals accepted the evidence of such atheists as were willing to lie, and rejected the testimony of those who preferred openly to avow a detested creed rather than tell a falsehood."

Racial Degeneracy.

To the Editor:—Apropos of your editorial in the JOURNAL, May 9, "Anthropology as a Branch of Medical Education," I have the honor to send you an extract from a letter of Dr. Jules Goldschmidt, Paris, France, late Medical Superintendent of the Funchal Leper Asylum, Madeira. I had sent Dr. Goldschmidt, my article "Racial Degeneracy in America; Goitre and Dwarfing," reprinted from the *University Medical Magazine*, January, 1896. My conclusions were:

"Racial degeneracy may be defined as non-resistance to influences inimical to the existence of the race. The individual who can not resist the disease-producing causes which are afloat, whether they be germs, climate, or whatever their nature, is physically degenerate. If the subject has lost all power of resisting the immoral tendencies which threaten the race, he is morally degenerate. A cretin is intellectually degenerate. A dwarf is a degenerate, because he has lost the faculty of growth. Goitre is a disease of racial degeneracy; it will only be found in those races in whom development has come to a stand-still, as the mixed races of South and Central America, the Cagots, some inferior layers of the Scotch, the mixed mulatto race, and the degenerate Indians of America, etc. Leprous races are degenerate, as the Eta race of Japan, some Central and South American races; the low caste Hindoos; the poorer element of the Norwegian people. These diseases—leprosy, goitre, dwarfing, cretinism—are evidences of the dying out of a race."

Dr. Goldschmidt writes: "What you say about pre-Columbian syphilis and leprosy, and that about racial degeneracy in America is of the highest interest and greatest importance for the history of diseases and for the theory of evolution."

"You remember what Darwin says in his 'Origin of Species' about the degeneration of the rabbit in the island of Porto Santo, some 60 miles to the north of Madeira and discovered a year before the latter island. Soon after the discovery, the ordinary rabbit was introduced into Porto Santo, and the still

existing race is quite dwarfish compared to its ancestral continental prototype. . . . At last I must say a few words about tuberculosis and leprosy among the Indian tribes of North and South America. . . . Are not alcoholism, syphilis and tuberculosis the causes of the rapid disappearance of the aborigines in North America? Has leprosy any importance in this question of extinction? On the other hand are the cases of leprosy among the southern Indians not overwhelmingly more numerous than those among the northern? This question has a great importance to me especially as regards the natural disappearance of epidemics." Very truly yours,

ALBERT S. ASHMEAD, M.D.

We All Talk Shop.

To the Editor:—The thought expressed in the words which head this letter was suggested by reading in a secular newspaper an interview of which the following is an extract:

"Dr. George F. Shrady, the famous practitioner who was in attendance upon both President Garfield and President Grant, is an advisory physician to the Red Cross Hospital and a conservative man, who is widely quoted upon medical topics. He is editor of the *Medical Record* of this city, probably the most important medical journal published on the continent. At his home at 8 East Sixty-sixth Street Dr. Shrady thus expressed himself: * * * * * 'It is like a knife—good in its place. There,' said the doctor, pointing to a knife in a glass case, 'is the knife that cut President Garfield, and the knife did him good; but I would not stick it into every sick man in my care.'"

The introduction to the interview is purely reportorial, and we have little to do with it. We like to know the man whose views upon matters we note, just the same as we like to know how much experience and authority there is back of an article in a medical journal. Hence, it comes about that when it is stated at the heading of a paper that the author is a member of three or four medical societies, an *ex*-member of one or two others, a lecturer or a professor in a medical college, and particularly if he is, etc., three or four times besides, we conclude at once that the article is worth the while. But what about "the knife in the glass case?" The reporter chanced to be seated so that he could see the knife in the "glass case." Exactly. He does not say whether the chair was fastened to the floor or not? Possibly the "glass case" was not fastened to the wall, but sitting on a table? A good artist always leaves out of the picture something for the imagination to supply.

One naturally asks, but why "glass"? That's it. "He pointed to the knife," hence, in this particular instance it is fair to presume that the case, that is to say, the "glass case," was transparent; a transparent "glass case" is aseptic, so we have it. Usually, the obsolete old Code is dragged into such discussions, but this interview was had in the *Record* office, and in that sanctum professional honor is free and untrammelled by codic restrictions.

J. L. TRACY, M.D.

PUBLIC HEALTH.

What Is the Possible Minimum Death Rate?—The late Dr. Parkes fixed 17 per 1,000 as the "mortality incident to human nature," and in his time—the infancy of hygiene and sanitation—even that figure seemed Utopian. But what shall it be now fixed at in view of the reduced rate in Greater London. In 1894 the death rate had fallen from 20.5 for the decennium, 1881-90, to 17.7 per 1,000; and last year, 1895, when the mean was 19.7, there were sanitary areas in the great metropolis with the following figures: Wandsworth, 14.8; Lee, 14.5; Lewisham, 14.4; Stoke Newington, 13.4, and Hampstead, 12.

The Hygienic Importance of Amusements.—At the recent annual banquet of the French Société de Hygiène, one speaker dwelt upon the absolute necessity of providing amusements for the

masses as a hygienic measure. This was better understood in the past than now, and entertainments were provided for the people by the State. He mentioned an instance in his own experience, of a regiment whose commanding officer allowed the men to sing on the march. Health, spirits and strength flourished, and the severest exercises were play to the light-hearted men. The officer was changed and the new-comer stopped the singing, when the men drooped and the sick list grew long.

Illinois Auxiliary Sanitary Association.—The third annual meeting of the Auxiliary Sanitary Association of the Illinois State Board of Health will be held in the Capitol building at Springfield, May 22 and 23. This Association is composed of delegates and representatives of the health boards and departments of the cities and towns of the State, and the scope and objects of the organization may be inferred from the following abstract of the program: First day's session, a paper on "The Duties of Local Boards of Health as Instructors of the Public," by Arthur R. Reynolds, M.D., ex-Commissioner of Health, Chicago; "Water Analysis and the Means Provided by the State University for Making Analyses of the Water Supplies of the State," by A. W. Palmer, S. C. D., Professor of Chemistry, University of Champaign; "Tuberculosis as It Affects Animal and Man," by M. R. Trumbower, D.V.S., State Veterinarian, Sterling; "To What Extent Should Compensation Be Made for Losses Sustained by Individuals to Protect Communities from Contagious Diseases?" by Hon. M. L. Newell, Assistant Attorney General, Springfield; "Sanitary Supervision of Country Schools," by C. W. Oleson, M.D., Lombard. Second day's session: "Milk Inspection," by Adolph Gehrmann, M. D., Director and Bacteriologist, Chicago Health Department; "Duties of Local Boards of Health in the Management of Infectious and Contagious Diseases," by L. C. Taylor, M.D., Springfield; "Best Methods of Disposing of Sewage and Garbage in Small Cities," by E. P. Cook, M. D., Mendota; "Powers and Possibilities of Local Boards of Health," by A. G. Patton, M. D., Monmouth: reports of sanitary work done by cities and towns in the State by delegates and representatives.

Mortality in New York State in March. The *Bulletin* of the State Board of Health shows an unusually heavy death roll by influenza. The daily average number of deaths rose from 338 in February and 328 in January, to 358 in March, the estimated death rate being 20.00 against 18.75 and 18.50 respectively in the preceding months. Compared with March, 1895, there were 300 fewer deaths, the decrease being in deaths attributed to old age and from unclassified causes; there were 200 more deaths from consumption reported than in last March; the number from acute respiratory diseases, as well as from other local diseases was nearly the same, while the total zymotic mortality was also the same. The gripe epidemic then prevailing was estimated to have caused 1,500 deaths during the month: the mortality of the present month has been exaggerated from this cause by about 1,100 deaths, its mild prevalence for the past two months having given place to somewhat greater intensity. Measles alone among zymotic diseases shows an increase as compared with the preceding months and with a year ago: there is a more general distribution, 250 deaths occurring from it, which is a monthly mortality not often reached: a considerable number of deaths occurred in adult life. There were but 370 deaths from diphtheria, the average for March for the past ten years being 525, which represents a diminution in its mortality from 9 per 100,000 population to 6, or one third. The death rate from all causes in rural parts of the State was 17, against 21 in the rest of the State, the percentage of zymotic mortality being 6 against 11; of consumption, 9 against 12; of acute respiratory diseases, 17 against 21. One fifth of the typhoid fever mortality occurred in rural parts of the State, and less than one fifteenth of the diphtheria mortality.

Car Sanitation. Report of Standing Committee of the Section

of Railway Surgery on "Car Sanitation and the Railway Transportation of cases of Contagious and Infectious Diseases. [From advance sheets of *Medico-Legal Journal*.]

TO THE SECTION ON RAILWAY SURGERY OF THE MEDICO-LEGAL SOCIETY OF NEW YORK:

Gentlemen: The Standing Committee authorized at the November, 1895, meeting joint session—to report on the question of car sanitation, and especially on the transportation of people, sick or afflicted with infectious or contagious diseases, submit the following report:

Transportation of the sick is necessary.

It is the duty, and to the interest of *all* that railway managers consider how best to meet the exigencies of such a service, and how best to protect all who travel on railways, from the danger of infection and contagion.

In this report we will first consider tuberculosis, better known as consumption, which is a dangerous, infectious, communicable disease, the spread of which may be largely prevented by isolation, and by simple and easy means of cleanliness on the part of those afflicted, and those having the care of them. It is transmitted in the vast majority of cases from the sick to the healthy, by means of the sputum or expectoration of those afflicted with the disease.

Apartments, berths, compartments in coaches, etc., which have been occupied by a consumptive, or by a person sick with any contagious disease, should not be occupied by others, until they have been disinfected. Sick people travel under different circumstances:

1. Some take passage in an apparently healthy state, and after a few hours experience the first symptoms of infection.
2. Others suffering from an acute transmissible disease, hastily undertake a short journey, in order to reach their family physicians.
3. Others having acquired a chronic disease, travel with a therapeutic object, in search of a different climate, of a bathing station, etc.
4. The unfortunate incurables often return to die in their own homes, or among their own people.

The sleeping car is considered by all to be the point of greatest danger. Fellow passengers and employes can and should be protected. The question of car sanitation is timely, very important, and of deep interest to the traveling public of the entire world. It is also a very delicate question indeed, for the officials of our railways to consider and settle, for it affects the personal liberty of passengers.

Your committee believes, however, that when our officials fully understand the dangers arising from the present custom of transportation of people, sick with contagious diseases, that they will be found ready and willing to meet us in discussion, to receive instructions and if they can see their way clear, to adopt proper and up-to-date means of prevention.

Your committee also believes that car sanitation is an element *soon* to be advertised by railways, and in proportion to its perfection, will they receive profit and commendation.

Preventative measures are, in the judgment of your committee, the best means of averting the dangers we are asked to consider. We therefore make the following recommendations:

Prevention: 1, education of the public through the daily press; 2, legislation, State and National; 3, isolation of passengers; 4, disinfection of berths and compartments; 5, a conference between railway men and railway surgeons.

Dated April 15, 1896.

George Chaffe, M.D., Chairman; R. Sayre Harden, M.D.; Clark Bell, Esq.; J. B. Murdock, M.D.; Frank H. Caldwell, M.D.; R. S. Parkhill, M.D.; Granville P. Conn, M.D.; R. Harvey Reed, M.D.; B. P. Downs, M.D.

Health Reports. The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

- Kentucky: Paducah, April 21 to 31, 4 cases, 2 deaths.
Louisiana: New Orleans, April 25 to May 2, 31 cases, 12 deaths; April 1 to 30, 248 cases, 92 deaths.
Michigan: Bay City, April 25 to May 2; Ionia, April 25 to May 2; smallpox reported.
New York: New York, May 2 to 9, 1 case, 1 death.
Tennessee: Memphis, April 1 to 30, 6 cases; Shelby County (not including Memphis) 41 cases, 3 deaths; Covington, April 1 to 30, 2 cases; Cedar Point, April 1 to 30, 1 case.
Washington: Seattle, April 25 to May 2, 1 case.

SMALLPOX—FOREIGN.

- Alexandria, April 1 to 8, 1 death.
Birmingham, April 18 to 25, 2 cases.

Bombay, April 2 to 14, 75 deaths.
 Bristol, April 18 to 25, 1 case, 1 death.
 Cairo, April 1 to 8, 4 deaths.
 Calcutta, March 21 to April 4, 13 deaths.
 Cardiff, April 18 to 25, 1 case.
 Cienfuegos, April 19 to 26, 8 deaths.
 Corunna, April 4 to 25, 10 deaths.
 Gibraltar, April 12 to 19, 1 case.
 Madrid, April 14 to 21, 10 deaths.
 Montevideo, March 22 to April 4, 6 cases.
 Moscow, April 4 to 11, 1 case.
 Naples, April 20 to 27, 8 cases, 3 deaths.
 Odessa, April 11 to 18, 20 cases, 1 death.
 Prague, April 11 to 18, 10 cases.
 St. Petersburg, April 11 to 18, 35 cases, 4 deaths.
 Swansea, April 18 to 25, 3 cases.
 Warsaw, April 11 to 18, 1 death.
 Rio de Janeiro, March 28 to April 11, 7 deaths.

CHOLERA.

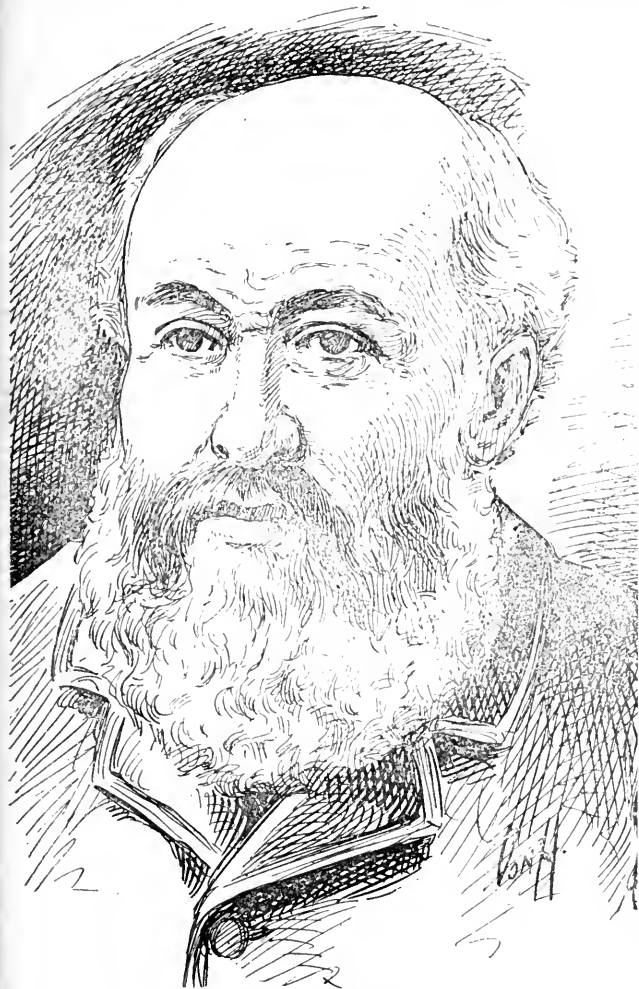
Alexandria, April 1 to 8, 19 deaths.
 Bombay, April 2 to 14, 14 deaths.
 Calcutta, March 21 to April 4, 535 deaths.

YELLOW FEVER.

Havana, April 28 to May 5, 12 cases, 5 deaths.
 Rio de Janeiro, March 28 to April 11, 305 deaths.

NECROLOGY.

AN OBJECT-LESSON IN LONGEVITY.—Readers of the JOURNAL are not unfamiliar with the name and fame of the subject of



DR. WILLIAM REYNOLD SALMON, M.R.C.S.

[By courtesy of the Chicago Times-Herald.]

the accompanying illustration. William Reynold Salmon, M. R. C. S., of Penllyn Court, Cowbridge, Glamorganshire, South Wales, completed his 106th year on March 16, and died on the 11th of the present month—at the time of his death the

oldest known individual of indisputably authenticated age, the oldest physician, the oldest member of the Royal College of Surgeons, England, and the oldest Freemason in the world. His age does not rest upon tradition or repute. He was the son of a successful and esteemed practicing physician of Market Wickham, Suffolk, Eng., and there is in the possession of his two surviving relatives, who cared for his household for many years, his mother's diary, in which is inscribed in the handwriting of a lady of the eighteenth century, under the date, Tuesday, March 16, 1790, a prayer of thankfulness to God that she had passed her 'tryall,' and that a son was born, who she hoped 'would prosper, be a support to his parents, and make virtue his chief pursuit.' The Royal College of Surgeons verified this record many years ago, and it was subsequently again authenticated by the authorities of the Freemasons, who thereupon enshrined his portrait in their gallery as the oldest living Freemason. The Salmon family moved to Cowbridge in 1796, so that the doctor had lived exactly a century in the lovely and poetic Vale of Glamorgan, in the very heart of which Penllyn Court is situate. Here on his 106th birthday—a man of over middle height, with still long flowing hair, druidical beard and mustache, and bushy eyebrows—Dr. Salmon was visited by one who writes:

"Seen a few days ago, the Patriarch of Penllyn Court was hale and hearty. He eats well and sleeps well and was feeling better than he had felt for the last five years. On that day he rose at noon, dined at 6, and retired at 9. Drank two glasses of port with his dinner, but did not smoke. He abandoned his favorite weed at the age of 90, and had to discontinue his drives over his beautiful estate in his 100th year. One day is much the same as another, for he gives his two relatives little trouble in attending upon his wants. Dr. Salmon has not discovered the elixir of life, for the shadows of life's evening are stealing slowly over him. He can not move about, his hearing is dulled, and the light is almost shut out from the 'windows of his soul.' Let us think of this remarkable man waiting for death uncomplainingly in his old-fashioned mansion, surrounded by the beautiful foliage and the broad expanse of green fields that he loved so much to roam when a younger man, in that sylvan Sleepy Hollow in the Vale of Glamorgan."

Eight weeks later he, who in youth had been "the youngest surgeon in the army," died, the oldest physician in the world.

MARIANO SEMMOLA, M.D., Professor at Naples and Senator of the Kingdom of Italy. Born in 1831, he was one of the most brilliant scientific men of Italy, and almost as well known outside by his numerous writings on his specialties, experimental pathology and therapeutics, and also his contributions to medical conventions. He delivered one of the general addresses at the International Medical Congress in Washington, 1887.

CONSTANTIN PAUL AND J. LEFORT, M.D.—The Académie de Médecine at Paris has just lost these two honored members. The former from a street lad had become one of the most popular physicians of Paris.

JOSEPH SPATH, M.D., at Vienna, one of the famous group that made Vienna's reputation a generation ago. He had been living in seclusion for some years, on account of blindness, since he was compelled to abandon his practice and the chair of Gynecology in 1886.

J. W. SCOTT, M.D. (Starling Medical College, Columbus, Ohio, 1855) died of heart disease, at Cleveland, Ohio, May 5, aged 74 years. He was born in Culpepper County, Va., and moved to Columbus in 1856. He was the first president of the Cleveland Medical Society and was appointed to the Chair of Materia Medica when the Charity Hospital Medical College was organized in 1863, and went with it when it joined the Western Reserve University. He was a member of the State Medical Association, the AMERICAN MEDICAL ASSOCIATION and other medical and medico-legal societies.

O. W. STONE, M.D. (Medical School of Maine, Brunswick, Me., 1878), died of consumption, at Boulder, Mont., April 30.

—George A. Fiegenbaum (St. Joseph's Medical College, St. Joseph, Mo., 1880) of stricture of the esophagus, at St. Joseph, Mo., April 30, aged 41 years.—George D. Stevenson, M.D., formerly of the City Hospital Staff of Newark, N. J., May 2.—Wm. A. Strother, M.D. (Med. Depart. University of New York City, 1861), died of pneumonia, at Albany, Ga., May 2, aged 56.—Orrin D. Todd, M.D. (Pennsylvania Med. College, 1865), at Eminence, Ky., May 4.—Claude Wilson, M.D. (College of Physicians and Surgeons of New York, 1876), died of pneumonia, at Waterville, N. Y., April 22, aged 48 years.—W. C. Gibson, M.D. (Jefferson Med. College, 1880), one of Macon's most popular physicians, died at Vineville, Ga., April 25, aged 39 years.—P. I. Spenser, M.D. (Med. Depart. University of Wooster, Cleveland, 1871), died of heart disease, at

Cleveland, Ohio, April 27, aged 59 years.—Conrad Secrest, M.D. (Rush Med. College, 1870), died at Watseka, Ill., April 28, aged 67 years.

MISCELLANY.

Odessa, Russia, is to have a medical college and large connecting hospital to cost 1,400,000 rubles, which has just been appropriated by the government for the purpose.

The Boston Medical Library.—At a meeting of the Boston Medical Library Association, it was voted to change the name of the Corporation from Boston Medical Library Association to Boston Medical Library.

Population of Greater New York.—It is estimated by Dr. Roger S. Tracy, of the New York City Board of Health, that the number of persons living within the limits of "greater New York" is 3,195,059.

The Official Languages at the International Medical Congress at Moscow in 1897.—Yielding to the universal protest, the Committee of Management have announced that English and German will also be accepted as official languages, with French and Russian.

A Colony for invalid children has been organized in southern Russia which boards and cares for a child for the entire summer for 70 rubles. The age is limited to 14 to 16 years, and the troubles are mostly scrofulous, rheumatic, neurasthenic, etc. It is the work of a Russian society for the preservation of the health of the poor.

Second Pan-American Medical Congress.—The Committee on Organization of the second Pan-American Medical Congress at Mexico City, Mexico, have notified, through their Secretary, Dr. Eduardo Liceaga, Dr. H. L. E. Johnson that he had been appointed the Vice-President of the Congress for the District of Columbia. Local organization will commence at once.

Experiments on the Power of Absorption of the Bladder.—Alapy finds that there is no absorption from the bladder in rabbits, in the case of non-volatile substances, but that the volatile, gas-producing substances are absorbed very rapidly, such as anilin, pyridin, collidin, picolin, nicotin, etc.—*Centralblatt f. Chirurgie*, April 18.

Unique Effect of Inductive Currents on Living Bacteria. Motile bacilli are the only organized beings that possess the property of being turned around by an inductive current. They always turn immediately in the direction of the current if they are alive, but it has no effect upon them if dead, showing that the electricity has some direct relation to the vitality of their protoplasm. (Lortet) *Semaine Médicale*, April 29.

"Sapient Beldames" or Gratuitous Prescribers. Dr. Henry Ling Taylor, speaking in *Pediatrics* of a certain form of shoe largely advertised and used for the "support" of weak ankles, pays his compliments to its producers in an emphatic way. This kind of appliance, he says, "may be a great commercial success, but it is a clog and a hindrance and should be consigned to the armamentarium of those *sapient beldames of both sexes*, who never know what is the matter, but invariably know what to prescribe."

Methylene Blue Stands Side by Side with Quinin in the treatment of malarial troubles, is the conclusion announced by Röttger Kieh after observing seven cases of intermittent fever treated with six to eight powders of 10 centigrams each, during the day, for eight to twenty-three days. No unfavorable results followed except where it was kept up too long, when it produced a general depressing effect, arrested at once by suspending it. *Semaine Médicale*, April 22.

A Lemon Worn as a Pessary. Bérard describes the case of a woman of 68, who had used for twenty-two years a lemon as a

pessary to control prolapsus, accompanied by rectocele and cystocele. She changed the lemon every month herself, until the time when she had to apply to Bérard for assistance. There were no alterations in the vagina, nor excessive discharges, and the lemon, which had been in place more than a month and a half, showed no signs of decay. The *Journal de Méd. de Paris* (April 19), remarks that there may possibly be a valuable suggestion in this case, as the antiseptic properties of lemon rind are well known. Pellissier even recommends in obstinate cases of gonorrhea, urethral injections of citric acid, 8 grams to 1 liter water.—*Memorabilien*, April 11.

Medical College Association.—The Association of American Medical Colleges held its annual meeting in Atlanta May 4. The business transacted was formal and routine. The requirements for membership remain the same, namely, preliminary examinations in, 1, English, 2, mathematics, 3, physics, and 4, Latin, and four years of study in a medical college, at least six months each year. Dr. James M. Bodine, of Louisville, Ky., was elected president, and Dr. Bayard Holmes, of Chicago, reelected secretary. The work of the committee on syllabus was accepted and the committee continued.

Serum "Treatment" for a Mind Diseased.—Mairet and Vires of Montpellier, announce the curious fact that in two cases of acute mania treated with the serum from a cured maniacal case, one was much improved, but relapsed when the injections were discontinued. The other was cured. The calm secured was permanent; reason returned and the patient was dismissed as cured.—*Semaine Médicale*, April 22.

Discussion of Fatality Following the Use of Antitoxin.—While Behring's serum is being lauded at the medical congresses around the world, the press in its birthplace is denouncing it in no measured terms on account of the fact stated in the following death notice that recently appeared, over the signature of one of the best-known physicians there: "Died suddenly yesterday, in the midst of perfect health, our child, 20 months old, immediately after one preventive injection of Behring's serum." Eulenberg, in a scathing article in the *Deutsch. Med. Wochsch.* of April 16, deprecates this abuse, and states that the fact of the death resulting so instantaneously shows that it was not due to the serum, but probably to embolism or to the introduction of some air, or to some carelessness in the operation, injecting, perhaps, into a vein, as he remarks that there are very few poisons virulent enough to produce such instantaneous results if injected in the proper place in the proper way.

Practical Notes.

Gavage or Forced Alimentation.—Rousseau St. Phillipe described at the meeting of the *Acad. de Méd.*, April 14, his process of feeding prematurely born or feeble infants by administering milk in a pointed spoon through the nostril, the infant lying flat on his lap, with the head slightly raised.

Painting with Guaiacol in Pneumonia.—Maldaresco reports the results of a hundred cases treated in this way as very favorable. He painted the posterior thoracic wall, and repeated it whenever the temperature rose above a hundred, for two to four days. After this the temperature remained normal, when he administered quinin and alcoholic drinks. With elderly people and children he used almond oil and guaiacol at 40 per cent.—*Semaine Médicale*, April 11.

Nuclein in the Treatment of Puerperal Septic Disorders.—Nuclein has been used in Europe by Sée in pneumonia, and Professor Schauta of Vienna, and Hofbauer have been using it recently in seven cases of puerperal infection. Two cases were beyond all relief when it was used, but the other five cases all showed improvement and rapid recovery after its administration. Nuclein is supposed to stimulate the production of leucocytes in the organism, and the patients each experienced a painful sensibility in the bones, similar to that observed in leukemia,

which Hofbauer ascribes to the increase in the leucocytogenous power of the bone marrow under the influence of the nuclein. —*Semaine Médicale*, April 29.

Galvano-Therapeutics to Reduce Hypertrophied Prostate.—*La Semaine Médicale*, of April 22, states that there is no record of the galvanic current applied although faradization has been tried, and describes at length a case treated by Minervini, of Naples, with great success, where there was complete retention of urine. After six treatments the urine showed itself, and with thirty, covering a period of forty-two days, normal functions were restored.

Icteric Fever and Hematuria Produced by Quinin and Beans.—Tomasselli has called attention to the fever, hematuria and pronounced jaundice caused in some persons by quinin, and Pucci describes in the *Gazz. degli Osp. e delle Clin.* of April 2, seven cases, all of which were preceded by similar symptoms produced by eating green beans. He found this intolerance of beans in all the chronic cases of intolerance of quinin. But three cases of severe jaundice, fever and hematuria caused by eating green beans and much aggravated by the administration of quinin, recovered entirely in couple of weeks, and quinin administered later produced no unusual effects.

Carbid of Calcium in Epithelioma of the Uterus and Vagina.—Guinard arrests and relieves the pains, hemorrhages and fetid discharges by introducing into the vagina a piece of carbid of calcium, about the size of a nut, and tamponing the opening with iodoform gauze. It develops acetylene gas in contact with moisture, and there is a burning sensation at first, but this soon passes away, in four hours at most. Four days later he washes out the vagina freely with a 1,000 solution of sublimate, carefully removing every incrustation. He recommends this treatment highly, although he has only had three months experience with it. Its power to arrest the hemorrhage immediately, renders it peculiarly valuable. —*Progrès Médical*, April 8.

Inter-Cricothyroid Laryngotomy.—Richelot advocates this operation as far more simple and beneficial in adults than tracheotomy. There is no injury to an important organ to be feared, and a simple bistoury and Krishaber canule are all that are required. Place the nail of the left index finger on a level with the lower edge of the thyroid cartilage, on the median line, and turn the head slightly to enlarge the space between the cartilages, then make an opening one centimeter in length. The cricothyroid membrane is opened with the point of the bistoury and the tube inserted. The whole operation takes less than a minute. A canule of 9 to 10 millimeters is a great help to respiration. He has seen them worn for months, and cause very little inconvenience, even in cases of tuberculosis and cancer, where the cartilages are liable to be degenerated and easily torn. —*Bulletin de l'Académie de Médecine*, April 21.

Fatal Diabetic Coma Supervening upon Influenza. Dr. E. S. Cadnan reports in the *British Medical Journal* a case of the above nature as follows:

"On Feb. 29, 1896, I saw Mrs. H., aged 42. She was almost completely comatose. I had attended her for a normal confinement in December, 1893. She continued in good health till the beginning of 1895, when she had influenza, but only an ordinary attack, and complained of no symptoms which would lead one to suppose she was suffering from diabetes mellitus. Until about eight weeks before my visit she enjoyed fairly good health. She then suffered from a second attack of influenza, which never made her keep her bed, and was accompanied by the usual symptoms; she never complained of great thirst or polyuria, soon recovered, and I did not see her again till February 29, when I obtained the following facts from the husband: During the previous six weeks she had suffered from great thirst, drinking at least one gallon of fluid in the day; her appetite was not altered in the same way, in fact she took about her usual quantity of food; she had lost flesh extremely fast, and complained of great lassitude. She passed large quantities of urine. The character of the breathing reminded me forcibly of opium poisoning, but when compared closely the dyspnea was too labored and not peaceful enough. The

lips were red and there were no signs of cyanosis; the pupils acted very sluggishly to light, but were of normal size. When asked to put out the tongue she did so, but could not answer any question: the tongue was exceedingly dry, hard and brown; and felt like a piece of dry leather. She was extremely emaciated, and the skin was harsh and dry. The temperature was subnormal and the pulse small, frequent and feeble. She lay still, except that sometimes the head was moved from side to side and occasionally she muttered incoherently. The urine obtained by the use of the catheter had the characteristics of diabetic urine; the specific gravity was 1025; it contained a small amount of albumin and gave well-marked sugar reactions and also the acetone reaction with perchlorid of iron. The stupor, which commenced between midnight and 1 A. M. of February 29, gradually deepened into coma, which was fully established on March 1, when she was evidently sinking fast. Death took place at 10:30 P. M., about forty-six hours after the commencement of the stupor."

Hospital Notes.

The twenty-fourth annual report of Roosevelt Hospital of New York shows that the number of patients admitted during the year was 3,101, of which 1,429 were discharged cured, 1,198 improved, and 343 died. There were 2,875 free patients, and the cases treated in the accident room reached 5,485.

The new Santa Fé hospital at Topeka, Kas., said to be the finest railroad hospital in the world, was formally accepted April 27, by General Manager Frey as chairman of the board of trustees, and the building is now the property of the Hospital Association. The cost was \$100,000, exclusive of the site, and the fund was raised by monthly assessments of the employés of the road. Dr. George W. Hogeboom is chief surgeon.

Detroit.

AT THE REGULAR MEETING of the Detroit Medical and Library Association, May 4, Dr. A. N. Collins read a paper upon "Intestinal Obstruction." In his paper he calls attention to the seriousness of a condition which is liable to be met with by the general practitioner at any hour, and he points out how necessary then it is for every practitioner to have a thorough knowledge of the causes, conditions, symptoms and treatment of the trouble. Intestinal obstruction is simply a condition, and in considering it the main difficulty lies in getting at the cause. In his paper the Doctor considered only the acute condition. The classification which he gave was based upon the cause, and was that of Dr. Sands, with an addition of his own, external hernia and food accumulations. The reason he gives for making this addition is that in his experience it has been one of the most common causes and productive of the characteristic symptoms. Intussusception is the commonest cause in children and hernia in adults. He speaks of paralysis of a section of the intestine as a frequent cause. In considering the treatment, he speaks of how serious a matter it is for the attending physician, after having made a diagnosis, to decide if an operation is necessary, for many cases will recover without surgical interference. He cites several cases which occurred in his own practice, in which after operation was advised and before the operation could be performed, the symptoms cleared up and the patient recovered. On the other hand, he cites several cases which came under his notice, in which no treatment but surgical would or could be of any avail. He gave as his opinion that many more lives would be saved if, after operation had been advised, the operation could be performed immediately, without the necessary delay of taking the patient to the hospital, and the ill effect that moving would have upon his condition.

THE WAYNE COUNTY MEDICAL SOCIETY at its regular meeting, May 7, listened to an interesting paper by Dr. Willard Chaney entitled "Deviations of the Septum."

HEALTH OFFICE report for week ending May 9, 1896: Deaths under 5 years, 31, total 78; births, male 46, female 40, total 86. Contagious diseases: Diphtheria last report 9, new cases 5, recovered 1, died 1, now sick 12; scarlet fever, last report 17, new cases 14, recovered 3, died none, now sick 28; measles, last report none, new cases 1, recovered none, died none, now sick 1.

Washington.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The Health Officer makes the following report for the week ended May 2: There was a decrease in the mortality of the District over 31 per cent. as compared with the previous week. The annual death rate fell accordingly from 21.0 to 15.10, while during the corresponding period of last year the rate was 23.26, the normal

point. According to the reports received at the Health Department, there were 80 deaths, as against 116 by the last report. The improvement in the general health resulted mainly from a cessation of brain and heart affections and a fall in deaths from consumption from 22 to 12. There was one death from typhoid fever, 1 from diphtheria, 2 from measles and 1 from whooping cough. Other than these the zymotic contagious diseases were in abeyance. The mortality among the colored population exceeded that of the white by 16 per cent. New cases of diphtheria reported were 2, while 4 houses were released from quarantine, thus leaving four still isolated. Of scarlet fever 4 new cases were reported, quarantine was raised from 4 houses and 5 were left placarded.

DENTAL ASSOCIATION MEETING.—The third union meeting of the Washington City Dental Society and the Maryland Dental Association was held in the Columbian Medical School Hall on the 8th inst. Many important dental subjects were discussed. The attendance was large.

CHARITABLE APPROPRIATIONS BY CONGRESS. The following items are noted in the appropriation bill just favorably reported by the Senate: Central Dispensary and Emergency Hospital, \$15,000; Children's Hospital, \$10,000; Homeopathic Hospital, \$8,500; Hospital for Foundlings, \$6,000; St. Ann's Infant Asylum, \$5,400; Eastern Dispensary, \$1,000; Home for Incurables, \$2,000; \$8,000 for enforcement of act to prevent spread of scarlet fever and diphtheria.

COLUMBIAN UNIVERSITY GRADUATION. The graduating exercises of the dental department of the University were held on the 5th inst. Thirteen received the degree of D.D.S. The medical department exercises were held on the 7th inst. with twenty graduates.

MEDICAL PRACTICE ACT. The Medical Practice act which passed the House some time ago was passed by the Senate on the 9th inst., with two additional amendments, and finally passed on the 11th. The act does not take effect until July 1, 1896. One of these amendments provides that the proposed board of medical supervisors, which is to grant licenses, shall not recognize physicians coming from States which do not grant equal rights and privileges to the licentiates of the District board, and the other makes the law applicable to the medical students who have matriculated in any medical college in this District prior to Jan. 1, 1896.

Another measure of interest to the medical profession which was agreed to related to the testimony of physicians in the District courts and reads as follows:

That in the courts of the District of Columbia no physician or surgeon shall be permitted, without the consent of the person afflicted, or of his legal representative, to disclose any information, confidential in its nature, which he shall have acquired in attending a patient in a professional capacity, and which was necessary to enable him to act in that capacity, whether such information shall have been obtained from the patient or from his family or from the person or persons in charge of him: Provided, That this act shall not apply to evidence in criminal cases, where the accused is charged with causing the death of, or inflicting injuries upon, a human being, and the disclosure shall be required in the interests of public justice.

The report accompanying the bill shows that its enactment was vigorously opposed by the six justices of the supreme court of the District of Columbia, on the ground that if it became a law it would be a serious obstruction to justice in contests over life insurance, personal injury from negligent or willful acts, wills, and other litigation, in which mental capacity was involved. The judges took the ground that the doctors did not occupy the same privileged position as the lawyers in confidential communications. They stated broadly that the bill was not susceptible of any amendment that would make it unobjectionable, and that such legislation would be detrimental in every way. In answer to this, the Medical Society, through President Busey, submitted a lengthy argument, and upon this reply the favorable report of the Senate District Committee was based, and the bill finally passed May 11.

MEDICAL SOCIETY. At the meeting of the Society held on the 6th inst., Dr. C. H. Alden, U.S.A., read a paper entitled "Treatment of Alcoholism from report of Army Medical Officers." Dr. Chappell reported the history of a fatal case of extrophy of the bladder.

THE PUBLIC SERVICES.

Competitive Examination.—There will be held at Washington, D. C., on June 15, 1896, a competitive examination of candidates for appointment to the position of Assistant Surgeon in the U. S. Marine-Hospital Service. Candidates are required to be not less than 24 years of age, and no appointment is made of any candidate over 30 years of age. They must be graduates of a reputable medical college, and furnish testimonials as to character.

Successful candidates, having made the required grade, are appointed

in order of merit as vacancies arise during the succeeding year. There is at present one vacancy.

A successful candidate, when recommended for appointment, is commissioned by the President of the United States as an assistant surgeon. After four years of service and a second examination he is entitled to promotion to the grade of passed assistant surgeon, and to the rank of surgeon, according to priority, on the occurrence of vacancies in that grade.

The salary of an assistant surgeon is \$1,600 per annum, together with furnished quarters, light and fuel. That of a passed assistant surgeon \$1,800 per annum, and that of surgeon \$2,500 per annum. In addition to the above salaries, after five years' service, an additional compensation of ten per cent. of the annual salary for each five years of service is allowed medical officers above the rank of assistant surgeons, the maximum rate, however, not to exceed forty per cent.

When an officer is on duty at a station where there are no quarters furnished by the Government, commutation of quarters is allowed at the rate of \$30 per month for an assistant surgeon, \$40 for a passed assistant surgeon, and \$50 for a surgeon. The successful candidates, after receiving appointments, are usually ordered to one of the larger stations for training in their duties.

Full information may be obtained by addressing the Surgeon-General of the Marine-Hospital Service, Washington, D. C.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 2 to May 8, 1896.

Major Daniel G. Caldwell, Surgeon, having been found incapacitated for active service by reason of disability incident to the Service, is, by direction of the President, retired from active service this date, May 2, 1896.

Capt. Charles E. Woodruff, Asst. Surgeon, now at Ft. Sheridan, Ill., is detailed for temporary duty as attending surgeon in Chicago, retaining his station at Ft. Sheridan.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending May 9, 1896.

P. A. Surgeon A. M. D. McCormick, detached from the Naval Academy, and ordered to the "Bancroft."

Medical Inspector Daniel McMurtrie, ordered for examination for promotion May 8.

Surgeon W. A. McClurg, detached from the "Concord," home and three months' leave.

P. A. Surgeon P. H. Bryant, detached from the "Petrel," home and three months' leave.

Medical Inspector J. M. Flint, Surgeon J. C. Byrnes and P. A. Surgeon C. F. Stokes, are appointed a board to examine applicants for admission to the Naval Academy.

Change of Address.

Bellamy, B. C., from Stockton to Livermore, Alameda County, Cal.
 Buskirk, J. D., from Bradley to Grandville, Mich.
 Coffman, G. L., from St. Louis, Mo., to Thayer, Kas.
 Davidson, F. S., from 1004 Morse Ave. to 528 Morse Ave., Chicago, Ill.
 Epstein, A., from 776 Jackson Blvd. to 619 Monroe St., Chicago, Ill.
 Eichberg, L. R., from 4056 Indiana Ave. to 3312 Calumet Ave., Chicago.
 Formanek, F., from 1171 Millard Ave. to 251 Ogden Ave., Chicago.
 Griffin, M. A., from 708 Monroe St. to 1291 S. Port Ave., Chicago, Ill.
 Hemenway, S., from Bonanza to Klamath Falls, Ore.
 Kirkbride, W. F., from Philadelphia, Pa., to Spring Lake Beach, Pa., P. O. Box 215.
 Lawrence, G. H., from 47 N. Sheldon St. to 891 Jackson Blvd., Chicago.
 Montgomery, Liston H., from 70 State St. to Room 18 Central Music Hall, Chicago, Ill.
 McLeod, J. H., from St. Louis, Mo., to care Wabash Hospital, Springfield, Ill.
 Prentiss, D. W., from Hamilton Parish, Bermuda, to 1218 Ninth St., Washington, D. C.
 Parks, W. R., from Chicago, to 1458 Maple Ave., Evanston, Ill.
 Rotgeb, H. D., from Wellington to East Lynn, Ill.
 Silva, C. C. P., from 281 Warren Ave. to 132 Ashland Blvd., Chicago.
 Shoup, Jessie, from 312 Indiana Ave. 117 Maryland Ave. N. E., Washington, D. C.
 Stett, O. J., from 190 55th St. to 25 E. 44th St., Chicago.
 Westcott, G. D., from 1280 Adams St. to 1625 Fulton St., Chicago.
 Wood, W. S., from St. Louis to Elmo, Mo.
 Watkins, S. E., from 1213 N. St. N. W. to 1119 O St. N. W., Washington.
 Weir, L. J., from Chicago to West York, Ill.
 Woltze, Jno., from 467 W. Chicago Ave. to 445 North Ave., Chicago.

LETTERS RECEIVED.

American Laundry Supply Co., Cincinnati, Ohio.
 Battle Creek Sanitarium, Battle Creek, Mich.; Blodgett, F. J., New York, N. Y.; Beakley, N. P., England, Ark.; Brandon Printing Company, Nashville, Tenn.
 Cone, Andrew, New York, N. Y.; Cordell, Eugene F., Baltimore, Md.
 Douber-Goodale Co., Boston, Mass.
 Elliott, A. R., New York, N. Y.
 Farrington, J. M., Binghamton, N. Y.; Fitzpatrick, N. P., Chicago.
 Greider, C. S., Hurlburg, Pa.
 Henrotin, F., Chicago.
 Kuhn, Daniel, St. Louis, Mo.; Klebs, A. C., Citronelle, Ala.
 Lafton, Lucien, Atlanta, Ga.; Lane, L. P., Stillmore, Ga.; Londonderry, Lithia Spring Water Company, Nashua, N. H.
 Marsh Mfg. Co., Chicago; Mitchell, L. C., Minneapolis, Minn.; Mosler, D. D., Biles, Ohio; McBride, M. A. (2), Leesville, Texas; McLaughlin, H. W., Denver, Colo.
 Niles, S. R., Advertising Agency, The, Boston, Mass.; Noyes, E. H., Milford, Pa.
 O'Bryan, A. F., Longview, Texas; O'Gorman, James, Baltimore, Md.
 O'Toole, T. J. (2), Eagle Grove, Iowa.
 Pearson, N. P., Chicago; Publishers' Commercial Union, Chicago.
 Reed, R. Harvey (2), Columbus, Ohio; Ross, A. A., Hochheim, Texas.
 Savage, G. C., Nashville, Tenn.; Schering & Glatz, New York, N. Y.
 Scott, N. Stone, Cleveland, Ohio; Seng, F. J., Chicago; Slaughter, A. W., Green Bay, Wis.; Stearns, F. & Co. (2), Detroit, Mich.; St. Charles Cordens Company, St. Charles, Ill.; Struch, Carl, Chicago.
 Talbot, E. S. (2), Chicago.
 Warner, J. W., New York, N. Y.; Wilbur, C. L., Lansing, Mich.; Woodbridge, J. E., Cleveland, Ohio.

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ADDRESSES.

THE STUDY OF THE FEVERS OF THE SOUTH.

The Address on General Medicine, Delivered at the Forty-seventh
Annual Meeting of the American Medical Association,
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Humanity has but three great enemies: Fever, famine and war; of these by far the greatest, by far the most terrible, is fever. Gad, the seer of David, estimated aright the relative intensity of these afflictions when he made three days' pestilence the equivalent of three months' flight before the enemy, and of three (seven) years of famine. As far back as history will carry us, in ancient Greece, in ancient Rome, throughout the middle ages, down to our own day, the noisome pestilence, in whatsoever form it assumed, has been dreaded justly as the greatest of evils.

It is worthy of comment that three of the greatest benefits conferred on mankind—beside which it would be hard to name three of equal importance—have been in connection with the fevers: The introduction of cinchona, the discovery of vaccination and the announcement of the principle of asepsis. Too great a boon for a single era, these priceless gifts have been distributed over three centuries. They represent great practical applications of our art in three departments: Cinchona bark in therapeutics, vaccination in preventive medicine and asepticism in surgery. Each of the diseases thus attacked in its stronghold may be taken as a type of a great group of the fevers, the miasmatic-contagious, the eruptive and the septic.

Although in connection with the fevers the century can claim but one discovery of the first magnitude: yet the sum of progress in all directions has been vast. If asked to name the most conspicuous, those which have helped us most to fulfill our highest functions in the relief of suffering and the prevention of disease, I would say, the differentiation of the continued fevers, the enouncing of the gospel of medical cleanliness, the recognition of the microbic origin of many diseases, and the introduction of rational methods of treatment.

I have chosen to address you *on the study of the fevers of the South*, since I felt that here no subject lies so near to the general practitioner, no question requires to be so often discussed with freedom and clearness, and no place in the civilized world offers better opportunities for the solution of some of the many complex problems as yet unsolved. I shall not refer to yellow fever, that dreaded foe which each generation has had to face, happily in epidemics of ever lessening extent and duration. I can not pass it, however, without reverently paying a tribute to our colleagues who have fallen in the fight. The unselfish devotion to

the good of our fellow creatures, which animates our best work, has given to physicians in every age a spirit which in times of great peril has enabled them to meet the gravest emergencies. No epidemics have blazoned forth in such relief the heroism of our fellows as those of typhus in Europe and of yellow fever in America.

The differentiation of special forms of the continued fevers, and particularly that of typhoid, is one of the most interesting chapters in medicine. "There is but one fever. Of course I do not admit of its artificial division into genera and species." So wrote the great Benjamin Rush, whose theory of the unity of fever with twelve primary states and innumerable combinations was a reaction from the complicated nosology of Cullen. Of the three generations of physicians of this century, the first never emerged from the chaos in which Cullen, Rush, *et al.*, left it; from the horizon of the second the thick clouds began to clear away; while we of the third live in the dawn, at any rate, of order.

The correlation of the fevers, the passage of one into the other, their transmutability and mutual substitution were articles of faith of our grandparents. Let me read you a paragraph from that delightful biography of John Armstrong by Francis Boott (1835), a work which should be read by Southern physicians who wish to learn how much good work was done by their predecessors in the early years of the century. "In taking, therefore, a general review of the diseases of North America, which owe their origin to malaria, we observe yellow fever almost annually epidemic at Vera Cruz, lat. 19° 11'; and that it gradually disappears in frequency as we approach the latitude of Boston. 42° 20'; that in the parallel of Philadelphia it often ends in typhus; that north of this line, typhus becomes the more frequent form of fever, till we lose all trace of yellow fever in Vermont, as a distinct disease, the symptoms of both, however, being sometimes blended in the same case; that both of them are attended, from the south to the north, with diarrhea, dysentery, cholera infantum in the summer, and in the winter and spring with a pleurisy or peripneumony, which in the south is more decidedly marked, like the autumnal fever, with bilious symptoms; sometimes, as Rush observed in 1803, with a tendency to a tertian type; and in the north, having, like its fevers, a more typhoid character, sometimes approaching to the most malignant forms of congestive fever."

The passage of remittent into yellow fever, the relations of the malarial to the continued fevers, the connection of pneumonia with malaria, were questions discussed at extraordinary length. Careless of the type, they attributed a mobility and plasticity to the individual fevers which we can not understand with our ideas of fixidness, and of a true breeding of the germs. The literature was in indirect bulk to the accuracy and positiveness of their knowledge. Vol-

umes to them were as articles to us. Take, for example, the enormous literature on the question which stirred so deeply the second generation of physicians in the South; the relations of malaria with pneumonia. What a wordy war it was! And how Manson and W. T. Howard belabored each other! René La Roche could only undertake the consideration of the question within the limits of a modest brochure of above five hundred pages! To us the crop may not seem to have been worth harvesting, but the soil left barren could scarcely have grown the grain by which we to-day live, and any student may read in the contributions between 1820 and 1860 an ever growing appreciation of the value of accurate clinical and pathologic observations.

In the study of fever the profession in the United States received during the third and fourth decades an extraordinary impulse from France. Previous to this English medicine had controlled the situation, but for years following their deaths, Hunter and Cullen had no worthy successors. No more arid period exists in British medicine than that which followed immediately upon the exit of these giants.

Laennec, with his marvelous discoveries in clinical medicine, was a ferment of extraordinary potency. To him, and later to Louis, the young men of this country turned for inspiration. While Laennec's work is eternal his career was brief, and it was particularly from his immediate successors in Paris, and above all from Louis, that American students received at this time their intellectual impulse. The introduction by him of the numerical method, and the rigid and accurate study which he made of typhoid fever, stimulated everywhere a more careful anatomic and clinical consideration of fevers of all sorts.

But Louis' work, great as it was in France, has had a far wider sphere. No European teacher has ever had so devoted or so distinguished a band of American students, upon whom was poured out a full measure of his spirit. James Jackson, Jr., Oliver Wendell Holmes, Henry I. Bowditch, Geo. B. Shattuck, John A. Swett, Alonzo Clark, Elisha Bartlett, Caspar W. Pennock, W. W. Gerhard, Thomas Stewardson, Alfred Stillé and William Power. What a splendid band! All of them "caught his clear accents, learned his great language and made him their model." Industry with accuracy, zeal with judgment, honesty with candor, characterized these men, who may be said truly to have changed the whole method of clinical work in this country. There was a certain *Je ne sais quoi* quality about this group which pertains to no other in the history of American medicine. Perhaps it is best expressed by the term *Brahmin*, as Oliver Wendell Holmes uses it, men to whom *noblesse oblige* was not mere verbiage. Alas! that but one of the group remains, full of years and honor, and as his recent address shows, faithful to the methods of his master, ever faithful to the highest interest of his profession. The work of these men has been worthy of them. I am never tired of telling the story of the differentiation of typhus and typhoid fever, in which they with a number of young men in different countries took part. I can not bore you with it here. The chief credit is due to W. W. Gerhard, of Philadelphia, but so well did Louis' pupils leaven the mass that Gerhard's paper, and the studies of James Jackson, Jr., Enoch Hale, Geo. B. Shattuck and Alfred Stillé made the distinctions well and widely known early in the forties. So solidly had the work been

done, that in the first edition of Bartlett's work on fevers, 1842, we have the separate accounts just as they are given to-day; and three editions of the work had appeared before Jenner brought conviction to the profession in Great Britain.

Yellow fever is now a rare visitant in the South; smallpox occurs only in local outbreaks; typhus fever has not been seen by the present generation of physicians; cholera has not been epidemic since 1866. Gradually, but surely, the great epidemic diseases have been driven from the land. Even malaria has diminished extraordinarily in its extent and in its intensity, particularly above the latitude of Norfolk. One only of the continued fevers persists, almost, we may say, in its original vigor. Typhoid fever is to-day in the United States *the fever*, just as it was when the old New England physicians recognized its recurrence year after year with the fall of the leaves. Of no disease is the history better known; the measures for its prevention are everywhere recognized; the incidence of its occurrence is an unfailing index of the sanitary intelligence of a community. With good drainage, pure water and pure milk, typhoid fever goes the way of typhus and cholera. The greatest sanitary triumphs of the century have been in reducing to a minimum the mortality from this disease in the great centers of population in Europe. The mortuary returns of Washington and of Baltimore, and of many smaller cities demonstrate that we are culpably negligent in allowing this most easily preventable disease to continue its ravages. I estimate that in the latter city there were during the year 1895 not less than 2,500 cases.

The greater prevalence of the disease last year in many cities in the Union was associated with temporary conditions upon which I need not dwell. Certain cities in which sanitary measures have been carried out recently, as Chicago, have showed even a diminution in mortality. But to one feature in connection with the disease I should like to call the special attention of the members, viz., its increasing prevalence in smaller towns and in the country. Accurate data are impossible to obtain, as compulsory notification of cases is not carried out, but in many States, particularly, so far as I know, in Pennsylvania, Maryland and Virginia, the cities have suffered less than the suburban and rural districts. Are we not responsible, in part at least, for this condition of affairs? Have we given enough attention to local health matters? Have we preached, in season and out of season, the gospel of cleanliness? And, most important of all, have we always realized the paramount importance of neutralizing the poison in each case? There is an urgent need in counties and smaller towns of a more systematic enforcement of the laws of health. We do not appreciate here, as in England, the value of well organized health boards with properly paid officials, and with modern equipments. Rural sanitation needs reorganizing, and the increase of typhoid fever is the best comment on the unsatisfactory nature of the present state of affairs.

It is a very gratifying sign to notice the attention which has been given of late to the subject of typhoid fever in the South. Some years ago a good many physicians resented the imputation that the disease to any extent prevailed in the Gulf States. I have been in the habit for several years past of reading the reports of the discussions on this subject at the New Orleans Parish Medical Society. They have

been interesting, as showing a progressive development of knowledge, such as comes to all of us with fuller study of any problem. Enteric fever presents no constant picture; on the contrary, scarcely any disease has a more varied symptomatology. The fever may be said to be invariable, though afebrile cases are not unknown; but in the features of onset, in the length of its course, in the presence or absence of symptoms regarded as cardinal, such as rose spots, diarrhea and splenic enlargement, typhoid fever is so uncertain that the diagnosis is often dubious. We have now, as I shall mention, an unerring means of differentiating malaria, with which here the disease is so often confounded. We are still without a ready means of recognizing under all conditions, typhoid fever, a method available even for the hospital physician. Elsner's plan, if it turns out successful, will be useful where there is a well equipped laboratory, but the general practitioner must trust to his past experience, to his common sense and to his special senses to recognize the disease. Mistakes can not be avoided, and there are cases, as in every disease, in which a diagnosis can not be reached.

Advances in the treatment of fevers, and especially of typhoid, have not kept pace with the rapid progress in our knowledge of the etiology. In the present condition of bacteriology we may hopefully expect great things in the near future, but meanwhile we jog along without any fixed aim, too often carried away by winds of doctrines and wild theories. Still it is something to have escaped from the restless activities of our grandfathers. They were not all, however, of the same stamp. If I had typhoid fever and had a theosophic option as to a family physician I would choose Nathan Smith, nor would I care whether it was while he labored in the flesh in the little town of Cornish, N. H., in 1798, or after he had become the distinguished Professor of Medicine in Yale.

I know of no more graphic contrast than can be drawn between the comfort of fever patients at the beginning and at the close of the century. In illustration let me give you an account which I picked up last summer in the Medical Library at Boston, from a brochure by Dr. Gamage on the fever of 1817-18 in that city. He was describing a typical case of typhoid fever with several relapses, which occurred in a woman, whom he saw about the first of February. In the first attack, between February 3 and 28, she had seventeen bleedings, varying from fifteen to twenty ounces; in all, 167 ounces of blood were taken. She had active purgation and calomel galore. There were blisters to the neck, blisters behind the ears, blisters on the abdomen. Throughout March, April and May the patient had three, if not four, relapses, in each of which there were renewed bleedings, though the amount of blood was rarely more than four to six ounces. The purging and blistering were kept up, but there was added on several occasions cold ablutions, and thrice she had tepid baths. In the very full record which he gives of the case it is evident that scarcely forty-eight hours passed without some active medication.

Think of the misery, the tediousness, the discomfort of a typhoid case with three relapses; think of the bleedings, the blisterings, the purgings, from which at least our fever patients of to-day are free! Contrast the quiet, the care, the gentle nursing, the scrupulous cleanliness, the abundance of cold water

to drink and the fresh air which typhoid patients of to-day receive. A practitioner of the Nathan Smith type, a man who has the confidence of his patients, will carry through a majority of his typhoid fever patients without a single dose of medicine, not a purge, not a vomit, not even a fever mixture. He is a patient, anxious spectator of a process he can not arrest, a watchful guardian who will know when to act with promptitude and decision and when to refrain. Would that worthy successors of this good old man (whose article on the typhous fever of New England shows him to have been a true disciple of Sydenham) were more numerous. Some of us insist, and I am one of them, that in hospital practice a cold bath every three hours, when the fever arises above a certain point, saves from eight to ten in each century of cases; while there are others—*quo! homines, tot sententie*—who put their trust in purges, or who undertake to disinfect the twenty feet of bowel with drugs whose chief virtue is their harmlessness.

Old Dr. Gamage, whose case I read to you, with that delightful complacency which has not yet disappeared from our ranks, congratulated himself and his patient that success had crowned his efforts. He concludes his paper with the words, "thus no less than four distinct accessions of the disease occurred. That they were the effects of the spreading and augmentation of the inflammatory action is proved by the fact that the symptoms in each instance were reduced within the bounds of present safety by bleeding, and the patient allowed another chance for existence." Pity, no doubt, is the chief feeling in our minds as we read such a report; but this is our day, not his. At some future time there will come a day, perhaps, when our complacency will seem as strange, when other auditors, in another place, may express the same pity for us that we feel for our predecessors. Even Rush seems to have had a presentiment that perhaps he did not know it all, since he closes his article on the phenomena of fever with the lines:

"We think our fathers fools, so wise we grow.
Our wiser sons I hope will think us so."

We don't!

I must claim the privilege of a faddist to abuse roundly other faddists who do not swim in my puddle. As a strong advocate of hydrotherapy, I take especial pleasure in denouncing as heretics of the worst possible stamp, the advocates of the so-called, antiseptic and abortive methods of treatment of typhoid fever. I would place the man who does not for this purpose also give a purge, in a limbo just a little less hot, as he probably does a little less harm. It galls my kibe, too, to think that the heresy is spreading, and scarcely a week passes in which I do not receive a temperature chart of some case of typhoid fever which has terminated spontaneously, on the twelfth or fourteenth day, as a triumphant demonstration of the value of drugs which, from my point of view, might as well have been given *per cutem* in the tub. At present I am so wholly abandoned to cold water practices that I confess to be anything but an impartial critic. Still, intestinal antisepsis is not a matter for typhoid fever patients only, and now that the glamour with which Boucharde invested the subject is fading, we are getting to hard common sense views on the question. Two facts—the two grains of wheat in the two bushels of chaff—which you can winnow from the whole complex literature to date about antiseptic medication, are: First, that in such a disease as chol-

era, in which the germs thrive and grow directly in the bowel, is a failure; and second, the impossibility of destroying experimentally germs in the bowel by any antiseptic administered *per os* in harmless doses.

The advocates in this country for the abortive and antiseptic plan of treatment must bring forward a much stronger body of evidence than has been presented, and in a much more rational way, before they can hope to carry conviction to the sceptic. Indeed, more than this, they must not regard themselves as exempt from the common rules which are recognized everywhere in modern medicine as essential. If they have a jewel, why, for pity's sake, ruin it in the setting? I have no hesitation in characterizing the papers which have appeared in the ASSOCIATION JOURNAL on the question as a heterogeneous jumble, entirely unworthy of the best traditions of the profession; unworthy of a subject connected in this country with the names of Bartlett, Gerhard, James Jackson and Flint. I am not one to cry: Can any good come out of Nazareth? Nor do I hold that all wisdom is in the professorial corps. Jenner was not a professor, nor was Sims; nor am I so blinded as to suppose that we come to the end of our wisdom in the treatment of any disease; but I do insist that the advocates of any special line of treatment should, at any rate, advance their claims with some regard to the intelligence of their readers, with some regard to the ordinary rules which regulate sane men in the presentation of a subject. To assert an abortive treatment of typhoid in a case in which on the thirteenth day of the illness, and on the seventh of the treatment, a patient died of intussusception, "cured of his typhoid fever on the seventh day of treatment," so it is stated, when the autopsy showed "the characteristic and extensive ulceration of Peyer's patches and tumefied glands," is to talk a language unintelligible to an educated medical man, and is nothing short of midsummer madness. Then follows the extraordinary remark, "The history and pathologic specimens prove conclusively that one case of typhoid fever was aborted. *Ab uno disce omnes.*" Such a conclusion would insult the intelligence of a first year medical student. To speak of a case of typhoid fever as aborted, which shows on the thirteenth day ulceration of the ileum and tumefied mesenteric glands, dams, in my opinion, the whole plan as a therapeutic fake of the very first water. *Ab uno disce omnes!* Another piece of evidence is mentioned in a case in which the disease was so far aborted as to enable the patient to sit up and eat beef-steak on the tenth day. He remained well for fifteen days, and then, *mirabile dictu*, this aborted fever had the audacity to relapse! The advocates of the abortive and antiseptic plan must, 1, learn what it is to abort a disease; 2, familiarize themselves fully with the clinical history of the milder types of typhoid fever; and, 3, present their reports of cases in a manner worthy of the subject, giving details which shall enable anyone to deduce his own lesson. I honor, Mr. President, enthusiasm, and respect honest conviction, but when principles are at stake which involve the good name of my colleagues and of my profession, and still further when in my judgment the lives of patients are placed in hazard I hold it better to speak out plainly than to maintain a supine, though more easy, silence.

I have spoken of the discovery of cinchona as one of the three greatest benefits conferred upon mankind in relation to the fevers, an event fraught with more

memorable consequences than any perhaps in the history of medicine. It has made waste places habitable, the wilderness to blossom like the rose, and has been one of the great factors in the expansion of European civilization. After two centuries and a half cinchona remains the only specific drug which we have in the fevers, to the action of which the *pharmacoepia* offers no parallel.

The clinical phenomena of malaria were better known to the old Greek and Roman physicians than those of other fevers. The writings of Sydenham and Morton in the seventeenth century, and Lancisi and others in the eighteenth century, served to give unusual fulness and breadth to the knowledge of paludism. I have read an extract from Armstrong's biography which gives an idea of the confusion which existed in the early part of the century, and which illustrates the uncertainty in the minds of the best workers just how far the malarial influence extended. In our own day the confusion has not disappeared, and until recently it was impossible to say accurately what was and what was not true malaria. So simple in some of its manifestations, so complex in others, it was quite difficult, on the one hand, to recognize all its protean features; and on the other hand, in affected districts, the tendency was irresistible to attribute to paludism any malady of a periodic type, or with specially anomalous symptoms. Confidently predicted by many, its presence formulated in as early as the year 1849, by J. K. Mitchell, the parasite of the disease remained unknown until 1880, the date of Laveran's discovery. The demonstration of the invariable presence of the *hematozoon* described by him is now as complete as it is possible to have anything in the range of medicine. It may be stated confidently that in no part of the world in which malaria prevails has any worker with a proper knowledge of the technique and suitable instruments failed to discover the parasites. The importance of the study from the standpoint of diagnosis can not be over-estimated. It gives the practitioner at all times and in all places an unfailing means of differentiating the malarial from other fevers. No one can now approach the study of the subject without familiarizing himself fully with what has been done on this question, and particularly upon the varieties of the malarial parasite, and the differences of type in the different forms of the disease. Though the work which has already been accomplished, particularly by the Italian observers, is far reaching and satisfactory, to some of the problems which remain I may here briefly refer.

We need more particularly a study of the condition of the blood in the irregular forms of malaria, such as prevail more particularly in the region of the Gulf States. Here at the outset the workers who have an opportunity of studying these forms are frequently nonplused by the scanty number of parasites in the blood. These are the very instances in which, as has been shown, the organisms are chiefly in the viscera, and the severity of the symptoms is almost directly proportionate to their number in the vessels of the spleen, bone marrow, intestines, brain and the other organs. There are cases in which the life of the patient depends directly upon the diagnosis, and upon the promptness with which the patient is placed under the influence of quinin, either by the hypodermic or intravenous injection.

The subject of malarial hematuria, which is year

by year discussed in our journals, has to be worked at anew from this modern standpoint. What are its exact relations to malaria? What is the form of the organism present in these cases? What are the pathologic changes in the kidneys and other organs? These are questions which await solution at the hands of expert men who have been trained in the modern methods of blood work. A practical point of the greatest importance bearing upon this question is the much debated relation of quinin to the hematuria. If the bleeding is caused directly by the presence in large numbers of the parasites in the kidneys, it runs directly counter to our knowledge of the action of quinin to suppose that it could in any way aggravate the hemorrhage. But the matter is one upon which in its present condition hopelessly irreconcilable views are held by general practitioners. The actual nature of the so-called malarial hematuria must, I think, first be settled.

Another subject to which particular attention should be given is the occurrence of malarial infection in other diseases. The coexistence of malaria with dysentery is well known. Malaria may develop in the course of pneumonia, and there may be a concurrent infection with malaria and with typhoid fever. Though undoubtedly this may happen, yet it must be extremely rare, as in the now very large number of cases of both diseases which we have had at the Johns Hopkins Hospital, all with careful blood examinations, there has not been a single instance in which typhoid fever and malaria were concurrent, although very many of our cases of typhoid fever come from malarious regions. Now that there has been such a strong reaction in the profession against the idea of the typho-malarial fever broached by Woodward, I would like in justice to that distinguished man to call attention to the fact that in his well-known paper at the International Medical Congress in 1876, he distinctly denied that what he termed typho-malarial fever was a specific fever—a new disease, but he expressly used the term “concurrent elements,” and there can be no question, I think now, that malaria and typhoid fever may coexist, but also there is no question that the malarial element may be quickly and efficiently disposed of by the administration of quinin. I repeat that there is no subject to which the young physicians of the South can devote themselves with more profit than to the study of malaria from the modern standpoint. The necessary technical knowledge can be obtained by two or three months’ study in a well equipped clinical laboratory. Without such training it is useless to go into the question. The whole literature of the subject is now readily accessible. The student will find in the volumes of the late Joseph Jones reference to much of the older literature, and a host of valuable clinical data collected by that most industrious observer, whose death recently we have had to lament. The New Sydenham Society has issued several monographs,¹ and in this country the monograph by my assistants, Dr. Thayer and Dr. Hewetson,² gives full details.

Apart from typhoid fever and from the irregular forms of fever due to malaria, is there a third type of fever in the South independent of both? This is perhaps the most important question awaiting solution in regard to the fevers of this locality. The idea

of the existence of such a separate fever is not new. Armstrong held that in the West Indies there was a common fever arising from heat acting on unseasoned constitutions. The disease has received many names: *Florida fever* in Florida, the *country fever* in the Carolinas, and by French writers it is spoken of as *fièvre inflammatoire*. Guitéras, who brought to the study of the question a peculiarly intimate acquaintance with yellow fever in the tropics, and also a thorough knowledge of the common types of typhoid fever in the North, has called it *continued thermic fever*. He says: “These cases deserve to be classified as an entirely distinct group, and to my mind must be recognized as a distinct disease. I have examined some of these cases of prolonged fever of southern countries, postmortem, and have failed to find the lesions of typhoid fever; I therefore think that my conclusion in regard to these cases is a correct one. The farther south we go, the more frequently we shall find that there is a certain fever which is peculiar to the region.” The literature of the subject is quite extensive, but we are not prepared as yet for a final decision of the question. The subject is of the very first importance, and demands renewed attention at the hands of those who have the opportunities. It is not in the far South only that this form of fever has been described, as shown by the papers of Robinson and Baumgarten on the simple continued fever of St. Louis.³

One or two significant facts have been brought out within the past few years. The careful observations made in Galveston by West and by Dock show that the two main types of fever in that city are malaria and typhoid fever. I have already referred to the discussions which have taken place during a series of years in the New Orleans Parish Medical Society, which showed a strong evidence of a belief in that city in the existence of a third type of fever. In a paper by Dr. Matas of that city, published a year and a half ago,⁴ he retracts his previous opinion, after nine years’ additional experience, and holds that the long-continued fever of Louisiana that resists quinin is really typhoid fever. Some of his conclusions in this matter may be quoted with advantage.

“The course of the long-continued fevers of Louisiana is not in the least altered or notably influenced by the cinchona alkaloids; *ergo*, it is not a malarial fever from the therapeutic standpoint.

“That this fever occurs at all seasons of the year, though it is more prevalent during the summer months; *ergo*, it is not a ‘thermic’ fever pure and simple.

“That cases of the fever occur in groups (and probably in districts), several members of a household being attacked simultaneously or in rapid succession; *ergo*, infection from a common source.

“That while the true classical and grave typhoid type of fever is exceptional and comparatively rare, it nevertheless exists in our midst in persons who are born in this city and who have never lived elsewhere; *ergo*, typical typhoid fever exists as an epidemic in New Orleans.

“In infected houses, where several cases are under treatment, it is not very rare to observe a fever of a most *typical* and grave typhoid type running through its course by the side of a benign *atypical* fever in which there are no adynamic symptoms, no diarrhea,

¹ Mannaberg, Marchiafava and Bignam.

² Johns Hopkins Hospital Reports, Vol. V.

³ Transactions of the Association of American Physicians, Vols. III and VIII.

⁴ Medical News, Dec. 15, 1894.

no hemorrhages; nothing, in fact, but a simple and uncomplicated thermic movement."

The question has suffered in the way in which it has been approached, and I may be allowed to suggest that those who have opportunities, both in the cities and in the country districts, should adopt the following methods:

In the first place, full clinical histories should be furnished of the cases. A man who wishes to contribute to the subject should not be too busy, not only to make a careful, critical study of the symptoms, but to jot them down in some order, so that at least they may be intelligible to others.

The second point is the necessity of obtaining autopsies in fatal cases. We all appreciate how difficult this is in private practice, but in determining the nature of obscure atypical cases of fever it is absolutely essential. There is not a hospital in the country in which the determination of the nature of obscure cases of fever is not settled by the autopsy alone.

And thirdly, it is essential that observers who undertake to study this question with thoroughness should approach it with a full acquaintance with the varieties of the malarial parasites, and with an accurate knowledge of bacteriologic technique.

Utopian as it may appear, we may look forward with hope to the day when the great enemies of our race shall be no more, when fever, war and pestilence shall cease to harass mankind.

When we glance at the progress of the century, have we not say that at least the beacon fires of hope have been lighted? The enormous advance in material prosperity, and the closer linking of the nations which has followed the annihilation of space by steam and electricity, has made widespread devastating famine almost impossible, and has, at any rate, set a limit to the range of its power for ill.

For one only of the three great curses the close of the century brings no gleam of hope. It will be in another democracy, in another century, perhaps far distant, that the race will realize the earnest longing of the son of Amos, that "nation shall not lift up sword against nation, neither shall they learn war any more." The gradual growth of a deep sense of the brotherhood of man, such an abiding sense as pervades our own profession in its relation to the suffering, which recognizes the one blood of all the nations, may perhaps do it. In some development of socialism, something that will widen patriotism beyond the bounds of nationalism, may rest the desire of the race in this matter; but the evil is rooted and grounded in the abyss of human passion, and war with all its horrors is likely long to burden the earth.

To us as a profession belongs the chief glory of the century. Enormous as has been the advancement in material prosperity, and wide-spread as has been the diffusion of benefits from the development of the physical sciences, they can not compare with the progress which has been made in the relief of suffering, and in the prevention of disease. Our work here ranks among the most memorable achievements in the history of the race. Fever in its varied forms is still with us, and, as I said at the start, the century has seen in connection with it but one discovery of the first magnitude, but it is of almost equal importance to know that the way has been opened, and that the united efforts of many workers in many lands are day by day disarming this great enemy of the race.

THE PURIFICATION OF PUBLIC WATER SUPPLIES.

The Address on State Medicine, delivered at the Forty-Seventh Annual Meeting of the American Medical Association at Atlanta, Ga., May 5-8, 1896.

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The most vitally important sanitary problem confronting American municipalities at the present day is, unquestionably, the supply of pure water for drinking and other domestic purposes. The wide-spread prevalence of typhoid fever may be practically looked upon as a measure of the pollution of the drinking water. Depending as this disease does almost entirely upon an infected water supply, the importance of having the latter of a pure quality is self-evident. In 1894, twenty-five of the principal cities of the United States had an average typhoid mortality of 39.6 per hundred thousand of population. Those cities which had the largest mortality from this disease were supplied by a highly suspicious quality of drinking water.

It will be hardly necessary at the present day to insist upon the etiologic relation of infected water to typhoid fever. The numerous epidemics in this country and abroad, which have been studied with so much care by eminent sanitarians, have demonstrated this relation. While cases doubtless occur in which the disease can not be traced to the water supply, these constitute the vanishing minority, the overwhelming majority being unquestionably due to infected water.

In epidemics of cholera a similar relation exists between the outbreaks and extension of the disease to an infected water supply. Aside, however, from the production of these specific diseases, pure water, or water free from all sorts of uncleanness, is demanded by the "sanitary conscience" of the public.

These premises being conceded, the great importance of securing a supply of drinking water free from contamination, becomes apparent.

In sparsely settled districts, or where a supply of unpolluted water can be brought from a distance to a large community, it will probably be better to secure such a pure supply rather than purify a source of supply which has been polluted; but in the majority of instances, particularly in the eastern and central sections of this country, the procurement of such an unpolluted supply is practically barred by financial considerations. We are therefore reduced to one of two alternatives—either to limit as much as possible, or altogether prevent, which is practically impossible, the access of impurities (notably of sewage or excremental matter) to the sources of supply; or else to resort to some method of purification of the water after it has become polluted.

The city of New York has recently chosen the first alternative mentioned, by the purchase of ground immediately bordering upon the stream furnishing the drinking water to that metropolis. By the removal of sources of pollution from the area of land so acquired, the endeavor has been made to secure a pure drinking water.

I have not at hand the figures, showing the amount of money expended in order to accomplish this purpose, but the sum must have been extremely large. In Chicago, the extraordinary outbreak of typhoid fever from 1889 to 1893 led to the extension of the in-take pipes in Lake Michigan to a distance of four miles from the shore, and the consequent diminution

of the sewage contamination has reduced the typhoid mortality from 159.7 per hundred thousand in 1891 to 31.4 per hundred thousand in 1894.

In most instances, however, where large communities are supplied with polluted water, the changing of the source of supply is impracticable. A recent inquiry by a commission of engineers upon providing a new supply of water for the city of Cincinnati, has taken into consideration a scheme for drawing the supply from the Cumberland Mountains, a distance of 130 miles away. The estimated cost of this work was \$27,000,000. Another scheme considered by the same commission, was to draw the supply from Lake Erie, 250 miles distant, at an estimated cost of over \$40,000,000. Chicago expended \$3,500,000 for the construction of the tunnel into the lake at its very doors.

These figures will probably be sufficient to show the impracticability, from a financial standpoint, of abandoning a source of water supply that may be polluted, now in use by any community, and going a great distance in search of a pure water supply. Fortunately there is at our hand, however, a means by which a source of supply once polluted can be again rendered pure; this is *filtration*.

Formerly, filtration simply meant straining out from water all gross impurities, and changing a dirty or muddy water into a clear and limpid fluid. It did not contemplate the changing of organic compounds into inorganic compounds, or the removal from the water of minute organisms, which we have learned to regard as causes of specific diseases. Our notions of what constitutes purification of water have considerably changed. We now know that water may be perfectly clear and limpid, and yet be extremely impure by reason of its content of impure organic matter or dangerous microorganisms. The results obtained by the filtration of sewage, in which a highly impure liquid, full of organic matter and teeming with microorganisms of various kinds, is rendered clear, limpid, almost entirely free from organisms and organic matter, have taught us how to purify a polluted water, which in many instances is simply a highly diluted sewage.

This method of speaking of a polluted water supply is not an exaggeration, when we study the published reports of the analyses of the water formerly used by the city of Lawrence, in Massachusetts, and now used by Jersey City and other larger and smaller communities in this country.

A great impetus to filtration was given by the experiments conducted under the auspices of the Massachusetts State Board of Health at Lawrence in that State, and carried out so thoroughly by Mr. Hiram F. Mills and Mr. Allen Hazen. These experiments, carried on with painstaking care for a number of years, prove conclusively that water, no matter how polluted, can be rendered pure by simply filtering the same through sand filters, provided certain cautions were observed regarding the construction of the filters, the rate of filtration, and other conditions varying with the character of the water to be purified.

For many years, filtration through sand has been used by European municipalities to secure purification of water. In London most of the drinking water has been filtered for upward of forty years. The filter beds of Berlin cover an area of more than thirty acres. In many of the European continental cities the drinking water is subjected to filtration. The

construction and practical management of filters have been investigated with great care. Comparative studies of the efficiency of sand filters, and of various processes of so-called "mechanical filtration," have been made recently in Providence, R. I., and at Lawrence, Mass. While the results obtained by different investigators have not been in entire agreement, the prevailing opinion of sanitarians and engineers is that sand filtration, where it can be adopted, gives the best results in purification, at the lowest cost of construction and maintenance.

Koch has given the following clear explanation of the process of sand filtration:

"The problem of filtration is to purify water from the matter held in suspension. Matter which has been dissolved goes through the filter with hardly any or with no perceptible change. As the chemist investigation of water has chiefly to deal with inquiry into the constituents which have been dissolved, it can not aid in studying the processes of filtration. But in earlier days one was so much accustomed to judge the character of water according to its chemist characteristics that, in complete ignorance of what took place in the process of filtration, one attempted to test and regulate the process chemically. Naturally, no useful result ever came of this. The specialists in filtration had found this out even in early times, and had attempted to obtain aid in some other way. They tested the water in glass or metal cylinders, the so-called 'water-tests,' as to its transparency before and after filtration, and according to the result they judged of the value of the sand filters. By this simple means they succeeded in discovering the most important conditions for a sufficient purification of water from its suspended constituents. From this it appeared that the real filtration does not take place in the sand, but that, by deposit from the still unpurified water, a layer of mud is formed on the top of the sand, and that this layer of mud which is over the sand, is the real filter which retains the suspended constituents from the water. In the process of filtration the important point is first that a proper layer of slime should be formed, and that it should not be disturbed during the process of filtration, and that when by further continuous deposit it becomes too thick and therefore too impermeable to water, it should be removed. According to all appearance different natural waters are capable of producing the filtering mud layer in very different degrees, according to the amount of mineral and vegetable matter held in suspension. Some river waters which are especially rich in clayey constituents can deposit a good filtering mud layer in eight or ten hours. Other kinds of water rendered more turbid by vegetable matter require a longer time, at least twenty-four hours, to form the deposit. At certain periods of the year, especially at the time of the so-called 'water-bloom,' owing to the appearance of innumerable microscopic algae, the vegetable constituents suspended in the water are increased to an extraordinary extent and are of a particularly slimy character, and form therefore a layer which in a few days becomes nearly impermeable to water and must be removed. From these brief remarks it will appear that in sand filtration we are not dealing with so simple a matter as is often supposed. It has also been discovered that in the gradual wearing out of the sand layer it should never be allowed to get below a certain thickness, about 30 cm., and that a certain speed, about 100 mm. in the hour, must be allowed

for the movement of the water through the sand layer to obtain the most perfect purification."

Koch further states that a daily or tri-weekly bacteriologic examination of the filtered water must be made in order to test the performance of the filter. "If a filter works satisfactorily in every respect, experience shows that there will be found less than one hundred germs capable of development in one cubic centimeter of water; and this is irrespective of the number of bacteria contained in the water before filtration." The slightest changes in the rapidity of filtration, or the disturbance of the filter bed, become manifest on bacteriologic examination.

The cholera epidemic in Hamburg in 1892 furnished an object lesson of great value. Hamburg and Altona both draw their water supply from the river Elbe. In Hamburg, in 1892, the water was furnished directly to consumers without filtration; in Altona, on the other hand, the water had been for a number of years filtered. The Hamburg supply was drawn from the river at a point where there was comparatively little pollution, but the Altona supply was drawn from the Elbe immediately after the stream had received the sewage of the entire population of Hamburg, numbering nearly 800,000. As a matter of fact, cholera bacteria were discovered in the Elbe water below the main outlet of the Hamburg sewers. There was every reason to expect, therefore, that the cholera would have been more virulent in Altona than in Hamburg; but the contrary was the case.

In Hamburg about 21,000 persons were attacked by cholera, of whom over 11,000 died during the epidemic. In Altona, on the other hand, there were not over 500 cases—400 of which were shown to have been importations from Hamburg, thus leaving the small number of 100 cases traceable to infection in Altona, or unaccounted for. Koch, who made a very careful inquiry into the circumstances of the outbreak at Hamburg, came to the conclusion that the comparative immunity of Altona was due to the filtration of its water supply.

Returning to the consideration of typhoid fever, we have in the United States an example of the limitations of this disease, produced by the purification of the drinking water by means of filtration. For a number of years, the city of Lawrence in Massachusetts had suffered from typhoid fever to an unusual degree. For the six years from 1887 to 1892, the typhoid deaths in that city averaged fifty annually, a proportion of 119 per 100,000 of population. In 1893, the drinking water, drawn from the Merrimac river, was subjected to filtration, and at once the typhoid death rate began to fall. In 1895, two years after the filtered water had been in general use in the city, the number of deaths had fallen to sixteen, of which nine occurred among "operatives working in certain mills where unfiltered water was used for washing purposes, and was used for drinking by the operatives, notwithstanding the prohibition of such use, because the river water was more accessible than the city water." (Quoted from a paper by Mr. Allen Hazen in the *Health Magazine* for March, 1896.) In two cases, the disease was believed to have been imported, and in five, the origin was not accounted for.

The conditions, under which filtration takes place, have been studied particularly in the experiments made at Lawrence, above referred to. Without going further into the details of the construction of filters, two processes must be kept in view—one, the removal

or straining out of the bacteria, always present in water; and the other, the oxidation of organic matter, and its conversion into inorganic compounds. These imply, that the materials, of which the filter is constructed, shall be sufficiently fine to hold back all suspended matters, and that a sufficient supply of oxygen shall always be present, in order to allow the oxidizing processes to go on. In most natural waters there is a sufficiently large quantity of free oxygen to allow the oxidizing processes to go on continually, but in cases where the water is highly polluted, it is necessary to permit access of extra quantities of oxygen, in order that all the organic matter may be oxidized. This may be accomplished, either by aeration of the water before filtration, or by carrying on the filtration intermittently, allowing the air to penetrate the interspaces in the filter before the water is again turned on the filter. This is in effect what is done in the intermittent filtration or the broad irrigation of sewage.

In the experiments at Lawrence, it was found that an average of 98.54 per cent. of the bacteria found in the river water were removed by filtration; under favorable conditions, *i. e.*, with filters of the best construction, and a moderate rate of flow—less than 1 per cent. of bacteria remained in the water after it had passed through the filter.

Within the last two years an extended series of experiments upon filtration with so-called "mechanical filters" were made in Providence, R. I., with the view of adopting a system of filtration combining efficiency with economy. The apparatus most thoroughly tested is known as the "Morrison filter," and its construction is described as follows:

"The filter bed of crushed quartz was two feet, ten inches in depth, supported upon a base of iron with circular perforations of about four inches in size, which were covered with screens. The crushed quartz used was the 'effective size' of 0.59 millimeters. The filter was washed by a reverse current, which caused the quartz to boil. The agitation and friction of the particles were increased by means of a rake with long teeth, which revolved about a central column in the filter; the rake penetrating the bed by a screw motion from top to bottom." One-half grain of basic sulphate of alumina was used to the gallon of water filtered, in order to produce a film upon the surface of the filter. This constitutes the real filtering layer, corresponding to the mud layer in the natural or sand filter.

The results obtained in these experiments showed that with careful management, from 92 to 99 per cent. of the bacteria contained in the water could be removed by mechanical filters. Further investigation demonstrated, however, that the installation and management of these filters would be more expensive than sand filtration, with no increase in efficiency.

On the whole, it is probable that sand filtration, having been thoroughly tested both by experiment and practical experience, must be regarded as the most efficient method of purifying a polluted water supply; and that, when carefully and intelligently managed, it can be depended upon for purification has been shown in the experience of Altona and Lawrence.

Did Not Know Him. Professor Giesler, of Göttingen, has twenty-four children. He saw a child crying in the street and asked: "What is the matter, little boy?" "Don't you know me, papa?" said the boy. He was one of the twenty-four.

CONCERNING MEDICAL LANGUAGE.

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held at Atlanta, Ga., May, 1896.

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One of the most amusing inconsistencies of a small class of minds otherwise progressive, scientific and rational, is their unreasoning conservatism concerning the spelling and use of certain words. In any other subject, for instance therapeutics or surgery, they will welcome investigation, and further it, admitting the duty of improving upon the old, and of pushing on toward a more simple and perfect science. But when you suggest that language, the tool of thought, deserves consideration, is very clumsy and archaic, is capable of being improved—at once they shrink and are shocked at your temerity.

This attitude of hatred of innovation in one single field of human activity, while admitting the law of progress in all other departments, is also coupled with a second inconsistency; a dogmatism of conviction that the change or modification of language urged is barbarous, almost sacrilegious, that you are a sort of ill-bred upstart in advocating it, and that the old form you desire to supplant is the correct one, while your new-fangled thing is absurd and is born of ignorance. The bigotry of the average Englishman in these matters is a charming exhibition of medieval-mindedness translated to an age of civilization and progress. He actually thinks that the spelling-reformer, however infinitesimal and microscopic the spelling-change advocated, is the product of "Americanism," and of American ignorance of how to spell. The American inheritor of the English dogmatism tries to hide his feeling, shrinks from such laughable exposure of his own ignorance, and even covers the sheep-skin of his ignorance with the lion-skin of erudition. I shall not soon forget a contributor whose English was equal in barbarity to that of our average senator, whose spelling by any standard was atrocious, and whose medical ideas were of course on a par with their means of expression; but he was certain of one thing, that he wanted hemorrhage "spelled rightly, with *e*." This to him was the symbol of scholarship—his nose was safely in the sand of erudition, but his whole body was delightfully visible.

I have had the pleasure of replying to but three or four critics of a few tiny philologic reforms or changes that seemed to me wise. Beside these four the world seems content either to accept or to reject in silence. I was struck by the fact that in all four of the speaking objectors their objections were solely based upon two foundations: Their personal dislike of change, and their complete ignorance of philology. Concerning the argument, *de gustibus*, there is surely no discussion, because taste, proverbially, is simply a subjective affair. But dogmatic opinion upon a subject in dispute, the deeply-rooted dogmatism upon things without a single minute's study of them or of their history—this in a supposably scientific man is—well! let us call it deplorable. It is amusing, even instructively amusing, but it is, once more, deplorable. Such a person, if a surgeon, would be shocked if you asked him to pronounce dogmatically upon an unstudied question of therapeutics or of mental disease, or if a diagnostician he would not express the least judgment as to cataract extraction, etc., but without an instant's study of philology he settles a philologic dispute off-hand and forever. Five minutes of glancing through

any one of the hundreds of books on the subject would have closed his lips, but that does not give him pause. He is sustained by the fact that "the English language as now written is good enough for me," and there float through his mind hazy ideas that etymology demands the present method, and that at best you are a very bothersome and conceited person.

To one who has pondered the subject, however little, it must be painfully apparent that every other product unconsciously developed in the evolution of the race, whether plows, guns, matches or books, has been found capable of betterment, and all civilization consists in improvement of or improvement upon the crude devices of early awkwardness. Why should language then be an exception to the rule? Those who have examined carefully aver that our language is a sorry instrument of thought, and bears about the same likeness to an ideal language that a hand-sickle does to the best reaping and binding machine of our day. It is plain, therefore, that the obstinate prejudice against any change whatsoever in it is most ill-advised and unreasonable.

We do not advise radical changes. The proper attitude of mind is one that welcomes slow and slight changes toward shortening and thus lessening the severe burden of education, and the expense of printing. Reform has a double motive here, psychologic and commercial. It has been estimated that our outrageous spelling costs one year of school-life of every child. The financial saving by lessening every printed page one line would probably pay the expenses of our government, and perhaps retire on a life-pension the Senate besides. This line could be saved, and at least a day or two of the wasted school-life spared by abolishing *æ* and *œ*, by lopping off a few redundant tails of words, and by observing a half-dozen little rules—all of which are not only advisable but philologically necessary, not only not improper but genuinely proper.

As to *æ* and *œ*, these diphthongs are difficult to write, and they are against the genius of the language. They have already been sloughed in a large number of words, and those who oppose what they are pleased to call "the mutilation of our beloved language," must answer our demand for a rule. Shall we reinsert the *æ* and *œ*, in words at present spelled with *e*, and which were derived from older words spelled with the darling diphthongs? And if you spell *hemorrhage*, will you, as you should, pronounce it hē'-mor-āj? It seems to me the etymologic sticklers are false to the old love, however true they may be to the new. Most of our words, for example, beginning with *præ*, are derived from the Latin *præ*. There are possibly a thousand of these words, such as *prescription*, *prepuce*, *pretend*, *preference*, etc. Shall we spell them all *præscription*, *præpuce*, etc.? Shall we also be (etymologically) correct and write *hæresy*, *hæretic*, *anapest*, *peony*, *phenomenon*, *meander*, *hematite*, *æther*, *dæmon*, *æsthetic*, *apheresis*, *diæresis*, *archæology*, *palæography*, *gangrene*, *pædobaptist*, *cannibite*, *cemetery*, *celestial*, *æconomy*, *epicæne*, *æsoptagus*, *phœnix*, *solæism*, and hundreds of derivatives and similar words as they are here written? Will you spell *diocese*, *diocese*? Will you spell *fancy*, *frantic* and *frenzy* with a very etymologically proper *ph*, instead of an incorrect *f*? If so, your phancy will make your readers phrenzied, and you phrantic, I fear. Will you write *fansy*, *treacle* and *treasure* with a *th*? If so, lay up your threasure in heaven, and

drink much threacle and thansy while your days do last.

Etymologic spelling is a long-exploded absurdity. It has led many a poor word-grubber into the quagmires of absurdity. It was, says the great English etymologist, a sort of mania in the sixteenth century, and has thrown confusion and ridicule into the study of language. "Its ignorant meddlesomeness introduced many false forms," so that now hardly any word tells its genesis or history by its written form. Every word must be examined separately, its changes both of form and sound must be studied historically, before we can know much about it. The final dictum of Skeat is as follows:

"The shortest description of modern spelling is to say that, speaking generally, it represents a Victorian pronunciation of 'popular' words by means of symbols imperfectly adapted to an Elizabethan pronunciation, the symbols themselves being mainly due to the Anglo-French scribes of the Plantagenet period, whose system was meant to be phonetic. It also aims at suggesting to the eye the original form of 'learned' words. It is thus governed by two conflicting principles, neither of which, even in its own domain, is consistently carried out."

It may be said that as many of our medical terms are not derived from the Greek or Latin by a real and historical process, but are *de novo* creations, using the ancient roots and stems as convenient materials of coinage, the objection does not hold, and that our words do therefore show their originals by their form. Alas! not even this poor excuse bears scrutiny. The centuries have infected the modern word-minter, and the inevitable hurry and destiny of evolution will not let the need of condensation rest. Even while we look at our printed dictionary the Zeitgeist is telescoping our words. Who now says *thyreoid* and *chorioid*? These forms are perfectly proper, and your dictionary-man with the awful sword of "etymology" and conservatism held across his path may be forced to write them so, but he smiles sadly as he does it and shakes his head despondently. Every one of the hundreds of words ending in *-oid* is derived (supposably) from the Greek *αἶος*. Why, then, is it *-oid* and not *-eid*? *Bulb* and *Bulbar* should be *both* and *bolbar*, as they come from *βολβος*. *Croup* is from A. S. *kropian*. How can an etymology-lover write *hyoid*? What resemblance is there to the Greek word? Our convenient compound word should etymologically be spelled *thyreo-hyacid*, instead of *thyreo-hyoid*. Why is one who forbids one literal iota of change in present words so utterly indifferent about the changes that have already crept in in the past? There are thousands of words in which Greek *i* has been changed to English *e*, as, e. g., all the words ending in *rheum*. He is wrathful because one wants to change them to *rheai*; why not so to those who changed the original *i* to *e*? He is as idolatrous of his beloved thousand *harms*, but the Greek was *hai* and not *har*. One of the most ludicrous instances of this imaginable is the very new coinage which its author spells *cardiology*. The anger of enraged Jupiter was as nothing to that aroused by the suggestion to shorten it to *celiology*. But in that word as given out, there is, "once you trip on it," perhaps not "twenty-nine," but at least two or three "distinct damnations, one sure if another fails." Why in the name of holy etymology, if derived from Greek *καλῶ* do we have *e* instead of *k*, and why *car* instead of *coi*? If the *calia* is derived from the Latin, then

why the hybrid? Surely one who pretends passionate devotion to pretty Ettie Mollie G., must not at the same time be paying court to her hated rival, the little illegit Miss Hybrid!

Every page of the dictionaries proves the absurdity of trying to make spelling teach etymology; and it is a fact that not anybody, certainly not spelling-reformers, more certainly not the conservatives, cares two beans for the etymology. If we did not have the printed word to stamp the coin it would be a different matter, but with dictionaries everywhere to give the origins and histories of all words, what imaginable service or usefulness is there in the attempt to load each down with its biography? In reading or speaking no one can think or wishes to think of the root thousands of years old. As well demand that your bouquet of roses shall have their roots and soil. The investigating botanist may do so, and may know all about the root and branch and stem, but work-a-day folks are not botanists or radical philologists. If one in reading had to know or keep in mind a half-conscious recognition of the etymology of each word, he would be able to read about one book a year, civilization and science would stagnate, and we might, could, would, or should all become Congressmen, millionaires, or jingoes.

The only proper and sensible purpose of spelling is its phonetic purpose. All the philologic tories of all Christendom or heathendom combined can not prevent the inevitable modifications—even entire changes of the spoken sound. In that witches' cauldron of modern English, especially the medical variety, we have from every source cooked a most remarkable hodgepodge of illogic and inconsequential conglomeration. Our ancestors have commanded us to eat of it, but do not let us choke it down, hiding our tears of disgust, and vowing it is incomparably toothsome. We assuredly should not with glee add more of the worst to the olla podrida, and when we have a justifiable opportunity to make it a millionth part better, we should not set up a cry of revolt, and cry, sacrilege! In an African forest the trail or path-way has constantly recurring detours, angles and curves, so that one walks about twice as far as necessary to reach land's end. No object prevents following a straight line. Why is this? It is because once a tree blew down here across the path, there a limb broke off, there a stone rolled down. So the savage went around these objects, forming a new and crooked path. When the termites devoured the tree the new trail was more worn than the old one, and with thoughtless imitation the men kept on laboriously winding and twisting their way instead of going straight on and across. It is the barbarian's habit of mind to keep on the unreasoning way his predecessor traveled. It is the essence to make straight the way. The incongruities of medical nomenclature and the stock-still standing of irrational conservatism lead one to wonder if we are ever to awaken to the need of philologic civilization. No judicious reformer asks for revolution but for evolution; we need be in no hurry; we should not make profound or radical changes, because (and only because) it is impossible to bring them about; but when men oppose every jot and tittle of change, when they fight against one single conscious change of precisely the same kind as

¹ Another sorry neoplasm is *uranalysis*—"analysis of ur"—to replace an equally absurd word, *urinalysis*—"alysis of urin." We have looked in vain for the words *olysis* and *ur*.

has already been a thousand times unconsciously wrought, then surely one must with open-eyed astonishment ask: Really, now, were you not born in Africa?

I wish again to emphasize the limitation that we do not advise one clean straight jump into phonetic spelling, simply because it is impossible. We seem like some mothers—the uglier and sicklier our orthographic child the more we love and cherish it. The maternal love is wise, but the other is a mania. Turn to Germany and what do we find? So far as phonetic writing is concerned their language was already marvelously perfect, but because it was not entirely perfect the Germans within a few past years have made it so. With us, whose spelling is the butt of the world's ridicule, with us we shriek our parrot-anger or growl our ursine bigotry if one suggests lopping off a supernumerary finger from our hideous teratologic thing. What kind of a nation is this Germany? Well, for one thing, she delights to pay her debts with value-received, while another nation we know of, from the hollows of lost manhood and polite poltroonery, squeaks and squizzles its senatorial sixteen to one. Another thing about this foolish Germany is that when a foolish nation attacks her, at once her edict of blood and iron goes forth, and in a hurricane of heroic energy her legions sweep resistless over a conquered land into the capital city of the world, and crown her emperor there in the coronation halls of dead Bourbonism. How is it with another nation? To show our braggart boorishness we intermeddle in another nation's rebellion, or we espouse the cause of a half-barbaric folk thousands of miles away, for whom we do not care a fig, against the world's one great civilizing and colonizing nation, and with a corporal's guard of 25,000 soldiers cry, War, War, War! How is it with Germany as to science generally, and education, and especially as to medical science? The thousands of our young men sent to her laboratories is sufficient answer. Well, this nation, as I have said, in a few years, and at one sweep, has cut the Gordian knot of spelling, simplified and shortened education thereby, and while we are squirming and making wry mouths over a few paltry and insignificant changes, she has wholly reformed the language that Goethe and Lessing wrote.

One of my four kind critics once wrote me remonstrating solely, on the ground of euphony, against cutting the *-al* off the tail end of many adjectives: "He didn't like it," he said, "it didn't sound well." He seemed wholly forgetful that the over-long tail of a thousand such words had already been lopped off, or perhaps had never grown out. In some countries the sheep's tails are so long that they hitch a tiny wagon to each animal, so that it hauls its caudal extremity instead of dragging it on the ground. Now the difference between these sheep and our medical Bo Peep *al-pacas*, is that the words grow no valuable wool on their tails, and that we trawl them on the ground behind us as the ladies do their dress-trails. Sheep and words and ladies are alike in the one important respect that, in the poet's immortal lines, we let them alone and they surely come home, dragging their tails (and much else also) behind them.

To my genial critic who wished his words and sheep (his ladies, too, I wonder?) to have tails and trails twice too long, I sent the following skit, to illustrate the already recognized fact of the redundancy of many

word-tails, and to suggest that we either retail all the short-tailed curs, or that we curtail all the long-tailed puppies. Either one thing or the other; if you refuse to say *chemic* and *theoretic*, then you must not say *scientific* and *hydrochloric*. If you make us say *chemical* and *theoretical*, then, like a sucking dove we will roar you for consistency and ask that you be *scientific*, or else we will prescribe *nitric* and *hydrochlorical* acid for your alarming *gastrical* torpor and obstinacy. My strabismic letter to my friend was as follows:

SOME SCIENTIFICAL DIFFICULTIES.—The patient was at the Polyclinical Hospital—a very sick man; he was ascitical and cyanotical; he had an anemical (dirotical or anacrotical) murmur; splanchnical and splenical dullness was pronounced. Neither the allopathical nor the homeopathical consultants could determine whether the affection was of extrinsical or intrinsical origin, whether anabolical, katabolical, atrophical, septicemical, lithemical, luetical, hemical, hemolytical, thermal, tabetical, hepatical or encephalical. The specialists were called in, and laryngoscopical, ophthalmoscopical, gynecological and otoscopical examinations were made. The laryngoscopical man said a diphtheritical membrane was forming, and the phrenical nerve was pressed upon. The next averred the difficulty was esophorical or exophorical, that a blennorrhagical inflammation, perhaps a rheumatical iritis existed. After an endoscopical examination the gynecological expert said pelvic (or pubical) disorder was present, and a bad cystical, spermatical and chorionical state of affairs. The ear-man claimed that the disease was specifical, that the otical ganglion was syphilitical and its condition pathognomonical. The diagnostical and prognostical difficulties were certes becoming most prolific!

As to therapeutical measures, one advised cardiacal and tonical treatment, another hypodermical; one thought hydriatrical methods good, another antiphlogistical, while still another suggested hypnotical and soporifical agents. Galvanical and faradical electricity, as well as statical and franklinical, were advised. The surgeon after a diagnostical incision (under anasthetical precautions) spoke of a plastical operation. Caustical applications to the throat were considered good, and the exhibition of prussical, or of borical, nitric and hydrochlorical acids, perhaps also carbolical with malical and acetical acid drinks. The general physician thought antineuralgical and antirheumatological prescriptions sufficient, but the obstetrician would have added oxytocical ones.

The patient died of *al-coholical* parietal dementia, superinduced, it is thought, by despair at the orthographical and phonetical conservatism of progressive Americans.

To make short work of it, the essence of the matter concerning *-ic* and *-ical* is this: Both of the suffixes, *-ic* and *-ical* are terminals, the significance of which is to give an adjectival meaning to a word. To add them both to one word is to contend that dogs and sheep should either have two tails, or that one tail should be twice as long as normal. If the suffix, *-ic*, gives the adjectival meaning, why add a second? The French, from whom we get many of the *-ic* terminations, find it unnecessary to add an *-al*. If a word is an adjective can you make it more so by tautologic caudalizations? (There are a few words whose stems end in *-ic*, such as *vesical*, *clinical*, *logical*, *finical*, etc., and these require the *-al* to make them adjectives; but these are provings of the rule, and the query why you don't say *vesic*, *logic* and *clivic* is the prompting of thoughtlessness. I would not object, however, in the least to clipping these also.) If a word needs two adjectival tails why should we not say *bestialic*, *linealic*, etc.? If these were admitted of course the *-al* lovers would have to add their pet to the word, and we should have *bestialical*, *linealical*, etc.; each sheep would then require two toy-wagons. This reminds one of the wonderful word, *pocket-handkerchief*. The primary good word was *kerchief*, a head-covering. We now call a piece of lace or linen a pocket-hand-head-covering. I am not unmindful of

the hyperfinical distinction that some hyperfinical folk have sought to establish as regards *-ic* and *-ical*, *-ac* and *-acal*, that the *-ics* and *-acs* denote primary objective attributes of or pertaining to the things, whilst the *-icals* and the *-acals* denote secondary qualities—of the nature of or connected with the attribute in *-ic* or *-ac*, i. e., more remotely and subjectively relating to the thing. For example, a *cardiac valve*, the *cardiacal qualities* of a drug; a *historic answer*; a *historical treatise*; a *comic paper*; a *comical idea*. But this contention is impossible of realization—1, because hundreds of words by custom have become absolutely limited to either form singly and alone; 2, because not even the best writers observe the distinction; 3, it is altogether too fine a distinction to be made by the ordinary workaday humanity; 4, it would not satisfy the *-alophiles*, who want the *-al* on the end of some of their words, without question, forever and ever, world without end, Amen! Think of saying *Arabical*, *Teutonical*, *Celtical*, etc.! We should of course have to adopt *beastialic* and *beastialical* (or bestic and bestical), *clinic* and *clinical*, *syphilitic* and *syphilitical*, and so on to the end. It is quite plain this system-mongering and analogy-craze leads us into sorry plights. In fact, it should be apparent upon a minute's reflection that in a language so utterly composite, illogical and non-systemic as ours, the argument from or for analogy is absurdity itself. In one respect this is an advantage, because when we can succeed in battering down the dead wall of ancient prejudice, and explode the arsenal of etymological spelling, then we may bring some order and sanity in the rebellious mob of English words.

Of one thing we may rest assured: All the tory immobility of all the world can not prevent change. It is as useless to attempt it as to try to stop the rising tide, or to stay the resistless and silent forces of evolution itself. It is the part of wisdom to guide evolution, not to fight it to the death, to guide language-evolution in the interests of brevity and perspicacity, not to cling irrationally to the old ways which clear vision may clearly see are doomed. The language of Chaucer, and even of Shakespeare, as shown in the original forms, is an utterly different language from that we speak to-day. The ordinary American, if he could hear Chaucer speaking, or if he could listen to a phonographic repetition of his actual speech, could not understand a sentence, hardly a word of it. The printed form can not bind the ever-fluctuating pronunciation. The province or function of the printed (or written) word is to stand as a symbol or visible analogue of the spoken word. Etymology to the dogs! Printing makes certain a record of the etymology, but to seek to clog the word itself with it is the worst of delusions. Our duty scientifically, sociologically, and philologically is to keep the printed form plastic. The crystallized language is a dead language, and when there is no plasticity of language there is none of the minds and civilization of those who speak that language. There is a subtle, but all-powerful reaction and retroaction of language upon mind. Men progressive in science and sociology must be progressive in language and the use of language. Prick a German word and it bleeds. There is the pulsing heart of meaning behind it, flooding it with sanguine significance. French words, and the Greek-derived or Latin-derived words of our own tongue are as bloodless, dead and meaningless as are to us Chinese pictographs. The comparison of the large, plastic, ener-

getic, capable German with the narrow, crystalline, stationary, incapable Frenchman must at once spring into view, and the prophecy is clear as to which one is to inherit the future. The French birth-rate is about equal to the death-rate; that of the Teuton is far in excess. Do you believe in progressive Teutonism and Anglo-Saxonism, or in reactionism, toryism, and ultramontism? Choose your partners, gentlemen. Your choice in so little a matter as the use of words will tell the plain story of mental bias, quite as well as the choice of religion or of political party.

Specifically, the microscopic modifications I have urged here are as follows:

1. Abolish in English words the archaic, unnecessary, bothersome *æ* and *æ*, supplanting it by *e*.

2. Cease adding the tautologic *-al* to adjectives having already one adjectival suffix, *-ic*. It is already done in thousands of words; finish the job.

3. Drop the useless hyphen in words whose parts are derived from classic languages. In ten thousand words you have already done so; finish with the rest. But retain the hyphen in such compound terms as express a single idea by two semifused English words, especially when both are nouns. E. g., say *antitoxin* (not *anti-torin*), *culdesac* (not *cul-de-sac*), *postmortem* (not *post-mortem*), *centrofixation* (not *ventro-fixation*), etc. Keep the hyphen, because it is necessary to avoid confusion and doubtfulness of meaning, in *curet-spoon*, *heart-murmur*, *skin-disease*, *sleeping-sickness*, etc.

4. Drop the useless *-te* from *curet*, *brunet*, *fouret*, *etiquet*, *cigaret*, etc. You have already lopped it off from *culet*, *doublet*, *quartet*, *quintet*, *sixtet*, *septet*, *racket*, *minuet*, *fillet*, *corset*, *stylet*, *tourniquet*, *bouquet*, etc. Finish the job.

In the same way cut off the useless *-me* from many words, writing *program*, *gram*, *centigram*, etc., just as already we do *telegram*, *anagram*, *diagram*, *epigram*; let's make an end of it.

5. Use figures instead of spelling out numbers, at least those above ten.

6. Anglicize foreign terms when a goodly proportion of your readers will not understand them in the originals. Use italics as little as possible; use as few foreign words and terms as possible, because the vast majority of your audience can not understand them (even if *you* do); and because there is a deal of silly conceit in airing exotics of speech.

7. As to the spelling of chemic terms, accept the recommendations of the American Association for the Advancement of Science, which after years of dispassionate investigation advised that we drop the final *e* in *bromid*, *iodid*, etc., and in *bromin*, *iodin*, *atropin*, *quinin*, etc. Say *phenol* instead of *carbolic acid*, *glycerol* instead of *glycerin*, etc.

8. Abolish all diereses and accents. They can not teach pronunciation, and they are useless luggage. Let us write *oophorectomy*, *cooperation*, *ptomain*, *leukomain*, etc., without the diereses. When a foreign word is Anglicized let us do it completely, and not drag over into our domain the exotics of foreign habit, leaving it, e. g., neither English nor French. Leave to the poets the acute, the grave, and the circumflex accents, that are foreign to the spirit of our own tongue.

9. Do not bother about hybrid terms. A mule is a better animal than either its father or its mother. It is only finicky sticklers that are horrified by hybrid words. There are many, many thousands of them in

our language, good words too, that have been used for centuries, and that always will be used. There is no earthly objection to them,—and indeed, we should rather welcome them if they are good words, expressive and short. More than any other language ours is adapted to receive them and use them, and there are more of them in it than in any other language. Instead of being ashamed of the fact we should be proud of it, as it shows our receptivity and plasticity. If we are bound to have the defects of our virtues, let us not be ashamed of the virtues of our defects.

Finally, I would beg that you carefully consider the source and secret reasons that exist for opposition to the foregoing recommendations. Ignorance, colossal, imperturbable, impertinent ignorance is characteristic of much of it. Read, for example, the letters in the *British Medical Journal* from correspondents (not editorial utterances, because the editors know better, and have publicly advised dropping the *æ* and *œ*), and you will see these objectors haven't studied philology five minutes in their lives, and are living in an antediluvian world.

But, again, consider the source, I beg of you, and you will very often find that it is the secret influence of the commercial medical publisher that is at work. He publishes a dictionary committed to the old ways, and hence prints his medical journals and books in the archaic language of his dictionary. It means expense and loss of money to him in very many ways to have his "authorities" supplanted. The astute editor of the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* has caught this aspect of the matter, and an editorial in the issue of Feb. 8, 1896, happily sets it forth. It becomes an important concern of the profession whether it has any scientific and literary rights, and if it shall govern itself or be governed by its publishing servants, very accommodating editors, and self-interest generally. What an instructive fact it is to see a journal that has once been taught how to spell, go back under the domination of commercialism to the "flesh-pots of Egypt." In this connection it is worthy of note that the two considerable journals of the United States *not* controlled by the commercial publisher, the *Boston Medical and Surgical Journal* (representing the best literary and scientific culture of the Eastern States) and the *JOURNAL OF THE ASSOCIATION* representing also the enterprise and freedom of the Western and of all States have long ago adopted and do now use the more progressive methods of spelling. The same practice on the part of many other reputable journals, and the unanimous acceptance of it by the American Medical² Editors'

² From *The Medical News*, June 17, 1893, I reproduce from the paper read at the meeting of the American Medical Editors' Association in Milwaukee, June 5, 1893, the following sentences:

(a) Of all the languages of the civilized world there is none that in the most distant manner can rival the English in the ludicrous illogicality and wretched lawlessness of its orthography. In other languages there is a manifest philologic sanity that evidently seeks to hold the written (or printed) word in some sort of relationship with the spoken word. But in our language the reverse seems to be the case; the more methods in which a single sound can be spelled the better it seemed to please the fathers of the language. As Professor Lounsbury says: "There is nothing more contemptible than our present spelling, unless it be the reasons usually given for clinging to it."

(b) The labor which this fact imposes upon the child's mind, and upon all minds that, so far as language learning goes, persist in the prepubertic stage, is a labor that conceived in its entirety is literally appalling. The German child learns in one year, and well, what the English child learns in three and poorly.* It is so tremendous a labor that even few educated men reach unconsciousness and ease of orthography, and for the great mass of people it is a constant source of worry or chagrin. To a vast number of people the secret consciousness of

Association three years ago—these and more, are most encouraging proofs of our freedom from prejudice and dogmatism, and that we are alive to the demands of literary as well as scientific progress. The suggestion need hardly be added that as without payment we give our articles, the product of our laborious lives and our devotion to nonmedical men, out of which they make fortunes, it hardly becomes them to dictate to us as to literary and scientific matters. If you contribute to these journals you have a perfect right to demand that your ideas of language shall be followed in their printing. Accompany your article or book with the condition that your choice of spelling-methods, etc., be carried out.

their orthographic failing keeps them from the pleasure of writing and composition, or prevents them from profitable employment. To every person that writes, the excess of labor required by our barbaric spelling is a huge waste of time and a heightener of the friction of life. With the correlated barbarism of pronunciation, it is the greatest obstacle to the spread of English as the world's great, sole tongue.

(c) The foregoing facts are so incontrovertible that no one who has even cursorily looked into philology and pedagogics has any tendency to deny them. Equally certain is it that all of our great students and masters of philology are entirely agreed as to the tremendous importance of lessening the burdensome labor of education, and the friction of life, by some approach, great or little, toward the phonetic spelling of English words. As succinctly stated in his preface by the learned editor of the great *Century Dictionary*: "The language is struggling toward a more consistent and phonetic spelling, and it is proper in disputed and doubtful cases to cast the influence of the dictionary in favor of this movement, both by its own usage in the body of the text, and at the end of articles by the order of forms or the selection of the form under which the word shall be treated."

Never has more capital been invested in similar enterprises, and never has more philologic erudition been gathered to the service than in the editing and publishing of those splendid lexicographic monuments of American scholarship, the *New Webster*, the *Century* and the *Standard* dictionaries. It is equally true that in each case the most earnest desire of the men in charge of these works has been to go to the furthest admissible limit dared in recommending the shortening and rationalizing of the spelling of English words. They have only stopped when and where they thought further advance would result in a balking, and a refusal of the people to follow.

Words fail me to express my amazement to hear men object to all change in the customary spelling. To be sure, they are but few, and those who have never given the matter an hour's thought or study, who thus blindly cling to the fetich of custom, stolidly resisting any change whatsoever. The changes that have been made, and that have become the rule—these they willingly accept. They have grown used to spelling *music* and *public* without a final *k*, and are willing to leave off this useless second tail. (The English even now stick to the final *k* in *almanac*.) But their mental forefathers as stoutly resisted the curtailing process, and their similarly minded children will finally accept the changes that progressive minds are now forcing on their fathers. The stupidest, most disgusting thing in the world, is the brute conservatism that refuses all change, good or not good, from stolid, unreasoning desire for things as they are. Better chorea, ay, better epilepsy than absolute paralysis. Conservatism is the sham coyness of linguistic old-maidism, the crinolin fig-leaf of philologic prudery, a fig-leaf, too, not the result of too much, but of too little knowledge—indeed, of an abysmal ignorance of the history of the language.

And most strange of all is such a dead-blank wall of prejudice on the part of medical men. Their science is a progressive one; their life is harassed and hurried with the crush of duties and opportunities. Every hour's experience teaches them to ignore precedent and to cut by the shortest route to the desired end. No body of men is more hampered, and in no calling is labor so much thwarted as in theirs, by popular inherited prejudices, and the old unsloUGHed snake-skins of quackery, of myth and of mummery.

The vast majority of medical words have not grown out of the old languages, either of the ancient living Greek or of the mediævally preserved dead Greek. When a word is desired the modern minter snaps out his Liddell and Scott, gets some words that best suit his purpose, and shakes them together in his etymologic basket until they cohere into some sort of unity, not infrequently a very ludicrous one.

The argument most relied on by the obstructionists is the etymologic one. But even this poor scarecrow can not be set up in our medical cornfields. I do not think the etymologic argument of much force, even in the general literary language, because already the form in a large portion of our words is altogether misleading, changed, or lost, and because the vast majority of people will and can never know anything of the etymologic rootings of their language. But far more important still is the fact that with printing came the impossibility of a coinage ever being lost, its history unrecorded, or its tiniest rootlet unexpressed.

But far and away over all is the fact that the needs and the help of the living millions of bodies and minds present and to come outweigh linguistic and philologic considerations. Language was made for man, not man for language.

Moreover, and this note well despite all the literary coxcombs and philologic old maids of Christendom, reform is inevitable. The people, with unerring instinct, are determined to mold their language into some better conformity to their needs. Slang is riotously rampant, and slang is language in the making. Some reform in spelling is as certain to come as future men and women are certain to come, and wisdom on our part is to accept the inevitable, and to make that inevitable as sensible as we can. As another has said: "The grammarian, the purist, the pernicketty stickler for trifles is the deadly foe of good English, rich in idioms and racy of the soil."

* Professor March says that "it has been computed that we throw away \$15,000,000 a year paying teachers for adding the brains of our children with bad spelling, and at least \$100,000,000 more paying printers and publishers for sprinkling our books and papers with silent letters."

Information Wanted.—Why is it ethical to prescribe German patented medicines and boycott the standard products of American chemists?—*Medical Brief*, December, 1895.

CHAIRMAN'S ADDRESS.

Address of the Chairman of the Section on the Practice of Medicine, delivered at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY WM. E. QUINE, M.D.

PROFESSOR OF THE PRACTICE OF MEDICINE IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO AND PRESIDENT OF THE FACULTY.

THE REMEDIAL APPLICATION OF BONE MARROW.

For the original mention of bone marrow as a possible remedy we are indebted to Brown-Séquard and d'Arsonval who, in 1891, suggested its use in the treatment of leukemia and other diseases believed to be characterized by defective hemogenesis. A year and a half later Filleau reported its successful employment in the form of an extract, in the treatment of the anemia of debility and of tuberculosis; and Macalister recorded a favorable result of its use in one case of lymphadenoma. (*British Med. Jour.*, June, 1893.)

It was left for T. R. Fraser, of Edinburgh, however, to press the new remedy forcibly upon the attention of the medical world and this he did in a report of its curative effect in a case of progressive pernicious anemia. (*British Med. Jour.*, April 7, 1894.) The clinical phenomena described were those of extreme anemia and the diagnosis was based on repeated blood examinations. The treatment included the use of arsenic, iron and salol, part of the time, but no improvement was noted till marrow was given and the improvement advanced steadily under the use of the marrow after the other agents were withdrawn. The animal product, whether of the yellow or the red variety, is not stated, was given to the extent of three ounces daily. The report ends with the declaration that "The patient is now in a practically normal condition."

Dr. I. N. Danforth, of Chicago, well known as a physician of extensive experience, and as one of the most accomplished microscopists in his city, reported a case of pernicious anemia which, under treatment with arsenic, glycerite of red marrow and various adjuvants, improved so rapidly as to enable him to say at the end of three or four months that the patient "now shows every indication of gradual restoration to health." (*Chicago Clinical Review*, 1894, v.) Unfortunately the evidences of sustained improvement in this case were short lived. Not long after the publication of the report progressive deterioration of health ensued, accompanied by the presence of malarial organisms in the blood, which were now discovered for the first time, and the deterioration advanced to a fatal termination. In view of this unhappy conclusion of an inspiring beginning it would be interesting to know whether the words of assurance used by Fraser two years ago in relation to the status of the case reported by him are equally applicable at the present time. In a personal communication dated April 4, 1895, Professor Danforth informs the writer of his later observations. He considers marrow applicable to all cases of anemia and has used it with temporary advantage in pulmonary phthisis and in Bright's disease; and with apparently marked and permanent benefit in the anemia of rapid growth, overwork and underfeeding. In one case of Hodgkin's disease, in which the remedy was used, the patient got well; and in two cases of splenic leukemia there ensued an increase in the number of red corpuscles and some abatement of the hemorrhagic tendency, without any impression appearing to be made on other phases, or on the

rapidity of progress of the malady. Professor Danforth prefers the red marrow and prescribes it in the form of an aromatic glycerite, of which one dram is given after meals. He directs attention to the possible danger of tubercular and other infections from the administration of uncooked marrow, and recommends the exclusive use of calves' marrow with a view to minimizing this danger.

J. D. Mann reports (*London Lancet*, 1894, I) four cases of anemia, two of them, apparently, cases of chloranemia in girls, and the other two, cases of simple anemia from hemorrhage, all of which were greatly benefited by the remedy; and Chas. Forbes (*British Med. Jour.*, 1894, II) and Henry Hun (*New York Med. Jour.*, 1894, LXI) each records a single observation of like kind.

That the utility of the agent is not limited to simple and easily curable cases of anemia is strongly vouched for by W. G. Bigger (*London Lancet*, 1894, II) who claims to have cured by its influence a case of leucocythemia of six years' standing. Iron and arsenic had been used with benefit on former occasions, but now a time had arrived when these remedies were powerless to prevent active and threatening progress of the disorder. At this time bone marrow was used, and in a remarkably short time it made the patient, a boy, perfectly well. The spleen, previously much enlarged, returned to its normal size. It is to be regretted that the gratifying experience of Dr. Bigger can not, apparently be duplicated by other physicians. That splenic leukemia is not strikingly influenced by bone marrow, as an ordinary event of its use, is clearly shown by the failures of Danforth, already mentioned, and of other observers hereinafter quoted.

One of the most satisfying contributions to our knowledge of the exact powers of the remedy, in various kinds of anemia, is furnished by J. S. Billings, Jr. (*Johns Hopkins Hospital Bulletin*, 1894, v.) This gentleman cites additional proof of its efficacy in chlorosis and chloranemia; and shows that in two cases of pernicious anemia, described with classical minuteness, it proved utterly useless; whereas, arsenic, in these cases, given in increasing doses, proved highly serviceable.

A. McL. Hamilton also records an interesting series of observations. (*New York Med. Jour.*, 1895, LXI.) He tested both yellow and red marrow, but obtained better results from the red. In every case cited the red corpuscles were counted by the Thoma-Zeiss apparatus and their hemoglobin value was estimated by the instruments of Fleischl, Gowers and Henocque. The whites were not counted. Professor Hamilton shows that the multiplication of reds after profuse hemorrhage, is approximately twice as rapid as the maximum rate hitherto recorded (20,000-30,000 daily per cu. mm. of blood), and that the total number of reds can be made to exceed the showing of normal blood (5,000,000 per cu. mm.) by fully 20 per cent. (6,000,000 per cu. mm.) He reports a case of pernicious anemia in which iron, arsenic and cod liver oil had been used without success, and bone marrow had subsequently caused a rapid increase in the number of reds, from 1,000,000 to 6,000,000 per cu. mm. of blood, together with an equally striking improvement in all the symptoms of the disease. The improvement was found to be maintained at the end of two months, but the subsequent history of the case is not recorded. The report includes the results of eighteen

separate studies, most of them relating to cases of ordinary anemia without special features, and demonstrating the value of the remedy.

My own observations concerning the effects of marrow in cases of chlorosis and simple anemia agree in every detail with those already recorded. In one case of splenic leukemia (*Chicago Clinical Review*, January, 1895) the remedy used alone had the effect of increasing the number of red corpuscles and lessening the hemorrhagic tendency without appearing to improve the condition of the patient in other respects or retarding the progress of his sickness to a fatal termination. In this case, also, malarial organisms, so pronounced by two thoroughly trained microscopists, were found in the patient's blood in the last weeks of his life. They had been previously diligently searched for on several occasions without success.

Bone marrow, then, and especially red marrow, is certainly a readily assimilable organic compound of iron and is a valuable addition to the resources of the physician in cases of ordinary chlorosis and anemia, and in some cases of blood impoverishment of a more intractable kind. Whether it is anything more than an assimilable preparation of iron is not conclusively proved. The claims made for it in relation to the cure of pernicious anemia, leukemia and kindred disorders seem to be premature; for sufficient time had not elapsed in any case to warrant such a conclusion. Moreover, in some of these cases, as pointed out by Billings (l. c.), the correctness of the diagnosis is not above suspicion; and, in others, arsenic and iron were given in conjunction, or in alternation with the marrow. We have no knowledge that enables us to understand how it is possible for this substance to effect a cure of pernicious anemia or of leukemia. It can not act like an ordinary animal extract which supplies a deficiency. Its operation must be unlike that of thyroidal extract in myxedema and adrenal extract in Addison's disease. In these disorders there is atrophy or some degree of destruction of the thyroid and adrenals, respectively, and, consequently, insufficient secretion from them to supply the needs of the body; and the administration of an artificial extract of the thyroid or adrenal supplies the demand directly. Whereas, in pernicious anemia and leukemia the bone marrow seems to be hypertrophied and over active, but notwithstanding its activity it is unable to keep pace with the globular destruction that is going on at the same time. Finally, there is no proof that marrow is a secretion. Its function seems to be that of cell production and development. Nor is there any proof that this function is influenced in any way by any constituent or secretion of the marrow itself (Billings). Many accurate observations are needed to make a basis for conclusions that will endure.

ADDISON'S DISEASE AND ADRENAL EXTRACT.

Fourteen cases of Addison's disease are now on record as having been treated with the adrenals of lower animals, mostly those of the sheep. The glycerite of the uncooked, minced organ seems to be the favorite preparation. It is given in quantities representing from 15 grains to 3 drams of the fresh adrenals daily, and these quantities are subdivided into three or more doses. Conclusive proof has not yet been adduced that the preparation possesses curative powers. In about half the recorded cases improve-

ment was noted, and in some of them the improvement was very striking; but information is lacking as to the stability of it.

Fluctuations in the activity of Addison's disease are common, including long periods of arrest of progress, during which more or less recuperation of the digestive and circulatory powers takes place, together with general improvement in the condition of the patient. In a given case it may not be easy to decide whether the arrest and recuperation which are manifest have come spontaneously, or have been produced by force of therapeutic agency.

Quite as good reasons are found in literature for a suspicion that adrenal extract does harm in some cases of Addison's disease, as there are for regarding it as beneficial in others. The whole theory, or fact, of internal secretion in its relations to therapeutics is still of uncertain stability. One can understand how the body, deprived of needed materials normally given to it by process of internal secretion by the suprarenal glands, the thyroid, the kidneys and other organs, may be greatly benefited, when these organs are incapacitated, by the administration of extracts derived from properly selected normal organs of lower animals; but it is difficult to understand how it is possible for such a substitute to eradicate the disease which made its administration necessary. If a patient's adrenals have been destroyed, or permanently crippled, how is it possible for the adrenals of the sheep, given to him a few days or weeks, to make him so very sound and well that ever after he will be able to maintain good health without the assistance of his own?

The only case of Addison's disease that I have treated by this process of substitution was that of a lady of 32, of tuberculous antecedents, who had been ill for four years, sometimes better, sometimes worse. Part of the time there was erratic subfebrile elevation of temperature, but during a much greater part the temperature was normal or a little below. The usual symptoms of the disease were plainly marked—anorexia, nausea, weak digestive powers, constipation, pallor, debility, and enfeeblement of circulation. At times the circulation was alarmingly weak. Bronzing of the skin in various places, face, neck and back of the hands, and a like discoloration of the buccal mucous membrane completed a fairly representative picture. There was no emaciation.

Fluctuations in the activity of the disease were marked and in the early part of its history the lady was able to attend to her ordinary duties a considerable portion of the time without excessive fatigue; but notwithstanding the occurrence of periods of arrest and restoration, relapses of active progress gradually exhausted strength and compelled her to keep to her bed or couch. Under these circumstances bone marrow extract was prescribed, in addition to the arsenic and iron already in use. The patient slowly improved, as she had done several times before without the assistance of marrow extract, under like circumstances of prostration, and hoping to expedite the improvement still more I prescribed a glycerite of sheep's adrenals, beginning with a dose of fifteen minims three times daily, and gradually increasing till dram doses were reached. The larger doses occasioned nausea and were continued only two or three days; thereafter the dose of half a dram was not exceeded. On the third day of this treatment the lady informed me that the new medicine was not

agreeing with her. She patiently continued taking it, however, usually in the dose of half a dram after meals. On the ninth day I noted a temperature of 100.5 (mouth) and on the occasion of my next visit, the twelfth day of the substitutive treatment, the temperature was 102 degrees. Nausea and extreme faintness were now complained of and inability to take the usual amount of food. The lady insisted that the new medicine was killing her, and fully satisfied that the end was near, and that sheep's adrenals could not postpone it, I ceased giving the preparation. Death came quietly, without awaking her nurse, four days later. This fragmentary account teaches nothing except that the *post hoc, propter hoc* philosophy is susceptible of more than one application in relation to the use of animal extracts.

TYPHOID FEVER: ITS TREATMENT BY INTESTINAL ANTISEPSIS AND ELIMINATION.

Among recent contributions to the literature of special therapeutics, few are more striking or suggestive than those of J. Eliot Woodbridge, of Youngstown, Ohio, and W. B. Thistle,¹ of London, England, in relation to the treatment of typhoid fever by sustained processes of intestinal antiseptics and purgation.

These gentlemen appear to have been working independently of one another on the same lines and with substantially the same results, but with different implements.

Their audacious declaration that the disease in question can be aborted every time, if treatment be begun early, and that death from it is never necessary, is likely to impress the average physician as being so extravagant and unwarranted by their own showing as to discourage him from undertaking an attentive examination of the facts upon which the claim is based.

To dismiss the subject with the statement that "the chief merit of the 'Woodbridge treatment' is its harmlessness," as has been done by one of our most distinguished clinicians, who had never given the treatment a trial, seems to me tantamount to prohibiting one from attempting to improve upon present methods of practice. If those who are inclined to condemn the proposed measures without a hearing will turn to any standard treatise on typhoid fever and study the elements of treatment, largely nihilistic, and when not nihilistic, symptomatic, recommended by the author, they will be forced to admit that much improvement is both desirable and possible. The medical profession of this country has been imposed upon so often by shallow and pretentious writers in relation to the phenomenal success they claim to have achieved by inconsequential agencies that now none but persons of recognized eminence are likely to receive prompt and respectful attention. The most successful treatment of typhoid fever in vogue to-day in the great hospitals of the world is undoubtedly the hydropathic, antipyretic method of Brandt; and it is interesting to know that an incidental effect of this treatment is increased renal elimination to the extent of intensifying the toxicity of the urine five fold.² It is also interesting to remember that the free administration of water by the stomach usually has the effect of quieting delirium, depressing temperature and making notable improvement in the general condition of

the patient. If elimination of the products of bacterial activity is to be recognized as an important object and effect of treatment what is to be said against the proposition to destroy or restrain the activity of the bacteria themselves and thus prevent the elaboration and absorption of their toxic products? It is this that Woodbridge and Thistle claim to do and urge their professional brethren to do.

It is unfortunate that the basis of therapeutic effort maintained by the gentlemen referred to, is so much obscured by the prominence of fantastic details; for, if attention were limited to the underlying principles the reason of the reader would be less grievously offended.

In justice to our colleague from Ohio it must be kept in mind, however, that he has vigorously and repeatedly disclaimed any intention to foist upon his professional brethren *sine qua non* specific compounds to be given unfailingly in one, two, three, or four, for the infallible cure of typhoid fever. His prescriptions are merely intended to serve as a guide to the application of principles. Thistle does not use the same medicines at all and yet his results, so far as they go, are no less satisfactory.

The especial merit of the plan of treatment under consideration, if it have any, does not reside in any new conception that is embodied in it, for there is none. It resides in the promptitude and vigor with which long-recognized but heretofore feebly administered therapeutic axioms are put into play. It will not be claimed, I think, that there is any specific merit in podophyllin or that it is strictly necessary to require a patient to swallow a particular tablet every fifteen minutes for thirty-six hours before permitting him to take a dose of epsom salts. The vital requirement is to disinfect the bowel as quickly as possible and at the same time to establish and maintain free drainage or elimination. It is a fact of easy demonstration that if this be done early, meteorism will not occur and the discharges will be without unpleasant odor. More, it can be easily demonstrated that meteorism already present, is dispelled by this treatment and that the fetor of discharges is gradually corrected. Putrefactive processes in the bowel contribute something to the natural history of typhoid fever. Every case of the disease is an example of mixed toxemia and the chief primary seat of infection is the intestinal mucous membrane.

The attitude of incredulity and indifference that is generally maintained in relation to the claims of Woodbridge and Thistle seems to be justified by the well-established fact that the bacilli of typhoid and the toxins they produce are not limited to the lumen of the bowel but have penetrated into the walls of the tube and, to some extent, found their way to remote parts of the body before the physician is ever called upon to give a dose of medicine; and it may well be doubted that any process of local treatment of the alimentary canal can make an important impression on the life history of the microorganisms which are now distant from it. It must be remembered, however, that before the bacilli can invade the tissues they must be present in the lumen of the bowel. It must be remembered that they multiply here. It must be remembered that the process of invasion of tissue and transmission to remote parts is not completed in a day but is a continuous and progressive one, lasting many days. It must be remembered that the effect of these organisms on the invaded tissues of the bowel—

¹ Canadian Practitioner, April, 1893; Medical Record, March, 1894, and Sept. 14, 1895.

² A. H. Burr, Chicago Medical Record, October, 1894.

inflammatory swelling, necrosis, etc.—depends on the number present at one time, the duration of their stay and the degree of concentration of their toxins. (Thistle, Sims Woodhead.) It must be remembered that the severity of an infectious disease, and the liability to intercurrent infections, depends, other things being equal, on the degree of the concentration of the toxic principles in the blood. If these facts are kept in mind it will appear rationally possible that by processes of purgation and antiseptics we may be able to prevent, in some degree at least, a concentrated infection of the lymphatic structures of the bowel and the consequent destruction of them, together with concentrated systemic infection and its attendant dangers. It is also rationally conceivable that the duration of the disease may be shortened.

The bacilli that have already reached remote parts of the body doubtless play an important role in the evolution of the natural history of typhoid fever; but it is plain that if the number be kept within bounds by restraining the activity of recruiting from the bowel, the minimum amount of damage will be done and the best possible opportunity will be left to invaded parts to destroy and triumph over the limited number of bacilli which have reached them.

If the foregoing course of reasoning is correct it points to the conclusion that the earlier antiseptic and eliminative treatment is instituted and the more thoroughly it is maintained, the more effective it will be. To withhold its employment a week or two, and permit the intestinal structures to become saturated with microbes and toxins and the system at large to become overwhelmed by concentrated infections would not be giving either the treatment or the patient a fair show. Processes of prevention are not to be expected to cure damage that has already been done.

It is not desirable that the antiseptics be absorbed. It is sufficient if a continuous stream of them be kept passing through the alimentary canal. To give them and allow the bowels to remain constipated is to invite the absorption of toxins that have already been elaborated. By making the culture medium noxious to the germs, by the use of antiseptics or germicides, and at the same time by diluting this medium more and more by the action of purgative medicines all will be done that can be done by these therapeutic measures. Continuous purgation is, I conceive, of at least equal importance with the continuous use of intestinal antiseptics.

One fact appears to have been fairly demonstrated by Woodbridge and his followers, viz.: That purgation begun early in the clinical history of the disease and continued steadily throughout its course does not increase liability to perforation or hemorrhage. It seems to lessen it. This can hardly be considered as soundly established, for the examples of typhoid fever that have appeared during the last two or three years have been, for the most part, uncommonly mild; but if it were soundly established it would not warrant the conclusion that active purgatives previously withheld can be administered without danger when grave intestinal lesions exist.

Permit me to direct attention to the rapidly growing statistics upon which the claims of Woodbridge are based. To say nothing of the hundreds of cases reported by himself in which little or no bronchitis occurred, little or no delirium, little or no subsultus, little or no meteorism, little or no dryness of the tongue, but little circulatory and thermic disturbance and no

perforation—cases that pursued a singularly brief and benign course; that were free from complications of every kind and invariably terminated in recovery when treatment had been begun early; let us consider the testimony presented by other writers:

Thistle (*loc. cit.*) has reported one hundred and seventy-two cases representing all grades of severity and progress when treatment was begun, with a mortality rate of 3 per cent.

F. Grover (*Jour. A. M. A.*, Feb. 15, 1895) reports fifteen consecutive recoveries; E. J. McCollum (*IBID.* Feb. 1, 1896) reports eighteen and J. J. Orton, eight; Wesley Davis (*IBID.* March 4, 1896) reports eighteen; W. B. Shields (*IBID.* April 11, 1896) reports twenty-eight recoveries and one death; and the present writer now reports twenty-one consecutive recoveries covering his private practice of the last two years. Total 275 cases and 6 deaths—a mortality rate of 2.2 per cent.

Considering that these cases came under treatment at various stages of progress of the disease it would appear probable that there is something of merit in the plan; and yet we are not to forget that during the past two or three years it has been uncommon for typhoid fever to terminate fatally under any kind of management and that exalted enthusiasm in relation to a particular specific method is far from having a safe foundation.

Hemorrhage occurred in two of Shield's cases and in one of them, it caused death.

In Davis's series four examples of hemorrhage and two of relapse are noted.

The cases referred to by the present writer included various degrees of severity and advancement when treatment was begun.

It is not claimed that the "Woodbridge treatment" was employed in one of them. Neither the trivial differences between prescription "No. 1" and prescription "No. 2," nor indeed, the prescriptions themselves, have impressed the writer as being of vital importance to any of his patients. The plan of treatment followed consisted, in a general way, of purgation—to the extent of from three to six evacuations daily, begun at once and continued throughout the course of the affection—together with intestinal antiseptics. The purgatives employed were of various kinds but usually either mercurial or saline. The antiseptic used was generally the mixture of guaiacal carbonate gr. iij, thymol gr. i, menthol gr. ss, and eucalyptol m. i, referred to by Woodbridge as "Prescription No. 3;" and it was given in the form of a capsule every two or three hours.

Other measures of treatment were not ignored. Rest in bed was enjoined in all cases, and the diet was of the kind in vogue with the profession. Sponging was used in all cases with more or less frequency and in one, that of a medical student, the Brandt treatment was employed systematically for a period of ten to twelve days. In short no attempt was made beyond that of studying the effect of continuous purgation and antiseptics in typhoid fever—and that without neglecting the use of better established methods and measures.

Although no death occurred the results, especially in the direction of aborting the malady, albeit not discouraging to one who had not expected much, were much less brilliant than those recorded by our friend from Ohio.

Limiting attention to thirteen cases in which treat-

ment was begun during the first week, even upon the uncertain basis for diagnosis that was generally found at the time. I respectfully report that two of these cases proved to be of the abortive variety—one reaching normal temperature on the ninth day and the other on the fourteenth.

In one case, that of a physician, a single relapse occurred; total duration thirty-eight days.

In another, that of a student, a second relapse occurred, total duration sixty-four days. The first relapse was engrafted on the primary attack and was indicated by the occurrence of epistaxis, abrupt rise in temperature and pulse rate and the appearance five days later of a rather coarse, but sparse, roseolous rash. A similar train of phenomena appeared during the seventh week. The primary course of fever was of moderate severity but the first relapse was uncommonly violent. Pneumococci were abundant in the sputa but no pulmonary consolidation was discovered. During the second relapse several small abscesses appeared, subcutaneous and submucous (buccal).

The remaining nine cases were singularly mild and free from bronchitis, meteorism, offensive discharges, dryness of the mouth, apathy, delirium, subsultus, hemorrhage and other disturbing manifestations. The usual pulse rate was between eighty-four and one hundred, and in no case did it go beyond one hundred and four. After the third day of treatment in no case did the temperature go above 102.5 degrees. The average duration of the nine cases was seventeen days.

It is not assumed that this inconsequential showing proves anything. It is merely in line with the ordinary observation of medical men in respect to the mildness and benignancy of typhoid fever during the past two or three years. Nevertheless there is enough merit in the conception of intestinal antiseptics and drainage, as a means of obviating continuous intoxication, to warrant one in giving it free and fair play. No one has a right to condemn it without proof.

ORIGINAL ARTICLES.

CAN WE IMPROVE UPON THE SANITARY CONDITION OF OUR CARS?

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

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I take it that every physician is a sanitarian; if not, he should be. The doctor's true sphere of action is not confined to disease alone, but embraces man's whole life when in a state of health as well as when in a state of disease.

A knowledge of the laws of hygiene is essentially necessary to the education of every physician, and its worth as a true science is of no less importance to the general public. We find in searching the archives of the past that those who preceded us in our noble calling recognized the science of sanitation as a true sister to the art of medicine as well as her greatest, brightest ally. Every civilized government has assumed the inherent right to protect the health and provide for the safety and welfare of its people; and this is not merely a presumed right, but it is a duty and obligation which the sovereign power owes to the public. That this is true and that sanitation has

been from the remotest period of history an integral part of medicine and accorded a place of distinction in the councils of ancient governments can not be denied. Let us for a moment, as a prelude to this paper, look into the realms of now almost forgotten history with reference to the laws governing public health.

This department of science (sanitation) has received so strong an impulse during the past few decades that many persons regard it as of modern origin; but on turning back to the records of early history we almost invariably find evidence that the health of the general population was a subject of legislation.

The Mosaic code of laws, the most ancient on record, contained minute directions for cleanliness of the person, the purification of the dwellings and the camp, the selection of healthy and the avoidance of unhealthy food, the seclusion of persons with contagious disorders and various other points bearing on the physical well-being of the Jewish nation.

The Greeks and Romans—although not like the Jews, making hygiene a part of their religion—were far from neglecting it. The laws of Lycurgus, says Dr. Gairdner, "are not wanting in very pointed enactments on sanitary matters; and the importance attached by the Greek Republic, and in the Platonic polity, to physical culture is too well known to require remark."

"The Roman people, poor and apparently rude as it was in its origin, yet found time, amidst its military operations, to construct the *cloaca maxima*, an indestructible and stupendous memorial of its attention to the drainage and sewerage of the city at a very early period of its history. At a later period aqueducts were made to cover miles upon miles of the surrounding plain; and their splendid ruins, still partly used for their original purpose, attest the munificence and the abundance with which the first of sanitary requisites was supplied to the imperial city." When state physicians were first appointed in the Roman Empire is not certainly known. Their mode of election is described in the Theodosian and Justinian codes. There were ten of them in the largest towns and to each district or subdivision, seven in towns of the second order and five in smaller ones. They collectively formed a college whose duty it was to attend to public health, and they may be regarded as the earliest type of our general medical council.

We find on our own continent that the ancient and energetic Aztecs were not ignorant of the laws of sanitation; and long before the sailing of Columbus from Palos, we find that their water supply and efforts at drainage evidence their knowledge and appreciation of hygiene equal to if not superior to that in vogue in some of our municipal governments of to-day.

Gradually, however, as Christianity spread, an utter misconception of doctrine led to the neglect of all care of the human body, and the question of public health, the foundation of a nation's wealth, growth and happiness, was ignobly buried in the darkness of the middle ages. It has now been unearthed by the inexorable demands of modern enlightenment, and gaining ascendancy, has greatedened and glorified medicine without marring the luster of her scientific consort, and to-day she turns to the people and their rulers, outside the medical fold, and demands as her right a place of honor in their councils. Thus we see

that from time immemorial it has been as much the physician's duty to regard the laws of sanitation as to treat the ills arising and sure to follow a violation of her mandates.

When we find that the air of passenger cars is shown upon careful examination to be equal in impurities, greater in amount of carbonic acid than some of the sewers of our cities, and the sleeping car to be pronounced a "hot bed of infection," it is time for us as railway surgeons on behalf of our respective railway companies and our duty to the traveling multitudes to investigate and see whether or not we "can improve the sanitary condition of our cars."

Permit to quote from a recent edition of the "National Board of Health Magazine."

"Everybody knows that the aim of the car-builder of the present day is to make the sleeper a palace on wheels. The seats are upholstered with the softest material, combined with reasonable durability; the carpets are most velvety; the curtains soft and rich; the mattresses, pillows, blankets and coverlets of the best. The whole furnishing of the car is similar to a private drawing-room."

Who could ask for more in the sense of comfort? And what is here said of the sleeping car, can be with equal propriety and justice claimed for the passenger car. We know that the passenger car of to-day is the evolution and product of many years of careful study, and it would appear that in meeting the demands of the traveling public it has nearly reached the limit of perfection in dimension and compactness as a component part of the train. In many instances from the artisan's point of view it is constructed both as elaborately and comfortably as the handiwork of the mechanic can devise. In the life and competition for trade, the rapidity and comfort in transit has stimulated our various railway companies to build and improve the passenger car so rapidly that we look with admiration at the results achieved in all that is artistic and beautiful in veritable palaces on wheels, speeding over mighty domain as true evidences of the skill and enterprise of our progressive people. With all this, however, we must admit that the sanitary condition and arrangement of the passenger car is bad, and this condition is often made worse through neglect or ignorance in the use of those means at hand provided for its ventilation and cleanliness. There is no doubt that had the mechanic gone hand in hand with the sanitarian in the construction of the passenger car, greater results would have been achieved. Certainly, so far as lighting, heating and ventilation is concerned, measures have been so far neglected as to call for legislative enactments in many instances, and a world of literature looking to the correction and improvement of the existing evil.

We quote further from this article by Dr. Pattison, on "Car Sanitation." After describing the various physical conditions of those who travel in the sleeper, and noting the infectious nature of tuberculosis he says: "And the tuberculous patients travel more than any other classes in search of suitable climate. Persons suffering from phthisis pulmonalis are to be met with in the sleepers upon nearly every transcontinental train. They cough and expectorate as all such do, sometimes in the cuspidor, sometimes in the handkerchief, but very frequently on the carpet as this is not their own. When on the last, the germ-laden expectoration becomes rapidly dried and ground with dust, rises in the air of the car and is inhaled by the sus-

ceptible fellow passenger, often an innocent stranger. It is quite rational to presume that in this way the fatal disease is often spread."

The doctor then goes on to say: "What, after a time is the sanitary condition of the sleeper? It becomes simply a hot bed of infection. It can not be otherwise, for no efficient measures are taken to prevent it. The sheets and pillow cases are changed daily, sent to the laundry. Allow that they are thus purified; what is done with the mattresses, pillows, blankets, coverlets, and curtains? They are closed up from sunlight and air in the upper berth, and for months at a time they are never exposed to nature's purifiers."

"So far as the car itself is concerned, at the end of the trip, the carpet is swept, the cushions brushed in a dry condition; a profusion of germ-laden dust rises to settle again; what falls upon the wood work, and is visible, is brushed off with a duster to settle again on the carpets and cushions, where all remains in the most favorable condition to be raised into the air by the next set of passengers and the motion of the car upon the return trip. To my mind, the sleeper of to-day is an extremely active factor in the propagation of infectious diseases, more so on account of its luxurious furnishings than other cars."

It can not be said that these remarks are overdrawn or exaggerated, neither will anyone doubt the infectiousness and contagiousness of tuberculosis nor the vast numbers who are constantly traveling afflicted with this disease in search of genial climes to invigorate their exhausted frames. What an infectious field the car from such contamination becomes in spreading disease among the innocent and unprotected public. And tuberculosis is not alone in the consideration of this unwholesome state of affairs, for the germs of many other infectious diseases are lodged and housed up through this want of better hygienic measures to wreak vengeance upon the unsuspecting.

Many suggestions have been made with reference to abating this evil, including many alterations in the construction of the car, the abolishing of the draperies and tacked-down carpets and other furnishings that will not withstand the proper methods that should be used in a thorough fumigation and disinfection.

Restrictions are likewise suggested to be imposed upon invalids requiring them to have certificates from the proper authorities showing freedom from infection as is necessary in the transportation of the dead. Many of the suggestions are practicable and could be easily put into operation, and carried out with little expense.

It is questionable, however, if under our form of government, State or federal, invalids could be obliged to present a certificate showing freedom from infection before being permitted to obtain transportation as it is required in transporting the dead.

It is certainly true, that it is as dangerous and hazardous to the public to carry by rail the infectious living as it is to carry the infectious dead, and probably more so, since the carrying of the dead will never equal in number the invalid class nor are the conditions of possible contact the same: to have in the same car persons afflicted with infectious diseases disseminating and spreading germs under the most favorable conditions is much more dangerous to the public than are the infected dead in the baggage car.

Still, the law of equity would grant privileges to the one that the relatives of the other could scarcely exact

as an inherent right. We can not prevent the infected from traveling no matter how plainly we may demonstrate the death dealing germs left in their wake. We must exert sanitary measures and precautions and depend on these to protect the public from disease.

If we wish to improve the sanitary condition of our cars we must not only look into the questions of ventilation, heating and lighting, but we must go beyond this and show to the car builder the wisdom of consulting and associating with the mechanic the ideas of the sanitarian. It is difficult and, in many instances, quite expensive to improve upon a poorly constructed car from a sanitary standpoint, and to attempt such improvement would necessitate an outlay greater than many of the companies would be able to bear. To accomplish the most good by having a properly ventilated car, and one that is susceptible of the greatest cleanliness, we must direct our attention to the building of the same. It is said that the most intelligent men of our country are engaged in the management of railways, and the fact that so little has been done in the way of railway sanitation is simply because these gentlemen are unaware of the value of such a departure, and have not been made to see the monetary gain that would accrue to their several companies by the proper enforcement of sanitary laws. This is undoubtedly true; so, also, is it true, that in a great organization of railway surgeons as we have here, the importance of sanitary measures with reference to the hygienic condition of the coaches should be studied, and the knowledge thus derived should be given to our respective railway companies for their information and guidance. I do not think that we should so long ignore these matters of vital importance as to let the legislative branches of our government step in by their enactments and describe, for instance, the manner in which heat should be applied to the train, any more than we should wait and expect from this same source information and instruction regarding the treatment of fractures and other injuries resulting from wrecks. I trust that it will be the sense of this association to deem it a duty incumbent upon it and always to look into the sanitary condition of our cars with a hope of improving it.

I do not intend to attempt in this paper to suggest to you what would be the most improved ideas of car sanitation. This must be reserved for the more efficient sanitary engineer, whose scope and field of observation is far greater than mine.

To this same expert must be left the plan of ventilation, complex and difficult of solution as it is, the maintenance of proper temperature and the best system of water-closets. All of these are susceptible of vast improvement.

The question of cleanliness, however, in the car proper, the water coolers, the purity of the ice and water supplies are matters that we are capable of coping with. If it is carried out by some regulated system of rules enforced by all the railway companies alike, a more wholesome and healthful condition will result to the public and we will be credited with the honor of having improved the sanitary condition of our cars.

All coaches, day or sleeping, especially after long trips, should be subjected to a cleansing and disinfection. This can be done in several ways and should be provided for in the necessary instructions given the employes having this matter in charge. The

same rigid rule should apply also the bed, bedding, carpets and draperies of the sleeping car. Not only should the car be cleaned at the end of each trip, but as far as possible it should be kept so while in transit. Since many people of filthy habit travel, the necessity of this will become obvious. The water coolers, which are scarcely if ever washed, should receive closer attention; likewise the ice and water with which they are filled, and the often disgusting manner in which this is done. The cuspidors should be cleaned as often as necessary, and when used by the tuberculous, should be disinfected; and until a better system of closets are devised, dry earth or a freer and more elaborate system of flushing should be provided.

Whatever system is adopted looking to a better sanitary condition of the cars should be one that is enforced by all the roads alike.

In concluding this paper, I thank you for your kind consideration and hope that I have been successful in showing why we as railway surgeons should be sanitarians, and why some of our deliberations should be in the direction of the improvement of the sanitary condition of our cars.

DISCUSSION.

DR. REED, of Columbus, Ohio—I believe I have been generally known as a sanitary crank, and I presume that for an individual who has as little money as I have to spend in this matter, I have spent perhaps as much as any man in the country in investigating the matters about which the author of the paper has written. I made a sanitary inspection of the Big Four, the Panhandle, Pittsburg, Fort Wayne and Chicago and the Baltimore and Ohio Railroads some years ago. This inspection consisted in the investigation of the air by chemic analysis, the investigation of the cars, the plan of heating, the water-closets and the ventilation; the temperature of the car at the floor, at the level of the mouth and at the ceiling, and it required no small amount of time, work and expense. After examining this matter carefully I found a great many things to recommend in my report. I had the pleasure of sending a copy of this report to President Pullman, and received a reply from him stating that he believed my suggestions were good. The trouble usually arises with the superintendents and the managers, who are, so to speak, between the devil and the deep sea. They are anxious to make the cars as comfortable and as handsome as possible to accommodate the traveling public, and on the other hand they must curtail expenses in order to maintain their positions as servants of the stockholders. To add these improvements means expense, and so long as the traveling public does not make any special claim for improvements on the cars, they do not feel inclined to make them. I do not think there is a general manager who would not admit that the paper read by our friend here was right and every word perhaps in it true, but they look at it from a business standpoint only. Quite a number of general managers have expressed their opinion to me on the subject and have said there was no question about its importance, but that so long as they were not required to make these improvements in order to get passenger traffic over their roads they did not deem it necessary to take the lead in the matter. I have no doubt Mr. Pullman looks at it in the same light. He sees very plainly that an elegantly fitted car, when placed beside another on the track that is not so elegantly fitted up, at the same price and going to the same place and making the same time, will be preferred by the public. I believe that until the public is educated in the matter you can not get the railway companies to adopt a new plan until the riding public demand it, and say to the railroad managers, "We won't ride on your road unless you give us a sanitary car to

ride in." I think the time will come when we will have these improvements, because I am sure the companies will be ready to make the expenditures if they see a return for this extra expense, but they do not feel like making the expenditures otherwise. Railroad companies are not organized for philanthropic purposes; they are organized strictly on business principles, and unless this can be demonstrated as a business enterprise, I do not believe it is possible for us to reach improvements.

DR. BEVAN—I believe that the paper of Dr. Dalby touches a very important kind of work, and the question has occurred to my mind whether or not it would not be possible for this Academy to bring out results of some practical value in this line. Whether it would not be possible for us to very thoroughly, as an Academy, investigate this whole subject and formulate some practical rules which we, as the Academy of Railway Surgeons, could recommend to railway companies, even to State legislatures, or the Interstate Commerce Commission. It certainly is a very valuable line of work, and it must be carefully worked out by just such men as the members of this association. With this in view—this is merely a suggestion—I should think at our next annual meeting it would be well to have several papers covering this entire ground, not only in a general way, as Dr. Dalby has done, but in a specific way, with specific and practical recommendations to the Academy.

DR. JOHN E. OWENS, of Chicago—I have for a long time felt that something in the direction of this paper should be done. In taking a long ride of 800 or 1,000 miles I have now and then watched the different varieties of the genus homo that refreshed himself or herself at the drinking fountain or water cooler, some evidently with pulmonary disease, tuberculosis, etc., and in a sleeping car, unless I am sleeping. I believe as the matter of tuberculosis is getting so well understood, slowly, it is true, by the public, and also in consequence of the existence of such papers as has been given us by Dr. Dalby, that the public, and consequently the railroad companies, will feel the evolution in the right direction and eventually we will have some attempt in the way of the construction of a car which will meet the objections presented by some of the luxurious cars in which we now ride. It will be a matter of very slow progress. I take it that some enterprising company will build one sanitary car and run that for a time; perhaps some other company as an advertisement will set forth to the public that the Sanitary Car will leave Chicago for Denver at 8:40, with no possible danger of any contagion or infection. It will come about in some such way, but the doctor can not do it unless he has the coöperation of the railroad authorities, as has been suggested, and with them the sanitarians of the country. The public health associations and all the representative bodies of this character in the country will in time, I presume, coöperate and their united effort will bring about the desired results. Certainly all the conditions for the spread of such contagion must be present in both the day coach and the sleeping car, as has been set forth by Dr. Dalby in his paper. The public, as has already been stated, comes very slowly to a realizing sense of what they should do to protect themselves. They don't appreciate what is done by others; we see that in the hospitals. It is useless to give a consumptive in a car a spit-cup to use and to throw out of the window. The carpet that he does not own, and the floor will be used in preference to these, however accessible they may be. I have not anything to recommend.

DR. MAYNARD—Following the paper of Dr. Dalby and following the line of Dr. Owens, I have noted for a great many years the unsanitary condition of cars, as a rule. All well-to-do consumptives travel by sleeping cars. It is through the agency of such an organization as this that we can do some good in a sanitary way. I happen to have a very close personal acquaintance, extending over a great many years, with the Pullman Company, the leading sleeping car company in the United

States, and I know that Mr. T. H. Wickes, the vice-president and general manager, and Mr. Gusten, the general superintendent, are anxious to do all they can, not only to make the traveling public comfortable, but to make their cars sanitary. I know this fact from conversation with Mr. Gusten to-day that they will be very glad to do anything they possibly can in order to make their cars sanitary, and would, I believe, take the lead in any movement that might have the endorsement of such an organization as we are, and consider any well-formulated and well-digested plan that might be presented to them. As to railways generally, they are like the rest of us, after the dollar, and as long as the suffering public are not educated and will put up with it, they will give just such accommodations as will keep up their passenger receipts. But any well-defined and well-formulated suggestions from an association of this kind would receive, from the Pullman Company at least, not only a courteous reception, but would be met more than half way. I know the danger. I see the consumptives on the road, hear the cough, see the spit, and as a rule I ride on the baggage car to save myself. But I believe it would be well for us to formulate, in the line of Dr. Dalby's paper, a set plan and submit the same, not only to the sleeping car companies, but to all passenger carrying roads.

DR. W. J. GALBRAITH, of Omaha, Neb.—I fully appreciate Dr. Dalby's ability to write upon sanitation as well as his ability in the profession in general. While it may be humane and it may be sympathetic for us to look upon this matter in the way we have, I do not deem it in the province of this association to make recommendations that we are not called upon to make by our general managers. It would be just as absurd for us to make recommendations how a locomotive should be made, how a road-bed should be graded, etc., as to enter into something that has no connection whatever with our positions. We are employed as surgeons and physicians to railroads to care for the sick and injured employees and those for whom the railroads are responsible. It is the duty of the master car builder and his associates and the chief engineer to put into practical execution all these measures that we are discussing, and they are constantly working upon sanitation, as well as the general improvement of their rolling stock. They are men who are educated and men whom our general managers depend upon to make such sanitary conditions, as well as safety conditions to transport their passengers. We have had in associations heretofore papers that have done railroad surgeons' associations a great deal of harm. I believe that the recommendations of Dr. Conn as contained in his paper have done more injury to the railroad surgeons and their societies than all other actions that have taken place during our short existence. We speak from a sympathetic and humane standpoint, which is all right. I appreciate that. I think it is all right for those things to be considered. At every discussion pertaining to the sanitation of cars, the first object has been tuberculosis. It is not directed to the public in general where the families intermingle and sleep together, in hospitals, where you have a tuberculous patient and one suffering from a different disease right next to him. Those things are not taken into consideration. We are not making recommendations in the proper channel. I believe that the paper by Dr. Dalby is a very valuable one; it shows good judgment and good sense, but if it is printed and the transactions sent to our general managers for review, we will be doing a great deal more harm than we will be doing good. It is something that we are not called upon to perform and it is not our duty to make those recommendations. Now the hospital care for the transportation of patients. This is a matter we have discussed in associations heretofore, and I have had it repeatedly from two or three different sources and from general managers, how absurd it would be for every trunk line to furnish cars for the transportation of tubercular patients. It is entirely out of the question that a trunk line

can afford to equip cars to start from Chicago to the Coast, to have a special car arranged for the transportations of tubercular cases. It is just as absurd as it is for the accident cars we have made recommendations for in associations I have been connected with. We have recommended that automatic couplers be immediately placed on all roads. What business have we to make such recommendations? None whatever. That is not our province whatever. I have fought the automatic coupler, I have fought the tubercular cars and the accident cars from the time our organizations of railroad societies started, and I hope this will be the last fight I shall have to make.

SANITARY REGULATIONS GOVERNING RAILWAYS.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY L. E. LEMEN, M.D.

DIVISION SURGEON, U. P. RY., DENVER, COLO.

It is not often that a railroad surgeon is called upon to speak before you upon matters pertaining to public health. Yet, in this particular, we are not to judge the future by the past. This is truly the era of preventive medicine, because we find not only all branches of medicine battling against every scourge, but the public in general has its thoughts set on the laws which are apt to conduce to good health. It would seem that, at last, the laity has commenced to appreciate the meaning of the old adage: "Public Health is Public Wealth."

In the revolution that is now taking place in scientific and social circles to promote the health of the people it behooves the railway surgeons, and railway officials to pause for a moment as to their duties and capabilities. To remain inactive in matters of this kind will be considered criminal and costly, and instead of deferring the necessary preventive measures in certain diseases until the railroads are compelled by State and National statutes to observe laws more or less stringent and often impracticable, it would appear to be the part of wisdom, first in the railway surgeon to pay special attention to State and municipal hygiene and the laws of the different localities governing the same, and second for the railway managers themselves to instruct their agents to supervise and direct as much as possible the sanitary legislation referring to public carriers.

In all the concerted effort for the public welfare now taking place we find State medicine especially concerned in restricting the spread of tuberculosis in general, and tuberculosis of the lungs or pulmonary consumption, in particular. It is on the subject of the latter that I propose to speak more especially as a railroad surgeon.

The value of Koch's discovery in fixing the specific cause of phthisis to the invasion of the tubercle bacillus is magnified day by day as we contemplate the possibilities of State medicine toward stamping out disease.

That pulmonary phthisis is a communicable disease no one will to-day question. The mode of spread is various, such for instance as: 1, taking the germ of the disease into the system by drinking infected milk; 2, the ingestion of diseased meat; 3, from the expired breath; 4, accidental contact with the expectoration and the discharge from tuberculous sores; 5, inhalation of air laden with bacilli from dried tubercular sputa.

Of the methods by which the disease is communicated, the latter, namely, the inhalation of air laden with bacilli from dried tubercular sputa, is recognized

to be the most common. It is in this mode of infection that the railroad surgeon is principally interested, since overcrowding in cars, poor ventilation and faulty construction specially favor the spread of the disease.

We have every reason to believe in the potency of isolation for the restriction of the spread of tubercular disease, and we read the signs of the times from those boarding houses and hotels who now advertise for non-tubercular patronage at the same time that sanitarians are advocating the value of segregation of consumptives into properly built cottages away from populous centers.

Facts such as these offer suggestions of value to railroad officials. If it is manifestly dangerous to receive the tubercular subjects in hotels and boarding houses occupied by people generally what should be the rule to be observed in railroad travel in a country like ours where people have such a tendency to move about? Take for instance railroads leading to resorts for consumptives where a great percentage of the travel is done, especially at certain seasons of the year, by the infected class, and then figure on the ill effects of permitting the sick and the well to travel together.

The time has arrived when the railroad sanitarian must point out these dangers. As scientific men we do a great deal for the cause of preventive medicine. I believe it is important that we should recommend the following.

1. Segregation of the consumptives in railroad travel.
2. The compartments of the infected individuals should be constructed in such a way that disinfection and cleansing may be easily accomplished.
3. The sleeping cars should be provided with drapery easily laundered, and all drapery should be washed as often as once a month.
4. The bedding of the isolated compartments should not be interchangeable with that of the other part of the car, and articles like blankets and mattresses should be steamed at least once per month.
5. The dangers of spreading the disease through the medium of dried sputa should be stated in circulars conveniently posted in the isolated compartment, and the necessity of expectorating into spittoons and not on the floor or in handkerchiefs should be specially dwelt upon.

DISCUSSION.

DR. C. M. DANIELS—In the new instruction book I am issuing to the physicians and employes of the road I represent, I have added a clause directing surgeons, when traveling over the line, to make an inspection of the train and in case any unsanitary conditions are found, that attention be immediately called to the same and reported promptly to the chief surgeon.

REPORT OF FIVE CASES OF TYPHOID FEVER TREATED BY THE WOODBRIDGE METHOD.

BY H. SCHOENFELD, M.D.

TRENTON, OHIO.

Case 1.—Lena F., of Trenton, Ohio, age 21 years; single; a domestic; began ailing on April 16 with the characteristic symptoms of typhoid fever. Had been working in family where two long prolonged cases lay. Saw her on April 30 and put her on iron, quinin and strychnin pills; aconite and digitalis and used turpentine stupes. Pulse 120, temperature 102.2. Third day temperature was up to 103. Put her on Woodbridge tablets No. 1 every hour. Fourth day gave them every half hour. On fifth day put her on No. 3 in a liquid form which after a while caused vomiting, which finally became very bad; so I ceased its use, her chief complaint being in the

epigastrium. Kept her on No. 1 and used papoid, listerin with aconite, digitalis, etc. Normal temperature was present on the evening of the twenty-third day.

I did not understand treatment as it was my first experience with it. There occurred no hemorrhage, and the only complication was gastric trouble and hysteria.

Case 2.—Harry K., of Miltonville, Ohio, American, age 27 years; married; a farmer. Had been complaining for two weeks. We thought he had dumb ague. Nose bleed occurred on July 31. August 1 the tongue was thoroughly coated, felt tired and aching; rigors more or less all day: very tympanitic and sensitive. Pulse 78, temperature 102.4. Gave tablets No. 1 every hour for first twenty-four hours. Second day I gave them every half hour (when I got five evacuations from bowels), until evening of third day, when I put him on No. 3 in addition, in fluid form. Fourth day, noticed the breath to be offensive, some sensitiveness in mouth and gums, so took him off of No. 1 and used pot. chlor. during that day. I continued No. 3, but put him back on No. 1 again on fifth day and continued thus. Normal temperature on morning of fourteenth day and same next evening.

Up to this time I did not do my patients or myself justice, owing to the fact that I had these formulæ put up by my local druggist and had some trouble in their use. I procured medicines from Messrs. Parke, Davis & Co. for my next case and continue to use them.

Case 3.—Valandingham F., of Busenbarks, Ohio, American, age 24 years; single; imbecile; a farm hand. Symptoms of typhoid fever first showed August 31, but he lagged along till September 4, when I first saw him. The bowel lesion was very pronounced and sensitive. Pulse 80, temperature 102, A.M. Not having Woodbridge tablets with me I put him on iron, quinin and strichnin pills, with listerin, aconite and digitalis. Next day, after a very restless night, put him on No. 1 every fifteen minutes, and applied turpentine stupes. Continued the same treatment during the next day. On the fourth day added Nos. 2 and 3. Kept this up regularly, varying the treatment only with the action of the bowels, and he had a pulse of 69, and temperature of 98.6 on the morning of the ninth day and evening of the following day.

The patient was fairly strong and I discharged him with the strictest admonition to be a little careful of his diet, as he had been extremely sore. So things progressed well for fourteen days, during which time he was up and out, moving around and feeling fine. The whole family being of a low grade of intelligence, what this poor fellow did not think of and call for to eat, they reminded him of; among other things fresh pork just butchered. As he was somewhat of a glutton he stuffed himself, and on the evening of the fifteenth day of freedom, twenty-six days after the beginning of the sickness, he was taken with a heavy chill. Next morning at daylight I was hurriedly summoned and just before my arrival I found he had had a stool of pure blood; I think about two or three pints. The pulse was 96, temperature 103, considerable nausea, and the appearance of the vomit like a lump of pure putty, well greased. My prognosis was not favorable. I put him on the orthodox treatment to arrest hemorrhage and to sustain the heart's action and strength and gave No. 3 capsules as required. With six more hemorrhages and a considerably lower temperature he passed to the fourteenth day, when the temperature touched normal and remained so, and he lives to-day turning the scales at over 200 pounds.

Case 4.—Bertha S., Middletown, Ohio, American, age 20 years; single; a housemaid. I was called hurriedly by telephone on the morning of December 28 to Middletown, to see this patient who had been treated for ten or twelve days by a medical friend. He had diagnosed and was treating typhoid fever, which diagnosis I confirmed. I found a very sensitive right iliac fossa. Pulse 102, temperature 102.2. I put her on No. 1 every fifteen minutes, which brought about eight operations from bowels, and continued the next day the same treatment, with like results, when I substituted Nos. 2 and 3 for No. 1, but lengthened the intervals of the dosage a little too long and too soon, and we had a little elevation of temperature for a day or two only. When I saw her on January 8, after eight days of treatment, I found the temperature normal and it continued so. I saw her three more times during the next week and then discharged her.

Case 5.—Traveling man, age 39 years. This was a peculiar case; the patient, stout and robust, came home on February 24, complaining generally with gripe symptoms; he came into my office for medicine and again on the 25th, he being up and around all of the time. After forty-eight hours all aches, pains and chilliness subsided, but on the 26th he felt "tough," and on the 27th I was called in to see him. Found him stupid and glum, very bilious; the skin, white of eye, etc., at times

being very yellow. That morning I took his temperature for the first time and found it 102, pulse 72 and regular, breathing easy, tongue coated down center, breath very offensive. There was no pain in right iliac fossa at all, but there was decided tympanites. I pronounced the disease to be perambulating typhoid. I immediately put him on No. 1 that evening; the temperature was 102.6, pulse 78. On the 28th the pulse was 78, temperature 101.4 A.M. He had rested fairly well, had seven or eight stools on the preceding day and in the evening his temperature was 102.8 and pulse 96. In spite of my directions he was given the tablets only every half hour. He rested fairly well that night. On the 29th the pulse was 96, temperature 103. I ordered No. 1 to be continued without fail every fifteen minutes, and if his bowels were not too frequent, two to be given at a time. Tympanites subsided and he was allowed to get up as he had complained of no ill feelings. I then put him on No. 3. There has been some nose bleed during the day. This patient had a normal temperature on the thirteenth day of treatment, both morning and evening; no tympanites; no soreness; no fiery-red tongue. He had some hallucinations once in a while during his illness. He heard a train pass for the first time, although he only lives 150 yards from the railroad. He bled three times from the kidneys; hematuria. I gave him small phial of sanmetto and hydrang. lith., which checked this in forty-eight hours. He took No. 2 almost all the time during the attack. He complained of the throat and mouth, and kept constantly spitting, so I ordered a wash of listerin and hydrastis Canadensis.

Thus I have treated five cases of undoubted typhoid fever by the Woodbridge method without a death and with results which are not possible by any other method, and with every case I treat I am more and more satisfied and convinced that this treatment is the treatment *par excellence*. It is the richest possible boon for the victims of typhoid fever and I shall use no other. When asked recently by another physician if I believed it would do all that was claimed for it, I answered: "So certain am I that were I unfortunately stricken with typhoid fever I would not trust myself to the care of any physician who was not an expert in the management of the disease by the Woodbridge method."

A CASE OF COR BOVINUM AND HORSE-SHOE KIDNEY—NECROPSY.

Read before the Iowa and Illinois Central District Medical Association, April 9, 1896.

BY A. M. BEAL, A.M., M.D.

MOLINE, ILL.

On Jan. 3, 1896, Dr. B. F. Hall and the writer, assisted by Drs. W. K. Sloan and G. G. Craig, conducted a necropsy on the remains of O. N. R., an American, aged 43 yrs. 5 mos., which presented excellent specimens of the so-called cor bovinum and the horse-shoe kidney.

The heart was found to weigh forty ounces and measured eight inches in length, five inches in breadth, four inches in thickness and fifteen inches in its greatest circumference. The hypertrophy was due mainly to an increase in the muscular tissue of the walls of the ventricles, and no indications of degeneration of this tissue could be found. The hypertrophy was so nearly uniform in the walls of the two ventricles as to preserve quite completely the symmetrical appearance of the organ. The right ventricular wall was half an inch in the greatest thickness; the left, one and one-fourth inches. The columnæ carneæ of the right ventricle were much hypertrophied. The capacity of the ventricles was about normal. The aorta was very much dilated in its ascending portion and arch, measuring one and three-fourths inches in diameter, and there was marked failure of coaptation of both the aortic and pulmonic valves. Calcareous degeneration in the aorta extended from the valves upward an inch or more in such degree that scales or plates of the deposit fully one-half inch square could be detached.

The liver and spleen were much congested and

hypertrophied, the former weighing seventy-two ounces and the latter twenty-three ounces. The lungs were badly congested, particularly the right one, which was quite generally adherent and so atrophied from pressure that it had lost nearly one-half of its original volume.

Anatomically the curiosity of the subject was the kidney, which was of horse-shoe type. This organ, commencing at the usual place on each side, extended around over the spine and vessels in the form of a complete horse-shoe, and was twenty and one-half inches in length and weighed twenty-four ounces. It presented very little variation in thickness or breadth from one extremity to the other. The isthmus was true kidney tissue and there could be found no sinus or depression, separating the organ into two parts. Circulatory anastomosis was complete and there was but one arterial trunk, which sprang from the aorta at about the usual place of origin of the renal arteries, and divided into two branches at its junction with the kidney directly in front of the spine. Each renal arm possessed a distinct pelvis facing anteriorly and somewhat toward the spinal side, from each of which sprang a ureter, which passed downward anteriorly. At each extremity of the organ was situated a supra-renal body of about normal size, and near the left extremity was a cyst containing about two ounces of clear serum, which was probably formed by the occlusion of a uriniferous tubule.

Functionally, this anomaly of a kidney had been perfect, as its secretory process had been perfectly normal, except as disturbed by sympathetic congestion and a great excess of lithiates or urates. Its tissue was remarkably healthful, considering the circulatory disturbances to which it had been subjected and the great excess of urates with which it had to contend, so that if good blood could have been properly supplied to it, the organ would have performed its function without a fault. It was only a congested kidney, with no evidences of degenerative nephritis, and certainly did not figure as an etiologic factor in the development of the cardiac hypertrophy, which is the condition of greatest importance in this case.

The pathologic condition in cardiac hypertrophy can generally be determined with a fair degree of certainty, even during life, but the pathogenesis is often very obscure.

The indications are, that in this case atheroma or arterio-fibrosis figured in the development of the cardiac hypertrophy. Degeneration could be detected, upon careful observation, in other parts of the arterial system than the region of the aortic and pulmonic valves. There is no rheumatism or rheumatic endocarditis, but there is a distinct history of symptoms that indicate increased arterial tension for a long period prior to the recognition of any heart lesion; so that it seems proper, in the absence of any other indications, to attribute the hypertrophy to disease of the arterial coats. This appears to be one of the exceptional cases wherein the kidneys were not seriously involved. Detection of the trouble was thus rendered the more difficult. In the usual case, with pronounced albuminuria and other indications of epithelial change, the cause can be more readily traced. The absence of these kidney conditions, however, may be due to the fact that the vascular changes have only involved other organs. In studying the etiology of atheroma and arterio-fibrosis, we find that the fibroid diathesis is most intimately associated with lithemia or uric-

emia. Whatever tends to produce decay will tend to produce these conditions, and a long train of causes could be enumerated, but the limits of this paper will necessarily confine our remarks to uricemia, or the uric acid diathesis, as that is the one that seems to have figured in the case under consideration. There can be no question as to the lithemic condition of the patient during the last six months of his illness. This, however, might have been a result rather than a cause, but careful and systematic inquiry reveals the fact that the symptoms of uricemia were present during the entire course of the cardiac difficulty and for a long period prior to its development, and a careful study of the family history indicates its heredity.

As to heredity in this difficulty, observations during the last year on ten cases of uricemia, with more or less cardiac disturbance, gave a distinct history of heredity in eight. This is probably above the usual ratio. The trouble seems to be more frequent with men than women, and it is found that laboring men do not escape, especially shop hands. This condition always represents defective oxidation and plays a more important part in the etiology of disease than is generally recognized. It will creep on slowly and stealthily at times, and is often recognized only when it has wrought serious disability. It is a prolific source of gastro-intestinal troubles, and the individual who fails to recognize this morbid element when it is the cause of dyspepsia, will be grievously disappointed in his prognosis and therapeutics, as will also the individual who fails to detect the increased arterial tension in the early stages of arterio-fibrosis. My paper is already becoming too long and I have been able only to offer a few suggestions, which it is hoped will stimulate the inquiries of others in this most important subject.

SELECTIONS.

A Neurologist's Farewell; Valedictory to the Graduating Class.—

Back in the old homestead under whose kindly roof and within whose cherished walls you were sheltered from earliest childhood till the time came when you went out into the wide, wide world to begin the making of your fortune and to work your way to fame, perhaps, there sits at this very moment, doubtless, one who, slowly rocking to and fro in that cherished room which first heard the sound of your childhood's earliest prattle and witnessed your first feeble efforts at getting on in the world, is thinking, thinking, thinking only of you. Boys, it is your mother, or one who sustains to you the similitude of that sacred relationship. It may be your mother is among the saints in heaven and that her place is filled by an older sister or some other relative, or a nearer and dearer one far than all other. Whoever it may be, it is a woman. Some woman's heart and the blessed spirit of a woman's love has followed you here to-night.

It may be the fair faced, sweet eyed girl you left behind you at the gate of her father's house with warm hand press, an affectionate kiss and a manly promise to do your duty. If so, her noble injunction, "John, no matter how much I shall want to see you, don't come back without your sheepskin," has been one of the inspirations that has brought the triumph of this hour.

When you left your home, your father, too, who himself had learned and proven the value of character to a man working his way through the world, sterner and less tender perhaps in his manner, but no less sincerely interested in your welfare, said: "In the battle of life before you, be a man, my boy." "Be a hero in the strife." Do your duty. Be true to the principles of honesty, integrity and truth. Work and you will win. He said, perhaps not in words, but in heart:

"To thine own self be true
And it must follow, as the night the day,
Thou canst not then be false to any man."

And your mother, in her heart of hearts, what did she

say to you, my boy? She said, or felt, as that Roman matron felt and said to her son, as she bade him farewell and sent him to the front where the banners of Caesar waved and the victorious eagles of ancient Rome were to float triumphant above the shout and din of battle and scenes of carnage, "Return with your shield or on it." And so does every modern mother say. She loves her son, but she would rather see him die in the strife than be a coward in the battle of life.

Gentlemen, you have won the fight. You may now go home with the trophies of victory. But this is but the first engagement of your campaign. You have endured its discipline and trials so far with persevering fortitude and admirable courage. You have marched into an unknown country, conquered it and made yourself its masters. I myself have led you from the fourth ventricle, the seat of origin of most of the cranial nerves, through the *iter a tertio ad quartum ventriculum*. You have surveyed with me the bridging commissures of the former and the valve of Vieussens that covers the latter. We have lifted up the fornix, found and removed the choroid plexus on its margin, and the *velum interpositum* beneath. We found the lyre there also, and you will find liars innumerable in your pathway in the world outside. In this vicinity underneath we found the corpora quadrigemina, and the little fourth nerve, and close by laterally and a little anteriorly, the geniculate bodies, and superimposed we found and removed the pineal gland with its sandy concretion which Descartes supposed was the seat of the soul, because, I presume, he always found grit in it, which every true soul is supposed to have, and which you must all have, just as a chicken must have "sand in its craw," to live in this life of conflict in which the fittest survives, the best and truest fighter wins, while the unfit, the weak, the craven and the cowards fail and die.

You went into the foramen of Monroe and the lateral ventricles, into the basal ganglia (thalamus opticus, the corpus striatum) and the internal capsule, the external capsule, the claustrum and the insula on either side nigh them. You took a last view of the caudate and lenticular nuclei, the linea semicircularis before the operculum and the fillet of Reil, you followed me from the cortex down the motor tract between the caudate and lenticular nuclei and optic thalamus into the crura cerebri and under the Pontine Arch of Varolius into the decussation of the pyramids and saw the place of the lemniscus and back again to American soil, whence we started. You have made a neurologic excursion, a campaign of conquest, into the territory of the cerebrum and have won a victory. You voyaged over the circle of Willis up into the country of the Sylvian fissure, followed the irrigating artery of the contiguous territory, the anterior and middle lobes of the cerebrum, and studied some of its diseases which science seeks to conquer.

You traced the tractus opticus from the chiasm and beyond in the retina to its lair in the quadrate tubercles, geniculate bodies and the occipital lobes. You have looked with me from the mamillary eminences and between commissures of the thalami down into the third ventricular cavernus with naked eye or in fancy wandering, and crossed laterally over ventricular territory into the "body" route of the Hippocampi majores. You sailed "around the horn" as it were. You have explored the convolutions of the psychomotor centers and their motor tracts, and the sensory tracts through the optic beds, and into the cerebellum by means of the three peduncles, and searched for the foes of health that lurk about these regions. You have stood faithfully around the demonstrator's table of our worthy colleague and your capable leader, Professor Keiffer, and been led along arduous pathways to glorious victory by each member of the faculty and they each and all commend your industry, your fidelity, your zeal, and a body of distinguished visitors has especially commended your enthusiasm.

In the campaign, you have acquitted yourselves like true soldiers of science, and in all the other lines of duty you have likewise, as the review examinations on which we base the bestowal of these parchments testify. They are you trophies and our awards of merit. If you labor as diligently, as faithfully, as courageously hereafter as you have done to this hour in all the campaigns of the battle of life before you, you will be victorious. And when you sit down to take a retrospective view of the conflict and your part in it, as men are wont to do, and count up your triumphs and your failures, your weaknesses and your sins, and your strong efforts resistive of life's temptations, as all good men sometimes do, I trust that you will find that you have been faithful to the sacred trust these parchments impose upon you, that you have ever stood in all your dealings with mankind upon the high "vantage ground of truth," for no pleasure is comparable, as Bacon said, to such an attitude before the world. That you will have been virtuous, as your high and honorable calling demands, in all adver-

sity remembering and getting the reward of the well known fact that,

"The good are better made by ill,
As odors crushed are sweeter still,"

that you may glean from your life's trials and duties the true advantages of experience, growing wiser with years, subtler, deeper, and more logical and efficient in all that pertains to your own and your patient's welfare.

You have gone over much cerebral territory than I have enumerated. You have traversed the *terra incognita* of the soul's dwelling place in the seven layers of the gray matter and as you studied the ganglion cells of the gray cortex and marveled at the myriad cells for reception and emission of cerebro-psychic impression, you have realized how wonderfully wrought is the brain of man and come to comprehend with the physician's insight, "by sight of science," how, when time, or disease, or toxic agents touch these centers of mental impression and expression, normal function fails and is perverted in this supreme mechanism of the Great Architect, just as in the lesser mechanisms of puny man's contrivance. You have seen a center clogged by a clot of blood about and below the paracentral lobule and further down the Rolandic fissure and motion in the leg has ceased, and further down the bordering convolutions of the Rolandic fissure thus pressed upon, the hand has lost its cunning; if lower still the power of word expression and ideation has failed and if further back in the medulla the tongue has "cleaved to the roof of the mouth" and the heart and lungs have refused to do their normal duty. An aneurysm, an embolus or thrombus an extravasation or a focus or foci of softening has wrought this ruin in motor or vital centers of the brain; or the psychical centers from the same or other cause have been gravely pressed upon and the machinery of mind has stopped stock still or gone on with halting and perverted movement, with the mentality perverted and transformed, as in insanity or delirium. You have seen the effect of the unseen toxic touch of the intangible virus of a fever or a fatal drug on this wondrous cerebrum or its meninges, and finally you have seen how "the poor brain doth, by the idle comments that it makes, foretell (to you) the ending of mortality," when the disorganized blood of typhoid or typhus carries poison in lieu of nutrition to the ganglion cells of the gray cortex whose life in the organism is the true physiologic blood thereof.

All this and much more have you noted with me during the course which ends to-night. You have gone with me down the motor columns of the spinal cord, followed the direct and the pyramidal tracts and the posterior and likewise lateral sensory columns and noted their peculiar diseases revealing differing symptoms according to locality, as individuals do speech, according to the country of their birth and residence.

You have noted here especially the great reflex centers, particularly in the lumbo-sacral spine, the cilio-spinal centers of the cervical area and the vital reflex centers of the medulla and many of the nerve origins of the medulla and pons region. You have studied their significance in health and disease, appreciated their signal aid in diagnosis and wondered again at the intricate mechanism and nice adjustment to end in the machinery of man, comparing it with the machinery of man's contrivance; you have thought with Alexander Pope how,

In human purpose, though labored on with pain,
A thousand movements scarce one purpose gain,
In God's one single can its end produce,
And yet serve second to some other use.

Such is the mechanism of the cerebro-spinal axis, to say nothing of its attendant system of sensitive nerves in the sensory and motor and sympathetic systems with the wonderful ganglionic centers of the latter. But this neural journey into the vast territory of the neurones, neurils, cells and proliferations must end, like our most pleasant companionship of the past year. We have together fought away many obstacles and blazed many pathways in companionship with each other. We have marched through neurologia and neuropathia, psychiatria, and psychopathia to the open neurologic sea.

Besides all this you have looked with microscopic vision into the infinitely minute cosmos of the cerebral hemispheres, mesocephalon, etc., and spinal cord of man, and seen the potentiality of ultimate cells and the wondrous conducting power of microscopic strands of nerve fiber. You have with mental vision gone further, "where no eye can see, no glass can reach." You have heard this faculty "expatiate free o'er all this scene of man; a mighty maze, though not without a plan," as your progressing study proved.

In the great mechanisms of mind, sensation, perception, reflection, emotion, and the motor, nutritional and metabolic movements in the domain of the cerebro-spinal with its attached trophic and sympathetic systems, you have found indeed, a "vast chain of being which from God began" and dis-

covered how "all are but parts of one stupendous whole," like the great universe to which Pope referred, "whose life the blood is and the nerves the soul," as we know by sight of physiologic and chemico-biologic science, and the Roentgen rays of advancing science are constantly clearing our vision into the depth of things pertaining to medicine. — C. H. HUGHES, M.D., Professor of Psychiatry and Neurology, Barnes Medical College, and President of the Faculty.

SOCIETY PROCEEDINGS.

Tennessee State Medical Society.

Annual Meeting held at Chattanooga, Tenn., April 14-16, 1896.

FIRST DAY.

The Society was called to order by DR. D. E. NELSON, Chairman of the Committee of Arrangements.

HON. GEORGE W. OCHS, Mayor of Chattanooga, delivered an address of welcome to the city, followed by an address by DR. GEORGE A. BAXTER on behalf of the Chattanooga Medical Society. The addresses were responded to by DR. J. S. NOWLIN, of Shelbyville.

PRESIDENT G. C. SAVAGE, of Nashville, then took the Chair. DR. T. J. CROFFORD, Memphis, read a paper on "Vaginal Hysterectomy." It was accompanied with a large number of drawings illustrating the subject. The principal point brought out was that every incision may be made and every ligature applied under the direction of the sense of sight.

DR. T. HILLIARD WOOD, Nashville, read a paper on "The Treatment of Ulcers of the Cornea."

DR. BENJAMIN BRABSON CATES, Knoxville, read a paper on FRACTURES OF THE BONES ENTERING INTO THE FORMATION OF THE ELBOW JOINT.

Fractures of the bones entering into the formation of the elbow joint may be confined to any one of the bones, or it may involve all of them simultaneously. The symptoms of fracture of any of the bones at the elbow are theoretically simple, yet practically offer difficulties, due to the anatomic structures surrounding it, and again to the distance from the surface of some parts of the bones entering into the formation of this joint, as in the coronoid process of the ulna and the neck of the radius. The diagnosis of injuries of the condyles of the humerus not complicated by luxation of the bones of the forearm, if seen before there is much swelling, can be differentiated by grasping the condyles between the fingers and rubbing them to and fro. The condyles may be wider on the injured side. Should the fracture extend through the base of the condyles there is shortening. When the olecranon process is fractured there is gaping between the fractured process and shaft of the bone. There is not always the complete loss of power of extending the forearm. Should the coronoid process of the ulna sustain a fracture, it might be felt in thin subjects as a loose body in front of the joint.

If the upper extremity of the radius is fractured the close proximity of its head to the surface offers the surgeon a better opportunity for manipulation; since by pressing upon the head of the radius with the thumb of one hand and grasping the hand of the patient with the other, he can by pronation and supination tell with a fair degree of certainty whether the head or the neck of the bone is the seat of injury. If simple and seen before there is much tumefaction, and when involving the lower extremity of the humerus, the application of the roller bandage and an internal rectangular splint, or an anterior angular splint well padded, with a cap for the posterior surface of the elbow, may be applied. If the olecranon is fractured the object is to keep the fragment in contact with the shaft of the ulna, which can be done by means of compresses with adhesive strips, fortified by a figure of eight turn of the roller bandage and keeping the arm extended by means of a straight splint applied to the anterior surface of the arm and forearm. Should the trauma be of such a nature as to permanently injure the structures of the joint, as often happens in compound fractures, forming a liability to ankylosis, the arm should be placed in a position the most useful, which is nearly a right angle.

DR. J. S. NOWLIN, Shelbyville, read

A REVIEW OF THE PAST AND PRESENT PATHOLOGY AND TREATMENT OF UTERINE DISPLACEMENTS,

in which he says: "I do not believe that uterine displacements ever require treatment of any kind when the organ itself is not diseased. When symptoms are present it is the result of disease and not displacement. I do not believe that the retroposition ever interferes with the blood or nerve supply sufficiently

to produce disease or pain. Rational treatment must be directed to the morbid condition and not to the position."

DR. T. J. HAPPEL, Trenton, read a paper on

IMMEDIATE OPERATIONS.

He cited cases of crushing injuries, etc., and makes the following deductions: Most important of all is the fact that each patient, and each injury, must be its own rule. No arbitrary rule can be laid down, by which to fix the time for an operation in cases of severe injuries. In slight injuries, with no shock, or very slight shock, the sooner the necessary attentions can be given the patient, the better. The prognosis in such cases is favorable. As a rule, patients from 10 to 25 years bear operations better than those younger or older. One more point to which I would invite attention is the fact that the presence of pus in operations for railway injuries is no proof of a want of proper cleanliness, or of proper antiseptic precautions. Crushed wounds, such as we ordinarily encounter in railway injuries, generate pus; that is, they heal by a granulation process in spite of our antiseptic or aseptic surgery. This condition of things, the failure to unite by first intention, is due in most cases to shock, which impairs nutrition, lessens the general vigor, and brings about blood changes, thus making a fitting soil for the growth and development of pyogenic cocci. Chloroform is the anesthetic employed in all of my surgical work.

DR. I. W. MOODY, Shelbyville, read a paper on "Croup."

DR. G. C. SAVAGE, Nashville, delivered the Presidential address: "Medical Progress; Its Helps and Hindrances." (See JOURNAL, page 799.)

DR. J. B. F. DICE, Morristown, read a "Report of a Case of Neurotic Bladder Trouble and subsequent Pyelonephritis; relieved by Nephrotomy."

DR. K. S. HOWTELL read a paper on

CHRONIC GASTRIC DYSPEPSIA.

Rapid eating and imperfect mastication are the chief exciting causes of all forms of dyspepsia. Mental strain or worry, etc., belong especially to the neuroses. The pathology of functional dyspepsia consists of either an atonic condition or an exaggerated irritability of the nerve supply. The treatment by dieting plays an important part, but may be too strict and too prolonged. Digestion begins in the mouth and any error as to cleanliness, thorough mastication and insalivation should be corrected.

Adjourned until 9 A.M.

SECOND DAY.

DR. S. S. CROCKETT, Nashville, read a paper on "Cancer of the Breast." The author held that since the atypical cells of cancer must originate from preëxisting atypical cancer cells, if all the atypical cancer cells are removed, in cases of cancer, there can be no so-called recurrence of the trouble. But if atypical cancer cells are left, these may proliferate and thus produce a so-called recurrence of cancer.

DR. H. J. WARMUTH, Smyrna, gave a paper on "The Radical Operation for Cancer of the Breast."

DR. W. F. GLENN, Nashville, read a paper on "Hypertrophy of the Prostate."

DR. G. B. THORNTON, Memphis, considered "Suburban Sanitation."

DR. G. W. DRAKE, Chattanooga, treated of "The Röntgen Rays: Their Prospective Utility in Physiology."

DR. A. B. COOKE, Nashville, discoursed upon "Fissura in Ano."

DR. C. M. SEBASTIAN, Martin, considered "The Germ Theory of Disease."

DR. J. L. CROOK, Jackson, dealt with the subject of "Sprained Ankles."

DR. J. A. CROOK, Jackson, took up

THE RATIONAL TREATMENT OF TYPHOID FEVER.

The paper contained a report of several cases of typhoid fever successfully treated by the so-called Woodbridge method.

THIRD DAY.

DR. W. S. SCOTT, Dickson, dealt with "Anomalies of the Umbilical Cord."

DR. PAUL F. EYE, Nashville, read a paper on

SURGERY OF THE PANCREAS, WITH REPORT OF A CASE.

The conditions deserving attention in a surgical way may be mentioned as those commonly found in analogous organs, as the liver, etc., such as carcinoma, sarcoma, abscess, hydatids, cysts, etc. Unfortunately, such affections as carcinoma, sarcoma and abscess of the pancreas have only been diagnosed after death, postmortem examinations revealing their true character. Wounds of the pancreas, partial rupture of the organ and severe contusions have been diagnosed and success-

fully treated. Portions of the organ, presenting themselves in stab and gunshot wounds, have been removed with complete recovery. The affection, however, with which we are best acquainted is cyst of the pancreas. Some of the causes which produce cyst of the pancreas may be enumerated as follows: Obstruction of the pancreatic duct, either by calculi or cicatricial contraction, the product of inflammation; displacement of the organ; pressure by tumor or aneurysm upon the organ or its duct, and traumatism.

The diagnosis of cyst of the pancreas is by no means an easy matter, and not a few cases are only cleared up by an exploratory incision through the abdominal walls. These cysts have been mistaken for hydatids of the liver, ovarian tumors, and in a few cases where the cysts were over an artery, for an aneurysm. It is only in a few cases where the cyst has attained a large size, that a diagnosis can be assured with any certainty. The history of the case should be carefully studied and the position of the tumor clearly outlined. The tumor is generally seen in the epigastric or left hypochondriac regions, having an elastic tense feeling, and is of rapid growth. Diarrhea and emaciation follow, due possibly to pressure from the cyst walls, and interference with the functions of the gland. Pain is experienced in the region of the pancreas, and to this some authors add a muddy complexion of the skin. A valuable diagnostic point is brought out in the insertion of a hypodermic needle into the cyst walls, the evacuation of the fluid and the examination of the same; the fluid in the great majority of cases being of a chocolate hue. In several cases reported the tumor was of large dimensions, the cyst containing nearly two gallons of fluid. The treatment of pancreatic cysts is divided into incision of the sac and drainage; the walls of the cyst being attached to the abdominal parietes, a drainage tube inserted, this being constantly shortened until finally removed, and the complete removal of the cyst. The objection to drainage by incision of the cyst is in some cases the establishment of a permanent fistula, the escape of the fluid into the peritoneal cavity, and the re-accumulation of the cyst after evacuation.

The ideal operation is the complete removal of the cyst from the abdominal cavity, as it removes these objections.

The essayist then reported a successful case of operation for removal of a cyst of the pancreas. The cyst occurred after the receipt of a trauma, in a patient who had previously been in good health, and seemed to indicate that pancreatic cysts can be produced by traumatism. The author believed this to be the second recorded case in which such a pancreatic cyst was successfully completely removed. During the operation the intestine was denuded of its mesentery for a distance of eight inches. The denuded gut was surrounded with an omental graft, with perfect success.

The paper and report were discussed by Dr. W. K. Sheddan, Williamsport, and closed by Dr. Eve.

Then followed "Professional Fads and Faddists," by Dr. W. K. Sheddan, Williamsport; "Treatment of Injuries of the Brain," by Dr. D. Y. Winston, Clarksville; "Indications for Trephining," by Dr. E. A. Neely, Memphis; "Report of a Case of Gallstones," by Dr. T. R. Moss, Dyersburg (see JOURNAL, page 775); "Pernicious Malarial Fever," by Dr. C. W. Womack, Chapel Hill; "Treatment of Hemorrhoids," by Dr. H. R. Coston, Fayetteville.

Dr. R. J. McFALL, Cumberland City, considered "Sciatica," in which he says: It may be a symptom of pregnancy, of affection of the retro-peritoneal lymph glands, of an intra-pelvic tumor, of foreign substance in the sigmoid flexure of the colon, and of a fecal mass.

Chicago Ophthalmological and Otological Society.

Regular meeting held March 10, 1896.

DR. GRADLE in the Chair.

Minutes of the last meeting were read and approved.

There were twenty-five members and visitors in attendance.

Dr. J. B. Loring was elected a member.

The following amendment to the Constitution and new by-law was adopted:

Article III of the Constitution. "The members of this Society shall be graduates of regular medicine, who shall have practiced ophthalmology or otology for at least three years before the time of applying for membership."

Section VIII of the By-Laws. "Any member who shall remain in arrears for dues or assessments for more than six months after notification by the Secretary, shall be considered as having resigned."

On motion, the Secretary was instructed to arrange for a place of meeting suitable for all members.

Dr. Wood then reported

A CASE OF PIGMENTATION OF THE CORNEA.

This rather rare condition is illustrated by the following case: Mr. D., aged 56 years, came to Nov. 29, 1895, and from him Mr. Wood obtained this history: He has always been near-sighted and at school his eyes were weak and he was unable to study with any satisfaction. Has always had more or less vertigo and frontal headache, but until recently never noticed any redness of the eyes or sticking together of the lids in the morning. Two months ago he began to have supra-orbital pain on the left side extending to the top of his head. This hemimeria was very severe and continued for seven weeks, with some remissions, until a week ago, since when it has been continuous. For most of this time he was not able to sleep, and then only when under the influence of narcotics. He never had any pain in the right eye or right side of the head. After the second attack of pain he noticed that his eye was quite red, and that the vision was not quite as good after the pain had somewhat subsided. It was much diminished after the last attack, just before Dr. Wood saw him.

Present condition: Vision of the right eye=fingers at 4 feet; right, 15-200; with his reading glasses he reads Jaeger 4, but can not distinguish even the coarsest print with his left eye. O. S. T+2, shallow anterior chamber, motionless and semi-dilated pupil, several small posterior synechiae, hazy, infiltrated cornea and doubtful cloudiness of the lens. The cloudy cornea, upon an examination with a strong Zeiss lens, focal illumination, window-reflex and the employment of fluorescein and pyoktanin solutions was found to consist, first, of a diffuse interstitial infiltration about the center of the cornea, and of a punctate keratitis with the dots arranged in the usual pyramidal fashion, the base 6 or 7 mm. broad, intersected by fine vessels and the apex, where the spots are few and scattered, reaching almost to the middle of the pupil. No vessel advances into the cornea more than 2 mm. from the limbus and some of them appear to end in the dots, forming a picture like that of nerve filaments and the corresponding tactile corpuscles. Both the ciliary and scleral vessels are much engorged and the eyeball is tender. The condition of the fundus can not be made out.

With the exception of a marked refractive error the right eye appeared normal. Dr. Wood at once applied a 1 per cent. mixture of eserine to the left eye and gave $\frac{1}{2}$ per cent. solution with cocaine for use at home until the patient could decide about the operation which he suggested. On December 2 Dr. Wood did a peripheral iridectomy upward. Bleeding occurred from the iris and the anterior chamber was filled with blood. Two days subsequently the tension was considerably less (the wound having not yet closed); the pains had gone and the patient was able to sleep without having taken analgesics. The signs and symptoms of glaucoma now steadily disappeared, the aqueous cleared up until January 14 V. O. S.=15-200. The eye is very quiet and the man is able to do some work. The field of vision for white, left, is, however, greatly reduced and comprises an area bounded by the twentieth parallel. There is an opacity in the upper fourth of the crystalline which looks as if, in tearing away the iris from the lens, the anterior capsule had been injured. The ophthalmoscope, although the media are still hazy, shows a marked excavation of the disc. Feb. 3, 1896, the lens is now quite opaque, but the eye is absolutely quiet; tension normal or slightly increased; there has been no trouble since the last report. There is a rent in the capsule, corresponding in position with the cut edge of the iris, the edges of which are everted and faintly pigmented.

Jan. 21, 1896. In the cornea a little to the nasal side of pupillary center is a large, isolated, 1 mm. broad, rounded mass of pigment and toward the outer edge of the pupil a smaller one, also discrete. At the edge of the pupil when at its average size are minute scattered deposits, some of them arranged in chains, but most of them irregularly dotting the cornea. Then, directly downward is a perfectly clear band of corneal tissue about 2 mm. wide, entirely free of pigment, as we proceed still further downward from the pupil toward the limbus the fine dots once more show themselves until just before the sclero-corneal junction is reached the peculiar picture is presented of what seems to be round corneal dots undergoing a process of pigmentation. We then reach an area of hazy cornea, 6 mm. by 3, bounded below by the sclera. This contains a large number of capillaries, plainly seen to be extensions from the anterior sclera vessels, running past or into a regular row of medium-sized dots, about thirty in number that, are placed almost equi-distant from the limbus corneae and one another. Some of these, especially at the center, are jet black, some are grayish and some are whitish, in all stages of pigmentation.

March 6, 1896. A portion of the diffuse inter-punctate hazi-

ness, just referred to, has disappeared, so that an entirely transparent cornea is seen in which the black dots, chains and irregular figures are planted.

The best descriptions of pigmentation of the cornea are given by Weeks, Treacher Collins, Vossius and Lawford. We notice in a majority of cases recorded by these authorities, 1. that they were mostly examples of some form of glaucoma, with increased and persistent intra-ocular tension; 2. there was bleeding into the anterior chamber; 3. there was brownish, smoky or other discoloration of the cornea, and 4. pigmentation was found at the limbus corneæ and in other parts of the anterior segment of the eyeball.

DR. PINCKARD had seen the case by courtesy of Dr. Wood. The central deposit looked very much like an anterior synechia that had been torn loose. There was no question in his mind that the deposits were on the posterior surface of the cornea. With a short focused lens, half an inch, they could be accurately placed on Descemet's membrane.

DR. HOTZ had also seen the patient and agreed that the deposits were on the back of the cornea. He had seen numerous cases of so-called serous iritis in which deposits on the posterior surface of the cornea had taken place. He believed that the pigment in these deposits came from the pigment layer of the iris. These deposits are sometimes so deceptive in appearance that they are taken for foreign bodies in the cornea.

DR. HALE said that in the German clinics one sometimes sees patients with pigmented corneæ, due to the tincture opii crocatæ.

DR. WOOD, in closing, said that there had never been any synechia in the case.

DR. MANN then reported cases of *purulent ophthalmia* treated by Dr. Scott's formula. The method adopted was strictly in accordance with Dr. Scott's instructions as presented to the Ophthalmological Section of the AMERICAN MEDICAL ASSOCIATION in 1894. The treatment consists, in brief, of cleansing with cotton for from 15 to 20 minutes, then cold applications and the instillation of a dropper-full of the hydrastin solution. Dr. Scott claimed for the treatment, that in acute cases abortion took place in from three to five days, and in older cases in about a week.

DR. WÜRDEMAN, of Milwaukee, said that the hydrastin was beneficial, but that it is not more so than boric acid or similar antiseptic solutions used in the same way, and he does not find that it has a specific influence in mitigating conjunctival inflammation, or that it materially cuts short the course of the ophthalmia. In a personal letter from Dr. Scott to Dr. Mann, dated March 5, 1896, he says that Dr. Würdemann is the only one who has failed to have uniformly good results; and that Dr. Scott had received over one hundred letters from gentlemen over the country whose results have been uniformly good.

DR. MANN's experience was limited to a few cases, but the results have been remarkable.

Case 1.—Baby: first seen August 8, when two weeks old. The disease had existed since the fourth day. It presented the ordinary appearance of an ordinary purulent ophthalmia of mild type. Prior treatment had been simply cleansing. The corneæ were clear; swelling and discharge moderate. A solution of boric acid was ordered every half hour, and a 2 per cent. silver solution applied daily. In the next two weeks there was not much change, although the silver was increased to 6 per cent. By this time the left cornea had become involved, followed in a few days by the right. The condition of the lid had slightly improved, but there was still considerable discharge. September 1 to 10, the case was in Dr. Starkey's care during Dr. Mann's absence from the city. Dr. Starkey continued the silver solution and used as high as 10 per cent., but with no lasting benefit. Both corneæ were perforated; anterior staphyloma in the left with anterior synechia. In the right there was a small perforation with anterior synechia. With Dr. Starkey's approval the hydrastin solution of Dr. Scott was ordered. The result was immediate improvement. The mother said there was no more pus formed after the first drop was used. When the baby was seen the next day there was only a slight muco-purulent discharge, and in forty-eight hours there was no pus, nor did any reappear. Dr. Mann feels satisfied that if the hydrastin had been used earlier the baby would now have two good eyes.

Case 2.—Baby, with purulent ophthalmia of moderate intensity, which had existed about two weeks. Both eyes were affected. Directions were given to clean the eyes frequently with boric acid solution and to use the hydrastin solutions four times daily. The mother was told that if the eyes did not seem a little better the following day to return. This was on Thursday. The following Monday she returned and Dr. Mann found on examination only a very slight purulent discharge, which entirely ceased within a week from the com-

mencement of the hydrastin solution. In this case no silver was used.

Case 3.—This case was similar to the above, but the disease was more pronounced. The lids were markedly swollen and there was a profuse discharge. Similar treatment and instructions were given as in the preceding case. Three days later the swelling was all gone, eyes wide open, only a slight muco-purulent discharge remaining. Corneæ clear.

Case 4.—Male adult. Gonorrheal ophthalmia of the right eye; the disease had existed in the right eye when the case came under Dr. Mann's care. The lids were swollen shut; there was chemosis; the cornea infiltrated. The eye was cleansed and a few drops of the hydrastin solution dropped in it. Instructions were given to have the eye washed every half hour with boric acid solution and the hydrastin solution used every three hours. The next day the swelling was some less and the amount of pus very much diminished. At the end of forty-eight hours there was no pus and but little swelling. The cornea, however, was so deeply invaded that it subsequently sloughed at the center.

All of these cases Dr. Mann had personally seen. Two of them showed very positive results. In both silver had been previously used, but in none was silver used during the same time the hydrastin solution was used. In every case silver would have been used had there not been decided improvement within twenty-four hours after the use of hydrastin. The Doctor thinks if we can get equally good results from this treatment by hydrastin, it should be preferred to the treatment with the strong solutions of nitrate of silver. The disadvantages of silver are that it requires a skilled hand in its application, and it is dangerous to the cornea. With the hydrastin solution there are no dangers to avoid.

DR. COLBURN does not advise the use of silver in any form. He has not used it for years, nor has he used the hydrastin solution. He has never had a cornea infiltrated in his experience. His method of treatment is thorough cleansing of the eye with a pipette with a neutral peroxid of hydrogen solution, 1 to 3, in water, this being followed by a hot peroxid of hydrogen solution, and finally filling the eye with borated vaselin. The most important part of the process is thorough cleansing with the peroxid of hydrogen.

DR. WÜRDEMAN read from Dr. Scott's original article: "This plan has robbed purulent ophthalmia of all its terrors. In all cases there is a marked improvement in twenty-four hours. The patient is almost well in forty-eight hours, and is always well in ten days." Dr. Würdemann had used Dr. Scott's method in fourteen cases, but he had found that the hydrastin solution was no better than a boric acid solution. There were four cases in which the cornea became stained and ulcerations started. He had had one case recently, however, in which the amount of discharge seemed to be lessened, but he had never seen any such results that approached Dr. Scott's claim.

DR. STARKEY had seen the case spoken of by Dr. Mann and the result seemed to be marvelous from the solution. He had not been able to satisfy himself why this was so, and it was not a coincidence in the treatment.

DR. HALE said that the presence of the gonococcus in the diagnosis of the cases was of the utmost importance; that such purulent cases may not be gonorrheal in character.

DR. MONTGOMERY had never used Dr. Scott's formula, but had no faith in it. His method of treatment consisted in the use of strong silver solutions with cleansing of the eye.

DR. HOTZ had had no experience with the Scott solution. He was entirely satisfied with the results obtained from solutions of silver nitrate combined with washing of the outside of the eye frequently with water. He did not believe that any nurse or parent was able to cleanse the inside of a baby's eye, and therefore never recommended it.

DR. HAWLEY had had little experience with hydrastin in eye diseases, but had used it considerably in urethral cases. He thinks it of value.

DR. HOLMES had no fault to find with the treatment by nitrate of silver. He applies the silver once a day carefully, and cold applications were kept up the rest of the time.

DR. GRADLE spoke of the apparent effect on a case of ophthalmia neonatorum by the attenuation of the virus, that is, in a case from an old gonorrhea in the father. The resulting ophthalmia neonatorum is very different from that of a recent case in the father.

DR. MANN, in closing, said he had started out with no faith in the Scott formula, nor would he now depend on the formula alone for the treatment of any case of gonorrheal ophthalmia. But he proposed to use it in selected cases, watching carefully for any increase of the disease, in which case he would use silver as he had done before.

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SATURDAY, MAY 23, 1896.

THE ANTI-VIVISECTION MOVEMENT.

"And God said, Let us make man in our image, after our likeness; and let him have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth." Genesis 1: 26.

"For thou hast made him a little lower than the angels, and hast crowned him with glory and honor.

"Thou madest him to have dominion over the works of thy hands; thou hast put all things under his feet." Psalm vii: 5, 6.

The cranks, with and without wheels, delight to assemble in Washington near the close of a session of Congress. They infest the rotunda, they swarm in the lobbies, they lie in wait for the passing member of Congress, and they button-hole the patient Senator in the Marble Room. No scheme so visionary, no sentiment so false, no project so absurd but it has its crank advocates, and sometimes when these vagaries come veiled in the cloak of philosophy these advocates swarm like the camp-followers of an army.

Just now the hungry wild-eyed fanatic has his mind fixed upon the passage of a bill which, if it become a law, will close the laboratories of the Public Service and stop physiologic experimentation under Governmental auspices. If this were all, the spectacle might be viewed with the same mild surprise and curiosity as that produced by the "COXEY" tatterdemalions of a year or two ago. But unfortunately, the passage of this law will be a signal for the commencement of a similar raid upon the State Legislatures, and all experimentation on animals will cease. It is needless here to recapitulate the long list of useful experiments that, performed on animals, have resulted in discoveries which have prolonged human life and reduced the sum of human suffering; for that has been ably done by many scientific men who have had a reluctant or partial hearing before the Senate Committee. The Committee having charge of the matter at the Atlanta meeting went to the root of the subject as follows:

WHEREAS, the members of the AMERICAN MEDICAL ASSOCIATION

recognize the fact that the developments of scientific medicine have resulted largely from experiments upon the lower animals; and

WHEREAS, anesthetics are habitually administered to animals subjected to painful experiments; and

WHEREAS, restrictive legislation is in our opinion unnecessary and opposed to the continued progress of medical science; and

WHEREAS, it is an unjust reflection upon the humanity of those engaged in animal experimentation to enact laws requiring them to use anesthetics and appointing inspectors to see that they do so; and

WHEREAS, far more unnecessary pain is constantly being inflicted upon the lower animals for sport and for game than in biologic and pathologic laboratories; and

WHEREAS, no evidence has been presented by those who advocate restrictive legislation showing that abuses exist in the District of Columbia; and

WHEREAS, results of great practical importance have been obtained by experiments on the lower animals made in the Government laboratories in the District of Columbia; therefore be it

Resolved, That the AMERICAN MEDICAL ASSOCIATION earnestly protest against the passage of Senate Bill No. 1552, entitled, "A Bill for the further prevention of cruelty to animals in the District of Columbia," or any modification of this Bill, unless it shall first be shown by an impartial investigation that cruel and unnecessary experiments are being performed in the District of Columbia, and that existing laws do not provide suitable punishment for cruelty to the domestic animals.

Resolved, That copies of these Resolutions, attested by the signatures of the President of the AMERICAN MEDICAL ASSOCIATION and of its Committee appointed to draft these resolutions, be sent to the Chairman of the Committees on the District of Columbia, in the House of Representatives and Senate of the United States.

(Signed)

DR. NICHOLAS SENN,
DR. WM. OSLER,
DR. GEO. M. GOULD,
DR. J. McFADDEN GASTON,
DR. DONALD MACLEAN.

From the days of Aristotle who tried the effect of various drugs on the tortoise, to the present day, when the demonstration of the pathogenic microbes has been actively made upon guinea pigs and rabbits, medical knowledge has made its great strides by means of vivisection or experimentation upon the lower animals, over which the CREATOR gave man dominion at the creation. It is quite probable that only a few of these fanatics are vegetarians and yet the only legitimate outcome of their argument would be to close the fisheries, the vast meat industries, and to allow the beasts, insects and fishes to flourish, unchecked by and without regard to the needs and uses of man.

Where, O misguided misanthropic antivivisectionist! will this thing stop? Will you draw the line on the warm-blooded animals, and allow the scientists control of the creeping things? Or will you include them also within the sacred inclosure where no experimentalist dares to tread? And the bacteria themselves, even the cholera microbe and the despised tubercle bacillus, are they not living organisms? Are experimenters to be barred from testing microbic powers of endurance? Is the fanatic quite prepared, on his exclusive bean diet, to even forbid the scientist from punishing a wicked flea or putting salt on the tail of a pathogenic microbe? Come Messrs. the antivivisectionists, let us have a clear definition of your tenets and the reasons for your alleged belief.

If experimentation on animals were for purposes of speculative science only, there might be a glimmering of reason in the outcry against it, but, on the contrary, these experiments almost without exception have the highest practical value, and the attained results are made use of throughout the civilized world immediately.

It is to be regretted that these experiments can not be made on some inanimate object, but man has not yet learned the exact nature of the vital spark, and the exact line of demarcation between the machine and that which vivifies it. We must therefore pursue our physical inquiries on living machinery, tissues having bodily functions to perform. This necessity makes animal experimentation indispensable to further progress. Biology is not yet exact; we must learn much, and the only direct avenue is through anatomic investigation and physiologic experiment.

The days of the Ptolemys, who gave the living condemned criminals to the knife of the anatomist, are over, and we have now only animals, over which the CREATOR gave man absolute dominion, for experimental purposes. Can our antivivisectionists provide a substitute? Or do they really intend that philosophic inquiry in this direction shall cease? We fear that they have moved and are moving in this matter not only without knowledge of the facts and of the great benefits which experimentation on the lower animals has conferred upon humanity, but in most cases in wilful ignorance and mischievous demagoguery.

In conclusion, we urge that as the ASSOCIATION has no standing committee on legislation, every member should at once write his Senator opposing it.

A PROPOSED INTERNATIONAL COMMISSION ON INSANITY.

It is stated in one of our exchanges that notice has been given in the British Parliament of a resolution to the effect that it is desirable in the interest of the general welfare that an international commission be appointed to investigate the causes of insanity, the rapid increase of which in all civilized countries is becoming one of the most important of the social questions of the times. Just what this proposed commission is expected to do is not stated and it is not, at first sight at least, easy to see what an international body can do to any greater advantage than one confined to a single country as regards direct beneficial results. Scientific questions, it is true, are not national ones in any limited sense, but for this very reason whatever of valuable truth is elicited in one country is at once common property to all, and therefore the chief value of an international commission would seem to be in the possible greater weight of authority that it could give to its findings and recommendations. While, however, its decisions

might have the highest scientific authority they could hardly expect to effect more than to add a little possible enlightenment to officials, rulers and legislators, and it is extremely questionable whether it would materially affect their actions to any considerable extent. The questions that would necessarily come before it, the effects of intemperance, immorality, the stress of modern civilization, the consequences of the prevalent militarism of the present time in Europe, of emigration, of popular social and religious tendencies, of special diseases, etc., have been and are constantly being discussed and investigated, and it is doubtful whether any really new data would be developed by the labors of such a commission more than by the various scientific workers at present engaged with them. The most we could expect of it would be the discussion of perhaps a wider range of statistics, and a more authoritative utterance on these subjects, provided the commission was properly composed of those whose words and opinions would carry sufficient weight. It need not be questioned that there might be a certain amount of benefit derived from an official international inquiry but no extravagant expectations will be realized, and it is not easy to see how between European nations there can be any effective international coöperation for the betterment of the existing state of affairs.

As regards America, however, there is one question that might well be an international one. Many of the European countries have long been in the habit of unloading their insane and other defectives upon us and the *rejecta* of the Continental and English asylums are to be found in nearly all our hospitals for the insane. There is no reciprocity in this, it is almost altogether one sided and we are the sufferers. If any kind of an international commission would help to do away with this imposition we certainly should be the first to welcome it.

SMALLPOX AT GLOUCESTER, ENGLAND.

The *Sanitary Record*, April 24, quotes a presentment by the April grand jury in which a demand is made for the enforcement of the vaccination laws by the Local Government Board, and that the laws be so changed that local boards of guardians be relieved from the duty of enforcing vaccination. This presentment strongly urges "the immediate vaccination of all unprotected children and the revaccination of adults as the only means of stamping out smallpox in the city."

The health officer's (DR. F. T. BOND) latest published report gives the following statement regarding the number of cases and deaths in the first quarter of 1896 as follows:

It is alleged by antivaccinators that vaccination gives no protection against smallpox. Let us see how far the experience of the epidemic in Gloucester up to the present time supports the assertion.

Up to March 27 the cases admitted into the Smallpox Hospital since June last from the City of Gloucester, and their results so far as the cases have yet terminated, are as follows: Persons attacked, 365; not vaccinated, 207; vaccinated only in infancy (chiefly adults), 158; revaccinated (fourteen years ago), 1. Deaths, 81; not vaccinated, 70; vaccinated only in infancy (chiefly adults), 11. Proportion of deaths 23 per cent., or one in five; not vaccinated, 33.8 per cent., or one in three; vaccinated only in infancy (chiefly adults), 7 per cent., or one in fourteen. Of the seventy unvaccinated deaths all but three were children under 10 years of age. Two of these three were 11 and 14 respectively, and the third was 21 years of age.

It is clear, therefore, that smallpox is a terribly fatal disease to young and unprotected children. In fact, it is a veritable *slaughter of the innocents*. Not a single death has yet occurred in a vaccinated person under 24 years of age, and death in the case of most of those who did die was attributable, in part at least, to the influence of other causes. It is, therefore, equally clear that vaccination gives a degree of protection against death from smallpox for the earlier years of life which is, for all practical purposes, nearly certain, even when it does not altogether protect against an attack of the disease.

The great majority of the unvaccinated children who recovered had the disease very severely and will be badly disfigured through life. Some of them will be blind. The great majority of 158 persons who are recorded as "vaccinated" were adults who had been vaccinated in infancy only. Many of them had very poor marks and were therefore badly protected from the first; and in the remainder the influence of their first vaccination had more or less faded through time, and yet most of these imperfectly protected persons had the disease so lightly that they will not be disfigured at all by it.

The ages of these 158 vaccinated persons were as follows: Under 10 years, 2; under 20, 42; under 30, 50; under 40, 35; 40 and over, 29. The ages of the unvaccinated were as follows: Under 10 years, 179; under 20, 14; under 30, 9; under 40, 1; 40 and over, 4. This confirms what doctors and all persons of experience assert, that proper vaccination, while giving almost certain protection during the first ten years of life, loses its effect gradually, though it gives some amount of protection throughout life, just as an attack of smallpox itself does. Only one case of a person who is said to have been revaccinated before exposure to the risk of infection is known to have been admitted into the hospital, and she was vaccinated fourteen years ago. Of all the medical men, trained nurses and all attendants who have, after being revaccinated, been brought into frequent and close contact with the disease in the city since the commencement of the outbreak, not one has taken the infection.

Instances of unvaccinated persons who have caught the disease, and of vaccinated persons who have escaped, in the same family, are very numerous. Among the above 365 cases there are a large number still in the hospital, many of whom are very ill, and among whom deaths must be expected, which will make the case in favor of vaccination still stronger than it is from the above numbers. There are also a large number of cases, both in the city and suburbs, for which there was no room in the hospital. The record of many of these cases has yet to be taken, but from what is already known of them, they will still further confirm the evidence in favor of vaccination which is afforded by the hospital cases.

The following is a portion of an article in the *London Times*, showing the active interest taken by the great national Local Government Board to secure a reestablishment of vaccinal protection in that community, and for thirty miles about:

The Board of Guardians of Gloucester is getting frightened at the disaster their fault has brought about. They issued notices to the public, for the first time in some ten or more years, urging the people to be vaccinated and revaccinated; and, getting still more alarmed, about a week since they actually decided to attempt to undo the mischief of past years, and passed a resolution deciding to enforce the compulsory clauses of the vaccination acts. It is officially stated that the Local Government Board, in view of the altered attitude of the guardians, has sent a medical inspector to Gloucester to aid, so far as is now practicable, in organizing a system of public vaccination, and it is strongly held in official minds that in vaccination and revaccination lies the only hope for the escape of the city from further spread of the disease. Dr. Parsons, one of the assistant medical officers of the Local Government Board, is the officer selected for this arduous and humane and also dangerous duty, and he is already at Gloucester assisting the local authorities in every way in his power. The Local Government Board has also issued notices to the guardians of unions within a radius of thirty miles of Gloucester, calling attention to the action they should take in preventing the danger of the importation of the disease from the infected city. The very leader of the antivaccination heresy has climbed down and has "submitted to the operation against his convictions but for the public good," probably thus saving his own skin after having been the means of putting hundreds of lives in jeopardy.

It may be stated that the Town Council from the first did their utmost by isolating the sick in hospital, by disinfecting houses, burning clothes and bedding, and placing relatives of sick in practical quarantine, to stay the outbreak. Finding the outbreak gaining, they built extra hospitals, and have now hospitals for 120 patients, but the disease continued to spread with such virulence that it was quite beyond their power to cope with it.

ECONOMY IN LIFE INSURANCE AT THE EXPENSE OF MEDICAL EXAMINERS.

The *Pacific Medical Journal* enters its protest against the reduction of the fees of medical examiners, if retrenchment is not also carried out in other directions. It says, with great truth, that many of the life insurance companies are feeling the effects of hard times. They find it necessary to economize, and have concluded to reduce the medical examiner's fee. There is not a board of directors of any life insurance company in the land that believes the medical examiner is overpaid or even sufficiently paid. Nor is there a board that believes that it would be economy to employ an irresponsible examiner.

The directors do know, however, that medical men will submit to almost any form of imposition from corporations—that if the older examiners will not submit to a reduction, there will be no difficulty in getting good men to take their places. The medical profession should stand together in this matter. For a company that pays its president \$100,000 a year, to reduce the medical examiner's fee in order to economize, is simply an insult and indignity to the medical profession. Physicians can live without the assistance of life insurance companies, but life insurance companies can not do business without the services of the medical examiner. It is clearly the fault of the profession and not of the companies if a reduction in examiner's fees is tolerated. A united profession and the fees will stand; divided and the fees will fall. Examiners should bring this matter before every medical society in the whole country, obtain the support of the whole profession, and

the companies will be compelled to economize where economy will be in the interest of the insured. Perhaps the companies could do with less extravagant and costly buildings, for instance.

THE "RABID ANTISEPTICIST" AND INFECTED BOOKS AND BANK-NOTES.

Here is a new word for the makers of dictionaries, the "antisepticist" (meaning probably the antiseptic crank), for which the editor of the *Press and Circular* appears to be responsible. The new term finds its origin in the following annotation on infected books, papers and bank-bills:

The Paris Academy of Medicine has been engaged upon the discussion of a communication by M. DU CAZAL, in which he records his experiments respecting the danger of infection from books. It goes without saying that he found abundant microbes on the pages of books, especially those lent out from libraries, and that he found it impossible to effectually disinfect them. The sequence, we assume, is that no one should read a book unless it is uncut and fresh from the press, and that, even in that case, the reader will have to run the gauntlet of a lesser army of microbes. The question suggests itself, where is this microbe craze to stop? Or at what point does it become ridiculous? Is there any article touched from morning to night in our daily life which is not open to the same objection in a greater or lesser degree than the circulating library book? The most rabid "antisepticist" accepts with satisfaction a bank-note reeking and saturated with germs, and carries it about with him into every sick chamber into which he enters. Where is the consistency?

THE JOURNAL SPECIAL AND THE "QUEEN AND CRESCENT."

"But man, proud man,
Drest in a little brief authority,
Most ignorant of what he's most assured,
His glassy essence, like an angry ape,
Plays such fantastic tricks before high heaven
As make the angels weep."

We have received a letter from a valued member, at the request of the railroad, deprecating the exposure of the methods of SUPERINTENDENT STEVENS in dealing with the members of the JOURNAL party at Cincinnati in a recent issue, and offering as an excuse that there was an agreement to deliver to the Queen and Crescent some six sleeping-car loads of people from the "Big Four" on the JOURNAL Special train. We were not responsible for opposition parties, and there was no such agreement, the JOURNAL simply urged as many as possible to go that way, and urged those who wished to join the Special elsewhere than at Chicago to join at Cincinnati and Indianapolis. There were therefore a sufficient number with those in waiting at Cincinnati, to make up a greater number than we had anticipated. We had made no definite promise. Now the facts are as stated in a previous issue, that MR. STEVENS compelled us to await the

arrival of the thirty-three persons who were with DRS. MOYER and WHITMORE of MR. G. S. DAVIS' *Medicine* party. That party was about four hours late, and the only possible reason why we were kept waiting was to save the expense of a special engine to haul them to Chattanooga; they were not going to Atlanta on our train, but were on an entirely different excursion route, intending to remain the next day at Chattanooga, and whatever may be said in extenuation, MR. STEVENS held us supperless in Cincinnati, and the time lost then made us late into Chattanooga, where our first stop was made for breakfast at 10:30 A.M., that is to say, from dinner at 3 P.M. Sunday until 10:30 A.M. Monday. All these things were explained to the great potentate, but he refused all requests and laughed in our faces, although nearly every male passenger made a personal appeal to him. That his phenomenal brutality should hurt the Queen and Crescent railroad is apparent, and if they are sorry for it they have a plain remedy, that is to repudiate MR. STEVENS and all his works, at the earliest possible date. It is possible that even the Queen and Crescent railroad may discover that it is not good railroad management to treat a hundred physicians and their families as a train load of immigrants. We are sincerely sorry for an otherwise excellent railroad and a passenger department, handicapped by such injudicious, indiscriminating, and inhumane officers. "We own this road" said MR. STEVENS; "this is *our* train, and we shall hold you until the Monon people arrive." That is the sum of MR. STEVENS' "concession," and so far as we are aware, nothing else was at any time contemplated by that mighty man, although our people had no more to do with the party in question than with any other party of excursionists in any other part of the Globe, except to wish them a safe and independent journey. If it hurt the Queen and Crescent people to have this JOURNAL tell the truth about their superintendent, we are sorry, but we must insist that a special train load of physicians traveling on any railroad shall be treated with the consideration and respect due their education, services and standing in the community, and not like a drove of cattle or a lot of immigrants traveling at immigrant rates. When this lesson shall have been thoroughly learned by certain railroad "magnates," the episode of MR. STEVENS will have had a useful outcome.

ASSOCIATION NEWS.

AMERICAN MEDICAL ASSOCIATION.

ADDRESS OF WELCOME ON BEHALF OF THE LOCAL MEDICAL PROFESSION.

BY FRANK M. RIDLEY, M.D., OF LA GRANGE, GA.

Mr. President and Gentlemen of the American Medical Association:—I would confess that I am profoundly sensible of the distinction conferred upon me by my professional brethren which places me here. Aside from an apprehension of my



A GEORGIA BARBECUE.

fitness to properly perform the task, it would be a labor of love to extend to you their greetings.

Such a welcome comes not alone from this fair city, which is the pride and marvel of us all, but from the great heart of this great commonwealth, stretching as it does from the sunlit summit of Lookout to where the crested billows break upon the white sands of our coast.

Founded in the wisdom and generosity of Oglethorpe, it was the youngest and feeblest of the old thirteen original colonies who by their conjoined efforts threw off the yoke of British domination on the plains of Yorktown. Not only so, but by their pronouncement sent forth from Independence Hall they, like the Veiled Prophet of Khorassan, "shouted freedom to the world," and thus started that great political movement which means "universal emancipation" and which to-day, it may be, is thundering at the gates of Moro Castle for the deliverance of liberty-seeking Cuba from the distress and ills of Spanish thralldom. In the meantime Georgia has grown to such proportions as to be recognized in no dubious sense as the Empire State of the South.

Here, then, gentlemen, in this capital of the Empire State, I bid you greeting; here under the shadow of Stone Mountain, that huge boulder upheaval from abysmal depths by some titanic force of pre-historic ages; here, in earshot of the "willow-fringed" Chattahoochee, described by our own Sidney Lanier as "springing in the hills of Habersham, and shouting through the valleys of Hall," as on it flows upon our western border 'mid banks of blooming flowers and springing ferns on its "eternal journey" to the Mexic sea.

Then, gentlemen, I bespeak the sentiment not only of my profession but of my State, when I say we rejoice at the gathering in our midst of this distinguished body of medical savants coming, as you do, from no pent-up Utica, but every part of this great nation, "from the slopes of the sea that sleeps, to the banks of the sea that's wild," from all sections of this boundless continent, composed of two score and more sovereign States, "distinct as the billows, one as the sea." We recall your former convocation in our midst, we miss the faces of those who, having served their day and generation, have passed to a higher state of existence, and to-day, "they rule our spirits from their urns."

In the meantime our profession has grown apace in all its branches. I do not exaggerate when I say that from the golden age of Pericles, when Hippocrates wrestled with that fearful plague which almost decimated Athens, until the days of Benjamin Rush, when the mercurial and the lancet constituted the chief armament of our materia medica, there was less advancement in the science of medicine than for the past half century; what the progress of another decade will be, the wisest of our number is unable to predict.

Organization with its concomitant influences has enhanced our achievements. The special work of individuals upon special lines has perhaps contributed more than aught else to an advancement and accomplishment. What political economists since the days of Adam Smith have designated as the "division of labor," has contributed more than aught else to the advancement of mechanical arts. Indeed, the steam engine would never have materialized but for the conjoined and con-



A GEORGIA BARBECUE.

secentive efforts of Watt and Stephenson; the cotton gin of Bull and Whitney, the spinning wheel of Arkwright, the ocean steamship would never have been perfected but for this "division of labor." What is said of the mechanical holds true of the higher arts. When Galvani touched, with a wire connecting a zinc and a copper plate, the muscles of a dead frog in his laboratory at Bologna, and caused it to leap like a thing of life, he instituted a new science. Thus by a special and individual study, Jenner discovered the vaccine virus, and by it curtailed the ravages of a dread disease and robbed it of its terrors. Koch discovered the bacillus which has destroyed so many useful lives, wrecked so many happy homes, and "hangs still like a pall" over humanity.

Pasteur has thus been able to counteract the subtle venom of the rabid dog. Lister has discovered antiseptics and thus almost revolutionized surgery, and our own Crawford Long discovered an anesthetic which has made the capital operations of surgery painless to the sufferer. Marion Sims applied the silver suture and thus instituted a new era in gynecology. Indeed, gentlemen, time would not avail me to mention one-tenth of the discoveries and applications of specialists in special lines which have given to medicine and to surgery the certitude of the exact sciences.

You, gentlemen, have come to further advance in your special sections the principles which these pioneers promulgated, and "they builded wiser than they knew." In behalf, then, of my profession I bid you greeting. Here, on this typical southern May day, beneath as lovely a sky as ever blessed the vision of the Mantuan bard, in a veritable atmosphere of hospitality, as bright as our sunshine, and as "sweet as the breath of the roses which bloom in our wildwood," I bid you welcome, thrice welcome, to this happy, prosperous, proud old commonwealth.

ADDRESS OF WELCOME ON BEHALF OF THE CITIZENS OF ATLANTA.

BY HON. JOHN TEMPLE GRAVES, OF ROME, GA.

Ladies and Gentlemen: You have just listened to an eloquent address from my friend Dr. Ridley, who has welcomed you to this beautiful city of Atlanta. The medical profession of Georgia is very fortunate in having a man so eloquent and versatile as Dr. Ridley. I congratulate myself upon the fact that I was born in the same year, attended the same college, although Dr. Ridley is some twenty years older than myself. (Laughter.) While I have enjoyed the rich and mellow eloquence of Dr. Ridley I have also enjoyed no less the benediction of the distinguished chaplain.

Beyond the ascription of praise to the Divine Power, which is always appropriate, it seems to me that the assembling together of a thousand doctors should be the occasion of prayer and profound concern to all classes of people. While the reverend and distinguished gentleman did not mention it specifically in his prayer, I think in his spoken aspiration to the hereafter he voiced the silent longing of this vast audience for a resting place in some better country where the doctors cease from troubling and the lancet is at rest. (Laughter and applause.)

Dr. Ridley has spoken the professional welcome of the city and the State. I speak for the helpless multitude—the outsiders—your victims, who languish under your lancets and are riddled by your horrid pills. I thank heaven that we have corralled you at last within the prison of our hospitality. You are harmless here. The geographic limit of your licenses has expired and the city is safe. If we should remove the legal

ban, if we should turn loose a thousand doctors on this helpless town, if we should add to the eager skill of our own professionals, the expert genius of this great convention, there is not a "liver" in Atlanta that would be safe to-night.

Atlanta is proud beyond expression of her brilliant galaxy of physicians. We support 200 doctors in this happy town, maintain them in the most lavish splendor and the most indolent leisure. There is nothing here for them to do. In the elixir of this incomparable air, and under the blue of these cloudless skies there is never an ailment that an old woman's nostrums wouldn't cure.

In the very desperation of their idleness, our physicians have been forced to forage. In the poverty of actual causes they have reached down into the sacred recesses of the human abdomen and dragged to the unwilling light a useless, obscure and infamous "appendix" on which to exercise their leisure and vindicate their skill. When the yellow scourge visited our southern coasts, this city of salubrity opened wide its arms to stricken refugees, and Westmoreland I., the distinguished father of the brilliant son radiant, with confidence in this higher air threw open his office to every suspicious case, and after ministering to their earlier symptoms drew down the drapery of his couch about him and lay down beside them in placid safety to pleasant dreams.

Our doctors here are almost without exception millionaires. They practice only on the stranger within our gates. They live in stately mansions, drive in splendid carriages and spend their time in thumping the soundest of "livers," and in feeling the steadiest pulses that ever beat in unison with the hope and progress of the healthiest and bravest city in the South.

There is not in all the world a better place for a doctor's holiday. Here you may lie down in peace to pleasant slumbers, and not a wave of trouble roll across your peaceful breasts.

But let me say in serious measure, that the city for which I speak is set in its very shape and structure to the end of hospitality. Its four great thoroughfares point the compass. Within their wide and generous angles they sweep all sections of the Republic. In their steady growth from center to suburb they have conspicuously or unconsciously assumed the shape of four extended arms, and these arms are now and always have been wide stretched in welcome to the world.

Atlanta is nature's city of conventions, framed for hospitality by its parts, its purpose and its generous soul. And the year behind us has been rich in accepted opportunity. Within the last two months of 1895 we banqueted around our social boards the press associations of twenty-six States, the governors and their State-house officers of twenty States, the mayors and municipal governments of the fifty representative cities of America. Around the hospitable mahogany of this new capital of the South that has risen like a phoenix from the ashes of the old, friendships have been formed, and sentiments of fellowship have been pledged that will be redeemed in the fulness of fraternity with which we shall march with locked arms through the stately stretches of our common and glorious future.

We make a new bond with this great convention. In the long visit of conventions which have met within our gates, not one has had a heartier welcome than we give to you. In war or peace, in sickness or in health, your great profession has been the healing and the solace of the world. In all this stately city, and in all this sovereign State, there is no home into which in some hour of gloom and sadness the physician has not come like incarnate comfort to the heart of grief. And in the flush and glow of rosy health it is a poor heart which does not in memory go backward from the sunshine to the somber shadows through which you moved in healing, like the benediction of the Lord. Next to the ministers of Almighty God, and linked in holy union with their blessed work, we

hold here the mission and the record of your service to mankind. And with all our hearts we give you greeting.

No other assembly could be more grateful to the heart and judgment of Atlanta. No greeting given to commercial convocations, no demonstration over literary lions, no blare and stir of bugles over gathered politicians shall vie in sincerity with the heartfelt greeting which we give to you.

Turn your stethoscopes upon us: level your heartsopes, your brainsopes, try us with the Roentgen rays of all intuitions, and you will find that Atlanta, city of conventions, abating no jot or tittle of the sincerity of any past profession, has held in her heart her last and most loving welcome for the doctors of America.

SOCIETY NEWS.

International Congress of Dermatology and Syphilography.—This Congress will be held in London this year, August 4 to 8. Eight subjects are announced for discussion as follows: Prurigo, keratosis, syphilitic reinfection, relations between tuberculosis and cutaneous troubles, duration of the contagious period of syphilis, trichophytosis, polymorphous erythema and malignant syphilis.

Indiana State Medical Society.—The forty-seventh annual meeting of this Society will be held at Fort Wayne, Thursday and Friday, May 28 and 29, 1896. The approaching meeting promises to be the best in the history of the Society and an unusually large attendance is expected, and it is particularly desired that the members not only make every possible effort to be present throughout the entire meeting, but that they bring their families with them and put in two days of profitable enjoyment. Every regular physician in the city of Fort Wayne is a committee of one to see that visiting members receive such treatment as may be expected from a progressive, enterprising and hospitable fraternity. Railroad rates of a fare and one-third are granted on all Indiana railroads, on the certificate plan, provided at least one hundred members avail themselves of these rates.

National Association of Railway Surgeons.—This Association, after one of the most important conventions in its history, adjourned *sine die* May 1 at 2 o'clock. The sessions were characterized by hard labor and diligent application to the important business in hand. The Convention was opened April 29 by Dr. W. B. Outten, Chairman of the local Committee of Arrangements. Health Commissioner Starkloff welcomed the visiting delegates to St. Louis in a brief address, in which he paid a glowing tribute to Pasteur, Lister and others who have helped to make a new science of surgery. Dr. F. G. Lutz replied in behalf of the visitors, and President J. B. Murphy then delivered his annual address. The latter reviewed the history of railway surgery from the time when round-houses were the hospitals and piles of ties the operating tables. The following papers were presented: The first was by Dr. T. H. Briggs, of Battle Creek, Mich., on "Surgical Treatment of Injuries of Spinal Cord and Column." The discussion was participated in by Drs. Outten, Hart and Jackson and President Murphy. Dr. S. R. Wooster read a paper on "Rupture of the Bladder with No Evidence of External Injury." The third paper was by Dr. Cassius D. Westcott, of Chicago, on "Traumatism of Eye-ball." Dr. Emmett Welsh, the Secretary, read a paper on "Color Blindness;" Dr. A. Alt, of St. Louis, read one on the "Tumor of the Lachrymal Gland," and Dr. James Moores Ball read an essay on "Eye Symptoms of Brain Tumor."

At the second day's session papers were read by Drs. E. R. Lewis, of Kansas City; J. H. Dixon, of Springfield, Ill.; J. B. Murphy, Chicago; A. H. Levings, Milwaukee; J. J. Buchanan, Pittsburg; George W. Crilly, Cleveland; John B. Deaver, Philadelphia; Harold N. Moyer, Chicago; Thomas H. Manley, New York, and John H. Punton, Kansas City. The surgeons were invited to Alexian Brothers' Hospital in the afternoon to a clinic with Roentgen ray features.

Dr. Emory Lanphear, of St. Louis, read a paper on "Why Railroad Surgeons Should Not Try to Practice Aseptic Surgery," which was virtually a reply to Dr. W. B. Outten's paper,

read before the Convention Thursday. Dr. J. A. Fulton, of Kansas City, also read a paper on "Inflammation of Bones." This closed the business of the Convention and an adjournment *sine die* was taken.

The new officers elected were: Frank J. Lutz, of St. Louis, President; Dr. Cassius D. Westcott, of Chicago, Secretary; Dr. E. R. Lewis, of Kansas City, Mo., Treasurer. The Vice-Presidents elected were Dr. W. R. Hamilton, of Pittsburg, Pa.; Dr. J. H. Letcher, Henderson, Ky.; Dr. Eddy, of Utica, N. Y.; Dr. Hutchinson, of Montreal; Dr. A. C. Wedge, of Albert Lea, Minn.; Dr. Goode, of Macon, Ga., and Dr. Lee, of Omaha, Neb.

The Executive Committee consists of Dr. Albert I. Bouffleur, of Chicago; Dr. J. N. Jackson, Kansas City; Dr. James A. Duncan, Toledo; Dr. J. B. Murphy, Chicago; Dr. W. S. Thorne, Toledo; Dr. W. D. Middleton, Davenport, Iowa; Dr. J. A. Barr, McKee's Rock, Pa.

Proceedings of the Congress of the French Association for the Advancement of Science.—This association of savants met at Tunis, April 1-5. (Reported in *Bulletin Médical* April 5, 8 and 22.) In the Section on Medicine Hanot presented a careful study of "Cancer of the Ampulla of Vater," reviewing the eleven cases on record, with one new one. The clinical picture comprises chronic, progressive, apyretic icterus, with discoloration of the feces, medium hypertrophy of the liver, gall bladder and spleen, without severe pains, increasing emaciation, and death in five to nine months. Histologic examination shows the cancer to be a cylindric-celled epithelioma. In Hanot's case, which had a much longer duration than the rest, there was constant leucocytosis, which favored the supposition of a cancer, while the absence of urobilinuria negated the idea of any important hepatic lesion. The icterus gradually subsided; the necropsy showed that the obstacle to the flow of bile had not been removed, but that the bile had undergone the transformation which Hanot calls pigmentary acholia. The patient's health had always been robust until two years previously, when he had entered the Bichat hospital for a fractured malleolus, and he stated that his serious trouble dated from that time, the emaciation, icterus, etc. A vegetating, non-ulcerous mass was found at the necropsy, about the size and shape of a chestnut, adhering to the mucous membrane of the ampulla of Vater, in which it had developed, projecting downward into the intestine which it did not obstruct at all, although it closed the pancreatic and common bile duct, entering it at this point. Considering the relative frequency of other official cancers, Hanot is surprised at the rarity of this kind, and he queries whether surgical intervention might not be successful with such a limited growth. Bard continued the subject by comparing this form with cancer of the pancreas, which it clinically resembles, while cancer of the duodenum partakes of the character of cancer of the stomach and of the pylorus, with a different set of symptoms due to obstruction of the alimentary canal. He considered cancer of the ampulla of Vater to be of pancreatic origin, starting in the excretory duct and characterized by a relatively slow development, by the absence of generalization and the variability of the icterus.

Cartaz described two forms of "Facial Paralysis from Otitis following La Grippe," one where the paralysis ceased at once with puncture of the tympanum, releasing the serous fluid that compressed the nerve, producing the paralysis; and a second form where the paralysis persisted, showing that the inflammation had extended to the nerve.

Bard has always found in cases of cancer of the pancreas with glycosuria, that there was a secondary cirrhosis of the pancreas accompanied by secondary cirrhosis of the liver due to the same cause. Glycosuria, therefore, while it does not prove the existence of a pancreatic cancer, is an aid to diagnosis when it accompanies an icterus from obstruction. It shows that this obstruction is in the pancreatic as well as in the biliary ducts, and therefore favors the assumption of a cancer of the head of the pancreas rather than a biliary obstruction from some other cause.

Voisin reported the case of a woman affected with melancholia, hallucinations of persecution, aphasia, word blindness, agraphia and hemiopia, following a severe attack of pleuropneumonia, which he had completely cured by hypnotic suggestion. He also carried her afterward through childbirth without her having the slightest knowledge of any of the events of her accouchement.

Double syphilitic gummy tumor in the spinal cord, producing complete paraplegia of the lower limbs and trunk, and the symptoms of syringomyelia, with absence of knee jerk and foot clonus, continual incontinence of urine, paralysis of the rectum and unequal movement of the pupils, was the

clinical picture of a case described by Hanot and Meunier, which terminated fatally in five days. They made 198 sections of the spinal cord, as this is such a rare disease, that they only knew of eight cases on record, with microscopic researches in three. They first established the fact that the tumors were not tuberculous, and then proceeded to explain the startling suddenness and violence of the attack by showing that the paraplegia had been menacing for some time, evidently, the pyramid so compressed by the tumors situated each side of the spinal cord, at the level of the first left dorsal and the second right, that it only required some slight arterial thrombosis to upset the balance and produce the ictus and the above symptoms then proceeded evenly on both sides. The syringomyelia and the peculiar zones of anesthetic and hyperesthetic skin, they explain by the fact that the sensory conductors of heat, pain, etc., from different zones of the body, do not follow the same path in the spinal cord. While the former enter the brain through the funiculus gracilis, the others (heat and pain) form part of the gray matter itself. The former, therefore, entered a portion of the spinal cord which was intact, passed into the funiculus gracilis, which was not affected and skipping the seat of the lesions, passed on into the brain. Those which started in the upper part of the trunk, were right in the midst of the lesion. To this is due the difference in the sensations in different zones of the body. The connection between the sensory and motor disturbances corresponded in this case with Brown-Séquard's "spinal hemiparaplegia with crossed hemianesthesia," only with the peculiarity that it was bilateral.

CORRESPONDENCE.

Typhoid Fever; Another Witness.

BLAKESBURG, IOWA, May 16, 1896.

To the Editor:—Prove all things; hold fast that which is good.

Whilst the mortality from typhoid fever continues to run so appallingly high, the true physician should never tire of reading any and all articles within his reach that will tend to throw light upon the subject, or aid him in reducing that mortality. The great number of deaths still reported from the ravages of typhoid fever is a stigma upon the whole medical fraternity—is truly mortifying in the extreme.

It may be true that some of our brethren jump at conclusions too hastily—are to ready to accept new theories and adopt new remedies; yet it is also true that many are too slow to admit that "there is anything new under the sun." They manifest a stoical indifference—even a dogmatic sarcasm and a stubborn skepticism, regarding all new discoveries, even when they are launched upon us by one whom they regard as eminently orthodox.

While the silent cities of the dead continue to grow so rapidly, the true physician has no moral right to show this stolid indifference. It is indeed not so surprising that the laity become skeptical, that they in a great measure lose confidence in all doctors and readily take to patent nostrums, faith-cures and Christian science.

But I wish brevity to be one merit of this letter, and laying aside all theories and all discussions upon the etiology and pathology of typhoid fever, I wish to add my testimony on the therapeutics of the disease.

What the laity ask of us is to cure the disease, to save their loved ones from an untimely grave. Must we turn a deaf ear to their cry? Do we not owe to the world something better and more promising than the old régime in the management of this dreaded disease?

As regards typhoid fever, I believe the problem has been solved. I do now believe we can cry out: Eureka! I am naturally somewhat skeptical myself; am slow in accepting new ideas, but I have always been in constant search after demonstrated facts. I do not now wish to be over-enthusiastic, but I most sincerely believe that the name of Dr. J. Eliot Woodbridge should, and will be handed down to coming

generations, on the golden pages of history, along with those of Jenner and Pasteur.

After having read the reports of scores of physicians in the *AMERICAN MEDICAL ASSOCIATION JOURNAL* and elsewhere, and after a personal experience in over seventy-five cases, I am convinced that the treatment now known as Dr. Woodbridge's antiseptic treatment of typhoid fever, is as surely prophylactic and curative, as is quinin an antiperiodic; that it will greatly modify the severity of the disease, even in the later stages, and will *abort typhoid fever*, if begun early and rigorously carried out.

My experience with the Woodbridge treatment has been most gratifying. To be able to carry my patient through, even when not seen in the first week, in from fourteen to twenty-one days, with a temperature seldom above 102.2, without delirium, with the mental faculties clear, with but little tympanites, without hemorrhage from the bowels, with a liberal allowance of food, with no grave complications and with rapid convalescence, is certainly very gratifying.

It is needless, here, to give the Woodbridge formulæ in detail. The readers of the *JOURNAL* have them. I only urge all who have not tested them, to do so and be convinced. First of all, be sure that you have *pure* medicines and have them compounded under your own supervision, and then have the attendants follow your instructions most implicitly.

I doubt not that Dr. Woodbridge can and will, in the near future, simplify his formula No. 1. I will here state that in a few cases, I did not find the mixture No. 2 well borne. To these cases I gave guaiacol carbonate alone, omitting the eucalyptol. Guaiacol carbonate is well borne by the most delicate stomach and is more easily administered to children than the liquid. I advise no auxiliary treatment, save the sponge bath, cleanliness and plenty of fresh air, with an occasional diuretic if necessary, and a dose of bromidia at night if the patient does not rest well.

Just here I would caution against the use of any of the coal tar products in typhoid fever, no matter how high the temperature runs. Shun them as you would an infernal machine.

Yours respectfully, C. N. UDELL, M.D.

Medical Directors of Life Insurance.

DENVER, COLO., May 12, 1896.

To the Editor:—In our *JOURNAL* of April 18, mention is made of the annual meeting at Richmond of the "Association of Life Insurance Medical Directors," on April 30 and May 1. Can you inform me who and where are the officers, secretary especially, of the Association?

S. T. McDERMITH, M.D.

PUBLIC HEALTH.

Queensland for Consumptives.—The *Australian Medical Gazette* states that tuberculosis is almost unknown in the Queensland-born population. It also says of Australia at large that phthisis is decreasing in prevalence.

Connecticut Candy not to be Adulterated.—Any person who shall adulterate candy with terra alba, barytes, talc, or any other mineral substance, or with poisonous colors or flavors, or knowingly sell or offer for sale, candy so adulterated, it was enacted in Connecticut in 1895, shall be punished by a fine of not more than \$100.

To Prevent Blindness in Connecticut.—Should one or both eyes of an infant become inflamed, or swollen, or reddened at any time within two weeks after its birth, it shall be the duty, under penalty, according to a law passed in Connecticut in 1895, of the midwife, nurse, or attendant having charge of such infant, to report in writing within six hours, to the health offi-

cer or board of health of the city, town or borough in which the parents of the infant reside, the fact that such inflammation, or swelling, or redness of the eyes exists.

Commissioners of Pharmacy in Connecticut.—Section 3118 of the general statutes of Connecticut was amended in 1895 by striking out in line two thereof the words "one reputable physician and two" and inserting in lieu thereof the words "three reputable," so that the section now reads: "There shall be three commissioners of pharmacy, consisting of three reputable pharmacists, to be selected by the governor from six persons to be annually nominated to him by the Connecticut Pharmaceutical Association."

Antitoxin of Alcoholism.—M. Toulouse has conceived the idea of finding an antitoxin for alcoholism. He administered to a dog 40 grams of ethyl alcohol daily during a week. He then took some serum from the animal, and injected 24 grams in three doses into a patient suffering from delirium tremens. The next day the temperature was lowered, there was less fever, and the patient became rational. M. Toulouse is following out his research to ascertain if the serum acted as an anti-alcoholic serum or only as a non-specific serum.

To Prevent Spread of Hydrophobia in Florida.—Sections 769 and 772 of the Revised Statutes of the State of Florida were amended in 1895, adding hydrophobia to the list previously composed only of yellow fever, smallpox and cholera, to be quarantined against (though it is provided that in cases of hydrophobia the State health may be represented by any authorized agent or agents of the State board of health in investigating with regard to same), and giving to the State board of health power to make, promulgate and enforce such rules and regulations as may be necessary to prevent the importation and spread of hydrophobia.

Sanitary Control of Milk Supplies.—In line with the now accepted dictum that the dairy farm is the chief source where milk becomes infected, Health Commissioner Emery has appointed a Dairy Inspector, whose duty will be to investigate the sources of the entire milk supply of Brooklyn. He is charged with the duty of examining the cow stables, the number of animals therein, their sanitary condition, the water they drink, and the drainage of the stables. If, in his opinion, any feature of any of the dairies is unsatisfactory, he has power to prohibit the sale in Brooklyn of milk from that establishment.

California Coroner to have Stenographer.—It was made lawful, by act of 1895, for the coroner of every county, or city and county, in California, having 100,000 or more inhabitants, to select and appoint an official stenographic reporter, at a salary of \$150 a month. It is made the duty of such reporter to attend all inquests held by the coroner and report in shorthand all testimony of witnesses, and all proceedings of such inquests, and to transcribe the same into legible longhand and furnish two typewritten copies thereof, to certify the same, and file one of the copies with the coroner, and the other with the clerk of said county or city and county, and also file with such clerk the original shorthand notes.

Health Officer can not Enjoin Maintenance of Hospital.—The supreme court of Wisconsin decided, March 10, 1896, in the case of *Buckstaff v. City of Oshkosh*, that there is no power, express or implied, under the Wisconsin statute directing town health officers "to take such measures for the prevention, suppression and control of contagious disease as may be needful and proper, subject to the approval of the board of health," authorizing the health officer, either in his own name or in the name of the board of health, to enjoin the maintenance of an isolation hospital for contagious diseases near the town. But, whether the action lies, or, if so, whether it can be instituted without authority conferred by the electors, the court does not undertake, in this case, to decide.

Nuisances Injurious to Health in Florida.—An act was passed in Florida in 1895 defining at considerable length and declaring what shall be deemed nuisances to health, and to provide for the removal thereof and punishment therefor. It makes it the duty of the State health officer, upon the request of the proper authorities, or of any three responsible resident citizens, or whenever it may seem necessary to the president of the State board of health, or to the State health officer himself, to investigate the sanitary condition of any city, town or place in the State: and if upon examination, the State officer shall ascertain the existence of any sanitary nuisance as defined in this act, it shall be his duty to serve notice upon the proper party or parties to remove or abate the nuisance, or if necessary, to proceed to remove or abate the nuisance.

Curiosities of "Quarantine."—A bill before Parliament to abolish the last trace of quarantine in England induces *The Hospital* to call attention to the fact that the plague had disappeared from England for more than thirty years before the practice of quarantine against it was definitely established by Act of Parliament in 1710, and that, with the exception of yellow fever, plague still remains the one disease against which the provisions of the Quarantine Act are still in force. While the sanitary administration has been dealing with every other kind of malady, the responsibility of taking precautions against these two diseases continued, and still continues, to devolve upon the Imperial Government, which has neither quarantine establishments nor isolation hospitals for the purpose. So far as plague is concerned this does not matter, but yellow fever is epidemic in ports with which England has considerable trade, and it was imported into Swansea in 1865, when it caused a considerable mortality. *The Hospital* thinks it high time, therefore, that its control should be handed over to the sanitary authorities.

Dangerous Athletic Exhibitions should be Restricted.—The *Boston Medical and Surgical Journal* asks a very pertinent and searching question: "Are these hazardous trapeze performances allowable in civilized communities?" The recent accident to a trapeze performer in Boston, in which a fall from the trapeze produced a fracture of a cervical vertebra, calls renewed attention to the dangers of such exhibition and emphasizes the question: "Are they worth while?" The ratio of the interest to the risk we will not undertake to estimate, but this much, at least, can be said, that these accidents result, as in this case, from the necessity which the performers are under of meeting their engagements often when they are not in the best physical condition. In New York, the "Human Arrow," as she is called in the play-bill, is in daily jeopardy from the chance that an accidental discharge of her mammoth crossbow may cause her to fall a distance of thirty feet. The other night the bow-string caught her at the back of her head and knocked her senseless, but her brother was able to reach and rescue her just at the moment of falling. And yet these cunningly devised enormities have no sanction of law for their prevention.

The Buffalo Medical and Surgical Journal.—The exclusive management of the June issue of that periodical has been entrusted to the medical ladies of that city. There will doubtless be a great demand for that issue from all parts of the country. If the time were not so short, we would like to submit for their consideration the following proposition, taken from the *Medical News*: One of the metropolitan papers has been devoting attention to the microscopic examination of the street dirt found adhering to the dress skirt of a lady after an afternoon's shopping in New York. It reports to have obtained from one skirt, besides innumerable innocuous and unclassified organisms, the germs of fever, influenza, anthrax, and diphtheria. This means of transferring virulent matter from the streets to the house is, without doubt, a frequent one, and very naturally suggests two very important sanitary reforms, to-wit:

Cleaner thoroughfares and shorter skirts. The sense of supreme security which the new woman feels in this particular must be regarded as some compensation for her more or less complete self-denial of the ordinary female garments.

Departments of Health Have Oversight of Shop-women.—A bill to protect the lives and health of deserving and industrious young women and to give them relief from much suffering has become a law in New York State. This bill fixes the hours for women and children in mercantile establishments at sixty hours per week, or an average of ten hours per day, excluding Sunday. Thus, if such employees are kept two or three hours longer at work on Saturday than on any other day in the week, the extra time must be made up by deduction from the labor of other days. The bill further provides that chairs shall be provided for women who are now kept standing for hours without rest, a practice productive of many serious ailments. It is also made the duty of the Board of Health to examine cellars and toilet rooms where women and children are employed and to give certificates as to their sanitary condition. A specially onerous duty has been devolved on local boards of health in a requirement for the medical examination of all shop-girls under sixteen years of age, the keeping of records of a detailed character and the issue of certificates to children requiring them and undergoing the prescribed examination.

A Timely Rebuke.—Under the laws and ordinances—not of New York city only, which is the *locale* of the following words of protest from a contemporary (*American Medico-Surgical Bulletin*, April 25)—professional men are obliged to report to boards of health the presence of diseases of an infectious nature occurring in their practice. This duty is cheerfully conformed with, since it is recognized as requisite in order to enable statistic data to be properly kept, and also because it is important that contagion should be prevented and the spread of epidemics be avoided. This duty, furthermore, the professional man performs without remuneration, considering that it is something which he as a citizen owes to the commonwealth. Boards of health in recent times have, in every possible way, endeavored to devise means for making the matter of reports as little a tax as possible on the time of the busy practitioner. Neither the law, however, nor the dictum of any board of health justifies its employees figuring in the role of either attending physician or consultant. The strict limitation of the duties of the inspector is to certify that there exists a case of contagious disease in the household whence the report emanated, and this is all. If he should find that the diagnosis was an erroneous one, it is not within his province to so state to the family or the patient, thus inevitably casting disrepute on the diagnostic ability of his professional brother. Inspectors from the board of health can neither figure as attending nor as consulting physicians unless so requested to act by the physician in charge. In the event of the meddlesomeness of an inspector leading to serious complication the *Bulletin* questions if the board of health, since in the eye of the law it is held responsible for the acts of its agents, does not lay itself open to suit for damages. All this is apropos of alleged flagrant instances of meddlesomeness and officiousness on the part of employees of the New York Health Department. But are there not others, and nearer the publication office of the *JOURNAL* than New York? There is ground for answer in the affirmation and this outspoken rebuke should be heeded by these also.

Repression of Bovine Tuberculosis in Connecticut.—The *Yale Medical Journal*, March, has the following editorial estimate of the value of the anti-tuberculosis legislation of 1895, in Connecticut:

"A law was enacted by the legislature of this State about one year ago, the aim of which was to eradicate bovine tuberculosis. Prior to the enactment of this law there was much

discussion upon it and strong efforts were made by the agricultural portion of the State to secure its defeat. The law provides for the appointment of three commissioners whose duty it is to inspect the cattle of the State for tuberculosis, using tuberculin as a diagnostic agent when so permitted by the owners of cattle, and to destroy all animals found affected with the disease. The law has now been in operation about twelve months and it has been found that quite a large per cent. of cattle are affected with tuberculosis. As it has been repeatedly proven that bovine tuberculosis is directly transmissible to man from meat, milk, or other ways, the importance of carrying out the above law becomes apparent to the general public and especially to the medical profession. The law can work no real hardship to the owners of cattle as it provides that the commissioners shall assess all animals at their market value before the tuberculin test is made. We hope that the law may be allowed to remain upon the statute books and so enforced that in the years to come a case of tuberculosis among the cattle in this State will be hard to find. As the principal source of the transmission of the tubercle bacilli from animals to man is through milk, the importance of the recent suggestion that a sanitary milk laboratory be established in every city, can not be overestimated. This plan is not entirely new, having been in operation for a considerable time in some of the larger cities of the country and meeting with very notable success in Boston, Mass. The object of an institution of this kind is, first, to provide pure, wholesome milk for general consumption; second, to provide pure milk, scientifically modified according to the directions of a physician to meet the needs of any particular case. Such establishments would be a great benefit to a large proportion of the population of this State, or any other which might adopt this system, and the danger of the transmission of the tubercle bacilli through milk would be reduced to a minimum. Although the danger of the disease being transmitted from animals to man is considerable, we know that the greatest danger is from the dried sputa of tuberculous patients and we would urge physicians to appeal to the better natures of their patients and warn them of the evils which may result from promiscuous expectoration."

Typhoid Fever in Indiana.—On account of the high rate of mortality from typhoid fever the State Board of Health of Indiana has issued a circular order to health authorities, attending physicians and heads of families relative to its prevention and suppression. The order went into effect May 1. It states the total number of cases during the past year in the state as 8,100, number of deaths 2,400. After reciting the methods by which typhoid fever is propagated it defines the duties of the physicians as follows:

1. Promptly report the case to the city or county health officer. This is a *moral, social and legal duty*. The county officer will report to this Board, and then analysis of water and other sanitary work can be undertaken.
2. If possible, have the patient placed in a room apart from the rest of the family, preferably on the top floor, and nursed as far as possible by one or two persons. Sometimes nurses make bread or prepare other food, with hands contaminated by caring for the patient. This leads to other cases in the family.
3. The dishes, knives, forks, spoons, underclothing and other articles used by the patient, should not be used by any one else, and should not be removed from the room until they have been disinfected. This is done by placing them for an hour in a solution of carbolic acid (six ounces of the acid to one gallon of water) and then boiling them in water.
4. The manner of disposing of the discharges from the bowels is of the *utmost importance*. In the vessel receiving the discharge there should be a quantity of chlorid of lime, and after the discharge is received it should be covered by at least a pint of solution of chlorid of lime in the proportion of six ounces to a gallon of water. It should be allowed to stand for an hour, and be thoroughly mixed before emptying into the closet.
5. The hands of those caring for the sick, and the portions of the patient's body which have become soiled with discharges should be frequently disinfected with a carbolic solution. The carbolic solution above described can be diluted one-half or the purpose.

THE DUTY OF HEALTH OFFICERS.

1. Every case of typhoid fever must be reported by the physician to the county health officer. Any physician failing in his duty to himself and humanity will be presented.
2. Upon receipt of report of a case of typhoid the county health officer shall, without delay, in *conjunction with the*

attending physician, visit the patient and make a thorough investigation. A sanitary survey shall be made of the premises according to the "Sanitary Survey Blank for Typhoid," and said blank, when filled, shall be filed to make a record. Every effort must be made to discover the source of the disease. The incubation period of typhoid may be seven days, average is twelve to fourteen days: greatest, twenty-three days.

Ninety-five per cent. of all cases of typhoid proceed from drinking water. Therefore, a close investigation must be made of every well from which the patient may have drunk for seven to twenty days preceding the attack. If, in the judgment of the Health Officer, analysis is required, send a copy of the Sanitary Survey to this office and ask that *Instructions A* be returned to you. This circular gives detail instructions for the collection of samples of water for bacteriologic and chemie analysis. The work will be done without cost, but will only be done when absolutely needed, and when every requirement of this office has been fulfilled. By order of the State Board of Health.

D. C. RAMSEY, M.D., President.

J. N. HURTY, M.D., Secretary.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Alabama: Mobile County, May 11, 2 cases.
Florida: Pensacola, May 2 to 9, 2 cases.
Louisiana: New Orleans, April 20 to May 7, 29 cases, 7 deaths.
Michigan: Ionia, May 2 to 9, smallpox reported.
Tennessee: Memphis, May 9 to 16, 2 cases.

SMALLPOX—FOREIGN.

Bristol, April 25 to May 2, 3 cases.
Cairo, April 9 to 15, 1 death.
Callao, March 29 to April 12, 10 deaths.
Cienfuegos, May 3 to 10, 17 deaths.
Copenhagen, April 11 to 18, 2 cases.
Genoa, April 25 to May 2, 2 cases.
Guayaquil, April 17 to 24, 4 deaths.
Licata, April 18 to 25, 1 case.
London, April 25 to May 8, 5 deaths.
Madrid, April 21 to 28, 11 deaths.
Manchester, April 25 to May 2, 1 case.
Moscow, April 18 to 25, 1 death.
Odessa, April 18 to 25, 22 cases, 4 deaths.
Prague, April 18 to 25, 4 cases.
Rio de Janeiro, April 8 to 15, 8 cases.
St. Petersburg, April 18 to 25, 26 cases, 11 deaths.
Swansea, April 25 to May 2, 2 cases.
Trieste, April 11 to 18, 3 cases.
Tuxpan, April 19 to 26, 7 deaths.
Warsaw, April 11 to 18, 1 death.

CHOLERA.

Alexandria, April 8 to 15, 15 deaths; Dec. 29, 1895, to April 26, 1896, 130 cases, 115 deaths.
Shimane Ken, Japan, April 19, 1 case.

YELLOW FEVER.

Rio de Janeiro, April 11 to 18, 122 cases, 98 deaths.
Cuba: Santiago, April 25 to May 9, 5 deaths; Havana, May 1 to 7, 13 cases, 6 deaths.

NECROLOGY.

DR. JOHN STEWART, formerly of Tai-ho, China, and latterly of Glasgow, Scotland, died at the latter city, after undergoing an operation for the relief of hepatic abscess, being then in his 37th year. During ten years of his life he had been one of the most laborious of medical missionaries of northern China, where he had conducted a free dispensary which was often crowded from seven in the morning until far along in the day, and where thousands of patients passed through his hands every year. Dr. Stewart began his medical studies at Marshall College, Aberdeen. He came to America and soon obtained a post in a large manufactory in Philadelphia that required him to be on duty every night. For three or four years he occupied this position, attending Pennsylvania University during the day, where, at the end of that period, he gained his M.D. Returning to England, he applied to the C. I. M., and pending acceptance, attended special classes in the London hospitals. He

went to China in 1885, and 1888 came to the city of Kwei-hwacheng in the far north, and labored there for the past seven years.

HERMAN LOEWENTHAL, M.D., of New York City, who died April 21 at the private hospital of his friend Dr. Lange, was a graduate of the University of Berlin in 1860. He was born in Berlin sixty years ago. He had served as a surgeon in the Prussian army until 1863, when he came to this country and entered the United States service as assistant surgeon, being subsequently promoted surgeon with the rank of major. After serving in the hospital at City Point he was transferred to the General Hospital at Annapolis, where he remained until the close of the war, when he retired from the service and established himself in private practice in New York, where he was widely known as a specialist in the diseases of women. President Cleveland appointed him an examining physician in the Pension Bureau. Dr. Loewenthal was a prominent Mason and a member of the G. A. R. He leaves a widow and six children.

WILLIAM SHARP, M.D., of Rugby.—The *Medical Press and Circular* has the following obituary note regarding Dr. Sharp: "The death of Dr. William Sharp, of Rugby, who has just died in his ninety-first year at Llandudno, has reminded the world of the youthfulness of the natural science curriculum. Dr. Sharp settled originally in Bradford, where he succeeded his father and became senior physician to the Infirmary in 1837. He afterward removed to Rugby, and persuaded Dr. Tait to introduce natural science into the Rugby teaching. This was eventually done, on condition that Dr. Sharp would become the first teacher, under the title of 'Reader in Natural Philosophy.' Dr. Sharp came of a north country stock which had been famous for its scientific attainments, and Dr. Sharp himself was made Fellow of the Royal Society in 1840. His Degree of Medicine was that of Lambeth, formerly in the episcopal gift, but now in abeyance. With regard to the public school science appointment, the late Tom Hughes observed, 'If Tait had done nothing else at Rugby than appointing Sharp, not without difficulty, as Reader in Natural Philosophy, he would have deserved the gratitude of every Rugby man.'"

J. WEST ROOSEVELT, M.D.—The following tribute to the memory of Dr. Roosevelt has been feelingly voted by the directors of the New York Physicians' Mutual Aid Association:

"The directors of this association have heard with deep regret of the death of Dr. J. West Roosevelt, an honored member of the association. His learning, his probity and his manliness were qualities which endeared him to all with whom he came into association.

"They acknowledge with deep appreciation his generosity and kindness in bequeathing to the association the amount of his claim, \$1,000, as an addition to the permanent fund of the association, and feel that in no surer way could a benefaction be made, for all time, a blessing to the needy members of his profession in this State.

"It was ordered that the name of Dr. J. West Roosevelt be placed on the list of benefactors of the association, and that notice of this action be sent to the medical journals."

ISAIAH F. PRAY, M.D., of New York City, died April 23, aged 59 years. He was a native of Maine, an arts graduate at Dartmouth College, and an M.D. at the New York University in 1870 and 1874 respectively. He was a member of the Pathological and County Medical Societies. A widow survives him.

JACOB RAY, M.D., died suddenly at his home, No. 284 Ferry street, Newark, N. J., on May 7, aged 73 years, of paralysis. He was born in Württemberg, 1824. He was a surgeon in the Württemberg army in 1849, when the latter was sent to Baden to quell the revolution there. He again saw field service in 1895, in the war with Prussia. In 1890 he came to the United States and made his home permanently in Newark.

JAMES B. HARRIS, M.D., of Sag Harbor, N. Y., died April 17, of pneumonia. He was 36 years old, and a graduate of the

New York College of Physicians and Surgeons, a member of the class of 1882.

J. G. WILLIAMS, M.D., at Braddyville, Iowa, May 2, aged 66.—M. C. Heath, M.D. (Med. College of Fort Wayne, Ind., 1883), of pulmonary tuberculosis, at Cadillac, Mich., May 2, aged 38.—Frederick Dunning, M.D. (Jefferson Med. College, Philadelphia, 1892), at Easton, Md., May 9.

BOOK NOTICES.

Dame Fortune Smiled. The Doctor's Story. By WILLIS BARNES. Pp. 335. Boston: Arena Publishing Company, 1896. Chicago: A. C. McClurg & Co.

This is a very readable novelette, in which a well educated young German physician, while in Paris completing his studies, becomes acquainted with some wealthy Americans who induce him to settle in New York. They make his fortune and he cures them of nervous prostration by hypnotic suggestion. He marries a bright and well educated newspaper correspondent, and his charming clients build him a sanitarium and strive to outdo each other in making charitable largesses. This is an excellent study for your wealthy patients.

General Index to the Journal of the American Medical Association. Vols. I to XXIV. By WM. B. ATKINSON, M.D. 8vo, cl., pp. 360. Chicago: AMERICAN MEDICAL ASSOCIATION Press, 1896. Price \$1.25.

This index will be found very useful to all medical men. In case they do not have the bound volumes of our JOURNAL, the index will tell them what has appeared in its pages, and there are few places in the United States where some one has not preserved his JOURNAL. Libraries will find this index indispensable; it includes the names of author and subject, and is printed in clear type on excellent paper.

Gentlemen noticing errors or omissions in it are asked to kindly send the correction to the editor of the JOURNAL.

Some Prolegomena to a Philosophy of Medicine. By GILES F. GOLDSBOROUGH, M.D., President of the British Homeopathic Society, etc. London: John Bale & Sons. 1896. Cl., pp. 66.

This is an attempt on the part of an English "homeopathic" practitioner to lay the foundation of a philosophy of medicine which may be considered as a sort of composite photograph of all systems which now exist. We can see no very good reason why the title could not have been condensed from "Some Prolegomena" to the simpler and more familiar word "Introduction," which means essentially the same thing. There are several new terms introduced. Not only is there little to find fault with, but much to be commended. The book is handsomely in appearance.

MISCELLANY.

Queer Place to Have Them.—A chiropodist announces on his cards that he has had the honor of removing corns from several of the crowned heads of Europe.—*Printer's Ink.*

An Octogenarian.—Dr. Alonzo Garcelon, the President of the Board of Trustees, celebrated his eighty-third birthday at the recent meeting at Atlanta, on which occasion he was the recipient of the hearty congratulations of his colleagues in the Association.

Requests to New York Charitable Institutions.—Under the will of the late Leonard Friedman the Mt. Sinai Hospital gets a bequest of \$2,500, the Montefiore Home for Chronic Invalids \$1,500, and other Asylums and Homes about \$7,000 in different sums.

Rare Quadruplets.—It has been estimated that a case of quadruplets occurs but once in 350,000 to 400,000 births. But if the proportion were one in a million, or even a billion, there

would always be two persons who would regard the prodigality of nature as an act of unkindness.—*Medical Press*.

He Affirmed the Negative.—"Well, doctor, is there any thing the matter with my foot?" asked Jones. "My answer," replied the doctor, "is in the negative." He had taken up the new photography.—*Pick-Me-Up*.

"Idiotic" Acid.—"What acid do we get from iodine?" asked the medical professor. "We get a—usually get idiotic acid," yawned the student. "Have you been taking some?" quietly asked the professor.—*Medical News*.

Life's Problem Given Up.—"After all," asked a disciple of Diogenes, the great thinker, "what is life?" "That, sir," he replied, "is a riddle which, in the end, is given up by every body."

She Had Rather Be an Aquarium.—Fashionable Doctor: "My dear young lady, you are drinking unfiltered water which swarms with animal organisms. You should have it boiled; that will kill them." His patient: "Well, doctor, I think I'd sooner be an aquarium than a cemetery."—*Harpers Weekly*.

A New Bacillus in Milk.—Obermuller writes to the *Hygienische Rundschau*, No. 19, 1895, that he has been inoculating guinea pigs with ordinary milk from a supposed well-appointed establishment. Several of the animals died with typical tuberculosis and the rest gave evidence of a peculiar infection, produced by a special bacillus, hitherto unknown, which he will soon more fully describe. In another series of experiments 38 per cent. showed tuberculous infection and 30 per cent. wasted away.

Druggist Suffers for Illegibility of Handwriting on Prescription.—A Paris druggist has just been fined 500 francs for compounding a prescription, the signature of which had been purposely rendered illegible, as it did not proceed from a physician. The regulations are that the druggist must insist upon the signature of a physician to each prescription, and verify the existence of local physicians by consulting the directory if necessary.—*Journal de Médecine de Paris*, March 15.

California Female Insane to Have Attendant.—Section 2218 of the Political Code of California, relating to the commitment of insane persons, which provided that the insane person, together with the order of the judge and certificate of the physicians, must be delivered to the sheriff of the county, and by him must be delivered to the officer in charge of the insane asylum, was amended in 1895, by adding, "but no female insane person shall be taken to the asylum without the attendance of some other female, or some relation of such insane person."

Endemic Ulcers.—Juliano, of Bahia, Brazil, is studying the endemic ulcers known variously as the Biskra button, Burmah boil, Cochinchina ulcer, Alibert's endemic prophylitis, Larrey's ulcerous dermatosis, Sahara chancre and by other local names. He prefers to call it the endemic button of the tropics, and believes that it is caused by some microorganism, which he is now trying to discover. He finds it most frequently on the face or extremities, which shows that it is usually communicated by the bite of some insect. He has a careful study of it in the *Journal des Maladies Cut. et Syph.*, October, 1895.

Tarnier's Treatment of Postpartum Hemorrhages, described at the Congress of the Obstetrical Society of France, last month, is merely a tampon, if the hemorrhage proceeds from the neck of the womb, the vagina or the vulva. The important point is to locate the source. If it proceeds from the body of the uterus, it is a serious matter then, and he applies heat in the form of hot water, but first he clears out of the uterus every trace of clot, in spite of all protests, sometimes having to clear it two or three times. If there is the slightest fragment of a clot left, the uterus is liable not to contract. Tarnier advises the use of hot water as a preventive measure when there is a known

individual or family tendency to hemorrhages or uterine inertia. He has never lost a patient from a postpartum hemorrhage, and he gives no drugs except in very rare cases he follows the hot water with a hypodermic injection of ergotinin.—*Progrès Médical*, April 18.

Anecdote Regarding the Late Dr. E. R. Palmer, of Louisville University.—He had a fund of wit, and often rose to eloquence, but his lectures were nevertheless always serious efforts to impart truth. The spontaneity of his wit was wonderful. "Mr. Smith," said he one day in the quiz, "what is the chief proximate principle of the fifth class?" Smith, a bashful youth from the country, blushed and hesitated, and began to scratch his ear. "You have it," shouted the professor in a merry voice, "your finger is on it; it's your ear" (urea).

Essential Paroxysmal Tachycardia Treated with Artificial Serum.—The *Bulletin Médical* of April 22, describes a severe case treated in vain with all the usual remedies, at the fifth day in acute asystole, in imminent danger of death. To retard the cardiac pulsations and increase the arterial tension, Chauffard resorted at last to an intravenous injection of artificial serum. One hour later the patient was breathing freely, with no further distress, and felt "infinitely better." By the next day he was completely restored. Chauffard accepts the results in this one case as offering very favorable indications for the continued use of this "medication with a future," in the severest cases of this disease when the cardiac paralysis and syncope become menacing.

Experiments in the Contagiousness of Pulmonary Phthisis.—It has been asserted that persons sent to resorts for their general health, acquire there the germs of tuberculosis. Some recent experiments described in the *Revue de la Tuberculose*, December, 1895, prove that where the sputa of consumptives, even in advanced stages, is carefully collected and destroyed, there is no contagion. Apartments where deaths from purulent phthisis had occurred were disinfected and animals inoculated with the dust collected from the walls, etc., afterward. Results showed that cleanliness and disinfection are enough to prevent any contagion from inhalation of the dust. Further experiments with animals proved that the most infective forms of phthisis did not communicate contagion where the patients constantly used portable cuspidors in which there was a layer of Van Swieten's solution. There is therefore less danger of contagion at a sanitarium or consumptive resort, where strict measures prevail, than in the every day life of any large town.

The Genuine Prophylaxis of Hydrophobia.—The London papers report that a great activity in enforcing the muzzling ordinance against dogs has taken place. Out of 11,000 dogs lately taken up by the catchers from all parts of London, 9,450 have been destroyed, and the new crematorium at Battersea has been kept in use all day and a great part of every night, in order to deal with the exceptionally large number of bodies that have had to be destroyed. It is estimated that about one hundred and fifty dogs have been suffocated in the lethal chamber every day, and about an equal number have been cremated daily. A total number of 638 animals have been claimed by their owners. Quite two-thirds of the dogs that have been received were fox terriers, and there have only been a very few dogs of really good breed. The daily number of animals that are being taken in is gradually decreasing. This is a sure method of reducing the material susceptible to rabies, and of indirectly stamping out hydrophobia. It may confidently be predicted that the mortality by that disease in 1896 will show a marked reduction.

Abnormal Urethras.—Wölfler treated recently a young girl who had besides the normal micturitions, a continuous slight flow of urine. Examination disclosed a second urethral opening between the first and the vagina. He assumed that there was a double bladder and united the two parts with a com-

pressor similar to Dupuytren's enterotome. He also intended to obliterate the second urethral mouth, but was prevented by a laceration between this canal and the urethra proper, when he performed Gersuny's operation of twisting the urethra, after which there was no further incontinence. Schwarz criticises this treatment in the *Beiträge z. Klin. Chir.*, No. 15, adding the results of observations in about a hundred cases of abnormal urethras, debouching into the urethra proper, the vagina, vulva, or rectum. He asserts that a communication must first be established between the abnormal urethra and the bladder, and then the abnormal outlet obliterated. Such malformations often escape notice in men and do not require surgical intervention, which is necessary in female cases usually. When the abnormal urethra debouches into the cul-de-sac it is a serious matter. Every case of this kind in his experience has proved fatal in time.

Four Years' Course. The Medical Department of the University of Buffalo announces that it has adopted a four years' course, beginning with the session of 1896-97.

Location of Private Asylums in Connecticut.—No asylum, home, or institution for defective, deformed or incurable persons, it was enacted in Connecticut in 1895, shall be established or maintained within the corporate limits of any town without the consent of said town, unless under express legislative authority.

The Intercolonial Medical Congress.—Preparations have been made for the meeting of the Intercolonial Medical Congress at Dunedin, New Zealand, in February next. From Australia, steamers have been arranged to leave all the chief ports in time for the opening of the Congress. The attractive program of the "trips" available for those who attend the Congress has probably influenced a good many of the members of the profession in Australia to make their journey to Dunedin.

Night Medical Service in New York City.—This service, established largely through the efforts of Dr. Henry Nachtel, has been discontinued after having been in operation about fifteen years. Its object has been to afford free medical relief, between 11 p.m. and sunrise, for the needy sick. The physician attending the call is paid \$3 per visit by the city. The discontinuance of this service, done by reason of alleged abuse of the charity, is due to the withholding of an appropriation of \$1,500 per annum by the Board of Estimate, and it is now alleged that a hardship is wrought in the case of many poor persons whose cases are not suitable for hospital treatment. The friends of the service have claimed that it is mandatory upon the financial officers of the city to appropriate the amount named.

Ameba Enteritis. This is Boas' name for a certain form of intestinal catarrh, and he is making a study of it and the microorganisms which produce it. The symptoms are excessive debility, diarrhea and vomiting. The disease lasts about six weeks, when the patient entirely recovers, as the ameba disappears from the stools (Quinke's ameba coli mitis). Animals injected with it did not respond in any way. Boas may have different results from the pure cultures he has succeeded in making now, from the fourth and last case ever observed in Berlin. *Dtsch. Med. Wochsch.*, April 16.

The Enzyme of Schizo-saccharomyces octosporus and Saccharomyces Marxianus. These two yeast plants produce a diametrically opposite effect upon cane sugar and maltose. The first inverts maltose while it leaves cane sugar untouched, from which we can expect that it will not form invertin, but rather glucose. The second on the other hand, inverts cane sugar and not maltose. It was also found that alpha methyl glucosid was induced by the first and not by the second. The experiments were made with a diluted extract of each by Fischer and Lindner, who describe them at length in the *Ber. d. Dtsch. Chem. Ges.*, xxviii, p. 984. *Centralbl. f. Phys.*, April 4.

Qualification for Giving Opinion as to Poisoning.—The question was raised in the Michigan case of People v. Thacker, as to whether a practicing physician, who has read the books and had the benefit of instructors until his mind is so well trained that he is able to take his degree as an M.D., and who is authorized by the law to practice medicine, and to prescribe remedies for persons who have been poisoned, either by accident or design, may express his opinion as to whether a given case is one of poisoning or not, or whether, in addition to the above qualifications, he must have actual experience in poisoning cases before he can testify. The authorities on the subject are conflicting. The supreme court of Michigan holds, March 24, 1896, that such an one is qualified, without the additional experience, to give his opinion as an expert. It thinks that if the witness has given the subject of poisons such careful and discriminating study, by reading the literature of the subject and listening to the lectures of instructors who have made a specialty of the subject, so that his study has resulted in the formation of a definite opinion, that he may express it, and that, when expressed, it may be considered by the jury, which should give the opinion so expressed just such weight as, in view of all the testimony, they think it entitled to. The medical witness whose testimony it specifically holds there was, for the above reasons, no error in admitting, graduated in March, 1894.

Influence of Salt on Chemic Changes.—Bial states that salt, up to a certain amount, has a most stimulating effect upon the growth of the yeast plant; after this point is passed, it ceases to have any effect, while if still more salt is added, it checks and destroys the plant. In administering salt, therefore, to check the gastric fermentation, it is very important to experiment carefully until the exact amount of salt required is determined, as different quantities produce opposite results. Ewald has secured excellent results with salt direct in such cases. Scheurlen has arrived at a similar conclusion by a different path, showing that the disinfecting power of carbolic acid can be very much increased by adding salt; even the most rebellious anthrax spores are destroyed by the combination. Gans also announces that carbonate and bicarbonate of soda retard notably the transformation of glycogen, in his experiments with a mixture of glycogen and diastase, while chlorid of sodium and Glauber's salt have no effect either way. This result confirms our ideas in regard to the action of alkalines in diabetes. *Dtsch. Med. Wochsch.*, April 16, and *Sem. Méd.*, April 22.

Free Bacteriologic Diagnosis of Diphtheria in London.—If we mistake not, the first civic division of London to adopt an independent laboratory for the modern diagnosis of diphtheria is that of St. Marylebone, under the direction of Dr. Wynter Blyth. The *Medical Press* says: "The experiment now being carried out in Marylebone of furnishing apparatus and opportunity for free bacteriologic examination in doubtful diphtheria will be watched with much interest by all who are interested in public health progress. Its results during the quarter have been as follows: Twenty-one cases of presumed diphtheria have been examined, and of these eleven, or rather more than half, showed the typical microphyte. The actual number of cases of diphtheria notified during the period in question was seventy-five, of which number forty-one were removed to a hospital. These figures show a marked increase over the corresponding period of 1894, when sixty-seven cases were officially reported. In view of the alarming spread of this fatal but quite preventable disease, Dr. Wynter Blyth is to be congratulated on his action in affording medical men in his district an opportunity at arriving at an absolute and early diagnosis in doubtful cases of sore throat."

Doctors' Right of Way. Over eight hundred physicians of Chicago have already taken advantage of an ordinance passed by the Council, giving them the right of way on the streets and over bridges ahead of processions, parades, fire lines and

other obstructions that usually stop their ordinary traffic. Each of the physicians applying has been furnished with a badge and a special permit, which entitle him to the privileges of the ordinance and demonstrate his authority. The badge is a very pretty affair, about the size of a quarter, made of German silver in the form of a circle 3-16 of an inch wide, around a red cross in the center. The cross is of red enamel and the circle white. The ordinance also applies to ambulances, and is made to include all physicians driving in answer to professional calls, to fires or accidents. It is designed to afford relief as quickly as possible to people who require the services of a physician. The permits are signed by the Mayor and City Clerk, and the badges are issued from the City Clerk's office on the payment of a 50-cent fee.

Hippocrates on Waters.—Whoever wishes to investigate medicine properly should proceed thus: . . . We must also consider the qualities of the waters, for as they differ from one another in taste and weight, so also do they differ much in their qualities. Concerning the waters which the inhabitants use, whether they be marshy and soft, or hard and running from elevated and rocky situations, and then if salty and unfit for cooking; and the ground whether it be naked and deficient in water, or wooded and well watered, and whether it lies in a hollow confined situation, or is elevated and cold; and the mode in which the inhabitants live and what are their pursuits; whether they are fond of drinking and eating to excess and given to indolence, or are fond of exercise and labor and are not given to excess in eating and drinking. From these things he must proceed to investigate everything else. For if one knows all these things well, or at least the greater part of them, he can not miss knowing when he comes to a strange city, either the diseases peculiar to the place, or the particular nature of common diseases, so that he will not be in doubt as to the treatment of the diseases or commit mistakes.—HIPPOCRATES ON "Airs, Waters and Places."

A Clergyman's Good Word for the Medical Profession.—The Rev. Dr. Talmage says, "Bless the doctors," and contends that there is too much fault-finding among the general public with physicians, especially when the patient fails to recover.

So far as I know them, physicians profess to be neither omnipotent nor all-wise. Like those of us in other professions and occupations, I suppose they sometimes make mistakes; but the time we spend in sarcastic flings at their Christ-like and magnificent calling we had better spend in thanksgiving to God for what they accomplish. Better not be too hard on the doctors. Sooner than you expect you will be sending for them, and between you and the King of Terrors there will be nothing out one of their prescriptions. They stand to-day, as a profession, fighting back whole armies of cancers, pneumonias, phthisias, and congestions of brain and liver and lung. They do more missionary work than any class of men in the country, and upon them will come the blessing of the Great Physician, as he says, "I was sick, and ye visited me." When the last illness of body is cured, and the last attack on the children's cradle has been discomfited, and the last broken bone of workman fallen from the house scaffolding shall be set, and the last wollen gum of teething child shall have been lanced, and the last pale patient with tumor successfully removed shall, with a grateful "Thank you, doctor," be released from the operating table in the clinical department of the city hospital, then it will be time enough to deride the medical profession. Christ go along with him in his journeying a physician, one Doctor Luke, and while some in that calling are sceptical and atheistic, many of them know how at the same time to medicate body and soul.

An American Citizen and Physician Wounded in Cuba.—Dr. Jose Manuel Delgado, who has been a storm center of considerable international correspondence, is a graduate of Bellevue Hospital Medical College of the class of 1872. A dispatch from Washington gives the following recent information regarding the progress of the case. In addition to the removal of the commanding officer who led in the outrage and wounding of the American citizen, Dr. Delgado, steps will be taken to

press a claim for money damages. Consul General Williams has submitted a great deal of information to the State Department, including sworn statements from both Dr. Delgado and his father, Joaquin Delgado, as to their citizenship, with descriptions as to the occurrences of March 4. Perhaps the most important evidence is that which shows that Captain General Weyler, when he received a protest from Consul General Williams, promptly stopped the proceedings which were in progress on the Dolores plantation, and had Dr. Delgado, who had been cut and shot, removed to a safe place, where he was given the best medical attention. Dr. Delgado fortunately recovered from his wounds, but is still in Cuba looking out for his plantation. No suggestion has reached the department as to the amount Dr. Delgado will claim for the injuries sustained by himself and men, as well as for the damage done his estates. Mrs. Mussey has not yet heard from Delgado on this point, and until she does she will take no action looking to the filing of his claim. When Dr. Delgado's claim is submitted the department will have two claims to press from this family. Mr. Delgado, the father, had his estates embargoed by the Spanish in 1869, and the Claims Commission which assembled a few years later awarded him damages to the extent of \$117,000. The matter has been close to settlement several times, but payment has never been made.

The Trendelenburg Position in Prolapse of the Funis.—The London *Lancet* has the following comment and commendation regarding that recent contribution of Dr. R. Abrahams to the *American Journal of Obstetrics* on this subject. "He relates a case in which his attention was accidentally called to the value of this position in the treatment of prolapse of the cord. It was a case in which the vertex presented. On rupturing the membranes a very large quantity of liquor amnii escaped, and a portion of the umbilical cord, estimated to be ten inches in length, was carried down by the gush of the waters into the vagina. The os was fully dilated, and the best plan seemed to him to be to deliver the woman either by forceps or version as quickly as possible. The patient's surroundings were of the poorest possible description, and the bed on which she was lying was 'a wide long board with four poles as feet to rest on.' While he was trying to get the patient in position for operating the foot of the bed gave way. This necessitated the raising and holding up of the foot of the bed some six feet from the ground while the supports of the bed were being repaired. On lowering the bed after this had been at last accomplished he examined the patient, and was surprised to find that no part of the cord was to be felt in the vagina and that the head was fully engaged. Delivery was effected quite naturally without any assistance. Dr. Abrahams ascribed the change in the condition of things to the extreme Trendelenburg position caused by raising the foot of the bed to the height above mentioned; and this appears most probably to be the true explanation of the sudden recession of the cord. He considered the Trendelenburg position much superior to the genupectoral position formerly recommended for these cases, as being more comfortable for the patient, but, on the other hand it has the disadvantage of causing difficulty in breathing. Still, as the position may only have to be maintained for a short time, as in Dr. Abraham's case, treatment of prolapse of the funis by the Trendelenburg position seems to deserve a trial."

The Lebel Sword Bayonet of the French Army.—The *Courier des Etats Unis*, in a communication dated April 22, 1896, has the following concerning wounds by the Lebel bayonet. Since the adoption of small caliber firearms there has been little opportunity in Europe at least, of observing wounds caused by the sword bayonets or poniards associated with the rifles. For a long time it was considered that these wounds ought to be more deadly than those occasioned by the old style saber bayonets;

but recent observations have modified completely this opinion and proved that the lesions produced by narrow bladed weapons heal readily notwithstanding probable intestinal perforations, and without the necessity of resorting to laparotomy. It is admitted now that the thrust of sword bayonets or poniards being at the moment of penetration much more feeble than that of a rifle bullet the triangular or quadrangular blades may push aside the intestine or even push it before them without perforating it: and even should they perforate, that the wound would close spontaneously and quickly. Several observations on accidental injuries give every reason to believe this: the last made by Surgeon-major Guichmerre on a soldier of the reserves, who on Oct. 17, 1895, was pierced by a sword bayonet, model 1886, in an assault during a sham fight and grievously wounded in the abdomen. No surgical interference was undertaken in this case and on October 20 the patient was much improved: on the 21st he was able to eat an egg and on the 30th he was discharged from hospital cured. It is to be noted in this connection that foreign powers have generally adopted poniards with a blade 25 to 30 centimeters long, while that of the Lebel sword bayonet is 518 millimeters.

Presumption as to Continuation of Sanity.—Every man is presumed to be sane. This presumption of sanity, the supreme court of Mississippi holds, in the case of *Ford v. State*, decided March 30, 1896, will be sufficient to sustain the burden resting on the State of proof of sanity on the part of the defendant at the time of the commission of the act charged if the defendant offers no testimony sufficient to raise, out of the evidence in the case, a reasonable doubt of the defendant's sanity at the time he committed the act. Where general, habitual insanity is shown to exist, it is presumed to continue, and the burden of showing that the act was committed in a lucid interval is upon the State, and in the sense that that burden is not satisfied by any presumption of sanity, but must be satisfied by proof on the part of the State of the lucid interval at the time of the doing of the act. But if only temporary or recurrent insanity, as from paralysis or epilepsy, be shown, there is no presumption therefrom of continued, general, habitual insanity. And when all that the evidence in the case shows is this latter form, temporary insanity, without raising a reasonable doubt as to whether it existed at the time of the act in question, the State may rely on the presumption of general sanity with which it started out, without offering proof as to the lucid interval; for the presumption of sanity with which the defendant is invested at the outset is a general and universal one, embracing, as a whole all its parts, the included presumption of sanity at all times, including the particular time when the act in question was committed, unless the evidence raises a reasonable doubt, not of temporary, but of general insanity, and hence of insanity at the particular time.

A Physician Exercises the Priestly Office. A poor New York lad, named Kyle, started away from home to seek his fortune, with some of his comrades, and began by trying to steal a ride on a freight train. The engine had hardly gained good speed before Kyle was jolted from the trucks to the rails. The wheels of the caboose passed over his legs and cut both off below the knee. His companions saw his plight and jumped off to go to his assistance. They managed to bind up the wounds with their handkerchiefs and the lining of one of their coats. Then they carried Kyle to the banks of the Hudson, near by, and made a bed for him on the grass. The station agent at Spuyten Duyvil had seen the accident and ran to the spot. When they saw him coming Kyle's companions ran away. The station agent summoned Policeman Shea, who called an ambulance from Fordham Hospital. As soon as the policeman had left, Kyle took a string of beads and the prayer book from his pocket. He went over the beads carefully and placed the cross upon his breast. Then he opened the prayer book and in a

faint voice began to read. A crowd gathered about the boy, anxious to relieve his sufferings. He thanked them and said he knew he was going to die. "But God bless you all," he continued, "I'll read a prayer for your salvation." Every head was bowed as the Latin words came in faint tones from the dying lad. Then the ambulance came and Kyle was placed inside by Dr. Riley. The boy became faint, his eyesight began to fail him. "I can't see to read," said he to Dr. Riley. "Won't you read me some prayers?" The Doctor took the book from the boy's hand and read to him till the hospital was reached. Then he was placed in bed, but he would relinquish neither the prayer book nor the beads. The poor lad shortly afterward became unconscious and death took place about midnight.

The Duty of the General Practitioner Toward the Feeble-Minded.—The editor of *Archives of Pediatrics* calls attention to the question of the responsibility of the family physician when he finds feeble-minded children in the families he attends. The relation is one that deserves his thoughtful attention, for he can assist these little unfortunates, not only as an adviser regarding their mental and moral training, but also in his capacity of physician. Feebleness of body frequently attends and increases feebleness of mind. There is a general sluggishness of the whole physical being, involving especially the organs of sense. This is not so much due to lack of mechanical perfection as to non-perception at the brain centers. The mind, therefore, lacks the constant spur to activity which that of the normal child receives. The child is to a great degree deprived of the knowledge commonly gained through the medium of the five senses. "The circulation of these children is slow and imperfect. They are therefore especially sensitive to cold and should be clothed more warmly than ordinary children. They eat slowly and generally digest the food well, but are subject to constipation. The diseases to which feeble-minded children are liable are asthenic in character. Phthisis, catarrhal pneumonia, bronchitis, ulcers and all forms of disease engendered by weak circulation and low vitality are common among them. If attention to hygiene is essential in normal children, it is doubly important in the case of the mentally feeble, in order that no unnecessary burden may be imposed upon those who are already so heavily handicapped. There is no special or specific treatment for most cases. Massage, by stimulating the circulation, sometimes proves of considerable assistance. Craniectomy will perhaps benefit a few cases of microcephaly, but their number is extremely small; its most successful application in the vast majority of cases is in its non-performance." Thyroid treatment of the cretinoid type has proved successful in many well-authenticated cases, and is established as a safe and legitimate method of treatment. It should be a recognized fact that the treatment must be continued as long as the child lives, if he is to remain healthy. In other types the medical treatment should consist in maintaining the nutrition at as perfect a point as possible and in diminishing as far as may be all inherited and acquired tendencies to disease.

Medicine Among the Arabs. A German scientist and physician spent six months lately in the Sinai Desert to collect certain data, and incidentally noted some interesting facts in regard to the diseases prevalent among the Bedouins and their treatment of them. He never found the slightest trace of tuberculosis, and therefore announces that the ideal sanitarium for consumptives might be erected there, if the desert were not so absolutely inaccessible, as it is the only place yet discovered where this disease is unknown to the native population. But it requires a train of camels and attendants to penetrate into the country. He found no trace of venereal disease, except among those Bedouins who had lived in Egypt. There are no doctors nor surgeons, and child-birth is accomplished in a standing posture. If the presentation is wrong, the woman is

placed in a strong cloth and shaken or bounced until the position of the fetus is changed if possible. Puerperal fever is frequent, as might be expected from the lack of cleanliness, and the old women proceed to drive out the fever devil by sticking red hot needles in the woman, beginning at the head and ending by driving him out at the feet, while all howl in chorus. Malaria prevails in Tor and other low places, but the mountains are always a sure retreat in the malarial season, where escape is also found from the cholera trailing after the pilgrims returning from Mecca.—*Dtsch. Med. Wochsch.*, April 9-16.

Primary and Secondary Lesions of the Nerve Cells.—Marinesco has been continuing Nissl's histologic studies of the nerve cells, and reported as follows to the Société de Biologie, January 25: It is known that the nerve cell is composed of a homogeneous, fundamental part (trophoplasm), which contains within it elements colored strongly by the basic anilin colors—chromophilic elements, or kinetoplasm, surrounding the nucleus and radiating into the protoplasmic elongations. The axis cylinder, of a fibrillary structure, belongs with the fundamental part of the cell, to the trophoplasm. The trophoplasm presides over the nutrition of the nerve and muscle fiber. The kinetoplasm is an apparatus destined to transform sensory or motor impressions. After section of a motor nerve, the kinetoplasm disappears progressively, from the periphery to the perinuclear layer. The axis cylinder and the myelin remain intact. The absent kinetoplasm may reappear if the trophoplasm is not altered. If the trophoplasm is affected, the axis cylinder becomes atrophied and degenerates. From these studies, Marinesco announces the pathogenesis of peripheral neuritis: The lesions of the central end, incorrectly called ascending neuritis, are due to the alteration of the trophoplasm of the nerve cell. Primary affections of the spinal cord induce at the same time, a lesion of the kinetoplasm and of the trophoplasm.—*Revue Int. de Méd. et de Chir.*, April 10.

The Surgical Staff of the Cuban Force.—The *New York Herald* correspondent in Cuba writes that the surgical corps in the Cuban army consists of eighty physicians, distributed among its six different corps. The head of the service is Dr. Joaquin Castillo Duany, surgeon general, a graduate of an American university, and formerly attached to the United States Navy, in which capacity he formed part of the crew that started in the *Rodgers* as a relief expedition to the *Jeannette*. When the present revolution broke out he was medical inspector at the Juraque iron mines. He joined the ranks of the Cubans, together with Mr. Kilpatrick, one of the managers, and several other employes, all Americans. Surgeons in the Cuban army have no limited time of service, receive no pay, acquire no fame or rank. These men, brought up under the refining influences of civilization, abandon their practices, their homes, their families, and start on a gloomy career of hardship and danger, with the possibility of being caught by the Spaniards and shot by the roadside. The surgeons are all provided with first-class French instruments, and in their operations they always make a lavish and intelligent use of antiseptics, for in Cuba's burning climate tetanus and secondary suppurations set in with astonishing rapidity. Drugs are often hard to obtain, there being no regular base of supplies. In many cases where mercury, bichlorid, iodoform and carbolic acid are unattainable, wounds are sprinkled over with finely powdered burnt coffee, which proves a powerful antiseptic. Fevers are often and successfully treated, in default of quinin, with a decoction of the "cundeamor," leaves from creeping plants of valuable febrifuge properties. As alcohol can be had plentifully at any sugar plantation in a reasonably pure state, tinctures of many native plants are constantly prepared which are found effective by previous trials. Chloroform and ether are things unheard of in those wildernesses, and nothing illustrates more graphically the Spartan heroism latent in the

Cuban nature than the unflinching way with which they submit in full consciousness to the ominous knife. It is not strange to see a man there light his cigar and look on coolly while his arm or leg is being amputated, just as if it were a matter of no concern to him.

Indorsement as a Legally Chartered Medical School.—A graduate of the medical department of the Laval University, a legally chartered medical college in Montreal, Canada, applied for a certificate to practice medicine in Rhode Island, but was refused one by the State board of health, on the ground that Laval University had not been indorsed by them as a reputable and legally chartered medical college. It appeared, however, that if he had presented with his diploma a license to practice medicine in Canada from the College of Physicians and Surgeons, a board similar to the State board of health of Rhode Island, the latter would have granted him a certificate to practice. And the evidence showed that the license of the college of physicians and surgeons was granted as a matter of course to those holding diplomas from the Laval University, who, like this party, had been found by the governors of the college of physicians and surgeons qualified to pursue the study of medicine, and had been registered in the books of the college as having commenced the study, on the payment of the prescribed fee. Moreover, the evidence showed that in several instances the State board of health of Rhode Island had granted certificates to practice to graduates of Laval University, who, having practiced medicine in Canada prior to coming there, had the license of the college of physicians and surgeons. If this was so, inasmuch as the license of the college of physicians and surgeons was granted to holders of diplomas of Laval University, of the class mentioned, without examination, merely on the payment of a prescribed fee, the supreme court of Rhode Island holds, *Boucher v. State Board of Health*, Feb. 11, 1896, that the granting of certificates by the State board of health to other graduates of Laval University, qualified as above stated, was, in effect, an indorsement of that university by them as a legally chartered medical college, to the extent mentioned, and that they therefore erred in refusing a certificate to this applicant merely because, not wishing to practice in Canada, he did not pay the fee and obtain the license from the college of physicians and surgeons.

Arkansas Prefers County Medical Examiners.—A law was passed in Arkansas in 1895 providing that the county courts of the several counties of the State shall appoint a County Board of Medical Examiners in and for their respective counties: such board to consist of three members, learned in the sciences of medicine and surgery, of good moral character, and duly registered, while two members of the board shall be graduates of some reputable medical college. The term of office is four years. But the county judge may at any time remove any county examiner for drunkenness or other immoral conduct. Each board is to hold at least two meetings a year at the county seat. In counties having two judicial districts there may be appointed two separate boards, one for each district, in the same manner and with like effect as provided for separate counties. The County Board of Medical Examiners is authorized to examine all persons who may desire to practice medicine who are residents of the county with the board, that may apply, and if found qualified to practice medicine and surgery, issue a certificate which shall entitle the holder to practice in the county in which it is issued or in any county into which his practice may extend, so long as his residence remains in the county wherein the certificate is issued. Such applicant shall pay the county board a fee of \$6 for the examination. Sections 4968, 4969 and 4970 of Sandels and Hill's digest, providing a State Board of Medical Examiners and the issuance of licenses by it, and all other laws in conflict with this 1895 enactment, are repealed. This bill, it is stated in a footnote

signed by the Speaker of the House and President of the State Senate, having been returned by the Governor with his objections thereto, and after reconsideration, having passed both houses by the constitutional majority, it has become a law.

Resection of the Wrist by a Dorso-palmar Incision.—At a recent meeting of the French Association for the Advancement of Sciences, M. Francis Villar, of Bordeaux, read a paper on resection of the wrist by the double longitudinal incision. Resection of the wrist, he says, is not much in vogue among surgeons. This is probably because the results for a very long time were not extraordinary, but since the antiseptic method and the researches of Professor Ollier, we are better able to judge of its value. The mortality is practically *nil*, and the functional results are often perfect. The methods of operating at our command are few in number, and attention is directed to the method under consideration which is but little known, but which will render valuable service at least in certain cases. Introduced by Studsgaard in Copenhagen, and practiced by Novaro, Bassini and Odisio in Italy, it does not seem to have attracted French surgeons, for Villar has been unable to discover any other case than his own operated on in 1893. The method is as follows: The incision is commenced on the back of the hand a little above the line of the radio-carpal joint and is prolonged to the end of the web between the third and fourth fingers. The extensor tendons are held aside and the interosseous muscles divided. The first incision is now continued from the web on to the palmar surface and up to the line of the joint or a little higher. This done the soft parts of the palm are divided, taking care to avoid the tendons and the median nerve. The superficial palmar arch is tied. If the two parts of the hand are widely separated (one of these consisting of the first three fingers, the other of the remaining two) the carpus is reached and nothing is left save to extirpate the different bones. While at first sight it would seem that this method causes considerable mutilation, repair takes place rapidly, as the cases published show. There are two striking advantages connected with this method. 1. It is much easier than the classic methods. It is no small task to separate the carpal bones connected by strong and resisting ligaments through the ordinary incisions. 2. It gives considerable room and allows osteo-articular or tendinous lesions to be followed throughout their whole extent. The therapeutic and functional results are excellent, and the method is especially indicated in cases of extensive lesions. (*Le Bulletin Médical*, 1895, No. 67.)

Operation for Epithelioma Incidentally Cures Prostatic Hypertrophy.

—Mr. Southam, of Manchester, England, is reported in the *British Medical Journal*, as reporting upon the favorable effects of castration for prostatic hypertrophy. In one case the patient for more than two years previously had passed no urine except by catheter. On the fifth day after the operation, which was performed as self catheterization had become very painful, difficult, and attended with hemorrhage, he began to regain the power of voluntary micturition and he could now dispense with the catheter, the urine being passed in a feeble stream with slight straining. To illustrate the effects of double castration upon the prostate, Mr. Southam also showed a patient, aged 71, on whom he had operated fifteen years previously for epithelioma recurring in the stump of the penis after amputation, both testes together with the remains of the penis and the entire scrotum being removed. There had been no further recurrence, and on examination by the rectum at the present time no indication of the presence of the prostate could be detected, its position at the neck of the bladder being represented by a depression or sinking in of the anterior wall of the rectum at this spot. The same journal quotes Albarran in *Presse Médicale*, as drawing a discrimination between the effects of castration upon the contractility of the bladder, and

upon the prostate, and between the effects upon the latter organ when hypertrophied and when normal. The writer has observed that in many cases after operation a rapid shrinking of the prostate is observed to follow in from one and one-half to two months. The glandular culs-de-sac, instead of being pressed together, are found separated by large spaces into a series of independent glands. There is a degenerative disintegration of epithelium which before disappearing takes on an embryonic type, but there is no proliferation of muscular or connective tissue: these appear abundant owing to the shrinking of the glandular tissue. Double castration causes atrophy of the normal, but not necessarily of the hypertrophied prostate, and evidence on this latter point is wanting. Clinically speaking, an atrophied prostate is one which has ceased to be felt by the rectum. But congestion accounts for at least one-third of the enlargement, and relief of retention where it exists is usually due to the diminution of this. Diminution of the volume of gland admits of increased vesical contractility, and thus aids in relieving or curing the retention. The value of operation lies in securing these results. In dysuria without retention, where the vesical and prostatic congestion causes frequent micturition, though castration gives relief, any measures for the diminution of the cystitis also relieve, and operation is unnecessary. In acute retention the operation is not called for. In incomplete retention, benefit is obtained for the reason that as the prostate becomes atrophied, the bladder acts with greater freedom. In chronic complete retention, complete cure often results, if there is no marked thickening of the walls of the bladder.

Centenarians of Chili and California.—In a recent issue of *Leslie's Weekly* is an illustrated article giving information regarding and photographs of some of the very old men and women of the American continent. The writer says:

The last census of Chili shows an unusual proportion of extremely old people among the population, there being 211 men and 223 women in that country who have passed the century mark. The age of the oldest, Rafael Munoz, of Colchaqua, was returned to the enumerators as 150. Three others were more than 130, and thirteen had passed 120, while fifty-three women and thirty-eight men gave in their ages as 110. A full report of the centenarians in the United States would surprise many of its readers, for the number of men and women who have attained great age is much larger than is generally supposed: and if the old could defy such accidental diseases as *grippe* and pneumonia their limit of life would be considerably extended. If in Chili the conditions are such as to prolong life, it would seem that California, particularly its southern portion, must be an equally favorable place for longevity. The climate is similar to that of Chili, and the mode of living among the natives does not differ greatly. There are some very old people in this State. As an out-door life tends more than anything else to longevity, it is not surprising to learn that the oldest man of whom we have any record in the United States was an Indian. His name was Gabriel, and he was a well-known character of Castroville, Cal. until he died in 1890, at the age of 147. There is now living in Southern California an Indian chief, the head of the Sobobo tribe, who is 136 years old and has a wife considerably past 100. There is an Indian dame at San Gabriel whose age is vouched for at 118. Close by the walls of the best preserved mission on the coast live three venerable women who are widely known as "The Belles of San Luis Rey." One of them claims to be 128, and the others are more than 120. They saw the first mass that was celebrated in the mission walls. Relics of bygone era, they appear to enjoy the attention which every visitor bestows upon them, but they are decidedly averse to the camera, and were with difficulty persuaded to sit for the photograph. In the Mexican division of the grand *fiesta* procession at Los Angeles, in the spring of 1894, rode Don Ygnacio Francisco de la Cruz Garcia, upright, apparently vigorous, managing his horse with the skill of a *caballero*. No person unacquainted with his history would have surmised that he had long passed the century mark, yet his age was 113. He is now often seen walking near his home in the city, and is in possession of all his faculties, even that of sight, although at one time he was totally blind. There can be no doubt about his age, for he holds a certificate for his baptism on May 4, 1781, in a Catholic church at San Jose de Gracia, in Mexico. He has a son 86 years old and his youngest child is 60.

A Mild Protest Against Bacterial Diagnosis at the London Pathological Society.—An editorial comment in the *Medical Press and Circular*, on the recent discussion before the Pathological Society of London, shows that some slight "conservative" opinion still exists in high circles regarding the bacterial diagnosis of diphtheria. The following is a portion of the editor's cautious, almost gingerly, handling of his subject. The editor's heart is in the right place, however, and this is a part of what he has to say: "It seems that virulent diphtheria bacilli may linger for an indefinite period in the mouth secretions of persons who have recovered from an attack: indeed, in a case mentioned by Dr. Hewlett at the Pathological Society, they were detected twenty-three weeks after the onset of the malady. This observation possesses a special significance, in view of the fact that the later investigations were undertaken at the behest of a schoolmaster who feared that the lad might, on his return to school, be the means of disseminating the disease; a well-founded suspicion, as events proved it to be. Mr. Butlin, the president, took advantage of the opportunity to review the situation in respect of the bacteriologic diagnosis of diphtheria. It seems that medical practitioners in the district where he resides are now provided by the authorities with the necessary facilities for obtaining expert opinion in respect of the secretions in suspected cases, an excellent innovation one would think, but one which he nevertheless seems to think somewhat vexatious. He also referred to the practice in the larger cities of the United States, where he assured them it had become the custom for the medical officer of health to at once visit and inspect all reported cases of diphtheria without going through the usual formality of asking the practitioner in charge to meet him in consultation. Mr. Butlin appears to dissent from the idea that the diagnosis shall be determined solely on bacteriologic data, and he suggested that the society might 'do something' to clear up a situation which, in his opinion, was full of danger to the public as well as to the profession. Before anything can be done, however, it will be necessary for us to know exactly what the danger is and how it is brought about, points as to which Mr. Butlin was silent. He questioned the importance attached by the speaker to the presence of these virulent bacilli after so long a period, and suggested that there were probably hundreds or even thousands of persons similarly inhabited by virulent bacilli wandering up and down the country apparently without detriment to the public welfare. How he arrived at the 'without detriment' conclusion he did not say. It occurs to us that possibly the existence of these ambulatory foci of infection may explain the ever increasing spread of the disease in spite of all the precautions that have been taken to check its ravages. We must confess that we do not clearly see what the society can do to clear up the situation. The Pathological Society, of all others, could hardly venture to throw cold water on the value and importance of bacteriologic investigation, but unless they declare bacteriology to be a scientific fad and a delusion, it is difficult to see how they can enter [a protest against its practical application to diagnosis. If the culture from the saliva of a given person is capable, as in Dr. Hewlett's case, of determining the death of guinea pigs in a few hours, even Mr. Butlin would hardly wish to introduce him to his family circle, his skepticism to the contrary notwithstanding. This being so, his protest would appear to be singularly inopportune, and, as coming from the President of the Pathological Society, somewhat regrettable." This may, we think, be taken for the last expiring protest by the "conservative element" against the full and free adoption of modern laboratory diagnostic work.

A Proposed Diploma Mill Under British Flag.—The *British Medical Journal* pours hot shot into "The College of Physicians and Surgeons of Bengal," which a few medical practitioners of Calcutta have formed into a voluntary association for the dou-

ble purpose of corporate combination and medical education without state aid or interference. Practitioners throughout India have been invited to become members of this "College" without ceremony or test, and fellowships on similar terms will no doubt be instituted ere long. A medical school has been started, and was declared open on January 13, by Dr. Juggobundo Bose, who delivered an inaugural address on the occasion. A prospectus of this school has been published. The curriculum is to extend over four years. Students are to pay the modest sum of 3 shillings and 6 pence for matriculation, and a fee of like amount monthly in advance for instruction. Courses of dissections, of practical chemistry, and of practical physiology are to cost severally three rupees extra. The diplomas L.C.P. and L.C.S. are to be conferred at the end of the curriculum after examination, for which a moderate additional fee of 25 rupees is claimed. The subjects of examination are stated. A president, four vice-presidents, and lecturers have been appointed, and the whole scheme looks very regular and complete on paper. No state sanction or charter has apparently been obtained for this enterprise, no capital provided, no arrangements made for dissections or hospital instruction, no library, museums, or laboratories established; no provision made for practical teaching of any sort. The instruction imparted would seem to be exclusively oral, and the character of the final examination may be judged of by the fact that "operations on the mannequin" is one of the tests. With every sympathy for any movement which has for its object the consolidation and coöperation of the medical profession in India, and the exercise of self-help in medical education, we can not help entertaining a strong doubt whether this scheme, as at present constituted, is likely to be a sound and safe one, or to accomplish the end which all wishers of India desire, namely the elevation of the medical profession and the larger participation of locally educated men in the medical and sanitary work of the empire. The requirements of a complete and practical education in medicine are so many and so costly in these days that it is a matter of amazement how any combination of medical men in India can have the hardihood to propose a scheme of training and licensing medical practitioners without having in the first instance and as a necessary preliminary obtained the funds and appliances and organized the arrangements requisite for scientific instruction. It is equally a subject of wonder how the government of the country can tolerate a dangerous and retrograde enterprise of this character. The graduates and licentiates of Indian universities and schools obtain their qualifications to practice under sanctions and conditions which ensure a thorough training according to modern principles and methods, and stamp their status in the community with authority. The so-called "College of Physicians and Surgeons of Bengal," as at present devised, is a sham, and its licentiates will, if no change takes place, constitute a very inferior class of medical diplomates. There is unfortunately no council of medical registration and education in India to safeguard the public against pretence and incompetence. But the government is able, through the universities, to control educational matters and insist that educational institutions shall be properly equipped and officered, and competent to impart sound instruction.

Practical Notes.

The Thyroid Preparations at the Medical Congresses in April.—Ewald's masterly critique of this subject was the feature of the XIV Congress für innere Medizin, held at Wiesbaden. It was in favor of the new medication, which he considers a very valuable contribution to therapeutics, especially Baumann's Thyro-iodin, to use in fighting myxedema and goitre. Thyroid medication for fibroma of the uterus was also the leading article presented at the Congress at Carthage, by Jouin, of Paris, who has obtained marked improvement with it in fibrous uter-

ine tumors and obstinate metrorrhagia, and suggests that it may yet be found invaluable in the early stages of tumors, sarcoma, etc.

A New Antiseptic Tablet for Nasal Solutions. The *American Therapist* states that Dr. Murray McFarlane, of Toronto, having become dissatisfied with Seiler's and Dobell's solutions as being too irritating in the majority of cases, has used with success a tablet containing the soluble salts of the blood plasma, which when added to two ounces of lukewarm water, forms a solution like blood plasma. Each tablet contains one-sixteenth of a grain of menthol.

Theobromin as a Diuretic. Huchard announces that he has found theobromin a very valuable diuretic in cardiac and renal troubles, and has studied it carefully in more than two hundred cases. Its action is prompt, reliable, and often succeeds where digitalis and caffeine have failed. A medium dose is two or three grams a day in half centigram powders, although as much as four or five grams can be given with impunity. Combined with a milk diet the therapeutic results are exceedingly satisfactory in infective diseases. *Union Médicale*, March 7.

Boas' Powders. These powders are valuable in relieving the attacks of pain in gastric ulcers:

R. Exalgin	3.00
Extract of belladonna	0.30
Phosphate of codein	0.30
Sugar of milk	5.00

Misce. Sig. Make ten powders. Take one as the attack comes on. Pure codein or the hydrochlorate can be substituted for the phosphate. *Semaine médicale*, April 8.

Insufflation of Air in Tuberculous Peritonitis. When the patient is so invaded by tubercular lesions in the pleura and lungs, fevers, etc., that he is unable to stand the shock of a laparotomy, simply puncture and the introduction of air into the peritoneum, will often bring relief, and the physician should always resort to this supreme means, instead of passively allowing the case to proceed to a fatal termination without it. This method may even prove more beneficial than laparotomy, and Mosetig Moorhof considers the introduction of air under pressure more liable to be followed by success than a laparotomy. Lenoir in the *Revue Int. de Méd. et de Chir.*, April 10.

Carbonic Acid in Sterility. By its stimulating effect in the peripheral nerves, and especially on the sexual system, carbonic acid in the form of water or gas baths, has a direct beneficial action in cases of masculine impotency, particularly in premature senile impotency, and in female dyspareunia and anaphrodisia (absence of sexual excitation), to which sterility is often traceable. It is also recommended in neuralgia of the uterus and ovaries and in dysmenorrhea. It is especially valuable in amenorrhea, administered in gas baths, gas douches and carbonic acid salt baths. Conditions of excessive sexual excitability strictly contraindicate its use. Schuster, of Nauheim, in the *Therapeutische Wochenschrift*, March 15.

Formol, Formalin, Formaldehyde. The use of this substance is increasing and growing more important every day in therapeutics, industry and for many other purposes. This *Journ. Nat.*, pages 543, 588, 645, 695, has described its application to ophthalmology, dentistry, the disinfecting of catgut and the preservation of specimens. The *Therapeutische Wochenschrift* of March 15, reports some later therapeutic successes with it. Gaylord and Frank have found it extremely beneficial in ulcus molle, in a 10 per cent. solution with which they painted the surface of the ulcer, which heals and sheds the cauterized surface in less than a week. The pain is severe but soon passes away. Also condylomata acuminata yields to this treatment. Lamarque uses a 1 per cent. solution of formaldehyde in cystitis tuberculosa, or instills it once a

day in a 5 per cent. solution. Barabaschew recommends it in a 1 to 2000 or 1 to 4000 solution in chronic inflammatory conditions of the connective tissue membrane.

Myoclonia. The meeting of the Association for Psychiatry and Neurology in Vienna, February 11, was mainly devoted to a discussion of this subject, as a patient was presented, suffering from a typical case that had commenced a year and a half previously. The paroxysms were violent, lightning-like contractions of the whole muscular system, from which only the muscles of the eyes, tongue and the peripheral muscles were exempt. One member was impressed with the resemblance between these spasms and those produced in animals by the removal of the thyroid glands. He had already treated cases that showed somewhat similar symptoms, combined with struma, with thyroid extract, and the cramps had disappeared. This treatment was recommended for this disease generally, and especially this case. *Wiener klin. Rundschau*, March 15.

Hydrotherapeutic Treatment of Multiple Neuritis.—Suggested by Pospischil of Krems, this treatment has the advantage that it can be employed from the very first moment of the acute attack instead of waiting, as usual, for further developments. The painful members are wrapped in a bandage dipped in ice water, outside of this there is a layer of cotton, all held in place by another bandage. The bandages are removed and replaced with fresh two or three times a day. A small quantity of sublimate added to the water, is a wise precaution to render the bandages aseptic. The pains subside rapidly with this treatment and the members cease to be contracted; when this arrives, in the course of two to three weeks, while the attack is still acute, the whole body is wrapped in a wet cloth, and then rolled in a blanket and an eider down placed over the patient. The intense perspiration thus induced hastens the elimination of toxins causing the disease, and exerts a most favorable effect upon the whole system. *Semaine Médicale*, April 29.

Antidiphtheritic Serum Administered by Rectal Injection.—Dr. Chantemesse, of the Pasteur Institute of Paris, has advised the exhibition of diphtherial antitoxin by rectal injection instead of subcutaneously. He has used this method in twenty cases, and believes that the fluid is easily and quickly absorbed. The bowel is first washed out by a simple enema, and then by means of an ordinary enema syringe and a gum-elastic catheter of medium size and about twenty centimeters long, the serum is introduced into the rectum. The method causes neither pain nor any unpleasant effects. The curative effect seems to be as certain as when the antitoxin is given by hypodermic injection. There is no need, so far as Dr. Chantemesse's experience goes, for any increase of dose when the serum is administered by the rectum. In severe cases of erysipelas he has injected into the rectum 200 to 300 cubic centimeters of the Marmorek serum. This quantity was readily absorbed and caused no ill effects. In applying this serum locally he adds five parts of lanolin to one part of the serum; pain, swelling and redness are thereby greatly reduced.

Are the Failures in Treating Hypertrophied Prostate with Castration always Reported. Czerny, of Heidelberg, doubts it. His experience in three cases has been that it was not followed by improvement, but rather by a series of ills, and it is a serious matter for a surgeon to cripple his patient in this way, without the slightest benefit to him. It is scarcely two years since Hegar's "Castratio Muliebris" to reduce myoma, was transferred to the male to reduce the prostate, which is so much less intimately connected with the spermatica interna than the uterus in the female. In that time White has collected 111 observations, and Bruns in the *Mitt. u. d. Grenz. der Med. und Chir.*, Vol. 1, No. 1, has stated the results of 148 observations, with a large number permanently freed from their pro-

vious inconveniences and 23 deaths. Czerny comments that at least the patient should be fully warned, and he hopes that the contraindications will soon be more definitely established. In cases of myoma of the prostate, or excessive development of one part, Bettini's galvano-caustic incision into the prostate is to be preferred as castration would probably have little effect on the flow of urine. This operation in the hands of a skillful operator, with a good apparatus (*Langenbeck's Archiv.* Vol. xxi, No. 1.) Czerny believes is destined to prove a blessing far more than is generally accepted at present.—*Dtsch. med. Wochsch.*, April 16.

Care of the Ear During the Exanthemata.—Dr. Walker Downie, of Glasgow, writes to the *Journal of Laryngology, Rhinology and Otology* regarding 400 cases of otitis media in children, the cause of which in about 60 per cent. was fairly determined to have been measles, scarlet fever, whooping cough, mumps or teething. From the very beginning of the illness, where there are any catarrhal symptoms, the patient should be directed to use the handkerchief frequently and strongly, the object being to clear the nose and nasopharynx of mucopurulent products, and to prevent them from settling and decomposing around the Eustachian orifices, through which infection of the ears takes place. If the child can not do this effectually the Politzer inflation bag should be used. The quantity of secretion dislodged and thrown into the mouth by this means is astonishing. When there is dullness of hearing or pain in the ears, resort to inflation should never be delayed. When the pain in the ears is acute, and should immediate relief not be obtained from inflation, and especially if there is a sudden rise of temperature without other explanation, the tympanum should be punctured without delay. Have the head securely held; have the membrane brightly illuminated; use an arrow-shaped paracentesis knife with a shoulder; puncture the tympanic membrane in its lower and posterior part. The operation not only relieves the immediate pain, but saves the deeper structures of the ear and prevents the misery of a chronic otorrhea with its attendant risk.

Treatment of Heart Troubles During and After Pregnancy.—According to Phillips in the *Revue des Mal. des Femmes*, for January, the different forms of cardiac lesions to be apprehended are: 1, adhesions due to an old pericarditis, or displacement of the heart from pleural adhesions; 2, myocarditis and degeneration of the cardiac muscle; 3, endocarditis affecting the valves; 4, endocarditis in an acute form, grafted on a chronic form. During pregnancy, if there is no symptom of cardiac insufficiency, it is enough to forbid going up stairs, and to keep the digestive functions in good order. The disorders indicating that the lesion is no longer compensated, do not appear before the fifth month, after which the patient must be kept in a reclining position. Arsenic, iron and strychnin will combat the weakness of the heart; ether and ammonia in case of syncope. If there is edema and dyspnea, digitalis and strophanthus can be given, even in cases of aortic lesion. During labor the dyspnea is less if the patient sits, and the dyspnea may necessitate injections of ether, or even the premature rupture of the membranes before the dilation of the neck is complete. Delivery must be hastened, and forceps used as soon as the dilatation of the neck is complete. An anesthetic must be employed, preferably ether. During the extraction, it will be well to lay on the abdomen, a bag of sand weighing about a dozen pounds, to avoid the abrupt drop of the blood pressure in the abdomen. That after delivery is the most dangerous period, and it lasts four days. Hemorrhages are not to be feared, but rather encouraged, and the threatening symptoms are due to the distension of the right side of the heart. No ergot nor injections of ergotin can be permitted at all, but amyl nitrite is theoretically indicated, and gives good results in practice. Subcutaneous injections of ether and strychnin

are very useful. In certain serious cases abortion has been advocated, but Phillips opposes this, as it is often followed by immediate death.—*Revue Int. de Méd. et de Chir.*, April 10.

Stypticin.—Gottschalk in *Therapeutische Monatshefte* records the results of the use of this drug in forty-seven cases of bleeding from the uterus. Stypticin is a yellowish powder, readily soluble in water, it is a hydrochlorid of cotarnin, one of the oxidation products of the opium alkaloid narcotin: in chemical structure it is closely allied to hydrastinin. It can be given subcutaneously, or more conveniently in powder or gelatin perles. The earliest experiences of its employment were not favorable, owing to too small a dose being given. Gottschalk finds that 0.05 gm. can be taken five or six times a day without any evil results. It has a great advantage over hydrastis and other uterine hemostatics, in that, as might have been expected from its source, it possesses a well-marked and potent sedative action which is both local and general, and hence specially indicates its use in dysmenorrhœal affections. Stypticin checks promptly hemorrhage resulting from pure uterine subinvolution, that is, that due to muscular atony and not to retention of membranes, etc. In cases arising from the latter cause ergot and hot douches together are better. In fungous endometritis stypticin is a valuable adjuvant to the curette; it is very useful when the patient objects to curetting, and particularly those cases in which this treatment does not stop the hemorrhage. It is also useful in bleeding caused by fibroids or the climacteric. In hemorrhage secondary to parametritis or diseases of the appendages it is less effectual than hydrastis. In such cases, however, idiosyncrasy is usually marked, and a cure is often not effected till the changes have been rung on all the various hemostatics. In purely congestive menorrhagia it is well combined with hydrastis. Stypticin is powerless to control the bleeding of uterine polypi, and is contraindicated in threatened abortion, or indeed in any of the hemorrhages of pregnancy, as it has a marked power of stimulating uterine contraction. This may be induced by it directly or result indirectly from the anemia produced by its vaso-constrictor action.

Hospital Notes.

HOSPITAL FOR CHILDREN AT PITTSBURG.—Henry C. Frick, chairman of the Carnegie Steel Company, will build a hospital for children on Squirrel Hill, Pittsburg, Pa., within a year, to cost \$500,000. The building will be on a plot of forty acres, which will be transformed into a private park and flower garden. The hospital will be placed under the control of the Protestant Episcopal Church.

THE NEW ST. JOSEPH'S HOSPITAL BUILDING in Joliet, Ill., was dedicated May 7 with elaborate ceremonies. St. Joseph's Hospital is a model institution, and is valued at \$70,000, and has a capacity for 125 patients.

ONE HUNDRED AND FORTY-FIVE YEARS OLD.—The one hundred and forty-fifth annual meeting of the Philadelphia Contributors to the Pennsylvania Hospital was held in the library room of the institution May 4. Frederick Fraley was called to the chair, and Arthur Biddle, counsel for the hospital, was appointed secretary of the meeting. The annual report of the Board of Managers was read, giving an account of the work and progress of the hospital during the past year.

Detroit.

AT THE REGULAR MEETING of the Detroit Medical and Library Association, May 11, Dr. J. Flinterman presented a paper entitled, "Degeneration."

THE WAYNE COUNTY MEDICAL SOCIETY, at its regular meeting May 14, inspected Elosie and Wayne about forty strong. At Elosie, Dr. E. O. Bennett, Superintendent of the Asylum, had them shown through the asylum, and partake of a luncheon, after which he sent them on their way rejoicing, in private and public conveyances, to Wayne, about two miles dis-

tant, where in the evening, at the Methodist Episcopal church, the regular weekly meeting was held. The program was as follows: Dr. R. H. Honner, "Intestinal Antiseptic in Typhoid Fever"; Dr. A. D. Holmes, "Broncho-pneumonia in Children"; Dr. E. F. Stewart, "Commercialism in the Practice of Medicine"; and Dr. E. B. Smith, "Surgical Treatment of Wounds." After the meeting, Mrs. S. A. Morrison, widow of the late Dr. Morrison, tendered a reception and banquet at her residence to the members of the society.

HEALTH OFFICE REPORT for week ending May 16: Deaths under 5 years 47, total 103; births, male 49, female 57, total 106. Contagious diseases: Diphtheria, last report 12, new cases 9, recovered 4, died 1, now sick 16; scarlet fever, last report 28, new cases 6, recovered 6, died none, now sick 28; measles, last report 1, new cases 1, recovered 2.

Louisville.

KENTUCKY MEDICAL ASSOCIATIONS.—The Southern Medical Association held its third semi-annual meeting at Russellville, May 12-14, with about eighty members and a number of visitors from Tennessee present. The following are the officers: President, Dr. D. G. Simmons, Adairsville; Vice-President, Dr. H. C. Cartwright, Bowling Green; Secretary, Dr. R. W. Frey, Trenton; Treasurer, Dr. C. G. Mosley, Casky.

THE SOUTHWESTERN MEDICAL ASSOCIATION held its twenty-fifth annual convention in Paducah, May 12-14. The following are the officers elected for the ensuing year: Dr. J. T. Reddick, Paducah; Vice-President, Dr. M. W. Rozell; Secretary, Dr. P. H. Stewart; Treasurer, Dr. C. H. Brothers. Dr. R. A. Hibbs, of New York, was made a life member, and eight regular members were added to the list.

UNDERTAKERS.—Complaint having been recently lodged with the mayor in regard to the lax way the undertakers have of obtaining signatures to death certificates, an order has been issued that they be compelled to comply with the law which requires all death certificates to be filed with the health officer before a permit for the burial can be had. This order was made to apply to the officials at the cemeteries who allow the burials to take place and trust the undertaker to see to the permit later. The case reported to the mayor was as follows: A death occurred in a prominent institution and the officials allowed the undertaker to attend to all the details. The burial took place and ten days afterward the attending physician to the institution thinking it queer that he had not signed the certificate investigated the matter and found that the death return had not been handed in, yet the burial had been allowed to take place at the cemetery. No such methods will prevail now.

COMMENCEMENT. The commencement season for the spring and summer medical schools is at hand, the Hospital College of Medicine and the Kentucky School of Medicine being schools of that character. The latter school will this year inaugurate the wearing of the regular university cap and gown, by both faculty and graduating class, an innovation which will prove popular and will no doubt be adopted by the other colleges in the course of time.

LOUISVILLE MEDICAL COLLEGE. Dr. A. M. Cartledge, formerly Professor of Surgery and Clinical Surgery in this college, has resigned this position to accept the chair of Gynecology made vacant by the retiring of Professor Ireland, who becomes Professor Emeritus of the same branch. Dr. W. C. Dugan has accepted the chair made vacant by the resignation of Dr. Cartledge.

Dr. J. M. Bodine, Dean of the Medical Department of the University of Louisville, has been the recipient of many congratulations on account of his election at Atlanta to the position of President of the American Medical College Association.

Dr. Todd. The many friends of Dr. Lyman Beecher Todd, of Lexington, will be sorry to learn of the sad accident which befell one of his daughters on the 13th inst. While out bicycle riding in an attempt to cross in front of an electric car she was struck and thrown under the car and almost instantly killed, the front wheels running over her chest.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 8 to May 15, 1896.

Major H. O. Penley, Surgeon, granted three months' leave of absence, to take effect about July 1, 1896.

First Lieut. James M. Kennedy, Asst. Surgeon (Ft. Missoula, Mont.), ordered to Ft. Yellowstone, Wyo., for temporary duty with troops in the field, in the National Park, during the season.

PROMOTIONS.

To be Assistant Surgeons, with the rank of Captain, May 4, 1896, after five years' service: First Lieut. William F. Lippitt, Jr., Asst. Surgeon; First Lieut. Merritt W. Ireland, Asst. Surgeon; First Lieut. George M. Wells, Asst. Surgeon.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending May 16, 1896.

Medical Inspector R. A. Marmion, detached from the "Newark," ordered home and placed on waiting orders.

Surgeon L. B. Baldwin, detached from the "Cincinnati" and ordered to the "Newark."

Surgeon N. H. Drake, detached from the "Franklin" and ordered to the "Cincinnati."

P. A. Surgeon I. W. Kite, detached from the naval hospital at New York and ordered to the "Franklin."

P. A. Surgeon P. Leach, detached from the naval laboratory, New York, and ordered to the naval hospital, New York.

Medical Inspector R. A. Marmion, ordered as member of the board of inspection and survey June 3, and member of medical board, navy yard, Washington, D. C.

Medical Director W. K. Van Reypen granted three months' leave of absence from June 3, with permission to leave the United States.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the fifteen days ended April 30, 1896.

Surgeon R. D. Murray, granted leave of absence for four days, April 30, 1896.

Surgeon J. B. Hamilton, granted leave of absence for fourteen days, April 21, 1896.

Surgeon G. W. Stoner, detailed to represent Service at meeting of American Medical Association at Atlanta, Ga., April 29, 1896.

BOARDS CONVENED.

Boards for physical examination of candidates for appointment in revenue cutter service:

At Philadelphia, Pa., Surgeon George Purviance, chairman, and P. A. Surgeon G. T. Vaughan, recorder, April 22, 1896.

At San Francisco, Cal., Surgeon John Godfrey, chairman, and Asst. Surgeon Rupert Blue, recorder, April 28, 1896.

At Washington, D. C., P. A. Surgeon C. E. Banks, chairman, and Asst. Surgeon W. J. S. Stewart, recorder, to convene May 1, 1896.

Change of Address.

Bryan, J. C., from 367 to 351 48th Street, New York, N. Y.
Carman, E. T., from 2400 Paulina Street to 3210 Malden Street, Chicago.
Flske, G. F., from Chicago Opera House Bldg., to Room 612 Reliance Bldg., Chicago, Ill.

Hammond, J. C., Omaha, Neb., to Denison, Iowa; Harrison, W. K., from 52 Walton Place to 32 Delaware Place, Chicago, Ill.; Houston, James, from Detroit, Mich., to Ingersoll, Ont. Canada.

Krieger, Geo., from 6302 S. Halsted Street to 3242 Vernon Ct., Chicago.
Langer, C., from 7115 Cottage Grove Ave., to 7137 Laugley Ave., Chicago, Ill.

MacDonald, C. E., from New York, N. Y., to Liberty Falls, N. Y.
Packard, J. H., from Philadelphia to Denver, Chester Co., Pa.; Potts, C. N., from Colorado Springs to Silverton, Colo.; Patch, Wm., from Irving to Cooksville, Ill.

Roberts, A. Sydney, from Philadelphia to Bala, Pa.; Raudebaugh, E. C., from Overton to New Pittsburg, Ohio.

Stowell, J. H., from Reliance Bldg., to Suite 907 Columbus Memorial Building, Chicago, Ill.; Spinney, C. N., from New York, N. Y., to 47 Montcalm Street, E., Detroit, Mich.

Thomas, C. P., from Everett to Spokane, Wash.

LETTERS RECEIVED

Ayer, N. W. & Co., Philadelphia, Pa.; Aaron, Chas. D., Detroit, Mich.

Burr, C. B., Flint, Mich.; Baker, Jas. B., Charlottesville, Va.; Bowman, A. H., Deadwood, S. D.; Bausman, A. B., Chicago, Ill.; Breedlove, J. W., Ft. Smith, Ark.; Brown, F. F., Adv. Agency, New York, N. Y.; Beach, H. H. A., Boston, Mass.; Brannon, L., Joliet, Ill.; Bird, E. H., Tampa, Fla.

Clausen, N. D., Hartford, Ind.; Cordell, E. F., Baltimore, Md.; Cole, Geo. L., Los Angeles, Cal.; Consumers Co., The, Chicago, Ill.; Cerna, David, Galveston, Texas.

Daly, J. N., Orangeville, Ill.; Dixon, Archibald, Henderson, Ky.; Dewey, Richard, Wauwatosa, Wis.; Davis, N. S., Chicago, Ill.

Foot, A. E., Philadelphia, Pa.
Garlington, T. R., Rome, Ga.

Haldensteln, J., (2) New York, N. Y.; Henkel, F. W. E., Chicago, Ill.; Hyde, James Nevins, Chicago, Ill.; Hummel, A. L., Adv. Agency, (2) New York, N. Y.

Irwin, Philrux, Washington, D. C.
Keener, W. T., Chicago, Ill.; Kerr, H. Norman, Chicago, Ill.; Kelly, Howard A., Baltimore, Md.

Logan, H. V., Scranton, Pa.; Lydston, G. Frank, Chicago, Ill.; Leslie, Arthur, New York, N. Y.

Macey, The Fred. Co., Grand Rapids, Mich.; Miller, C. J., Whitewater, Wis.; Mohr, Paul, Cullman, Ala.; Merrick, M. J., Passaic, N. J.; Maltine, Mig. Co., The, New York, N. Y.

Newman, A., Paterson, N. J.; Niles, S. R., Adv. Agency, The, Boston, Mass.; National Home, National Home, Wis.; Nye, H., Enon Valley, Pa.; Parke, Davis & Co., Detroit, Mich.; Parmele, Chas. Roome, New York, N. Y.; Pompe, A. A., Chicago, Ill.; Parsons, James Russell, Jr., Albany, N. Y.

Ryman, H. M., New York, N. Y.; Rogers, A. W., Cleveland, Ohio; Reik, H. O., Baltimore, Md.

St. Charles Condensing Co., St. Charles, Ohio; Schieffelin & Co., New York, N. Y.; Smith, B. M., Davis, W. Va.

Thomas, John D., Washington, D. C.
Williamson, J. H., Pittsburg, Pa.; Wheat, Lewis, Richmond, Va.; Walker, A. B., Canton, Ohio; Whitaker, Alfred, E., Boulder, Colo.

Young, Amos S., Weston, Mich.

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No. 22.

ADDRESS.

ADDRESS OF THE CHAIRMAN OF THE SECTION ON SURGERY AND ANATOMY.

Delivered at the Forty-seventh Annual Meeting of the American
Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY C. A. WHEATON, M.D.
ST. PAUL, MINN.

Gentlemen of the Surgical Section:—Through the agency of our worthy secretary we have been enabled to provide a program of rare promise for the ensuing three days. Custom has established that the presiding officer of the Section on Surgery shall offer some contribution to its proceedings. Such are usually of a scientific character. I believe, however, that fully as much benefit may accrue from a résumé of the needs and obligations of the workers in this department of our ASSOCIATION. In my humble opinion, at a time when the scientific attainments of the representative members of this ASSOCIATION were of a much more mediocre quality, when they met together in general session and deliberated upon the requirements of the profession, and before the days of the segregation of this ASSOCIATION, before the epoch of specialties, these meetings meant something, and much of good immediate and remote resulted. Memory recalls the time when the elder Warren, the elder Gross, Valentine Mott, Pancoast, Rhea Barton, Brainerd, Hodggen, Bigelow and many others of international fame attended these meetings and shed the radiance of their brilliant intellects upon these National gatherings, and the actively working members of the profession at large, who represent the brain and sinew of the American profession, attended regularly with alacrity and enthusiasm, with insatiable appetites to assimilate all that was good and practical that emanated from these master minds. The older members were strengthened, the younger encouraged by their example to renewed efforts. In those days we learned by attrition how little we knew, and how great the magnitude of the possibilities of the future, when so directed. We have our modern Goliaths; we have Senn and Fenger, Cheever and Warren, McBurney and Bull, Wyeth, White, Keen, Morton and Roswell Park, who have all placed indelibly upon the records of this corporate body an inscription which will endure forever; many of whom too often absent themselves from these meetings, depriving us of the benefit of their superior genius and accomplishments. This unfortunate condition of affairs is the logical result of that segregation which I so much deplore. We are individually and collectively proud of the attainments of the AMERICAN MEDICAL ASSOCIATION. We know that by comparison with similar organizations the world over, we do not suffer. This statement needs no defense and is, I believe, conceded, but that a house divided against itself can not

stand, is as true to-day as when spoken centuries ago. We must bring these wanderers back into the fold or our ASSOCIATION will suffer in numbers, influence and proficiency, and the time is not far distant when the AMERICAN MEDICAL ASSOCIATION will be secondary to other organizations, or extinct. I earnestly deprecate this condition of affairs, because it deprives us in our deliberations of the aid of the other members of our profession, whose efforts for the conservation and preservation of life have nothing to do with the knife except in a passive sense, but whose counsel we need, and whose assistance often is absolutely essential in guiding our precious charges to a safe harbor. Where will we land if these leaders in surgery and in medicine, in gynecology and the various other specialties, hold themselves aloof from these gatherings? Sir Edward Jenner gave us vaccination, Morton, Wells and Duncan gave us anesthesia, and Lister a knowledge of surgical cleanliness. We younger men of the present generation felt that we were approaching the surgical millenium with those adjuncts at our command. The surgical license which has resulted has led us into many excesses in surgical procedure. Only a few short years have elapsed since nature's bountiful resources for the protection of human life were revealed, and we are now experiencing the reaction which is an unavoidable consequence of riper experience. Instead of the asexualization of our suffering sisters, we are groping along conservative lines, endeavoring to preserve the organs and functions with which God and nature endowed her. Let us preserve rather than destroy. May we not again invoke the assistance of our absent brethren whose counsel and advice we so much need? The major part of our program is made up of a symposium on the injuries of the cerebro-spinal axis and its bony encasement. I feel confident the subject will be amply covered and fully discussed. It is my earnest hope that in its medico-legal relations, it will receive the attention its importance deserves. The malodorous situation in which the medical witness so often finds himself is due to several causes, chief of which is the motive which inspires his testimony, the legal jugglery of an astute lawyer, and confined by the rulings of the court it compels him to answer "yes" or "no," thus preventing intelligent testimony, baffles justice, humiliates and makes the witness ridiculous in the eyes of both the jury and the public. Our corporations as well as medical witnesses have reason to regret the theories of Erichsen, so long accepted as true, which are now relegated to that professional mausoleum that contains so many entombed medical and surgical fallacies of the past, and by their fuller knowledge derived by scientific research. We now recognize as neurasthenia the Erichsen bugbear of railway spine. We followed the teachings of Erichsen for many years, blindly I think, and it is a question in my mind whether the modern substitute

neurasthenia is not a monster equally desperate and threatening, and which may prove to be another siren that may lead us to commit greater professional inaccuracies and entail greater humiliation. The question of the hour is (in this connection), what can we, as representatives of this body, do to remedy this admitted evil? I, for one, believe that equal justice to both plaintiff and defendant will not obtain until such time as the so-called expert is placed by statute beyond the influence of monetary considerations. I sincerely hope that the many able papers about to be presented before this Section and the resulting discussions will elucidate an intelligent solution of this vexed question of medical ethics.

In conclusion, I do not wish to be understood as disparaging one's individual evolution in a special line, for God knows we are all weak enough in any of them, but with a view of maintaining the integrity of this ASSOCIATION, and particularly the Surgical Section, for it is an important integral part of the whole, and its life and future usefulness depend upon the hearty coöperation of the pioneers who have hewn the way, and made it possible for the younger and less experienced to follow and participate in the formation of a professional fabric which will be a credit to our leaders, add to the laurels of the American profession, and amalgamate and strengthen this organization. I venture to say that there is not a successful specialist in any branch to-day, who is not in a large measure dependent upon his "general medicine" brethren for his following and success, and if my premises are correct he is obligated to attend these gatherings, participate in their labors and reap the benefits justly earned. If he is a man of stout heart, a good campaigner, and has a large income, he may be able to attend all the other association meetings, but to this one he should pledge his special fealty because of its National character, because of its cosmopolitan personality which makes us feel so interdependent, and finally because the character of work done by this Section reflects, in a large degree, the quality of the whole.

ORIGINAL ARTICLES.

SUBPHRENIC ABSCESS AND ITS RELATION TO PYOTHORAX.

Read in the Section on Surgery and Anatomy at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY CARL BECK, M.D.,

PROFESSOR OF SURGERY, NEW YORK SCHOOL OF CLINICAL MEDICINE; SURGEON TO ST. MARK'S HOSPITAL, GERMAN POLIKLINIK, WEST SIDE GERMAN DISPENSARY; CONSULTING SURGEON H. S. G. S. ORPHAN ASYLUM, ETC., NEW YORK.

Among five cases of subphrenic abscess which I observed during the last six years, I could but twice make a correct diagnosis before operation. In two cases I diagnosed pyothorax, the symptoms being those made known by the more or less exhaustive descriptions of modern writers. From the study of the current literature on this subject, as well as from the reports of friends I know, however, that I do not assume an isolated position in this connection, and that pyothorax is very often confounded with subphrenic abscess—not unfrequently even after operation. Such errors impressed me gravely with the important necessity of widening our limited diagnostic knowledge upon this neglected subject. Practically this error, especially if made by a surgeon, is no great misfortune for the patient. It differs but little

whether the abscess is located above or below the diaphragm, as the essential part of the treatment in either condition is the same, namely, free opening. But manifestly from a scientific standpoint it is most desirable to know before the operation, whether pyothorax or subphrenic abscess is present.

Increased knowledge would certainly awaken the interest of the profession much more closely upon this Proteus-like disease. When recognized at its earliest possible stage it will give the surgeon most favorable possible chance for success. It will not then happen that patients who might be easily saved by the surgical knife, will be treated for tuberculosis pulmonum until the autopsy reveals that they succumbed to a pus collection in the subphrenic space.

I may even venture so far as to maintain that subphrenic abscess now takes the rank of appendicitis of yore, when an occasional autopsy demonstrated that under extremely rare circumstances perforation of the vermiform appendix, caused by "the obligate grape-seed," may occur, "a cure in such unfortunate cases of course being out of question."

Great was the change that such a short time brought forth! While experienced surgeons had seen one or two such cases during their lives, the leading surgeons of to-day count their cases by the hundreds. Is this due to appendicitis now being a more frequent disease than formerly? Probably not. It is the extensive knowledge gained particularly through the efforts of American surgeons by their autopsies *in vivo*.

As soon as the profession at large will take the same interest in subphrenic abscess as they do now in appendicitis the number of cases, which in the whole present literature amounts to less than two hundred, will rapidly swell to an enormous number and accordingly the prognosis, except in those of malignant origin, will be most favorable.

The history is a most important guide in differentiation. In subphrenic abscess there is generally a history of previous abdominal disturbance. There is no history of cough and expectoration, as in pyothorax. The heart is little; if at all, displaced and there is no excessive action of the thorax or of the intercostal spaces. In the lungs, vesicular breathing is found below the clavicle. Pectoral fremitus is also clearly perceptible. There is a well-marked limit to the region of vesicular breathing, below which the expiration-murmur is replaced by amphoric sounds. Deep inspiration pushes the boundary line of the region of vesicular breathing much farther down, into areas in which formerly no respiratory murmur could be perceived. This would indicate a well-marked separation between the lungs and the abscess cavity, the boundary line of the lungs protruding toward the abscess cavity during deep inspiration.

It is sometimes impossible to distinguish an encysted pyothorax from a subphrenic abscess. The pathognomonic signs of such effusions urged by Leyden were absence of cough and slight expectoration, slight displacement of the heart and rapid change of note if the patient is rapidly turned. But, according to my observations, pleuritic effusion, particularly pyothorax, sometimes occurs without these symptoms.

The motions of the exploratory needle introduced into the abscess, were also regarded as pathognomonic by Fuerbringer. But, bearing in mind that in subphrenic abscess the function of the diaphragm is greatly impaired and that, furthermore, the point of the exploratory needle may be fixed by the diaphragm

as well as by the abscess membrane, neither the presence nor the absence of the motions can be regarded as determining pathognomonic factors.

If the diaphragm, being pushed up high, tightly adheres to the thoracic walls the needle may invade the subphrenic abscess without being fixed by the diaphragm: consequently, even if the diaphragm should still be able to make respiratory movements, the needle would not necessarily be moved by them.

The value of Litten's diaphragm-phenomenon is not yet established. Jendrassik asserts his ability to note a well-marked concave undulating curve parallel to the costal margins in the manumary as well as the axillary line during inspiration. In one of his cases he based the diagnosis of subphrenic abscess upon this phenomenon. The correctness thereof was demonstrated by subsequent operation.

Pfuhl recommended manometry of the internal pressure of the abscess as a reliable guide for differentiation between pyothorax and subphrenic abscess. The canula of a trocar after being introduced into the abscess cavity is brought into connection with a manometer, so that the motions of its mercurial column can be registered. If the canula be in the thoracic cavity the canula would fall during inspiration and rise during expiration, while, if the canula be in the subphrenium, the column would rise during inspiration and fall during expiration. This phenomenon would be due to the dilatation of the pleural cavity and to beveling of the contracting diaphragm. So the conditions of pressure in the subphrenium would be inversely proportionate to the pyothoracic cavity; but regarding the fact, that in all cases except those of very recent date the contractility of the diaphragm is greatly impaired, if not totally annulled, by over-extension as well as by permanent absorption of toxic products, it can hardly be expected that it still possesses power sufficient to increase the pressure in the subphrenic space and to diminish it in a pyothoracic cavity.

Jaffé simply advises controlling the velocity of the pus as it flows through a trocar canula and to observe the difference in the amount of pus discharging during expiration and inspiration. If the amount were smaller during expiration the pus collection would be situated below, if during inspiration, it would be above the diaphragm; but for the same reasons as given for the Pfuhl experiments, these ingenious suggestions are unreliable.

All these points go to show that, aside from the history, there are but few absolutely reliable pathognomonic data for the diagnosis of subphrenic abscess. Practically, however, the main question will always remain as to the presence of an abscess. Whenever suspicion exists the introduction of the exploratory needle is a matter of course. The same aseptic precautions should be observed as in any other operation. The skin of the patient, as well as the hands of the surgeon, should be rendered clean, and the syringe and needle thoroughly sterile. If the first trial be negative, the needle should be introduced several times into different portions, as the pus cavity may either be of small extent or may contain a cheesy accumulation, or finally, may be divided into several small minor cavities by adhesions.

In the first event the cavity may be missed altogether by the exploratory needle, and in the second

the needle being introduced into the solid cheesy mass, can draw no pus. After each negative result, therefore, a wire should be pushed through the needle (which must not be of too small a caliber). Thus, some pus which had remained adherent to the inner surface of the needle, will become attached to the wire. Occasionally it will be useful to fill the syringe with sterile water after the operation, and force the water through the needle into a Petri dish. In case cheesy masses are present, small particles are sometimes drawn into the caliber of the needle which can not be seen by the unaided eye; but which, by being mixed with the sterile water, can be recognized under the microscope. In case the microscope does not give sufficient information resort should be had to cultures of the fluid.

T. Brown, in a case of subphrenic abscess, which he took for pyothorax until after operation, found cultures of the bacillus coli communis in the aspirated pus. He very properly emphasizes that when pus from this region yields on culture a mixed or pure growth of bacillus coli communis, there is a strong probability that the point of suppuration is situated below the diaphragm.

The treatment of subphrenic abscess, as alluded to above, is practically the same as that of pyothorax, that is, resection of a piece of rib, the subphrenic abscess generally being within the extent of the ribs. Only resection secures a sufficiently wide opening for thorough evacuation.

As a rule, the eighth, ninth or tenth rib, preferably in the median axillary line, is selected. If the abscess be large, in subphrenic abscess as well as in pyothorax, I have recently made it a rule to resect two or three ribs in order to be able to pack the whole cavity with gauze, which procedure seems to me to be the ideal treatment of any abscess. If the abscess be small, it will not generally be found within the axillary line; then the exploratory needle will always indicate the ultimate route of the incision line. Exceptionally such abscesses may be reached below the costal arches or the xiphoid process.

As to the question whether in the subphrenic abscess the pleuræ adhere or whether they present a cavity filled with serum or pus, it can be stated, that, although of great importance for prognostic purposes, it makes little difference in regard to the surgical proceedings indicated. It is still a widely accepted assumption, that if the pleural sac, when in a normal state, should be opened it would be exposed to the dangers of pneumothorax—not to speak of the erroneous fear of infection from the atmosphere or from escaping pus.

But it must not be lost sight of, that it really happens, as it did to me, that having diagnosed pyothorax the pleural sac is found empty, the abscess then, of course, being subdiaphragmatically located, the danger of pneumothorax is practically *nil*. In subphrenic abscess the diaphragm is then pushed so far up toward the thoracic cavity as to be pressed against the thoracic walls to a considerable extent so as to have its summit brought into permanent contact with the costal pleura. It may even have been so much overstretched as to be entirely paralyzed. The lower part of the thorax itself is also so much expanded that its aspirating power is diminished, and if it really should happen, that after the exposure of the pleural sac pneumothorax occur, and a feeble patient suffer shock, the final incision and evacuation may be deferred until the following day.

PERSONAL EXPERIENCE IN SPINAL SURGERY.

Read by title in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

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My personal experience with the surgery of the spinal cord embraces the following cases:

Case 1.—G. W. V., male, 31 years, April 19, 1888, while working at the bottom of an elevator shaft, the car descended upon him, striking the back of his head and shoulders, doubling him over forward with great force and producing fracture of the 11th and 12th dorsal and 1st lumbar vertebrae. He immediately became paraplegic, the bladder and rectum being involved in the paralysis. He was carried to his home and put to bed. November 1, more than six months after the injury, I examined him. He had some troublesome bed-sores in the region of the sacrum and hips and had been confined to his bed ever since the accident. I treated him by extension and plaster-of-Paris jacket, which he wore for more than a year. A zone of plaster-of-Paris, in which iron staples were inserted at three different and equidistant points, was placed tightly around the chest above and a similar belt below the line of fracture. Extension bars were then placed in the staples, which by key and ratchet were lengthened, thus forcibly lifting the superincumbent weight from the point of fracture. He improved gradually under the treatment and is now able to walk with the aid of a cane, but has a shambling gait and has not fully recovered the function of the bladder. He is still at times troubled with trophic sores over the sacrum. He is a pensioner on the list of the Western Union Telegraph Company, and does light work about the building in New York city.

It is impossible to estimate accurately the severity of the paralysis which occurred immediately after the accident. This was a case in which a suit for damages was under consideration, and I have noticed that without exception these cases consciously or unconsciously exaggerate their symptoms. However, there was a well-marked projection of the spines of the vertebrae at the seat of injury, and the persistence of the trophic sores and of the paralysis of the bladder even to this date, testify to a very considerable damage to the spinal cord, and it is more than likely that at the time of injury there was an extravasation of blood connected with the fracture, causing practically a complete paraplegia which in part disappeared by absorption of the clot, and by the support given to the part of the body above the point of fracture by the strong extension which was adjusted.

Case 2.—S. S., male, 9 years; admitted to Mt. Sinai Hospital, May 28, 1889. One week before admission he began to be paralyzed from about the level of the navel down. Complete paraplegia ensued. There was a slight dorsal kyphosis which had not been detected by his parents. Reflexes were absent. During suspension a Sayre jacket was applied, which he wore for three and a half months. September 18, I did a supra-public cystotomy for the relief of a severe cystitis, caused by frequent catheterization and infection.

As the paraplegia was in no way improved on Dec. 3, 1889, I removed the laminae of the fourth, fifth and sixth dorsal vertebrae. As the laminae of the fifth were removed, the dura was seen to bulge for an area about three-quarters of an inch in extent, and on opening at this point, a small round mass of cheesy-looking tubercular material was seen, partly within and partly projecting from the right posterior and lateral aspects of the cord. It was spherical in shape and less than three-quarters of an inch in diameter. It was carefully lifted out with the handle of a scalpel, and the surface of the cavity left was mopped out with a film of cotton wet with weak bichlorid solution. The boy was kept in bed in the recumbent position. February 1, two months after the operation the act of urination again became voluntary. By February 9

there were signs of motion in the legs and feet. By the 20th he walked well, from which time he continued to improve and has entirely recovered. Five years after the operation, when I last saw him, he could run, jump, dance, and do anything with his feet and legs.

Case 3.—G. D., male, 10 years; June 28, 1890, fell a distance of about twenty feet, striking upon the back, and became immediately totally paraplegic without at any time losing consciousness. The rectum and bladder were involved in the paralysis. For six weeks he was treated with a Sayre plaster-of-Paris jacket, but as he improved in no sense, he was brought to me for operation through the courtesy of Drs. Gibney, Watson and McLaughlin. He was in good general condition, but there was absence of motion from the level of the iliac spines down and no sensation from the junction of the middle with the upper thirds of thighs to the toes; there was also constant overflow of urine. There was no well marked kyphosis in this case, but from the line of motor paralysis it was decided that the seat of compression was near the dorso-lumbar junction.

Feb. 26, 1891, I removed the laminae of the 11th and 12th dorsal and 1st lumbar vertebrae. The dura when exposed and opened was greatly thickened and there was evidently a *chronic pachymeningitis*. The cord was pale in color, much diminished in size and soft to the touch; no direct compression by depressed bone was discoverable; the wound was closed as usual. The patient recovered promptly, but without any improvement, and died of gradual exhaustion in April, 1894, more than three years after the operation. In this case I am of the opinion that the crushing of the bodies was so slight that no deformity occurred. Extra-dural hemorrhage occurred producing compression and with the traumatism a *pachymeningitis* with permanent degeneration of the cord from pressure and anemia. The same condition resulted in the following case:

Case 4.—S. L., male, 16 years, in good health; fell January, 1894, striking on his back and head upon the floor. After three hours of unconsciousness, he realized that both lower extremities were paralyzed, as to motion and sensation. Rectum and bladder were also paralyzed. For several days after the injury he had chills or rigors, followed by high temperature. He was treated by his physician by careful attention to the bladder and bowels, nutritious diet, and the prevention of bed-sores, for six weeks after the accident, March 8, when he came under my care. He was seen by Dr. Sachs in consultation and it was found that there was complete loss of motion and sensation below the level of the 9th dorsal vertebra behind to near the umbilicus in front. The variations of the temperature in this case present an interesting study.

March 8, 6 A.M., 99.6; 9 P.M., 103.7. March 9, 6 A.M., 104.4; 8 A.M., 102.5; 11 A.M., 104.3; 12 noon, 103.5; 3 P.M., 104.7; 6 P.M., 102.2; 9 P.M., 103.5. From 9 P.M., March 9, it steadily declined and at 6 A.M., March 10, it fell to 97. By 3 P.M., it was 103.5. March 11, 12 and 13 there was little change from 101 to 103; March 14, it fell at 9 A.M. to 99.4; 15 and 16, about 99 to 100; 17, at 9 A.M., 101 to 102, a chill came on and the temperature rose rapidly to 104; 18 and 19, about 100; 20, chill, 103.4; 21, chill, 105; 22, 102 to 104; 23, 100 to 101, operation; 24, 102; 25, 100 to 104; 26, 101 to 105.8; 27, 101 to 105.8; 28, 100 to 104.8; 29, 101.5 to 103.3; 30, 102; 31, 97 to 102.2; April 1, 101 to 105.2; 2, 102 and fell to 100; 3, 101, at 3 P.M. it fell to 98, and by 5 P.M., was 103; 6, chill at 3 A.M., 103.4; 7, 99; 8, 105; 9, 101; 10, 103; 11, 101 to 103.8; 12, 99 to 100; 13, 100 to 101; 14, 6 A.M. chill, 102; by 3 P.M., 99; 15, 103.5, chill; 16, 9 A.M., 99; 6 P.M., 105.2; 17, 6 A.M., 103.3; at noon he died, temperature 102.

On March 23, I removed the laminae of the ninth, tenth and eleventh and part of the eighth dorsal vertebrae. Between the dura and the bones was a layer of lymph varying from one-eighth to one-fourth of an inch in thickness, which could be lifted off by carefully scraping with the dull scissors. This extended upward and downward as far as the canal was exposed. This membrane was like the rich plastic lymph which covers the intestinal peritoneum in some forms of

appendicitis. The dura was incised for four inches and a free quantity of cerebro-spinal fluid escaped. The cord was not bruised or divided, nor did it appear to have been injured in any way, but it was about one-half the normal size and paler in color. The patient rallied well from the operation. The variations in pulse and temperature which were present for three weeks before the operation persisted to the end. The urine for some weeks before the operation and after this was ammoniacal in odor and contained pus, necessitating irrigation every six to ten hours with warm Thiersch's solution. He gradually and steadily declined from the day of injury to April 17, the date of death. The wound healed without supuration. The cerebro-spinal fluid escaped from the wound in varying quantity to about six days before death, when the last drainage opening was closed. An autopsy was refused, much to my regret.

These two cases are unusual in my experience. In neither case was there an appreciable injury to the spinal column or cord. At the time of the accident there was evidently an extra-dural hemorrhage, due in all probability to the breaking loose of some of the veins which pass out from the bodies of the vertebrae posteriorly. This hemorrhage exercised a compression upon the cord for a considerable distance, gradually causing atrophy. The presence of the clot produced a pachymeningitis hemorrhagica externa, and the wide varying temperature resulted from this lesion. The cystitis which existed would not have caused such extremes of heat or rapid variations. Moreover the bladder was kept clear by irrigation.

Case 5.—Charles T., 10 years, of Newman, Ga., fell from a tree, a distance of about fifteen feet, in 1892, and suffered instant paraplegia. Four months after the injury he was brought to me. There was complete paralysis of motion and sensation from the level of the umbilicus down, including the rectum and bladder. The bladder did not overflow, but, when it was fairly distended with urine, his father had observed that by tapping with the finger on the abdomen just over the bladder, this organ would contract and empty itself of its contents in practically a normal manner. There was a recognizable projection of the spines above and below the seventh dorsal vertebra.

Removal of the laminae of the sixth, seventh and eighth dorsal demonstrated a fracture with laceration of the cord which was completely destroyed. No improvement followed the operation. The boy is still living, nearly four years after the operation, and is in good physical condition. His mind is more than ordinarily well developed with remarkable power of memory amounting in this direction to precocity. He still causes evacuation of the bladder by beating a tattoo over this organ.

Case 6.—H. A., male, 21 years, Sept. 1, 1889, was thrown from the cowcatcher of a locomotive on which he was riding, struck upon the rail and bounded from the track. He was picked up unconscious. When consciousness was restored he was paralyzed from his navel down, including the bladder and rectum. There were severe pains in the legs and feet.

April 30, 1890, I removed the laminae of the last two dorsal and first lumbar vertebrae. In crushing, the bones had impinged upon the cord, which was partly divided, and the undivided part was compressed between the laminae of the vertebra above and the crushed and displaced body below. Removal of the laminae relieved compression to a certain extent. When he recovered from the anesthetic, it was noticed that there was immediate slight improvement in motion, especially in the feet. This continued and now, in 1896, six years after the operation, he has

fairly good use of the lower extremities; can flex and extend thighs and legs and the anesthesia has disappeared above the knees. He uses one crutch and a cane and with these is able to get about. Within a year he came from his home, a distance of several miles unaccompanied, taking street cars and walking, to present himself at my request at the New York Academy of Medicine.

Case 7.—J. C., 31 years; Mississippi, April, 1893, while in good health, was shot by robbers: six pistol balls, 38-caliber, entered the body at short range and five of them lodged. The first missile passed through the alveolus of the left upper maxilla, wounded the tongue and lodged in the pterygo-maxillary fossa. This bullet I removed. The second ball fractured the right clavicle and was buried in the trapezius muscle and was also removed. The third bullet struck the skull at the occipital protuberance and remained lodged in the muscle at the back of the head and neck. A fourth missile struck a rib and again left the body. A fifth lodged in the deep muscles of the back. At the sixth shot he fell, conscious but paralyzed in the lower half of the body. This ball passed through the skin of the back two inches to the right of the spinous processes, and entered the spinal canal through the right laminae of the third and fourth dorsal vertebrae. Nov. 20, 1893, over six months after the injury, I saw this patient. There was complete muscular and sensory paralysis below a line starting near the sixth dorsal spine and passing parallel with the ribs to near the ensiform cartilage of the sternum. The bladder and rectum were also paralyzed.

Nov. 22, 1893.—Operation, during which I tracked the bullet to the spinal cord. It entered, cutting a plug out of the right laminae of the third and fourth dorsal vertebrae. A rim of lead was found adherent to this hole of entrance. The bullet passed forward, cutting the dura on the right side and the right portion of the cord, and passed beyond reach into the body of the vertebra just in front. Several spiculae of bone were found in the cord, and these had destroyed that portion not divided by the missile. The patient recovered from the operation in no way improved, excepting by the removal of the bullet from the nasopharynx and died about seven months after the operation from exhaustion due to bed-sores, cystitis and interference with the alimentary canal.

Case 8.—S. E. R., private, Troop "C," Third U. S. Cavalry, 20 years; June 19, 1895, while in the act of diving in Lake Champlain, struck violently upon his head and suffered immediate paraplegia. On being taken from the water he was found to be paralyzed as to motion and sensation from the diaphragm down. The paralysis also involved the region of distribution of the ulnar nerves, and the rectum and the bladder.

July 7 he was brought to Fort Columbus, where I saw him in consultation with Major John Van R. Hoff, Surgeon, U. S. A. The injury was located between the seventh cervical and the fourth dorsal, and it was very probable that the bodies of these vertebrae were crushed. Operation was not deemed advisable in this case as there was little doubt that the cord had been destroyed at the time of the injury, and that too long a period had elapsed to justify the hope of relief. The usual trophic bed-sores over the sacrum appeared. The patient was discharged from the service in December, 1895, and is now an inmate of the Soldier's Home in Washington city. His general condition remains unchanged.

Case 9.—L. S., 16 years, personal and family history negative, Oct. 7, 1895, fell one flight of stairs, striking on right sacral region; could not get up but was not unconscious. Admitted to Mt. Sinai Hospital Oct. 9, 1895.

Examination showed a projection over the spine of the seventh cervical vertebra. Head was held stiff and rigid. All voluntary motion of the lower extremities and lower portion of trunk, including bladder and rectum, suspended; was able to move arms, but not without great difficulty; anesthesia from level of the lower portion of the scapula down, and down

the inner side of both arms, ulnar distribution. Reflexes suspended. On the day of admission, October 9, the pulse varied from 40 to 52; respiration, 20; temperature normal. October 10, pulse 56 to 75; respiration 18 to 24; temperature, 99 to 104. October 11, pulse, 42 to 80; respiration, 11 to 34; temperature varying from 96.6 to 104 degrees. October 12, pulse 30 to 98; respiration 9 to 16; temperature 91 to 95.2 degrees.

The disturbance in body temperature and in the respiratory and circulatory centers, which is not uncommon in these cases of injury of the spinal cord and membrane, may be observed in the following record of this case for the third day after admission:

Oct. 12.	Temp.	Resp.	Pulse.
1 A.M.	96	12	42
3 A.M.	95.8	12	44
5 A.M.	93	14	46
7 A.M.	92.5	16	98
8 A.M.	90.8	14	45
10 A.M.	92	9	42
12 Noon	91.8	10	36
2 P.M.	91.8	9	30
4 P.M.	91.8	9	30
6 P.M.	92.4	20	35
8 P.M.	93.6	9	36
10 P.M.	94.9	9	38
12 Midnight	95.2	10	43

October 13 the pulse never went above 48 and was as low as 42; respiration, 10 to 21; temperature, 95.4 to 100.8. October 14, pulse, 45 to 55; respiration, 14 to 21; temperature, 100.2 to 101.4. October 15, highest temperature was 101.3, and lowest 99.8; respiration, 13 to 18; pulse, 42 to 50.

There was scarcely any variation from this condition until after October 20, when the temperature rose to 103, respiration, 15 to 20; pulse, 45 to 55. About the same on the 22d and 23d. Again on the 26th the temperature rose to 103, and never got lower than 101; pulse, 50 to 70; respiration, 18 to 20. From this time on the pulse began to grow very rapid and was 70 to 86 on October 31. On November 1, 2 and 3 it was as high as 96 beats to the minute; respiration on these days was from 24 to 28; highest temperature, 104.6.

There is nothing further of interest in this case. The patient is still living and has complete paraplegia from the level of the apices of the scapulæ. The usual bed-sores due to trophic disturbance, are present over the sacrum. The fracture was due to contre-coup, the patient striking only on the sacrum.

Case 10. W. W., 27 years, of Rockaway, N. Y., a laborer in good physical condition. Aug. 3, 1895, while leaning well forward, he was struck over the spines of the tenth, eleventh and twelfth dorsal vertebrae by a stone weighing about twenty pounds, as estimated, which fell from a height of about ten feet; he fell to the ground, having become instantly paralyzed in both lower extremities.

August 11, eight days after the injury, having seen the patient in consultation with Drs. Stephen Pierson and J. H. O'Reilly, of Morristown, N. J., I removed the laminae of the tenth, eleventh and twelfth dorsal vertebrae. Some fragments of the laminae had been driven down upon the dura, but had not perforated its membrane, only mashing and bruising the spinal cord, which was not, however, entirely severed; there was no hemorrhage within the dura, which was immediately closed by interrupted sutures of fine sterile catgut. At the time of operation there was complete paralysis of motion in both lower extremities and of the bladder and rectum. The line of anesthesia extended in the arc of a circle about six inches below the umbilicus in front and about the same level posteriorly. The third day after the operation the patient believed there was improvement in motion,

and was able to move the foot of the right side, which he could not do before. This improvement, however, was only temporary, for in a letter, dated April 19, 1896, from Dr. F. W. Flagge, who had charge of the patient, he says:

"Walton thinks there has been some improvement in motion, but I doubt it. His feet and ankles swell during the day, but this disappears by morning. His legs jump when touched, the knees jerking together; there are stinging sensations at times in the thighs and legs, and pain shoots down to the toes, beginning at the calf of the leg. He also suffers from inflammation of the bladder. The urine does not overflow now, all the time, as it did at first; sometimes as much as two hours elapse without any coming away, then it comes in a spurt in no way controlled or controllable by the patient. Pulse, 96 to 104; temperature, normal; respiration, 20; skin cool and moist; has lost weight. Large bed-sores formed on the prominences of the sacrum, but those are healing. Severe priapism occurs every day; bowels respond to cathartics in large doses, and he has the usual sensations in the bowels after taking medicine but has no feeling in the rectum."

Case 11.—J. H., 19 years; physical condition excellent. Aug. 12, 1895, while sitting on the railing of a porch, it broke and he fell backward about eight feet, striking directly upon the head, causing violent acute flexion of the chin upon the chest. He remained motionless, and when picked up by the by-standers screamed with pain. He was seen within a few minutes of the accident by Prof. Richard Douglas, of Nashville, who found every evidence of profound shock, rapid pulse, shallow respiration, extreme pallor; he was perfectly conscious and complained of intense pain in the back of the neck, which was greatly increased by the slightest motion. There was complete paralysis of both motion and sensation in the trunk and both lower extremities, the line of anesthesia being one inch above the level of the nipple. The right arm was partially paralyzed, with complete anesthesia in the distribution of the ulnar nerve. Prof. Duncan Eve saw the case in consultation. There was a decided depression over the region of the fifth cervical, and a diagnosis of fracture of the cervical vertebrae, probably the fourth and fifth, with pressure on the laceration of the cord, was made. The patient was placed upon a hard mattress and extension made from the chin and occiput, counter-extension being made by elevating the head of the bed: an ice-bag was applied over the seat of the injury. There was marked elevation of the temperature in a few hours and a great thirst, severe constipation and incontinence of urine.

Through the courtesy of Drs. Douglas and Eve I was called to this case, arriving on the morning of August 16, four days after the injury. Since that date the line of anesthesia had extended to three inches above the level of the nipple, and in the left arm paralysis of motion was appearing. The steadily ascending involvement of the cord already encroached upon the roots of origin of the phrenic nerves and convinced me that death would result in a very few days by extension of paralysis, and that, however hopeless operative interference might be, it was all that was left to be advised. The condition was clearly explained to the parties in interest and operation was accepted.

With the assistance of Drs. Douglas and Eve and the staff of Dr. Douglas's private hospital in Nashville, to which the patient had been carried, I performed the operation of laminectomy, removing the spines and laminae of the fourth, fifth and sixth cervical vertebrae. The fifth was found to have been fractured on both sides close to the origin of the lamina from the body of the vertebra, and again fractured near the junction of the two laminae or bifurcated

spine. One side of the fractured lamina had been driven forcibly upon the substance of the cord, crushing and almost completely dividing it at the level of the body of the fifth cervical, without penetrating the dura. The dura was opened, the cord was found to be pulpified but there was no hemorrhage within the membranes.

The patient bore the operation well; no evidence of shock. The temperature six hours after the operation rose to 105. No improvement followed and no material change took place until the sixth day after the operation. The patient then developed well-marked hypostatic pneumonia and died from respiratory failure on August 24, twelve days after the injury and eight days after the operation.

The temperature, pulse and respiration ran as follows:

	Tempera- ture.	Pulse.	Respi- ration.
First day. . .	100 to 104.2	120 to 75	28 to 16
Second day. . .	103.3 to 102.1	120 to 100	22 to 16
Third day. . .	103 to 99	100 to 80	20 to 13
Fourth day. . .	103 to 101	90 to 80	20 to 22
Fifth day ¹ . . .	104.3 to 102	114 to 100	22 to 32
Sixth day. . .	104 to 100	104 to 112	19 to 18
Seventh day. . .	100 to 104	104 to 92	15 to 24
Eighth day. . .	101 to 104	80 to 100	15 to 28
Ninth day. . .	101 to 105	80 to 96	24 to 34
Tenth day. . .	103 to 104	88 to 96	28 to 34
Eleventh day. . .	103 to 104	88 to 96	24 to 36
Twelfth day. . .	102 to 105	88 to 90	40 to 30
Thirteenth day	105 to 107.2	86 to 120	27 to 40

Patient died at 2:40 P.M.

It is evident that interference with the function of the phrenic nerve was present in this case from the moment of injury. The filament of the fifth cervical nerve which goes to the phrenic, was involved by the fracture. The ascending degeneration of the cord involved in succession the fourth and third cervical, ultimately producing paralysis of the phrenics, thus impairing respiration and inducing hypostatic congestion of the lungs.

In an analysis of the foregoing cases, the following points seem to me of practical importance.

In Case 2 there was compression of the cord with paraplegia, due to the presence of a tuberculous neoplasm. This paraplegia had persisted from May 28, 1889, to Dec. 3, 1889, a little over six months. The tumor was removed and the functions of the cord were restored. While the character of the compression was sufficient to interfere with the conductive power of motion and sensation, these functions being completely suspended for six months, the ascending and descending degeneration of the cord evidently took place in so slight a degree that the conductivity of the cord was restored after the removal of the compression.

In Cases 3 and 4 there were no external evidences of fracture, and while I am convinced that extra-dural hemorrhage occurred in both of these cases, due to otherwise insignificant injury of the bodies of the vertebrae, thus rupturing some of the veins which pass out of these masses of bone, I am sure that no compression occurred from displaced bone. There was no projection or depression of the spines in either one of these cases, a condition which in all the other cases of fracture pointed very directly to the seat of injury. The appearance of the spinal cord in these two cases was unlike that in any of the others; it was very much reduced in size at the point at which the incision of the dura was made and seemed paler

and more anemic than the others. The paraplegia and the ultimate fatal result in both was due either to pachymeningitis, which was the result of the traumatism, or to general concussion and myelitis which followed in the cord and which condition resulted in degeneration of this organ. That the paraplegia was due to the extra-dural hemorrhage and was local in character, I think is evident from the fact that the line of paralysis did not change in these cases from the day of injury to the day of death; in other words, there was no general atrophy of the cord above the seat of injury.

It will be observed that both of these cases were injured by falling directly upon the back, one falling upon the floor and injuring the head at the same time; the other falling upon the ground, striking upon the back.

In Case 1 the patient was struck on the head and the fracture took place at the dorso-lumbar junction as the man was doubled forward upon himself.

Case 8 was injured while diving, striking upon his head and producing a crushing of the upper two dorsal vertebrae.

Case 9 fell from a height, striking on his sacrum and buttocks, fracture occurring at the cervico-dorsal junction.

Case 11 struck upon the back of the head, fracturing the fifth cervical, no doubt crushing the body and fracturing both laminae at their junction with the body.

Cases 5 and 6 were in all probability lesions caused by *contre-coup*, but upon this point I could not obtain a positive history.

Only two cases were due to *direct* violence; one of these, the remarkable case of gunshot wound of the cord; the other due to the impact of a heavy stone upon the spinous processes of the injured region.

As to the results of the cases given, three were not operated upon. One of these was greatly improved by extension and counter-extension, the fracture occurring in the dorso-lumbar region where this plan of treatment can be satisfactorily carried out. The same treatment was undertaken in the other two cases, but with no improvement in their condition. Both are living but their conditions are decidedly hopeless.

Of the eight cases upon which I operated, one was entirely cured (case of tuberculous tumor); another, the young man who was injured by being thrown in front of a locomotive, although the operation was done eight months after the injury, was in my opinion greatly benefited thereby, and is still living and able to get about with a cane and crutch. The other cases were in no way benefited by operation.

Of these eight operative cases, one died six days after operation, and his death may have been hastened somewhat by the interference, although it is clear that destruction of the spinal cord at the level of the fifth cervical vertebra could not long have been survived without interference, by reason of extension of the ascending degeneration to the branches of the phrenic nerve.

In none of the other cases could a fatal result be charged in any way to the operation. Indeed, in my opinion, when properly performed, the operation involves so slight a risk to life that it should encourage the surgeon to advise this method of exploration in all cases in which the symptoms point to compression of the cord. I would be deterred from advising opera-

¹ Day of operation.

tion in any case by nothing except the great depression of pulse, respiration or temperature which is occasionally met with. In one of my cases, the temperature was down as low as 91 and did not go above 96 in twenty-four hours.

The method of operating I employed in each case is as follows: With the patient in the prone position, reclining somewhat upon one side in order to interfere as little as possible with the movements of respiration, an incision, the center of which is the seat of lesion, seven or eight inches in length is made directly over the spines. Retraction should be made by strong hooks, which controls hemorrhage in good measure; the attachments of the muscles should be cut or scraped from the bones in order to avoid wounding any vessels. In this way the laminae are finally exposed and with a small rongeur are divided and removed one after another until the dura is sufficiently exposed. If there is considerable oozing, this should be stopped by packing with sterile gauze, taking care not to make pressure on the exposed dura. After the wound is entirely dry, the dura is opened by a sharp-pointed knife, cutting down carefully in the middle line until there is an escape of a drop or more of clear cerebro-spinal fluid. Through this primary puncture a dull-pointed grooved director should be inserted, and the dura divided exactly in the middle line as far as necessary. When the fluid escapes the edges of the dura can be held apart by mouse-tooth forceps and the cord inspected. If the latter is touched with the finger it should be very lightly and carefully done; a light, dull-pointed probe should be passed up and down from the point of opening to determine whether or not the compression of the cord exists above or below. In one instance, following this precaution, I found that as the probe was arrested by the projecting bone, I was a inch below the real point of compression. The dura should then be closed by fine interrupted catgut sutures about three-sixteenths of an inch apart and the muscles of the two sides stitched together with strong catgut sutures. Silkworm gut sutures are used for the skin. It is always wise to leave a twist of catgut projecting from the level of the dura and out at the inferior angle of the wound, as some oozing is apt to occur which, if not allowed to escape, would exercise compression upon the cord. Most careful asepsis should be practiced. The patient should remain upon the back for the first week or ten days after the operation. I usually dress the wound about the fourth or fifth day. Patients seem to suffer no material inconvenience from removal of the laminae of two or three vertebrae.

ON THE EXPLORATION OF THE BRAIN WITH A NEEDLE AND SYRINGE THROUGH CAPILLARY HOLES DRILLED THROUGH THE SKULL.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association at Atlanta, Georgia, May 5-8, 1896.

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It is several years ago, in May, 1889, that I first drew the attention of the profession to the value and importance of exploring the brain with a needle through small apertures made in the skull. This

method was proposed to take the place of trephining, *i.e.* removing a ring or bone, before exploring the subdural spaces and the brain. The simplicity of the procedure and its safety recommended it as an easy means within the reach of a greater number than the other more serious and comparatively complicated operation of the trepan. By its ready employment it was expected that many lesions, specially abscesses, cysts and hard tumors, could be earlier diagnosed and located with certainty after exploring by this means the region suspected from the distant symptoms.

To determine first the possible dangers from hemorrhage I conducted a number of experiments on dogs. The manner of proceeding was in thorough accord with the Listerian principles, and the spots for perforation selected with as much care as if an ordinary trepanation was to be performed. The instrument employed was an ordinary stem watchmaker's drill, to which I added an adjustable guard to prevent unlimited penetration of the drill into the brain substance after the penetration of the bones. An important factor the *size of the needle*; it should be at least twice as large as that of an ordinary hypodermic, lest the fluid, if thick, would not be sucked in by the syringe, thus leading to erroneous conclusions. Two dogs were thus treated, twice on each side, away from the middle meningeal artery. The needle penetrated two and one-half inches. After thorough recovery the same two animals were again subjected to the same process exactly. At no time did they show any signs of having thus had their brains explored repeatedly. One dog was killed while under the effects of the anesthetic and the parts exposed and examined thoroughly. All that could be seen was an ecchymotic spot no larger than a flattened pea under the pia mater, no more than could have happened if a crown of bone had been removed before using the exploring needle. Thus it was proved as far as these experiments went that it was possible and practical to explore the brain in several spots at the same sitting without being limited to the space and lines of a ring of trepan. It is only in cases of tumors of the same consistency as the brain, that is soft but not fluid, that the explorations would be of no avail and let matters remain in doubt, but this also would be the case if the trepan had been used instead of a drill. Even then, in some cases the microscopic examination of the particles expelled from the needle might give reliable information. May we not venture to predict that some day this process will be used to aspirate the extravasation of blood in the tissue of the brain or its ventricles in cases of cerebral hemorrhage, spontaneous or traumatic, as we do for a liquid hematoma of the soft parts.

It is also in the early detection of the mastoid and peri-audicular abscesses from middle and internal otitis that the method will afford most important results, whether positive or negative, the latter being then just as important and practical as the former.

Dr. R. Matas, who kindly assisted me in my experiments on the dogs, communicates the following case, which occurred in 1889.

"Patient had suffered for years with a chronic purulent discharge from the left ear and he suspected an abscess of the temporo-sphenoidal lobe compressing the inferior or middle pon-Rolandic region. He says he was so impressed with the simplicity and certainty of the capillary drill punctures that he decided to explore the patient's brain with the hope that if pus

was found, its subsequent evacuation by a large trephine opening might bring relief. It was done, at Barter's point of election for temporo-sphenoidal abscess one and one-half inch behind the center of the external auditory meatus and one and one-half inch above. Through the direct tract in the soft parts, the point of a spiral watchmaker's drill was introduced and a small hole was quickly made which involved the whole thickness of the skull almost through the vitreous plate. The resistance of the vitreous was easily appreciated so that due caution could be observed not to punch the whole drill with the point suddenly into the brain. The perforation of the skull was easily completed with the point of a No. 1 aspirator needle attached to an ordinary hypodermic syringe. The exploring needle (duly sterilized) was then introduced fully two inches into the brain and slowly withdrawn. Unfortunately no pus could be aspirated notwithstanding a perfect vacuum. Another drill hole, one inch in front of the last point and on the same line was made and the needle introduced with the same negative results. No effect upon the patient's condition was noticed when the needle penetrated the brain. Not the slightest variation in the pulse. Nothing to indicate that the two explorations had in any manner complicated the patient's condition. In view of these two negative results and the otherwise hopeless state of the patient we decided to desist from further explorative procedures. The patient succumbed in full coma the same night. No autopsy was performed, but I am satisfied from the failure of the carefully made punctures that there was no abscess and that the pressure symptoms and septic condition were accounted for by meningeal exudation and septic sinus phlebitis."

My growing interest in this subject induced me to undertake extensive bibliographic researches. In this I was most kindly assisted by Dr. W. W. Keen and by Dr. Hermann Gessner.

Apprehensions have been expressed as to the danger of hemorrhage. They are, a priori, not greater than when a crown has been removed and the needle run through the dura or pia mater. The fears are, however, more theoretical than practical, as demonstrated by the experiments related above and also by the experiments of Dr. Spitzka (Proceedings Amer. Neurological Assn., 1887). It has been thoroughly demonstrated that almost all the parts of the brain can be punctured with an exploring needle with impunity under thorough asepsis. This has been done time and again on the lower animals after using the trepan.

On the living human subject, Dr. Spitzka reports the case of a boy where, after trephining, the brain had been punctured in two places.

This case deserves more than passing notice, particularly because it is almost unique in the human subject and also in justice to the pains taken by the conscientious and thorough experimenter to follow it to its extreme limit.

The patient, a boy, aged 11, was thrown from a horse, and sometime afterward his symptoms became aggravated. Trephining at the point of injury was performed and a hypodermic needle introduced three times in various directions. No fluid was obtained. He died comatose three months after operation.

On searching for an indication of the punctures made none could be discovered on the surface of the brain nor in the pia, arachnoid and dura. On care-

fully making three sections of the region involved, three dark bluish lines were found extending vertically to the surface. One, the longest, measuring a centimeter in length, nearly reached the surface, and in the hardened specimen a slight pucker was found to mark the point which it would have reached if continued. The three showed the same composition, coagulated blood; at their deeper ends there was a rusty colored continuation, which microscopic examination showed to be due to the presence of a large number of blood corpuscles in the otherwise normal cerebral tissue. There was no spindle cell nor indication of any inflammatory disturbances whatever in the cortical or medullary tissues, nor did any of the nerve cells, as far as they could be identified, exhibit structural changes. The blood vessels were normal. I could discover no certain indications that any vessel had been wounded. Undoubtedly the three delicate tubular semi-clots represented the entire extent of the permanent damage inflicted by the probe punctures. So far as this case goes the harmlessness of exploring punctures is proven.

The conclusions drawn by the reading of Dr. Spitzka's paper is that practically hypodermic needles may be inserted with impunity, but he thinks that needles should never be introduced in the internal capsules, the contiguous ganglia or the lateral ventricles merely for exploratory purposes, unaided by positive clinical indications of the location of the disease. Surely no exploration should be attempted if no proper symptoms call for it.

In August, 1893, Meinhard Schmidt published in the *Archiv. für Klinische Chirurgie* an article entitled "On Perforations of the Cranium with Subsequent Diagnostic Puncture (explorations) of the Brain," and he mentions a case where this process was used; it gave a negative result, but this was most valuable in itself. The patient succumbed three days after the puncturing, to what proved a fissured fracture of the skull. The needle puncture site in the right temporal lobe, was marked by a fine patched star-shaped ecchymosis in the pia mater, scarcely the size of a lentil; the site of the puncture could not be found in the cortex, so that the direction itself could not be determined. Numerous incisions through the substance of the brain, made in various directions, gave no view of the puncture. There was neither any trace of the tract of the puncture nor any hemorrhage of whatever size to indicate its site. He considers it doubtful that any serious hemorrhage would take place even if a branch of the middle meningeal was traversed, as he thinks that upon the withdrawal of the needle the contraction of the coats will close the opening. The same applies to the middle cerebral. Of course, the tract of the longitudinal and transverse sinuses must be avoided unless they be inflamed, when they must be explored.

Maas, in 1869, mentioned the idea. (*Zur Casuistik und Therapie der Gehirnsabscesse nach eigenen Erfahrungen, Berliner Klinische Wochenschrift, 1869.*) He was at that time an assistant in the Breslau Clinic. However, nothing shows that he has applied it either on the lower animals or on man. He calls the process *Akidopeirastie*, meaning the proof by the needle.

Middeldorf, in 1856 (*Gunsburg's Zeitschrift für Klinische Medicin*), had anticipated Maas and seems to have used the drill on the mastoid process, on the frontal sinus, on encephalocele and encephalohema-

toma, but he does not mention the skull over the brain. He recommends a spoon-shaped drill point which cuts out the inner table of the skull and at the same time does not project through, so that it is less dangerous to the dura mater.

DISCUSSION.

DR. THOMAS H. MANLEY, of New York, said: The author referred to the question of the utility of his method of examining the brain by small punctures, but I question the propriety of using that or any other means of exploration in cases of hemorrhage into the brain substance or between the walls of the skull and the meninges. My experience in treating fractures of the skull has been large and I have some pretty pronounced views as a result of my own experience as to what I think is the safest way of dealing with hemorrhage. The teachings of modern surgery would imply that the rational method is to at once explore for the bleeding point and displace the clot, but I feel sure in those cases in which there is any depression of warmth, it is calculated to do more harm than good. Hemorrhage into the brain substance in certain situations is entirely beyond our reach, assuming that the clot could be safely dislodged. If there be an effusion of blood into the brain, there is no reason why that blood should not undergo rapid absorption the same as elsewhere, in fact more so on account of the high vascularity. It has been my misfortune in trephining and undertaking to displace large blood clots to open the vessels which nature had plugged with clots and my patients bled to death. Others may have had the same experience. A month ago I was called to see the wife of a physician who had slipped on the icy pavements and fallen, striking on the back of her head. She could not stand for a few moments, but after awhile she was able to make her way home. During the day she became conscious of a severe pain in her head, the sight became dimmed and somnolence developed. On the second day after the injury, I was called to see her, when she presented every evidence of fracture. She had complete paralysis of the muscles of the left eye, as well as the entire loss of vision. The right eye was also paralyzed, but the sight was unaffected. There was a slight elevation of temperature, about 100, but no paralysis. The case pointed pretty positively to a hemorrhage, probably into the posterior occipital lobe of the cerebrum, and the question arose what was the best to be done. There was no hemorrhage from the ears or nostrils, but she was developing meningitis. The only thing that pointed to fracture was large ecchymosis into the conjunctivæ and both eyes were distended. A consultation was held with one of the most distinguished neurologists in New York and also with a surgeon who was a relative of the patient, and it being decided that there was a hemorrhage, trephining was suggested. I took a bold stand against that procedure, and I felt so certain my course was right that I said I must withdraw from the case if the trephining was performed, because I believed it would kill the woman. The husband supported me, the skull was not trephined and the woman made a good recovery. As far as hemorrhages into the brain are concerned, I wish others would give us their views. Is it their opinion that we should or should not trephine for hemorrhage? This might be well in suppurated disease of the mastoid and purulent processes stretching along the anterior lateral walls. It strikes me if we undertake to employ this or any other means we should be ready at the same time to go on and do the operation, and the anesthetizing of the patient should be just as complete as for any other operation.

DR. NICHOLAS SLENN of Chicago, said: The paper is a very valuable one and is calculated to add dignity to the Session. I somewhat disagree with the author but some of the ideas he has advanced will lead to very valuable results. From a practical standpoint, I must confess that I have more often been

disappointed than anything else in using the needle. I have never gotten any diagnostic information equal to inspecting and palpating the surface of the brain because diagnostic palpation can be relied upon. If the needle yield a negative result, you will very largely draw an erroneous conclusion. We can not estimate the extent of its diagnostic resources by the size of the cranial cavity, and I think that a small perforation is attended by more danger than by opening the skull; in fact, it is the experience of every surgeon that it is the small wounds that are so prone to trouble us, for obvious reasons. I combine puncture of the brain with a temporary resection of the skull at the point I believe to be the seat of the disease and this temporary resection yields very valuable diagnostic information. In the first place, after having laid the brain free, one can form some idea whether it is necessary to puncture or not. If I am still uncertain, I follow with palpation. These methods will show the presence or absence of an intra-cranial tension. If there is no tension there is no need of a needle puncture, but if there is tension, the needle should be used. It is here where the needle so often yields erroneous information. When I puncture the brain, I always combine with it the modern aspiration. By puncturing the brain carefully in the direction where we have reason to believe an abscess exists, the sensation imparted to the finger is of great value in determining between a solid tumor and a cyst. Increased resistance of the needle will help you. The needle can only give positive results in the case of fluids, pathologic productions such as blood, serum, cysts or abscesses. Again, the needle can not be relied upon as an absolute diagnostic test even in the presence of an abscess or a cyst, but the surgeon may utilize it as a guide to reaching the abscess. I feel therefore that I must look upon the needle only as a diagnostic resource, as an aid in making diagnostic tests. One day after making a temporary resection of the skull, finding no possible indication of an intra-cranial lesion and wishing to explore the brain in different directions in a systematic manner, I made a puncture and was horrified by a sudden movement of the head of the patient. I knew that this sudden movement had resulted in extensive damage to the brain, and I do not wish to repeat a similar experience. You are all aware of the fact that an ordinary exploratory incision can not be relied upon. Another thing, the needle is difficult to sterilize and frequently the apparatus will not work at the proper moment. I wish to substitute for the needle the method of suction by using a bulb that I can empty. This I connect to a rubber tube and attach the trocar, which is movable to the canula and the exhaustive apparatus. The vacuum can always be relied upon in making the suction and I have been very much pleased with this method.

DR. ALEX. HUGH FERGUSON of Chicago said Dr. Souchon's paper is a good one, but from my own experience, I think it is very unreliable and I would not care to rely upon the needle. The same is true of drainage. I remember a case of abscess which had a typical history of middle ear disease, etc., and on exploring with the needle, I could find no abscess but the surface of the brain manifested the signs of inflammation. In certain cases the needle may be very useful, but sometimes the coagulation of the blood is very rapid so that it would not be as serviceable as one might expect. If there is an injury of the brain substance and a good deal of hemorrhage we substitute something else, as for example gauze packing.

DR. SOUCHON, in closing the discussion, said: I intend this needle to be used merely as a preliminary step to be followed immediately by one of the proper methods of treatment. As regards the exploration that has to be done, there are several reasons why the needle is useful. The size of the needle is a very important matter. Sometimes the method will fail upon the first trial because the apparatus does not work properly, or the needle may be rusty or too small. I have seen my assistant exploring with a needle that was too small and no good resulted. I can not emphasize other good points at this time.

EXPLORATION AND TREATMENT OF FISSURES FROM SKULL FRACTURES.

Read in the Section on Surgery and Anatomy at the Forty seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY H. H. A. BEACH, M.D.

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The modern treatment of fractures of the skull, which includes the uncovering of all suspicious areas suggesting depression or the projection of bony spicule toward the dura, the removal of fragments and foreign matter of every description, the arrest of hemorrhage, adequate provision for drainage, faithful observance of asepsis both in operating and dressing, with such attention to the general condition of a patient as may be requisite, is, in a word, the impression that Lister and his teaching have made upon the surgical work of pre-antiseptic days.

The results obtained before that time through the faithful and painstaking application of surgical principles, of which cleanliness as then understood was the corner-stone, are scarcely less astonishing than those of to-day, if just consideration is given the work prosecuted in ignorance of the existence of bacteria and their appalling ravages.

The confidence and boldness with which the surgeon may now undertake explorations involving the gravest consequences, have really been the outcome of protection afforded from the toxic effects of septic disease by the gradual development of aseptic principles. Wonderful advances in saving lives and the brilliant results of daring operating have made the field of cerebral surgery a most attractive one during the past decade. With all the advantages, however, afforded by aseptic precautions, the mortality of skull fractures involving the base remains high. This mortality has an association with such elevation of temperature as to point unmistakably in the direction of septic infection as an explanation, and leads to the doubt of a perfect asepsis in all cases. Without question a certain share of the mortality is inevitable from severity of injury as well as from incidental complications that are independent of sepsis. Crushing injuries of the head with extensive laceration and destruction of tissue, together with abundant hemorrhage, will surely determine a proportion of more or less early and irremediably fatal results.

Of the patients who survive the immediate effects of injury, a number are subject to a comparatively slight rise of temperature for a short time, associated with varying symptoms of concussion, and ultimately recover. The remainder improve for an uncertain period from several days to a week or more, then gradually develop a temperature that, with occasional and irregular fluctuation, rises as the patient gradually sinks to his death. It is possible that of this last group some die from chronic inflammation of brain tissues following their contusion or laceration and the interference with its nutrition through the pressure effects of masses of clot, added to the degenerative changes characteristic of those processes. Progressively high temperatures common to fatal cases, however (though every care prescribed by aseptic rules be followed), and their similarity in other respects to those treated without aseptic precautions make it doubtful, to say the least, if sepsis has been completely eliminated from them.

The reduction of this mortality is a problem that now confronts the surgeon, and as an entering wedge

toward its solution, the importance of a series of observations that will establish beyond doubt the relation of sepsis to the fatal results can not be overestimated. Much may be accomplished by the systematic and accurate observation of all cases of fractured skull where there is any open surface requiring dressing or where any discharge exists, by making bacteriologic cultures, at intervals during life and at the autopsy; briefly, freedom from sepsis should be definitely and unmistakably proved in any fatal case by the unassailable evidence supplied by carefully made bacteriologic tests, to clear it from the suspicion of putrefactive infection. With the belief that such inspections will show cases heretofore unsuspected to be septic, and therefore requiring a more rigid application of aseptic principles, I venture to add that a logical deduction from the same combination of symptoms with wounds in other parts of the body would direct the attention of the surgeon to the vital importance of finding, if possible, the source of infection and applying the proper remedy.

In making this search, one is impressed with the invariable freedom with which the immediate seat of injury is now inspected, cleaned and dressed, relieving in a measure the region of direct violence from the suspicion of contamination.

In considering the more remote sources, the common association of bloody or serous discharges from the ear or nasal passages, continuing for days after the injury, and in some fatal cases to the end, suggests possibilities of bacterial infection through the extension of a fracture by fissures to the internal ear where an old otorrhea can supply the material in abundance for polluting the discharge from the interior of the skull; or, by the destruction of the membrana tympani, establish direct connection on one side with the air through the external auditory meatus and by the Eustachian tube to the cavity of the naso-pharynx, which Paul Raugé terms "the storehouse from which the infective elements passing through the tube into the tympanum are derived." Fissures communicating directly with the nasal cavity are of necessity open to the same infective influences.

A large percentage of those who die from skull fractures have these bloody or serous discharges, also those who survive for more than five or six days and then die. On the other hand, a good proportion of those who recover have the same history; from which it is proper to infer that such discharges are not in themselves necessarily fatal, nor the bony fissure associated with them. Another explanation for fatal cases must be found either in the character of the injury to the brain and its vessels, or that of the fissures through which the discharges escape. Admitting that cases of severe contusion or laceration may die in a few days, or less, with elevated temperatures but without septic infection, until time and observation shall prove that question beyond doubt, we have left as an active factor in the results, the differences in fissures produced by their location, the parts toward which they trend, and the mobility of the bones which they separate.

A fissure through bones fractured with so much force as to leave them loosely connected would be more likely to supply an avenue for infective material to reach the skull cavity than one that could be barely detected and closely resembled a crack in glass or porcelain. The variations between these extremes are common to all fractures and may explain a part,

at least, of the differences of results in cases presenting similar symptoms. Though the flow of blood or serum may be nearly alike in a given number of cases, the quantity is not a safe guide to the extent of bone separation.

I need not dwell upon the difficulty of making the middle ear as aseptic as it should be, to warrant a communicating opening with the brain free from danger. The cavity of the skull stands with that of the peritoneum, in the importance of maintaining perfect aseptic defenses. The most dangerous of the combinations described, a loose fracture extending into a suppurative ear, of long duration, with fresh bloody or serous discharges, suggests a way for attacking less serious cases, by approaching the septic area from the region of the direct injury. By the use of the rongeur, a fissure extending in the direction of the ear can be widened into a channel of half an inch, to the base, through which the brain or dura may be lifted with a blunt retractor and the extent of the fissuring determined. The auricle may then be dissected forward so that a fissure can be followed to the mastoid and into the auditory canal, permitting the protection of its inferior aspect, for a distance, by gauze. Having inserted a protection of gauze between the upper aspect of the fissure and the dura or base of the brain through the channel made by widening the fissure, the latter also may be packed with gauze connecting it with the gauze at the vertex, limiting hemorrhage and providing an excellent drainage apparatus from the vertex to the base of the skull without causing undue brain pressure. With a previous history of a suppurative ear the tympanum should be freshly disinfected after carefully protecting the injured parts. The auricle is then rolled forward and the region included in the aseptic dressing.

As the possibilities of infection can not be estimated before unfavorable symptoms develop, and as it is then too late to institute aseptic measures, however radical, a conservative treatment would naturally include, at the first inspection of the wound, a most rigid asepsis, the following out of fissures with the utmost precision, uncovering the whole circumference of the skull opening for that purpose, and providing unlimited drainage by widening the fissures into loosely connected bone, that extend in the direction of the base.

When nearly 50 per cent of brain abscesses originate in suppurative ear diseases, the isolation of this region from the brain and its attachments during the repair of a fractured skull becomes a serious question; whether, in view of a steadily increasing temperature in spite of our precautions, and in the absence of other causes, it may not be justifiable to make a more radical clearing and asepsis of the ear cavities than can be obtained without anesthesia. The danger associated with such a procedure through the possibility of forcing, by washing under pressure, septic material from the tympanum through the fissure to the interior of the skull, emphasizes the importance of an adequate *primary* asepsis of the ears in fractures connected with them.

Death may follow ear suppuration by injury from below as I have observed in a hospital case some years ago, where an attempt was made to commit suicide by firing a revolver, ball caliber 38, into the neck at a point in front of the sterno-cleido-mastoid muscle and on a level with the angle of the lower jaw. The

wound of entrance passed directly upward between that bone and the mastoid process and perforated the meatus, where the ball was tightly wedged and could be felt from the outside with a probe passed by the ear, as well as through the wound from below. Ready access to the ball was obtained by dissecting the auricle forward. After its removal suppurative middle ear disease followed and the patient died from a large cerebral abscess of the right hemisphere immediately above the infected area as shown by autopsy.

In conclusion I will add one case only as an instance of what the complete exploration and widening of fissures may accomplish in the prevention of infection through its abundant provision for drainage and asepsis.

A well-developed man, M. S., age 36, entered the Massachusetts General Hospital with the history of having been struck on the head with a large piece of coal that had fallen thirty feet. He was conscious, rational and without paralysis. The pupils were equal and reacted to light. Pulse 100 of fair strength. There was bleeding from the right ear and at the parieto-occipital angle a scalp wound two inches long connecting with a depressed fracture. The head was shaved and made aseptic.

Upon uncovering the fracture a circular depression of two inches diameter was found with shelving edges. After removing a few projecting points with the chisel, the fractured bone was elevated and the dura exposed. It was darkened from contusion but not torn. Pulsation was slight when the fragments were removed, and hemorrhage free.

Upon inspection of the opening into the skull a fissure was found on the right border extending in the direction of the right ear. The scalp was then dissected up in the direction of the fissure until the external auditory canal was reached. As the auricle obstructed a complete exploration, the incision was continued in the direction of the mastoid and the bony canal exposed by dislocating the auricle forward, showing an extension of the fissure anterior to the mastoid into the canal. The separation of the fractured bones was complete, permitting their easy displacement, to and from the brain, but not laterally from the line of fracture so as to permit a satisfactory examination.

It was clear that the hemorrhage from this fissure unless arrested promised everything in the way of sepsis. To close it and at the same time supply necessary drainage for the cavity above, it became necessary to widen the fissure to the width of the rongeur (one-half of an inch), from the opening at the vertex to the level of the base. Then it was easy to lift the dura from the region of the fissure and after washing out the cavity to pack it with iodoform gauze as before described. A few silkworm gut sutures through the skin and across the channel helped to keep the gauze from becoming displaced, and over all the usual aseptic dressing was applied, including the external ear.

His temperature reached 101 degrees for one night (the third after the operation), then remained between 100 degrees and normal during the succeeding two weeks. The pulse ranged between 60 and 75. He had a slight headache on the first day after the injury. The gauze drains were gradually removed; upon the thirteenth day the wound was granulating well and he was up and about the ward. There was deafness of the right ear and some facial paralysis of that side.

He was discharged well in two weeks, previous to which his ear was examined by Dr. J. Orne Green, who found that the fracture had involved the labyrinth with the facial and auditory nerves, and made the prognosis of permanent deafness.

DISCUSSION.

The Secretary, Dr. W. L. ESTES, said: It seems to me that the questions involved in this paper should not pass unnoticed, as they confront every surgeon and may occur to every practitioner. Dr. Beach has brought out with great clearness the necessity of disinfection, the production of a septic state and the employment of proper drainage. These are the principles on which every surgeon works. Fractures at the base of the cranium are those which are perhaps least practicable in obtaining thorough asepsis and drainage. It seems to me that physicians do not recognize the necessity of proper disinfection of the avenues of asepsis, i. e., the nares and the external ear. It has been my fortune to have to treat cases which had been seen previously by the family physician who was not accustomed to work in aseptic surgery, and I have found that there has been absolutely no attempt at disinfection of the nasal passages or the external auditory meatus when all the symptoms have led to a fracture involving the base. It seems of the greatest importance that this Section should advocate and impress upon practitioners the absolute importance of disinfection when there is no question about the external cavities being involved. It is my custom to thoroughly douche or spray the nasal cavities, and to plug them anteriorly and posteriorly, if necessary, with some disinfectant gauze. After thorough disinfection of the external auditory canal I plug it also. Now as to drainage, it is sometimes a serious matter to do this in fractures of the lowest basilar indication. If it involves the area which is posterior to the auditory canal, it may be an easy matter, but if it involves the anterior area, it is more difficult. There is no question that the propositions of Dr. Beach are the proper ones. No matter what the danger may be, the greatest danger is in neglecting the matter. It seems of the greatest importance to widen the fissures, if necessary, and to be sure that adequate drainage is provided. The question of hemorrhage is a most dangerous one. The sinuses need not necessarily be injured, but the meningeal vessels would probably be those especially involved. Great care and blunt lifting of the dura will usually permit the securing of proper drainage.

CEREBRAL SURGERY; REPORT OF CASES.

Read in the Section on Surgery and Anatomy, at the Forty seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY J. C. OLIVER, M.D.

CINCINNATI, OHIO.

As this paper is one dealing with the general subject before this Section, I shall simply report cases, knowing that the points in regard to cerebral surgery as a whole will be taken up and discussed by men far abler and more competent than myself.

Case 1.—This case is presented, solely for the purpose of illustrating the very great difficulty which occasionally surrounds our attempt at cerebral localization in traumatic cases.

Robert C., aged 59, finely developed and nourished, February 22, 1896, fell about thirty feet through a dust chute in a cotton factory. Probably remained lying at the bottom of the chute for about one hour before being discovered. I saw him at 8:30 p.m., Feb. 22, 1896, in consultation with Drs. A. R. Walker, W. H. DeWitt and P. W. Good. This was about four hours after the accident.

Examination showed an extensive bruise of the scalp in the median line of the vertex, extending slightly farther to the left than to the right side. No fracture of the skull apparent. There was ptosis on the left side, hemorrhage from the left nostril, motor aphasia, both pupils were midway between contraction and dilatation and did not react. Patient was rest-

less, would arise from the bed and could stand upon his feet. Both arms and legs were used freely. He could understand what was said to him and made efforts to respond but was unsuccessful. No vomiting. Examination of chest revealed fractures of second and third ribs about the angles. The symptoms otherwise were negative.

Diagnosis: Fracture of base of cranium and fractured ribs. A very guarded prognosis was given. An ice-cap was ordered for the head and K. br. given every three hours in scruple doses.

February 23, patient seems some brighter; restlessness much less; sleeps soundly, snores considerably. Ptosis seems somewhat less. Other symptoms about the same. Continued treatment. Slight fever developed to-day. The future history of the case is one of increasing fever and gradually deepening coma. I did not see the case again until after death, he, in the meantime, being under the care of Dr. A. R. Walker. He died at 9:30 A.M., Feb. 26, 1896. Temperature just before death, 105.

Autopsy was made by Dr. Frank Fee, six hours after death. P.M. rigidity well marked. P.M. staining slight. Prominence corresponding to bruised area on vertex, depression anterior and posterior to it. Bruising over left side of chest.

Head: Large effusion of blood in the scalp at the vertex. No fracture. Brain had small bloody effusion in the most posterior and lowest part of the occipital lobes on each side, most marked on the right. Otherwise brain normal.

Meninges: Smoky from beginning inflammation. No pus. Middle meningeal artery of left side ruptured, about a dram of blood effused.

Base of skull: Two distinct fractures, one of left orbital plate and one of left cribriform plate. Fracture not extensive. Skull very thin.

Chest: Second and third ribs fractured posteriorly, fourth, fifth, sixth and seventh fractured near junction with costal cartilages. Heart and lungs normal.

Abdomen: All organs normal except kidneys and liver; these were fatty and the left kidney presented three cysts.

Cause of death: Fracturae basis cranii.

Case 2.—Dr. H. H. Hoppe, Neurologist to the Cincinnati Hospital, had this man in his service. In order to save time I will abridge the medical history and confine myself to the essential points. These were Jacksonian epilepsy, the convulsion always beginning in the left leg, then involving the left arm, then the left side of the face and then becoming general. These convulsions occurred in groups, so that he would have ten to twenty in a day (status epilepticus). Following the convulsion the patient would have a left sided paresis, which would only remain for a few hours. After passing through these attacks, the patient would become maniacal, in which condition he was dangerous to those about him. These were in brief the only points bearing upon diagnosis.

From the above symptoms Dr. Hoppe concluded that some irritation existed in the leg center on the right side of the brain, and turned the case over to me for operation.

On August 31, 1894, after the usual preparation of the patient and site of operation, he was taken to the amphitheater for operation. Chloroform was the anesthetic used. A crescentic incision was made over the right parietal region, the bone having been previously "scored" with an awl to mark the course and location of the Rolandic area. After the flap had been turned back and the hemorrhage controlled, an inch trephine was applied and a button of bone removed over the area corresponding to the leg center. Before using the trephine, there was noted a blue line in the bone running downward and forward, almost parallel to and about one-half inch behind the Rolandic fissure. The opening in the skull was enlarged by means of a rongeur forceps, downward and forward. In the process of enlarging the opening, there was opened a large vein running in the diploe. This vein was what caused the bluish line above noted. It had eroded the inner table of the skull and had caused an absorption of the dura immediately under it, so that there protruded through the dura, a hernia of the pia and brain. I should state, lest the above description be misleading, that there was a varicosity in the vein

about the size of a pea, and that it was at this point that absorption of the outer and inner tables and dura had taken place. The line of the vein was followed with the rongeur forceps, the dura was opened by a crucial incision and both it and the pia were found much thickened and edematous. The convolutions of the brain appeared normal, consequently no further exploration was made.

To arrest the hemorrhage from the vein in the diploe, it was found necessary to close the channel with a piece of sterilized match, this being left *in situ*. The incisions in the dura were sutured with interrupted catgut sutures, the flap from the scalp being closed with a continuous silk suture. The head was enveloped in an aseptic dressing, held in place by a crinoline bandage.

At 7 P.M. on the day of operation, the patient was in good condition, the pulse was good and he was comfortable. The dressing had to be changed because of the blood soaking through it. On September 1, the dressings were reapplied. There was but little external hemorrhage, but a considerable hematoma had formed under the scalp. The edges of the wound were slightly separated with a pair of artery forceps and the blood allowed to escape. Temperature normal. September 6, stitches removed; no suppuration. Examination of special senses negative. For the first two days after operation the patient was restless, irritable, exacting and surly. Since then he has been much more amiable. On September 19, a note says there have been no bad symptoms and he pronounces himself well. September 26, patient complained of pain in the left leg, chiefly in the region of the knee; is unable to explain the same. Examination negative. Says he has had no symptoms such as he formerly had when a convulsion was impending. October 1, he is up and around the ward. Says he feels perfectly well.

Following the operation, the patient experienced a complete cessation of convulsions for a period of six months; after this he began to experience pain in his left leg and there was a gradual return of the convulsions. He re-entered the Cincinnati Hospital June 4, 1895, and I again saw the case with Dr. Hoppe. We believed the return of the convulsions was dependent upon the fact that adhesion of the membranes to the brain had taken place and the irritation came from this condition.

With a view to remedying the condition I again operated upon him. Very dense adhesions were found over the area of the former operation. These were very carefully separated and a plate of gold foil was placed between the surface of the brain and the cranial flap. The operation was a very bloody one.

Following the operation there was nothing of importance to note. The wound healed by primary union. The patient remained in the hospital until October 12, when he was transferred to the Infirmary. In a few days after his transfer I was informed that he had suddenly died during the night. None of the attendants knew the manner of his death but it is supposed he died in a convulsion.

By a piece of good fortune I obtained the opportunity to examine the head. The plate of gold was in position and had accomplished the purpose for which it was inserted. There was no gross lesion of the brain.

Whether the venous varicosity was the cause of the epilepsy or not, is an open question. Dr. P. S. Con-

ner, of Cincinnati, showed me a portion of the occipital bone which had been perforated by a varicose vein. In this case the patient had suffered from epilepsy during life and no other cause than the venous enlargement could be found post-mortem to account for the condition.

Case 3.—This was a private patient of Dr. Jos. Eichberg. The brilliant diagnosis was made by him and we are indebted to him for the medical history.

Wm. S., aged 19; family history negative. The patient had been working in a machine shop. No history of any injury for the last thirteen years. At that time there was a slight scalp wound (superficial) which has left a cicatrix about one-quarter of an inch in length, an inch to the left of the median line over the coronal suture; scalp around the cicatrix was not adherent. Has had no serious ailment until the present time. In June of the present year (1895), a swelling developed about the left eye.

Report of Dr. Jos. Eichberg: On the afternoon of the day of admission, I found, on entering my waiting room, the patient seated in a chair in an attitude of extreme dejection, the head lolling backward on the shoulders and the eyes partially closed, face extremely sallow like the color observed in pyemia or chronic sepsis, and expressive of pain.

When urged to get up, the patient walked into the examining room unaided, but with a slightly staggering gait. There was considerable hesitancy in the understanding of questions, but the answers were prompt, phonation was clear. There was great difficulty in any sustained effort at attention, so that the patient would have to be recalled from a sort of somnolent condition which seemed to supervene a few seconds after any intelligent effort. Patient stated that he had lost 27 pounds in ten weeks and that he suffered great pain over the entire head, pain being constant but accompanied by exacerbations of most intense suffering. The focus of greatest pain was always located on the left side toward the frontal region; from this point the pain radiated to other parts of the head. The bowels had been constipated, but this was possibly due to large doses of morphia necessitated by patient's insomnia, the pain in the head being worse at night. On testing vision it was found to be 20-70 in both eyes, but in the effort of looking at the card the patient would lapse again into stupor. According to the mother's statement, the somnolency had rapidly increased in the last forty-eight hours without any relief of the pain. There was found a paresis on the right side involving the face and both extremities; this existed without the knowledge of the patient or his friends, being too slight to attract attention, and affected the motor functions more than the sensory. Though the patient was a right-handed man, the muscular power of the right hand was manifestly less than the left. The pupils of both eyes were dilated and equal, dilatation existing in spite of the giving of morphia in large doses. Pupils reacted promptly to strong light, becoming dilated almost immediately after the stimulus was withdrawn. The tongue protruded in the median line. With the ophthalmoscope a very characteristic choked disc was found in the left eye. Veins exceedingly tortuous and enlarged; convexity of papilla very evident. The deep reflexes were normal. Slight scar noticed below the supraorbital ridge, where, according to patient's statement, a swelling had been incised two weeks after the onset of his illness. Temperature 98 in the mouth. Pulse 84, irregular and rather hard. Breathing 22, also irregular in rhythm. Lungs normal; heart normal; spleen slightly enlarged; face emaciated.

Diagnosis: Cerebral abscess of left frontal lobe,

producing paresis of right side from indirect pressure against internal capsule.

Dr. Eichberg asked me to see the case with him on the evening of Sept. 11, 1895, and to come prepared to operate for cerebral abscess. We saw the patient together at about 9 P.M. A young man of good physique sat in a chair apparently oblivious to all that was going on around him. The other symptoms indicating an operation have been so well described that I shall not repeat what has already been said. This stupid condition was so marked that I asked his father whether the boy had ever been bright or intelligent. He assured me that the boy was naturally bright and was a competent machinist. Arrangements were immediately made for opening the skull. At the consultation with Drs. Eichberg and Kebler, the question of localization had been thoroughly discussed and we agreed that the trephine opening should be made over the left frontal region, as we believed the abscess to be located in that part of the brain, and that the parietic symptoms were due to indirect pressure. A point of interest, and possibly of importance, was that the scar from an old injury (inflicted thirteen years previously) was plainly visible over the left frontal region.

After the scalp had been shaved and sterilized, a horse-shoe shaped incision was made and the tissues rapidly retracted from the bone, an inch and a half trephine was then applied and the button of bone removed. The dura mater bulged strongly into the opening and showed no pulsation; the dura was now opened by crescentic incision and detached from the convolutions. A grooved director was passed into the brain substance in several directions; finally a slight resistance was encountered about one inch below the surface, and when this was overcome by pressure upon the director, pus flowed along the groove. A pair of hemostatic forceps was now passed along the director and the blades spread apart; this permitted a free discharge of the pus. After the pus ceased flowing, I passed my little finger into the cavity and by so doing discovered a second abscess, which was opened by pushing a finger through its limiting membrane. Although the quantity of pus was not measured, I am inclined to believe that I am not overstepping the limits of truth when the quantity is given as three ounces. A large drainage tube was carried into the cavity and gauze packed around it, the ends of the gauze being brought out of the lower angles of the wound. The flap was perforated and the drainage tube brought out of the opening. The edges of the incision were now brought together except at the lowest point, where the gauze was brought out. The usual aseptic dressings were applied and the patient put to bed in very good condition.

After History: Patient recovered very nicely from the anesthetic. When he became conscious, there seemed to be some improvement in his mental condition. Some convergence of the eyes still present, right pupil slightly more dilated than the left. Sept. 12, 1895, the wound was redressed this morning. Considerable pus was present under the flaps; to facilitate the removal of this, a couple of stitches were taken out. The mental condition and paresis are improved. September 13, some convergence of eyes still present. Pupils are equal and react to light and accommodation. Vision for near objects good, but diplopia exists when distant objects are looked at. A considerable edema of the side of the head and face

was present this morning. A few more stitches were removed and the flaps separated by a pair of forceps; this manipulation permitted quite an amount of pus to escape. On the following day, September 14, a fungus cerebri began to present. The drainage tube, which had never been at all satisfactory because of the stopping up of its lumen, was now entirely discarded and gauze drainage alone was used. The patient from this time on showed a steady improvement. The fungus cerebri was allowed to take care of itself, which it did in a most satisfactory manner, finally disappearing about four weeks after the operation. The temperature at no time subsequent to the operation reached 100, and the convalescence was uninterrupted, unless the fungus cerebri could be called an interruption.

One curious feature of the case was the behavior of the pulse during the operation. When fully under the influence of the anesthetic (chloroform), the pulse was about 160 per minute; when the abscess was punctured, the number of beats suddenly fell to about 60 per minute and remained so. At the present time the patient is in perfect condition. He has resumed his occupation, that of a machinist. There are no symptoms of the trouble present. His mind is as good as it ever was.

Case 4.—Mr. C. S. B., aged 26; printer; white, well developed and nourished. Father living and healthy, mother healthy. Had jaundice ten years ago. Had the usual diseases of childhood. Had peritonitis two years ago. Otherwise has been healthy.

The early history of this attack as furnished by Dr. E. E. Sattler is as follows: In July the patient first came to my office with an intense, acute otitis media, drum bulging, fluid in the middle ear, intense suffering. A paracentesis of the drum membrane was made and fluid of a mucous character was evacuated. The fluid at that time was more mucous than purulent and has continued so ever since. About ten days later, the pain increasing and the discharge showing signs of diminishing, the drum membrane in the most prominent part was punctured with relief to the symptoms. The puncture was followed by profuse discharge. Since that time the ear has discharged freely and the patient made daily visits to the office until last Saturday, Oct. 12, 1895. During all this time he has been following his usual avocation, that of a postal clerk.

On Sunday afternoon, October 13, Dr. Sattler was called to see the patient at his residence and found him comatose, pulse about 90, pupils contracted, size of a pin head, slightly reacting to light, Cheyne-Stokes respiration. It was immediately recognized that some serious implication of the brain was present, most probably secondary to the middle ear trouble. A hypodermic of pilocarpin muriate was given, which was followed by profuse diaphoresis. He seemed some better that night, partially came out of the comatose state, made incoherent remarks and at times even recognized his relatives for a moment or so. On Monday he was rational, off and on, but soon sunk into a semi-comatose state from which, however, he could be rallied. Pulse weak and fast, 120. His removal to the hospital was advised in order to have an operation performed upon him. The mastoid has never been involved, but he has had severe headaches occasionally.

The notes of the case taken at the Cincinnati Hospital are as follows: Earache three months and a half ago, for which he consulted an aurist, under whose care he has been ever since. The notes regarding that period are those given above. The present attack began with a severe pain under the left frontal eminence. The patient was depressed and intellect clouded. Stupor increased, he became restless at

times. Yesterday morning the mental condition was worse but he could still answer some questions. Last night he was very restless, had high fever (103), and was delirious. This morning he was partially rational. Mother noticed increasing torpor to-day. He was unconscious upon admission at 5 p.m. Examination of the urine revealed a small quantity of albumin. Examination was as follows: Weight 145 pounds, height 6 feet 2 inches, right half of scalp shaved since arrival in hospital. Semi-comatose condition. Resists movements of head and eyelids; may be partly aroused by questioning, nods head in answer; unable to protrude tongue. Short intervals of consciousness during examination, followed by relapse into stupor.

Cranial Nerves.—First pair: No response to olfactory stimulation by ammonia. Third, fourth and sixth: Divergent strabismus; eyeballs deflected upward and outward; attempts to resist opening of lids by raising right hand; pupils small, equal; reaction to light sluggish. During short periods of consciousness eyes directed more forward but right eye still diverged. Individual ocular muscles can not be examined. Fifth: No response to tactile stimulation; shows appreciation of pin prick over left cheek, left side of nose, right upper cheek and forehead; always uses right hand in attempting to protect himself from examination. Both masseters retract. Seventh: Face not notably drawn to one side; no evident facial palsy. Eighth: Pulse 132, regular, good tension, occasionally intermits; respiration regular, 26; no stertor. Ninth: Patient swallows well; no tremor of tongue. Eleventh: Trapezii resists traction; unable to protrude tongue.

Motor Symptoms.—Upper extremities: Spontaneous movements: power markedly diminished; resists extension of both upper extremities; flexes them spontaneously. Lower extremities: Pigment cicatrix one inch in diameter over right tibia.

Sensation.—No patella reflex nor ankle clonus; some tendency to spasm of flexors of knee; no rigidity of flexors of ankles. Plantar reflex present. Abdominal reflex present and active; epigastric reflex present and active. No response to ordinary sensory stimulation of upper extremities. No response to pain or tactile stimulation of lower extremities below upper third of tibia.

Occasional drawing up of both corners of the mouth, as in trismus, was noticed. The patient was extremely restless, in almost constant motion during the examination.

A consultation was held at 5 p.m., Oct. 15, 1895, with Drs. Thorner, Langdon and Dandridge. From the symptoms presented an opinion was reached that we had to deal with either 1, an abscess located in the temporo-sphenoidal lobe or cerebellum; 2, diffuse purulent meningitis; or 3, a thrombosis of the lateral sinus. The unanimous opinion of the physicians was that it was impossible to distinguish between them and that an exploratory trephining ought to be done, first over the temporo-sphenoidal lobe, and if unsuccessful here, to open over the cerebellum on the right side. This being agreed to, the operation was set for 8 p.m. Drs. Dandridge, Thorner, Robert Sattler, Langdon, Fackler, MacMillan, Tate, Evans and the internes were present. After the usual preparations, the temporo-sphenoidal lobe was located at a point one and three-quarter inches above and one and one-quarter inches behind the center of the external auditory meatus. A half-inch trephine opening was made

here and then enlarged with rongeur forceps. When the dura was reached it was found to be tense but did not bulge. The pulsation of the brain was well marked both to the sense of sight and touch. A flap of the dura mater was then laid down and a grooved director passed into the brain in various directions. No pus nor resistance was found. An artery in the diploe caused considerable hemorrhage but was finally controlled by pressure. The scalp was now stitched in place and the wound closed without drainage. So soon as the former wound was closed, the skin and muscles of the back of the head and neck were laid back by a horseshoe shaped incision. A trephine opening (five-eighths of an inch) was made in the bone on a level slightly below the external occipital protuberance and slightly nearer the mastoid portion of the temporal bone than to the protuberance. The bone was tolerably thick. When the dura was reached it appeared normal, the pulsations were present and marked. After opening the dura, the cerebellum bulged into the wound somewhat. Exploration with a grooved director failed to locate any pus. The wound was sutured and the patient returned to his bed. He lived about forty-five minutes after his return to the ward.

A postmortem examination of the head showed diffuse purulent meningitis involving both the convexity and base. There was marked enlargement of the veins of the pia, and many of them showed dark clots in their lumen. The petrous portion of the temporal bone was carious for a distance of about three-quarters of an inch back from its apex on its superior surface. The upper edge of the carotid canal was partially destroyed and the infection seemed to have followed the line of the vessels, and did not, as is usual in these cases, pass through the roof of the tympanum at its thinnest portion, the tegmen. Examination of the parts showed that the trephine openings were properly located, and that had an abscess existed in either the right temporo-sphenoidal lobe or in the cerebellum, we could readily have evacuated it.

The important question in this case was that of differential diagnosis. It was readily apparent that some grave intracranial condition existed; it was also a fair interpretation of the symptoms to conclude that a meningitis was present, but it was impossible to affirm that the meningitis was *not* dependent upon a localized accumulation of pus which had produced a meningitis by extension of inflammation. The sudden onset, the rapid pulse, high fever (103), contracted pupils irresponsive to light, the restlessness, delirium, trismus, and the absence of localizing symptoms, all spoke in favor of a meningitis. We are all well aware, however, that an abscess may exist in the temporo-sphenoidal lobe or in the cerebellum, without distinct localizing symptoms. The man's condition was desperate, and would certainly have soon terminated fatally unless relief was afforded him. Such relief was impossible save through surgical intervention, hence it was our duty to afford him the chance offered by an operation.

While the termination of the case was an unfavorable one, it presented features of unusual interest. It emphasizes the fact that a differential diagnosis of cerebral abscess is a very difficult one. It also shows conclusively that the brain symptoms following middle ear trouble are not always dependent upon localized accumulations of pus within the brain. Another point of interest is that the mastoid cells escaped

infection. The route pursued by the caries explains why they were not infected.

Trephining for drainage and relief of pressure has been recommended in purulent meningitis, but the results are not brilliant. After some experience in pathologic work, I am convinced that there is another element at work in cases of meningitis besides the pressure and effusion to account for the almost invariably fatal result in these cases. The amount of exudation is ordinarily but small, and the resulting pressure should not be so great as to cause the symptoms and usual termination. The septic element should receive more recognition than is at present accorded it. As is well known, the conditions for absorption of septic matter are most favorable, and it seems reasonable to conclude that death is caused by the septic intoxication rather than by the pressure. If we grant the septic intoxication, we need not be surprised to learn that opening the skull and dura in these cases is not productive of amelioration of the symptoms.

DISCUSSION.

DR. RANSOHOFF, of Cincinnati—In the case reported it is said there was considerable hemorrhage, which is very frequent. Quite recently I have adopted a method by which hemorrhage from the scalp can be reduced to a minimum. Very often, owing to the loss of blood from the division of the dura, and from the cerebral veins after an operation for the removal of a brain tumor, the operation can not be completed at one sitting. Every drop of blood that is saved is of moment, and we all know that under the older methods much blood was lost. The use of the Esmarch strap about the scalp encircling the skull nearly upon a line with the base, is something that every one knows is applied with much difficulty. After much care, sometimes, the scalp sinks down into the orbit and the entire object of the use of the strap is lost, and the hemorrhage is profuse. I will call attention to a method of dividing the scalp without loss of blood, which method is a very simple one, although I have never seen a description of it. I practiced it recently in a case of sarcoma of the dura mater in which the tumor was as large as a small orange, after perforating the skull. It had been operated on twice before on the supposition that it was a wen. To prevent hemorrhage I introduced, about an inch from the surface of the tumor, a continuous chain suture, drawing it tight around the entire line of the incision. When it was drawn tight, which could be done rapidly, the entire area of the skull was made absolutely bloodless, and the incision was made within the line of the chain. When one considers the size of the incision that must be made for trephining, and difficulty of grasping the vessels in the tense scalp, one can readily appreciate how much blood will be saved the patient by using this suture. The first dressing must be changed in twenty-four hours for the removal of the gauze packing, and in that case the sutures can be clipped and removed. The use of this suture for twenty-four hours will not in any way interfere with the vitality of the flap.

The Roentgen Ray and "Second Sight."—Dr. Ottolenghi, of Naples, has suggested, in *Riforma Medica*, that the supposed power of seeing through opaque media, etc., which is claimed by certain hysteric somnambulistic or trance subjects, may have some objective basis in the light of the recent discoveries of Roentgen. The author supposes that in the more or less extra-normal conditions of the nervous system obtaining in this class of patient, the retina may be sensitive to the X-rays, which, under ordinary conditions, fail to produce any impression. This suggestion is only meant by the author to apply to such cases as are inexplicable in any other way.

OBSERVATIONS CONCERNING THE LAW OF PRIVILEGED COMMUNICATIONS BETWEEN PHYSICIAN AND PATIENT, AS APPLICABLE TO THE DUTIES OF RAILWAY SURGEONS.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY HON. TRACY C. BECKER.

BUFFALO, N. Y.

Gentlemen of the Association.—I highly appreciate the honor conferred upon me by being invited to deliver an address at the meeting of the American Academy of Railway Surgeons on some topic connected with the medico-legal aspects of railway surgery; and upon reflection, have deemed it advisable to devote the time allotted to a consideration of the laws concerning "Privileged Communications between Physician and Patient," particularly as regards the application of these laws to the duties of railway surgeons.

As I understand the status of the members of your body, nearly every one of you is under contract of regular employment by some railway company, by which, in cases of accidental injury to its employes or its passengers, it becomes your duty to visit such cases and to give them the benefit of your professional knowledge and skill. If so, you are not, in the strict sense of the term, employed in your professional capacity by the party interested. It, therefore, becomes important for you to be informed as to how far any knowledge or information you may obtain while treating such patients can be disclosed without violation of your legal duties as prescribed by the statutes of the various States in which you perform those duties.

It is a singular and not commonly known fact, that under the English common law, while inviolable secrecy was required to be observed by attorneys with reference to communications which they received from their clients, no protection from disclosure in evidence in a court of justice was extended to communications between a medical man and his patient. The reason for this distinction has been said to be, that the privilege was founded upon considerations of public policy in the administration of justice in the courts. Attorneys were a part of their system, while physicians were no part of that system, and while the compulsory examination of lawyers as to communications received by them from their clients would tend to discourage confidence between client and attorney and to the suppression of truth in litigation, the disclosing of confidences given to physicians could in no way tend to weaken the administration of justice or to render it ineffectual.

The hardness and inequality of this rule, and the danger which was liable to follow from a disclosure by medical men of what they learned from patients as to their past life and family history, and the cause and character of their injuries, diseases and the like, have led to what was believed to be legislative reform in this country, and statutes have been passed in many of the States and Territories restricting disclosures by physicians of information received by them while acting in their professional capacity. Up to September 1895, the following twenty-five States and Territories had statutes of this character, viz., Arkansas, California, Colorado, Idaho, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana,

Nebraska, Nevada, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Utah, Washington, Wisconsin and Wyoming; while in the other States the rule of the English common law is still followed and there are no restrictions upon such disclosures.

In many of the States there is a declaration of the policy of the statute prefixed to it, and this declaration is to the effect that there are particular relations in which it is the policy of the law to encourage confidence and to preserve it inviolable, and that, therefore, the prohibition of the statute is laid.

In California, Idaho, Minnesota, Montana, North Dakota, Oregon, South Dakota, Utah and Washington, the statutes are made to apply solely to civil actions. The statutes in other States make no distinction between civil actions and criminal actions. In some States, for example in New York, the statutes permit of a waiver of the privilege after death of the patient by his heirs or next of kin. In other States the power of waiver dies with him, and no one has the power of waiver after his death.

In Arkansas the information must be a *confidential* communication. (Collins v. Mack, 31 Ark. 684.) But in other States the rule has received a broader interpretation, and the general tendency of the courts in those States is to give the statute broad scope and effect, and to bring within its restrictions every kind of information which the medical man gains while in attendance upon his patient about his case: and the proper test may be said to be whether such information would have been given him had he not been in attendance in a professional capacity. It, therefore, includes not only what the patient tells the physician as to the disease or injury, and as to the cause of the injury, but the physician can not disclose what he learns by his own examination and investigation, or from statements made by patient even in the presence of a third party.

Hence it has been held that admission made by a patient to his physician tending to show contributory negligence on the part of the patient at the time he received the injury, are not admissible; and a physician has been prevented from disclosing whether his patient said that the car on which he was injured was in motion when he received his injury, because the injury would be likely to be more severe if the car was in motion. (Reynolds v. Burlington C. R. & N. R. R. Co., 65 Iowa 152.)

The fact that the physician does not prescribe for the patient, or actually treat him, is immaterial, for the status operates upon the communication itself and the professional capacity and presence of the physician. "If the act is a professional act, it is within the scope of the law. *Medicus optimus medicamentum minimum* is the maxim used in one case to illustrate this point." (In the Matter of Freeman, 46 Hun. 458.) Chas. A. Boston: Article on "Privileged Communications," in Witthaus and Becker Medical Jurisprudence, New York, 1894.

It has also been held by the United States supreme court, that in cases triable in the United States courts in States where, by law, such communications are privileged, the U. S. courts will enforce, as a rule of evidence, the rule laid down by the statute in such State. (Logan v. U. S., 144 U. S. 263, Conn. Mut. L. Ins. Co. v. Union Trust Co. 112 U. S. 250.)

Having thus briefly explained the statutory regulations concerning such communications and their

scope and effect, the question suggests itself for discussion how far such rules apply to railway surgeons who, in the employ of their company, visit patients and gain information after an accident or injury, examining their cases and treating them in a professional capacity.

I have no hesitation whatever in expressing the opinion that a physician acting in that capacity and under such circumstances, although not strictly in the employ of the patient, necessarily gains his knowledge from the fact that his services are rendered in a professional capacity, and that, therefore, any knowledge or information which he obtains under such conditions can not be disclosed, except upon the express waiver of the patient during his life time, or, in States where that is permitted, by his legal representatives after his death; the single exception probably being that in an action against the physician for malpractice, if the patient testifies as to the manner of treatment, the physician is then at liberty to introduce his own testimony, or that of another physician, as to the facts thus put in issue by the patient. (Lane v. Boicourt, 27 N. E. Rep. 1111. See also, Winner v. Lathrop, 67 Hun. 511.) And the rule in California is that where a physician is cross examined by his patient, calling for privileged matter, the privilege is waived. (Valensin v. Valensin, 14 Pac. Rep., 87.) But in a recent case in New York it has been held that although a physician is compelled to sue his patient for the amount of his bill and the patient denies the employment, the physician can not testify to what he did or prescribed for the patient. In New York a very analogous case to the relations of railroad surgeon and patient occurred in the case of Grattan v. Met. Ins. Co., 24 Hun. 43; same case on appeal to the court of appeals, 92 N. Y. 274, where another person employed a physician to examine the patient and report, and it appeared that the person examined did not desire any knowledge as to his condition; yet the court held, that, as the examination was made as a professional act, the relation of physician and patient was established between the physician and the person examined even though there was only an interview. In another case in New York the public prosecutor sent a physician to a person for the purpose of making an examination, so as to obtain evidence against another person charged with crime, and the person examined accepted the services of the physician in his professional character, and it was held that the physician could not testify as to the results of the examination. (People v. Murphy, 101 N. Y. 126.)

It is true that there have been other cases in New York, and perhaps in other States, which seem to vary this rule somewhat. In one case, for instance, where the physician stated that he was simply there at the instigation of another party to examine him, and not for the purpose of prescribing, and the examination was held in the presence of the patient's attending physician, it was held that the relation of physician and patient was not established. (Heath v. Broadway & S. A. Ry. Co. 8 N. Y. Supp. 863. See also Henry v. N. Y., L. E. & W. R. R. Co., 57 Hun. 76. People v. Kemmler, 119 N. Y. 580. People v. Sliney, 137 N. Y. 570.)

In Missouri it was held that information as to the way in which an injury was inflicted is of the greatest necessity for successful treatment, and that it is information which physicians invariably demand and receive, and should be excluded. (Norton v. City of

Moberly, 18 Mo. Ap. 457. Streeter v. City of Breckenridge, 23 Mo. Ap. 244.)

If the rule be as strict as I believe and have stated it to be it becomes a serious question for your consideration whether or not an effort should be made in the different States to have amendments adopted which shall modify the statutes somewhat in that particular.

Speaking as a lawyer, I am inclined to think that the rule as it now stands is a salutary one, so far as relates to ordinary diseases and mental and physical conditions; but that where a railway surgeon is furnished by the railway company and sent from place to place to treat patients without charge to themselves, if they knowingly accept his services and proceed to give him an account of the accident, and to disclose circumstances which would benefit the company by showing, in case of suit brought by him during his life time, or his representatives after his death, that he had brought the injury upon himself by his own fault, the rule ought not to be so limited and restricted as to prevent the disclosure of what is thus learned.

While it is in a general way, as has been said above, important and essential to know the nature and cause of the injury to enable the physician to treat the injury properly, nevertheless it is not so absolutely necessary and essential that perhaps the only intelligent and truthful witness whom the railroad company could call to show by the admissions of the patient how his negligence brought about his injuries, should be excluded from testifying. This is a question which is peculiarly one for your own good sense and good judgment to determine.

The theory on which admissions of a party to an action are admitted on behalf of his opponent, is that he would not tell what was against his own interests. For this reason Mr. Best, in his admirable work on Evidence, divides admission evidence into two classes, one of which he denominates "Self-serving evidence," that is, declaration of a party in his own interest, which is never admissible, and the other which he denominates "self-disserving evidence," being declarations made by a party against his own interests, which are generally admissible against him.

To weigh and determine this question properly, you ought to consider whether anything in the interest of humanity and of the well being of your patients would be concealed by them if they knew that you would be permitted to testify to it afterward. If so, then, the rule ought not to be amended, and you would be the last persons in the world to ask that it should be. On the other hand, if the probabilities are that in ninety-nine cases out of a hundred, nothing would be concealed or untruthfully stated because the patient knew that his statements could be used against him, and that you would be able to treat your case just as well and as fully and carefully and successfully, then the prohibition of the statutes, as interpreted by the courts, should be modified.

It is doubtless true that the dictates of what was believed to be sound public policy led to the establishment of these statutes, but their conditions have often worked a perversion of justice in the courts, and go into court to recover the amount due him for services; still in all statutory enactments in a free country, the test of the law must be whether it works the greatest good to the greatest number.

Apply that test to the statutes under consideration in this paper for yourselves, and no doubt you will

reach such a conclusion as will be eminently satisfactory to the dictates of professional etiquette, and to the duty that you owe to yourselves, your employers and to public sentiment.

THE BEST METHODS OF TEACHING.

Abstracts of papers read at the meeting of the American Academy of Medicine, Atlanta, Ga., May 4, 1896.

THE BEST METHOD TO TEACH PRACTICE OF MEDICINE.

BY J. C. WILSON, M.D.

The title of this communication has been selected by the Committee. The following method can not be regarded as "best" in any final sense, but as subject to alteration and modification according to circumstances. It is that employed in a medical school in which the speaker has the responsibility of arranging the details of the course in practice for large classes, and is the result of carefully considered progressive changes during a period of five years, starting with a systematic didactic course of three lectures a week and two general clinics a week. It is at present arranged for a three years' course. The four years' course to which it is now being adapted does not essentially modify the plan save in allowing the student more time for outside study and an increase in the number of hours devoted to actual clinical work.

The groundwork in physiology, visceral anatomy and the anatomy of the nervous system, histology, pathologic histology and morbid anatomy are preliminary to the course. The more thoroughly the student is grounded in these branches the greater will be his grasp of the subject of practice. The plan consists in systematic instruction in the following subjects:

1. Semeiology, including a discussion of the principles underlying physical diagnosis; one lecture a week, abundantly illustrated with diagrams, models, etc., delivered to the whole class of the second or third year, as the case may be.

2. Practical demonstration in physical diagnosis at the bed-side to the same class in sections. The sections vary in number according to the size of the class, but should not exceed fifteen men. The teaching is conducted by demonstrators, the roll is called and the work ranks in estimating the standing and progress of the student with section work in the laboratories.

3. Systematic didactic lectures by the professor of practice to the second and third or third and fourth year classes, as the case may be. This course covers two years. No effort is made to fully discuss every topic properly coming under the head of Practice of Medicine, on the contrary the consideration of very many diseases is brief and that of still more is omitted altogether. Important diseases, such as enteric fever, pneumonia, variola, diphtheria, malaria, endocarditis and pericarditis, blood diseases, the apoplexies, tabes dorsalis, forms of neuritis, epilepsy, chorea, hysteria, peptic ulcer, gastro-intestinal catarrhs, hepatic cirrhosis, visceral cancer, nephritis, diabetes mellitus, etc., are considered at length and in detail, an effort being made throughout to develop in each pathologic condition the interdependence of the morbid phenomena, the nature of the modification of physiologic processes to changes in structure, and stress being made upon etiology. The rationale of treatment is fully discussed. In advising therapeutic measures the lecturer invariably invites the attention of the student to the prin-

ciples involved. Available knowledge as to the natural history of disease is set forth. The discussion of differential diagnosis affords the opportunity for the consideration at some length of the morbid phenomena of associated and analogous disorders. It follows that such disorders may subsequently be more briefly considered to the saving of time and with no loss to the student. Thus, after a thorough study of enteric fever such less common febrile disorders as typhus and relapsing fever may be more concisely taught, or after such a study of pneumonia the consideration of bronchitis, broncho-pneumonia and the various forms of pleurisy may be made relatively brief, after variola the study of the other exanthemata may be condensed, and so on through the list. These lectures are fully illustrated by modern diagrams and models; nor is the use of the blackboard overlooked.

To those who object to teaching by lecture it may be said that this method has the advantage of a broader and more systematic exposition of the facts of medicine than any clinic, no matter how ample the material it can supply; that it is more suggestive and interesting than text-book quizzes, and that it invests the instruction with more or less of the personality of the teacher, according to his gifts.

4. During the two years occupied by this course two quizzes a week, forming part of the curriculum, are conducted by well trained competent demonstrators. One of these gentlemen quizzes upon the subjects of the immediate course during the week, the other upon the subjects of the course of the preceding year at the corresponding period. This arrangement gives the students at the same time a systematic and progressive review of the work of the two years.

5. General medical clinics are conducted twice a week in the amphitheater of the hospital, during the first half of the term by the professor of practice, during the second half by the professor of therapeutics. These clinics are attended by the members of the second and third or third and fourth year classes, as the case may be. From time to time they are conducted in the form of clinical conferences with students to whom cases have been assigned for especial study.

6. Special clinics on diseases of the nervous system, diseases of children, diseases of the skin and other subjects closely allied to the practice of medicine are conducted likewise in the amphitheater of the hospital by the clinical professors of the respective branches on certain days in the week. These clinics are attended by the students of the final year.

7. Ward classes for the study of clinical medicine, arranged for sections of the class during the final year. Attendance upon these classes is compulsory and has an equal value in making up the student's standing with section work in the laboratories.

8. Clinical microscopy, including practical urinary analysis, the use of the microscope, the staining of bacteria, etc., with especial reference to particular cases, is taught to sections of the class during the final year.

The purpose of this plan is not only to lay before the students the facts of *Inner Medicine* at sufficient length, but also from the most varied points of view; to familiarize him with those facts by constant repetition and renewed emphasis; to excite his interest and scientific curiosity in them by suggesting their analogies, relations and interdependence; and finally, to teach him the first steps of a technique in which training alone can make him an adept.

THE BEST METHOD OF TEACHING PHYSIOLOGY.

BY CHARLES D. SMITH, M.D., PROFESSOR OF PHYSIOLOGY, BOWDOIN MEDICAL COLLEGE, PORTLAND, ME.

What kind of physiology is it desirable to teach? Physiology of the human body. For what purpose is this to be taught? To place within the reach of the student facts which he may utilize. To accomplish these ends is a problem, the solution of which must vary with the average type of the class, the school, and the method of teaching employed.

Deficient preliminary education is fatal to a proper understanding and appreciation of the principles of physiology. A plan which seems to the writer to meet the requirements of the problem in the average school with the average students is outlined herein. The course should extend over at least two years. During the first, a knowledge of the functions of nutrition and reproduction should be acquired. He should, at the first, be made familiar with a comprehensive view of the chemie basis of the human body and the general properties of the muscular and nervous tissues, the functions of the cell, etc. During the second year, after reviewing the work of the first, the nervous system and special senses should receive special attention. Examinations should follow each year.

The advantages of this arrangement are: The student is given no more than he can fairly digest, his mind is not overcrowded or confused, he is not apprehensive of a final examination, and the course is progressive.

Instruction in gross anatomy and histology of the tissues and organs should precede the study of physiology. Experience in this two years' course has demonstrated its superiority over the plan which permits finals at the end of a single year.

The instruction may be given either by text-book, laboratory demonstration or didactic lecture. Each has its share of usefulness, no one is sufficient. The first is the most indispensable if the recitation is conducted along pedagogic lines. As to laboratory work, less need be said about *what* to demonstrate than *when*. It must supplement mental drill which has been obtained elsewhere. The lecture taken alone as a means of teaching may be objected to, its prime function is to supplement and enforce the teaching from the text-book and laboratory. A tendency in all departments of medical teaching is to crowd a certain amount of work in a certain space of time and to give weight to unimportant minutiae. The desired end of imparting knowledge is much more easily accomplished by placing before the student a general idea and filling in details afterward.

Summed up, the writer would urge: 1, a composite plan of recitation, laboratory and oral instruction; 2, less complex topics for the first year with three hours in the class room and one in the laboratory; 3, in the second year, two hours in the laboratory and one in the class room; 4, purely experimental work elective as an advanced study.

THE BEST OUTFIT FOR MEDICAL STUDY.

BY F. H. GERRISH, M.D.

In addition to the branches generally taught in the common schools, the would-be medical student should have a good command of English, a reading knowledge of easy Latin, and familiarity with French and German. Arithmetic, algebra and geometry are necessary. Physics and chemistry are required as a pre-

lude to physiology, and botany and comparative anatomy should precede human anatomy. Logic is an important branch. Wherever it is possible there should be practical laboratory work, and the habit of note-taking should be cultivated. In this connection it was insisted that drawing ought to be required, on account of the invaluable aid which it gives the student, the physician and the surgeon. No one should be encouraged to study medicine who is not physically strong, of fair natural capacity, fond of biologic work, and morally pure.

MEDICAL LONDON.

NOTES FROM MY SKETCH BOOK.

BY L. HARRISON METTLER, A.M., M.D.

CHICAGO, ILL.

While a student abroad, I had the opportunity of observing something about the medical side of the *Nation of London*, as De Quincey loves to call the world's metropolis, that may be of interest. The hospitals, as a rule, are quite ancient affairs, patched up here and there, and occasionally enlarged by the addition of new buildings. Guy's and St. Bartholomew's are among the oldest and most honored, while St. Thomas' and Queen's Square are among the more modern and elegant. The museums of most of them are exceedingly rich. The poor wretches who die within these hospitals often leave a legacy: sometimes only a leg, to be pickled in alcohol or corked tightly in a jar and set away on a shelf for the edification of zealous students and the admiration of note-taking travelers like myself. On account of the antiquity of many of these hospitals the lecture rooms are small, musty-smelling, cramped and uncomfortable. Is it any wonder that antisepsis should have had its rise in England? The great Lister himself was once a promenade through some of these musty buildings. Evidently something had to be done. The broom and the dust-pan only raised a cloud to choke one's lungs and to worry the sores upon the wretched patients. Perhaps a germ was lurking in all this dust. Let's kill him, we said, and dose him with bichlorids or carbolic acid or any other available thunder and lightning! We did and hence arose the antiseptics, the sprays, the washes and all the rest of the business. In some of the newer hospitals, especially in America, it was discovered that sometimes a flood of clean water, especially if it were boiled, got those germs out of the way about as well as all the thunder and lightning; which made it appear as though the dirt itself and the musty environment *tout ensemble* were the originators of those septicemias, blood poisonings, etc., which made the surgery of days gone by almost a curse rather than a blessing. So, in all things, we go on improving, learning some new facts and doing a great deal of loud crowing over our new knowledge and our wonderful discoveries, while in the end we find that we have only learned perhaps to be a little more cleanly and less filthy than our unsouped forefathers. The laboratories of nearly all the schools and hospitals are well furnished, roomy and adapted to the changed conditions in the study of modern medicine. What with wash-bottles, beakers, Bunsen burners, test tubes, reagents and germicides, with microscopes, spectrosopes, lactometers, urinometers, pulsometers, sphygmographs and a host of other harrowing apparatus and scientific complications, any country lad who comes up to study medicine

ought to be glad to pay his fee, gulp down the knowledge doled out to him and leave a wiser man, or at least a better self-estimated one, than when he arrived. What the laboratories make up the lecture rooms are abundantly deficient in. Their poor illumination is enough to inspire another divine comedy. Their stiff-backed, uncushioned benches possess a surprising faculty for raising boils on —, well, we'll say the elbows; but, perhaps, that has its advantages, for the student soon has a practical subject in himself and in his own *boiling* condition to begin his medical freaks upon. Having now paid my compliments to the hospitals of London in general, I will refer to two of them in particular, one a very ancient general hospital, the other a very new special one.

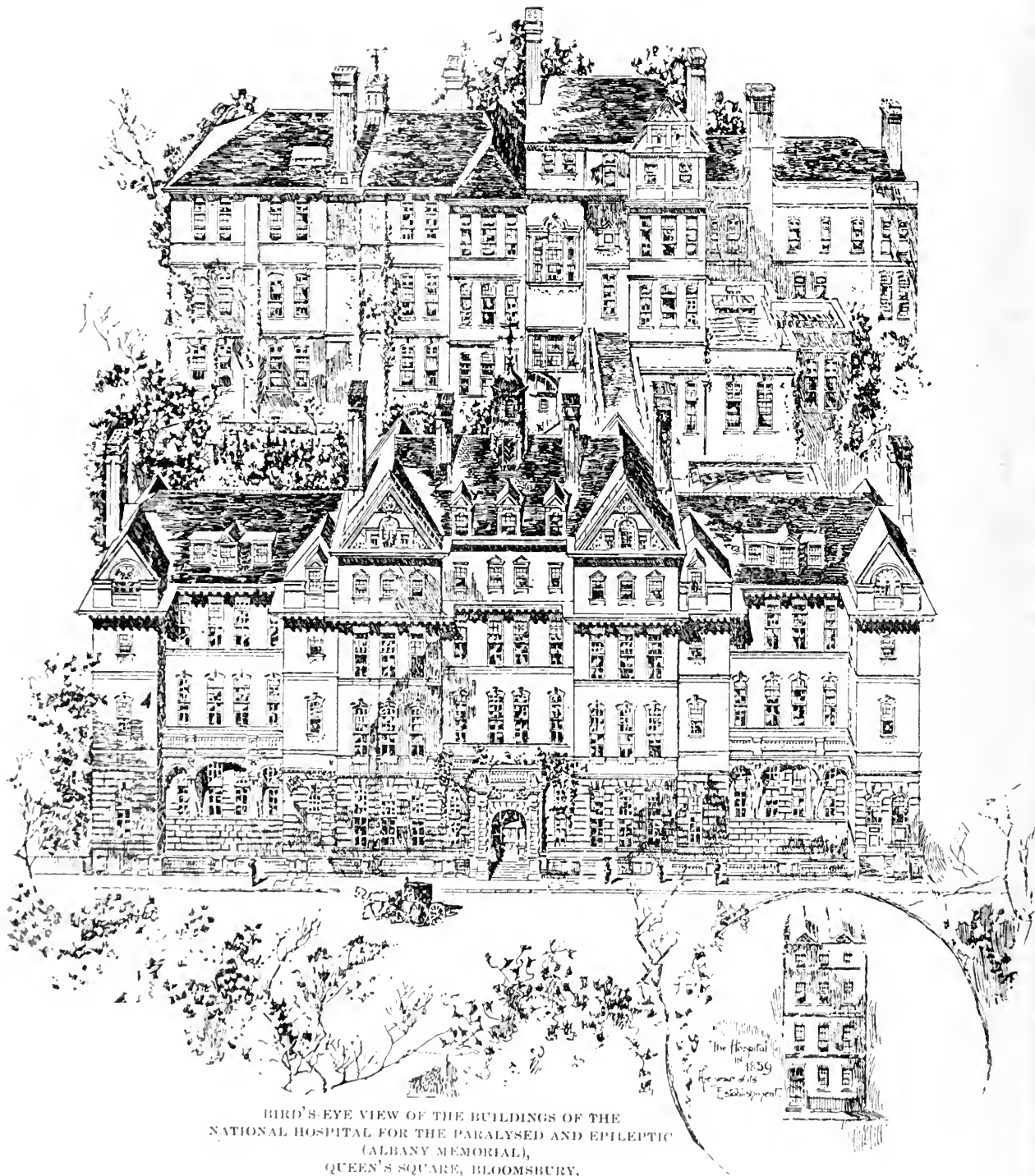
Under the first Henry, surnamed Fine Scholar, England began to recover from the civil conflicts that had been going on since the advent of the Conqueror; and London in particular was beginning to show the effects of the calm in the foundation about this time of some of her greatest buildings. In 1123 Rahere, the king's minstrel, established the hospital and subsequently raised the priory of St. Bartholomew beside Smithfield. In two inscriptions seen upon the walls of the hospital to-day, 1102 is given as the date of its foundation. This error has been traced to a careless transcription occurring in a fifteenth century copy of the life of Rahere written in the twelfth century. The hospital enjoyed an independent constitution and a separate estate, but like many hospitals of the present day was under the control of the religious organization. At first it had a head master, eight brethren and four sisters. From the beginning it was strictly a hospital for the sick and not an almshouse. This is distinctly expressed in the grant of privileges made to it by Edward III. Among the list of its benefactors are to be seen the names of Thomas à Becket, Henry FitzAilwin, the first mayor of London, William Longespée, one of the witnesses of Magna Charta, and King Henry III. The hospital and the priory were separated upon the dissolution of the latter in 1537. During the general religious upheavals under Henry VIII the king acquired possession of the hospital and its revenues, but upon the earnest entreaty of Sir Richard Gresham, Lord Mayor of London, he refounded it by royal charter, and in 1547 granted it another charter, which restored to it the greater part of its revenues. At this time it had 100 beds, a number which has since been increased sevenfold. The "*Breviarium Bartholomei*," a general treatise on medicine, was the first book to be written upon observations made in the hospital, and its author was John Mirfeld, one of the canons of the priory, living in the latter half of the fourteenth century. The immediate superintendence of the hospital for many years was placed in the hands of Thomas Vicary, sergeant surgeon to Henry VIII, Edward VI, Mary and Elizabeth, and the author of "*The Englishman's Treasure*," the first work on anatomy printed in the English language. From 1609 to 1643 Harvey, the discoverer of the circulation of the blood, was the physician in charge. Some of his rules in regard to the kind of cases which ought to be admitted are in force to-day. The great fire spared the buildings, but they were nevertheless reconstructed by Gibbs in 1730.

Availing myself of the special invitation of Mr. Bowlby, I was glad to witness within the walls of this famous old hospital so serious an operation as the tying of the innominate artery by Mr. Langton. A feeling

of laudable pride went through me as I passed through the gate where the immortal Harvey entered, and stood in the hall where the gruff old Abernethy used to lecture and where the unequaled anatomist, Richard Owen, wrought and revealed anew the antediluvian world. Above the portal still stands the statue of Henry VIII, fat, straddling and menacing. The hospital consists of a square of solid stone build-

suddenly revived. I could then and there have taken a hand at a tug-of-war, joined in the college cry or debated with the fellows the merits of the last senior oration. I pity the man who has no college reminiscences.

After making a few inquiries I came to the operating room, in which were gathered about a hundred students, twenty professors and lecturers and several



ings in the midst of one of the busiest and noisiest sections of London. In the center of the square is a large court, by shaded immense old trees, beneath which the students congregate for discussing a case from one hall to another. Upon entering this sedate old courtyard all my pleasant memories of college days were

nurses and attendants. Antiquity, of course, excuses a great deal, but I was a little disappointed at the smallness of the room, its poor ventilation and not over-cleanly appearance. The students are not supplied with benches but must stand on an ascending series of semi-circular steps, extending from the

operating table up toward the back of the room, and each supplied with a railing upon which to lean while witnessing the operation. During a long operation it is most exhausting for the men to stand thus crowded closely together, and though it may keep them wakeful it is not conducive toward maintaining the closest attention. The men were marvelously quiet and orderly, and showed in their very manner the seriousness of the operation which they expected to see. Soon the patient was etherized and brought in upon the table. The surgeon, a large man with a Celtic physiognomy and a half-drowsy, tired air, delivered a kind of explanatory introduction, clear, concise and explicit, without any attempt at oratory or rhetoric. Close beside stood Mr. Savory, styled the "orator" of the medical profession of London. Students thronged his lectures upon anatomy, this proving that the dullness of a discourse does not depend upon the subject matter, but upon the speaker. The operation was done rapidly, neatly and successfully.

The clinical practice of St. Bartholomew's to-day comprises a service of some 748 beds. Of these 227 are allotted to medical cases, 353 to surgical, 26 to eye disease, 20 to gynecology and 50 to syphilitics. In 1887 the in-patients numbered some 7,433 and the out-patients 150,828. Confinements attended at home by members of the staff numbered 1,623. The college associated with the Hospital is recognized as one of the best in the world. Its actual beginning is not on record, but students commenced to attend the hospital clinics as early as 1662. Five years later they were assisted in their studies by the formation of a "library for the use of the governors and young university scholars." Percival Pott, whose pupil was the famous John Hunter, was a lecturer in the school. John Abernethy instructed in anatomy, physiology and surgery in the theater erected for him by the governors in 1791. He attracted such large classes, including such students as Benjamin Brodie and William Lawrence, that a still more commodious theater had to be constructed. After many improvements and enlargements the steady growth of the school induced the governors to erect an entire set of new buildings in 1876 upon an enlarged area. In 1843 a college was founded to afford the pupils the moral advantages, together with the convenience of a residence within the walls of the hospital. It has since been enlarged to twice its original size. Within the court is the church of St. Bartholomew-the-Less, which was restored in 1865. The visit of an American physician to London would be incomplete without including a visit to St. Bartholomew's, for it is the most typical of the older London hospitals, as its staff contains the names of some of the most distinguished medical men of the day.

It is a novel experience to pass at once from old, historic St. Bartholomew to the new and magnificent hospital for nervous diseases in Queen's Square, Bloomsbury. This institution, christened The National Hospital for the Paralyzed and Epileptic, entered into existence in the year 1859. For twenty-five years its work was carried on in old houses. The foundation stone of the first part of the new hospital was laid by the Duke of Westminster in 1880. In 1883 the main building was started; it was completed in 1885, opened with royal ceremony, and dedicated as a memorial to the Duke of Albany, who took an active interest in the work but died before its completion. It is the first hospital for the treatment of nervous

diseases erected in any part of the Queen's dominions. Its books record the homes of some of its patients as Australia, South Africa, Hindostan, New Grenada, Trinidad, Greece and Sicily. Its world-wide reputation is readily understood from a glance at its medical staff which includes such names as Drs. Ramskill, Radcliffe, Hughlings Jackson, Buzzard, Bastian, Gowers, Ferrier and Messrs. William Adams and Victor Horsley. The annual expenditure approaches £12,000, more than two-thirds of which is made up by voluntary offerings, legacies, endowments and interest-bearing subscriptions. Subscribers have certain privileges for the admission of non-paying patients, but no one is treated gratuitously who is at all able to pay anything. Special wards are provided for middle class patients of straitened means, who contribute 21s. per week. As nervous diseases are so often incurable, it is a happy coincidence that a pension fund should be established in connection with the hospital. A benefaction of £300, for instance, founds a pension of £10 in perpetuity, one of £600 a pension of £20, etc.; and the founders retain the right of appointing the first pensioner, or reserving the nominations during their lives.

A description of the superb architecture of this hospital, its chaste and elegant fittings, its completeness of detail, would consume more space than is now at my disposal. Suffice it to say, that all its appointments are strictly up to date. For example, there are six hydraulic elevators, three for passengers, and as many more for the distribution of food, fuel and ward necessities; the corridors, staircases, halls and landings are wide, cheery, paved with mosaic, daintily distempered, and endowed with beautifully stained and tinted glass in doors and windows. Every dormitory has a large day room attached to it, supplied with piano, well-stocked library, games, musical boxes and other means of entertainment. The chapel is a beneficent consideration for a hospital in which many patients are obliged to stay many weeks or months. It is a charming room, covered with a handsome glass dome exquisitely tinted, and supplied with large a pipe organ and seating capacity for 120 persons. The chaplain and organist are paid out of a special endowment. The garden, though limited in area, is under a high state of cultivation, and by means of its pavilions and settees give the inmates an opportunity to enjoy the open air. Ever since 1868 a regular course of winter entertainments at fortnightly intervals has been annually organized. These performances have always attained a high standard of excellence. Under the presidency of the Duchess of Teck, the Samaritan Society, administered by a committee of ladies, attempts to provide the more necessitous out-patients with grants of fuel, food, clothing, to pay their fares to and from the hospital, and to send convalescents to the seaside and elsewhere.

There is a clinical amphitheater in the hospital, and here, as well as in the wards and dispensary rooms, many physicians from all parts of the world have availed themselves of this unrivaled field for the study of nervous diseases. It was my privilege, through the kindness of Mr. Adams and Dr. Ferrier to observe the work of this hospital for several weeks and I am grateful to add my testimony to the skill and ability of the staff in imparting knowledge, to the wealth of clinical material here to be seen and to the uniform courtesy shown by the attendants. In 1895 no less than 844 patients were received into the wards of this

special hospital. Of these 51 died while 556 were relieved or cured. Of the total number of fatal cases, 33 per cent. were cases of tumor of the brain, mainly of a malignant nature. Of the cases of epilepsy, 72 per cent. were relieved. The total number of patients upon the hospital book at the close of 1895 was 5,243, of whom 179 were in the wards. The remainder were either out-patients or were waiting for beds. As all forms of nervous diseases, organic as well as functional are admitted to this hospital, and as most of them, for obvious reasons, were major cases, it is easily seen how valuable an opportunity is here presented for the study of these obscure maladies.

Of the other great hospitals of London, mention might be made of Charing Cross, King's College, Brompton, Middlesex, London, St. George's, St. Thomas', Guy's, and Soho Square Hospital for Women, but time and space will not admit of a description of them here. The two I have selected are quite typical, each in its own way. Even these have occupied so much space that I can not now refer, as I had intended doing, to some of the medical societies, their meetings which I have attended, the medical schools, and a few of the medical customs of the private practitioners, differing from our own.

4543 Lake Ave.

DISCUSSION ON ADDRESS OF THE CHAIRMAN, DR. WILLIAM E. QUINE, OF CHICAGO.

In the Section on Practice of Medicine, American Medical Association,
Atlanta, Ga., May 5-8, 1896.

[Address appeared in JOURNAL of May 23, page 1012.]

DR. J. T. PRIESTLEY, of Iowa—With regard to the so-called Woodbridge treatment of typhoid fever, I made a report to our State society two weeks ago. For some time I had been impressed with the idea of intestinal antiseptics, and, in fact, got my first impression from Dr. George B. Wood. Dr. Wood, however, made the fatal mistake of blocking up the bowel with opium. Then came Birney Yeo's so-called chlorin treatment, for which he gave me the formula. Under that method I treated thirty-seven cases of typhoid without a single death. I judged at that time, as I do now, that the typhoid which we have been having through Iowa has been of an unusually mild character. Having had a personal knowledge of Dr. Woodbridge's work, I employed his treatment in forty-one cases of typhoid which I reported before the State Society of Iowa. Only two of that number died, and both of them were persons whom I did not see until the second week, and both were alcoholics. That is a much better result than I have ever been able to obtain with any other plan of treatment. I quite agree with those writers who regard the Brandt treatment of typhoid fever as a marked advance, but the inconvenience of applying it in general practice, together with the utter abhorrence for it which some patients experience, led me to try the Woodbridge treatment.

DR. BURNS, Philadelphia My attention was called to the Woodbridge treatment some two years ago, and being a resident of that portion of Philadelphia which is supplied with water that always, probably, contains typhoid bacteria, and where we are accustomed to seeing more or less of typhoid fever, the idea came to me, suggested by the Woodbridge principle, to use carbolic acid as an antiseptic, in conjunction with glycerin as an eliminative. I regret that I have not kept a full record of the cases treated in that manner, but in a considerable experience I have met with no deaths, and although the temperature had been high, 103 to 104 F., pulse rate 100 to 120, tongue dry, diarrhea, the course of the disease was modified and ended in recovery.

DR. HOBART A. HARE, Philadelphia Whether we believe in

the theory of antiseptics in the treatment of typhoid fever or not, I think we recognize the fact that in those instances in which we combine with this treatment the use of hepatic stimulants, or drugs designed to increase the activity of the liver, we do as much toward modifying the severity of the disease by preventing the absorption of toxic material as we do by producing actual intestinal antiseptics. In a number of diseases which we suppose now to be largely due to a septic condition of the alimentary canal, and in which the systemic symptoms are out of proportion apparently to the local lesions—for instance, the summer diarrhea of infants—I have found that the administration of drugs like podophyllin produces improvement in the condition of the patient in direct proportion to the increased activity of the hepatic gland. I believe that physicians are too apt to consider that the only function of the liver is to pour out bile into the alimentary canal. The result of that function is, of course, that the bile acts as an antiseptic in preventing putrefaction, but we forget that the liver has a very important function to perform aside from its glycogenic function, namely, the function of destroying poisons which are absorbed from the alimentary canal. If the blood vessels leading to the liver are tied off in such a way that materials can be absorbed from the intestine without first passing to the liver, it has been found that the animals become rapidly intoxicated. And if poisons be given to animals from which the liver has been extirpated, or in which the liver has been prevented from acting by mechanical means, it has been found that very much more minute doses of those poisons will produce death than in animals in which the liver has been left intact. Now, if podophyllin, which we have heard of in this antiseptic treatment, does good, it does good, I think, by its influence upon the hepatic gland. The hepatic gland in its turn probably acts just as any large capillary network may do, by destroying toxic material in the circulation. The liver being a particularly large collection of capillaries, has unusual power to destroy vegetable alkaloids, as shown by experiments, and, in a similar way, probably destroys those toxic agents which enter the system from the alimentary canal. Now, my experience with the treatment of typhoid fever is small and the cases which I have seen have been mild ones, the death rate *nil*. I have employed practically no treatment except a little hydrochloric acid to keep the stomach active; clean the tongue, control excessive diarrhea or constipation, or meet any other individual symptom which might arise. But in another disease which I have already mentioned, the summer diarrhea of infants, again and again have I seen this effect of stimulating the liver. In the sanitarium at Red Bank, New Jersey, a large number of cases have been studied, of children brought there while purging a peculiar watery material, of mousy odor, passing rapidly into collapse, and on giving minute doses of podophyllin every hour or every half-hour the passage would be seen to assume a biliary color, and with the first sign of return of hepatic action we were safe in giving a favorable prognosis. I repeat, that where these drugs do good, I believe it is quite as much by increasing the activity of the liver as by any intestinal antiseptics which they may develop.

DR. JOHN A. OUCHTERLONY, Louisville—I was very much interested in the paper, and not at all less so with the first part of it than with the second, but inasmuch as the discussion has turned chiefly upon the latter part I wish to make some remarks upon that. When I began the study of medicine the principal object which we had in view was to support the patient's strength. Very little else was aimed at except to meet complications or symptoms as they arose. But after awhile it seemed to me that was not all that might be done, especially in as much as we find the type of typhoid fever vary exceedingly. It is almost impossible to lay down one mode of treatment of this disease when one epidemic is so unlike another. It is true that during the last few years the epidemics

which we have passed through have been of a milder type than those of fifteen or more years ago, but I have noticed that in those cases in which there was actual constipation or very little diarrhea, the temperature was likely to run much higher than in those in which the diarrhea was moderate, and that pointed rather clearly to the fact that diarrhea is eliminative and therefore conservative, so that I came to regard it as a good plan to help nature by increasing elimination where the bowels were constipated, and even in cases in which they were not constipated. I have been particularly struck by the fact that the less the bowels perform the eliminative function the higher the temperature is apt to run, and that, instead of giving antipyretics for the reduction of the temperature, we may often accomplish that desirable object by making the bowels do their eliminative work and thus remove from the system the fever-exciting poisons agents. As to intestinal antiseptics, I began giving attention to this a few years ago, and while I must say that I have not had remarkable results, still the plan has certainly worked well. The reason that I have not seen any very great difference between the cases treated and those not treated with antiseptics is probably due to the fact that the epidemics were mild, the cases were not severe, the temperature was not excessively high, and the other leading symptoms were mild in proportion. The sulpho-carbolate of zinc has been the agent which I have chiefly relied upon, and I can not help thinking that hydrochloric acid, which we have been using for so many years and with apparently good results, when given persistently and in full doses must certainly produce some antiseptic influence. I do not look upon it merely as a placebo, but as a remedy of positive usefulness in the treatment of typhoid fever.

DR. KRAUS, Iowa—Since we have heard a little report from our State on the antiseptic treatment of typhoid fever, I would like to state that during the year I have treated seven cases in this manner with two deaths. Never before had I two deaths in one year, while I have treated as many as forty-three successive cases without one death on the general plan mentioned by Professor Hare. The first case which I treated by the Woodbridge plan, as far as I could, was that of a strong young man not an alcoholic, who kept at his work for a week after the beginning of his illness, and then came under my care. I employed the tablets and the capsules, but principally the latter. He had a severe hemorrhage within three or four days after the commencement of the treatment, and although he lived three weeks from this time yet he continued to have hemorrhages off and on until death. Then I had two cases recover after about two weeks sickness. The next case I saw early, carried out the treatment with medicines put up by Parke, Davis & Company, and he died at the end of seven or eight days. I may say that one of my colleagues who treated three cases in this manner lost one of them.

DR. H. A. WEST, Galveston—I consider this subject one of the most important ones which could come up for discussion before this section for the reason that, if the claims made for his treatment by Dr. Woodbridge should be substantiated by the accumulated experience of many observers, he has in my opinion, made one of the greatest discoveries of the age. It has been claimed that by this treatment typhoid fever can be aborted; that it can be cut short in a few days, and that now we should not have a death from this disease, or at any rate very rarely; in other words, that we have a specific for typhoid fever. I repeat that if this can be substantiated, then one of the greatest of all discoveries has been made. As far as I know, no other remedy with any such power has yet been found, and I must confess that I have been extremely skeptical in regard to this one. It seems to me that several things should be taken into consideration. How many specifics have we for infectious diseases? What specific have we for scarlet fever, for cholera, or for other infectious diseases? But I do not propose to be satisfied with excluding this new remedy

because I do not believe in the principle of its application. I intend to try it. Thus far I have contented myself with treating cases of typhoid fever largely on the expectant plan, giving antiseptics only so far as they did not interfere with digestion, produce nausea, take away the appetite, or interfere with any of the functions of the body. In view of the explanation which has been offered of this Woodbridge method, that it is eliminative, it would seem there may be something in it, but so far as the claim is made for it—of cutting short the disease and reducing the mortality to so great an extent, I must confess that I am a skeptic. We frequently see cases of typhoid fever which have gone to the second week before entering the hospital or calling a physician, sometimes perforation has first occurred, and I repeat that I am skeptical as to the discovery of a specific for this disease.

DR. LANGTHY, Pennsylvania—I live in a city where it has been said we have more typhoid fever than anywhere else in the United States. I believe in the antiseptic treatment of typhoid fever. I have treated 300 cases, of which I have kept notes, about two-thirds of them with the Woodbridge treatment and about one-third of them with naphthalin used as an antiseptic. The mortality has been 3 per cent. I do not believe the Woodbridge treatment is any better than the naphthalin. About two hundred grains a day of naphthalin will do anything which the Woodbridge treatment will accomplish, and just as effectually. In collapse during typhoid fever the injection of normal salt solution acts better than anything else.

DR. WITHERSPOON, Nashville—So many of the gentlemen who have spoken have favored the use of the Woodbridge method of intestinal antiseptics in typhoid fever that I think it is about time for some of us who do not believe in it to say something. In the first place, I do not believe that the pathology of the disease warrants the cure which it is said to effect. The period of incubation of typhoid fever is really the time when the germ is invading the alimentary tract, and it has found the proper nutriment for its development in the lymphoid structure before we see the case, before the development of symptoms and the diagnosis of the disease. Now, after the germs have penetrated the lymphoid structure, I claim that intestinal antiseptics can not accomplish much, if anything, in the treatment of the case. I do not see how it can. I thoroughly agree with Dr. Hare that, like the use of podophyllin, an increase of secretion is about the only thing there is in the treatment. How we can use a minute quantity of an antiseptic in the treatment of a disease which has already passed into the lymphatics of the body, which is already being eliminated by the urine, which has already involved the spleen and liver, and cut it short, I certainly can not understand, and I do not see how we can promise ourselves anything more by that method than by any other. Another thing seems remarkable to me, and that is that the gentlemen should have seen so many cases of typhoid fever. It is certainly different from my experience. I do not doubt their statistics, but I do doubt the diagnosis. We know well that there are forms of continued fever which simulate very closely typhoid fever and yet which have not the specific germ of that disease, and I would like to know, of those who have spoken, whether in their cases the specific germ was found. Where such remarkable results are obtained apparently from the treatment, it is important to know whether the diagnosis was beyond doubt. I believe the Brandt method is by far the best, and that it has given the best results in the treatment of typhoid fever.

DR. N. R. COLEMAN, Columbus, Ohio—This subject is of such deep interest to all parts of the country that I hope to be excused for taking up a little of your time. The interest is not confined to the medical colleges, for we hear gentlemen from all parts of the United States giving their experience, or their views, on this method of treating typhoid fever. Before expressing my own views I should like to ask Dr. Priestley

whether he treated his forty cases strictly and absolutely on the Woodbridge principle, or did he carry out a mixed treatment?

DR. PRIESTLEY I treated them according to that plan, to the best of my ability and as strictly as I could. I did not test for the bacillus.

DR. COLEMAN Did you follow the Woodbridge diet?

DR. PRIESTLEY No.

DR. COLEMAN I am an Ohio man and have heard Woodbridge speak. He will tell you that he allows his patients to eat almost as they did before they had typhoid fever. They can eat gross food. He will tell you that he will put the patients on their feet in fifteen days. I have had occasion to say that I do not believe it. When you take one specified kind of treatment and say that it is a certain means, and that it must be adhered to to the letter in every case, I do not believe there is a gentleman present who has the rashness to adopt it, who will in typhoid fever give these intestinal antiseptics and allow their patients to eat gross food from the onset, giving beefsteak and even cabbage, as I heard stated in Ohio, and claiming to get patients up and about their vocation in from nine to fifteen days. It is with such claims that we have to contend, and I may say after carefully studying the histories of their cases and looking over the temperature curve, I have become a doubting Thomas as to their diagnoses. I do not believe their diagnosis is correct, that it is genuine typhoid fever, but rather that the majority of the cases are cases of remittent fever. I do not believe that they have to deal with the typhoid bacillus and the toxins and ptomaines that are generated by that germ. Before giving my limited experience I would like to call your attention to a few things. You are called to a case of true typhoid fever, and the very first thing which may strike your attention is a congested condition of the skin, showing evidently a vaso-motor paresis. Your patient is entering semi-coma. He is carried into the hospital in that condition. I remember that last fall four cases were brought into the hospital in that condition, and they require prompt and determined treatment or they will die. Another case will have backache, general malaise and constipated bowels for a week or longer before you are called. In another the bowels are loose and the greatest trouble you have to contend with throughout the entire disease is to control the bowels. The cases of typhoid fever which give the least trouble are those in which the bowels are more or less constipated. The cases which have frequent action of the bowels are the ones which in my limited experience are most apt to have hemorrhage—a symptom which has killed more patients for me than all other things.

Consider again the idea of the Woodbridge treatment setting the patient on his feet, well, within fifteen days. Before you ever see that patient the germ has already entered the intestinal mucous membrane; it is already at work; the solitary glands and the Peyer's patches are in a state of congestion with enlargement; you may be able to eliminate more or less of the toxins and ptomaines which have been generated, but you can not return those glands to their normal condition in a short period of time. When, therefore, a series of cases is reported with such excellent results, we have a right to doubt the correctness of the diagnosis. In the central part of the United States we meet with many cases in which, without the aid of the microscope, it is difficult to differentiate between typhoid and remittent fever. I meet with such cases and I make use of the microscope. If you find the typhoid germ, you have something to base your diagnosis upon. Otherwise I should have serious doubts. I have employed the Woodbridge method, but in some of the cases I had to discontinue it on account of the frequent action of the bowels, for, as I have already said, where the bowel has been loose I have had more trouble in controlling it than with any other symptom. I have not been able to carry out the Woodbridge treatment in every respect on that account. It is too risky. For two years we have used the bath, in the Hospital, in every case when the temperature went above 102.5 F., and the records show that the mortality has been lower than during previous years. It is an invaluable treatment. In reference to intestinal disinfection, I am a believer in it. Do not understand me that I would not advocate elimination from the intestinal tract, for it is the great sewer of the body. I invariably start my treatment in typhoid with some agent which will produce intestinal elimination. I like calomel, podophyllin, or something of this nature, to start the secretions because I think it is a serious matter to allow a patient to go through a long sickness with the bowels clogged and take the chances of intoxication. So I repeat that alimentary disinfectants are useful, and I like the sulphocarbonate of zinc as well as any. It is a safe agent, and may be carried up to almost any extent without toxic effects. So, with the Brandt method, with proper diet, and

with intestinal disinfectants, the results have been satisfactory in a high degree, but I have never been able to cure a case of pure typhoid fever short of two to four weeks.

DR. FENTON B. TURCK, Chicago—The study of typhoid fever can not be carried out by simply enumerating symptoms, and it is impossible to discuss this question on the line of semiology alone. It is most difficult to make a diagnosis by bacteriologic means. It is a most difficult thing to differentiate between the colon bacilli and the so-called typhoid fever bacillus. However, we know something of the method of invasion among microorganisms of the alimentary tract. We know that they pass through the walls. In the Cook County Hospital we make a careful bacteriologic examination in every case of typhoid fever which comes to autopsy, and we find microorganisms in the spleen, in the liver, and various parts of the body. Can you call that a purely intestinal disease? Now with regard to treatment, bacteriologists would be rather loath to expect to disinfect a tube twenty-five feet long with a few grains of any antiseptic. We can not in a small test tube even, produce an aseptic condition with a few grains of any antiseptic. It is impossible, then, in this long intestinal tube to produce it by any of the various antiseptics used. Hence we can not, simply on the basis of antiseptics, reason out a treatment which will destroy the microorganisms, and such therapeutics are theoretical and irrational and should be discarded. If you say you do it empirically, it is all right; but if you do it for antiseptics it is wrong. If you give strong enough poisons to produce an aseptic condition you destroy the cells of the alimentary tract. Therefore it is irrational. Regarding the toxic effects in typhoid fever, I have watched them carefully, and while elimination of the toxins would be symptomatic treatment, yet it would be along the lines of our present knowledge of this disease. Dr. Hare has frequently in his writings called attention to the great importance of elimination through the alimentary tract. The Brandt treatment, as you know, has for its purpose the stimulation of the circulation by which the antitoxin of the blood, the blood within the viscera, is swept into the general circulation. Hence to increase the circulation is to increase elimination. I present these few ideas because time will not permit of giving long clinical experience. Your attention is called to the futility of attempting to disinfect a tube twenty-five feet long, like the intestinal tract, with a few grains of antiseptics.

DR. HOLTON, Vermont—For a hundred years typhoid fever was an annual epidemic in New England. Dr. Nathan Smith had more success in its treatment than any other man in the beginning of this century, and when asked what his treatment was, he said it was milk and water. He gave his patients plenty of water and nourished them on milk and treated symptoms as they arose. During the first fifteen or twenty years of my practice I was located in a vicinity where typhoid fever was an annual epidemic, and I could predict that when new people came into a certain neighborhood they would be sure to have typhoid fever. Now, those cases were typical, having all the symptoms laid down in the books, and the rule was, throughout that section, a mortality of one in forty. The treatment was expectant in those days. We were taught to nourish the patient on milk. When indicated, we gave our good old friend calomel, and when the tongue was brown we gave a little turpentine. During the last twenty years, under the same conditions so far as we know, it has been a rare thing to see an epidemic of typhoid fever in our community. We know that in the history of medicine diseases go by cycles. In the seventeenth century an epidemic of malarial fever went through New England. Fifteen or twenty years ago it again passed along essentially the same track as a hundred years ago, along the coast. We do not have it now. I have talked with physicians who tell me the same thing with regard to typhoid fever. We seldom see a typical case. The cases which we do see usually have symptoms only ten or twelve days. I treat them in the same way as typical cases, stirring up the secretions, for I believe in all diseases there is a great deal in keeping the glandular system of the body active with antiseptics, if you please to so call them, such as thymol or iodine, or whatever seems to be indicated, and patients get well. Now, we know there are what have been called perambulating cases of typhoid fever, and some of those patients continue to walk about until they have a hemorrhage from the bowel and die within twenty minutes from the time they are seen by the doctor. The Peyer's patches had ulcerated and caused hemorrhage from the branches of the mesenteric artery. The point which I wish to make is, that, while we see these changes in the type and in the frequency of typhoid fever for which I am unable to account, but simply note the fact, I am cautious about giving credit to any particular form of treatment for the

good results apparently obtained, when that treatment has no rational basis, for, as the last speaker has said, we can not render twenty-five feet of intestine aseptic with a few small doses of some disinfectant. Attention has already been called to the fact that before we see the patient the bacilli have infected the system.

DR. J. A. CROOK, Tennessee—I have been in the habit of reading this matter on typhoid fever ever since Dr. Woodbridge's first paper was published, but I had not used any of the remedies suggested until the past season, when I had occasion to treat twelve cases. The shortest duration in any case was eight days. The longest fourteen days, the average being eleven days. It may be questioned by some, however, whether I treated a single one of the cases by the Woodbridge method, for at the time I was called I did not think it necessary to risk disturbing the stomach every fifteen minutes and therefore omitted prescription No. 1 and began with No. 2. As soon as the bowel had moved freely I passed to No. 3. Prior to this experience I thought I had success in the treatment of typhoid fever with the Brandt method, with sulpho-carbolate of zinc, with salol, carbolic acid, etc., but never did I have results which compared with those of the past season. Cases have been reported from Massachusetts, from Denver, from Washington and elsewhere to the number of more than one hundred, and among all these reports there was but one death where the Woodbridge treatment had been employed, and in that instance it was due to hemorrhage which occurred a short while after eating fried meat, etc., contrary to directions. No other treatment yet discovered has given such success. I may report a case, that of a patient whom I found with a temperature of 102 degrees to 103.5 degrees, bowel distended, tongue coated, three or four passages a day, etc. He said he had been in that condition nearly a week, trying to wear the disease out. Whether it was typhoid or not, it was the same disease which we have been in the habit of treating for three or four weeks and regarding as bad cases of typhoid fever. I put him immediately upon the Woodbridge combination No. 2. Next day he was no better, but the treatment was continued, and on the third morning he said that medicine was helping him. Being asked how he knew, he said his actions were not so offensive. That man, without having heard an expression from me, had formed the conclusion that it was an antiseptic. The following day I gave him No. 3. No quinin, never a fever powder, but on the fifth day the fever began to recede. The eleventh day his temperature became normal, and he had no further trouble except swelling of one limb during convalescence.

DR. ALONZO GARCELON, Lewiston, Me.—I have been in practice over sixty years and arise to confirm the testimony of my friend Dr. Holton who says that the character of typhoid fever has changed during that time. I commenced the practice of medicine in the year 1839, and immediately after that, even in the State of Maine where we have clear water, pure air and seemingly every condition which nature has conferred upon mankind for health and long life, we had many cases of typhoid fever. But the disease at that time was always characterized by certain definite symptoms which all of you who have had much experience must recognize as belonging to typhoid fever. Among them were sudamina, dry tongue, diarrhea or constipation, tympanites, hemorrhage from the bowels in about one-third of the cases, fever, etc. A very considerable number of those with severe hemorrhage from the bowels recovered. The treatment in those days was very much as suggested by my friend from Vermont, regulation of the secretions, medicines intended to act upon the liver, upon the bowels, for tympanites eucalyptus. Now, the past ten or fifteen years I have not seen perhaps a single case of genuine typhoid fever. In the city in which I live I have seen a number of cases in consultation which were called typhoid fever, but which were simply a typhoid state of the system—not real typhoid fever. There was no sudamina, no rose spots, no tympanites, in short, absence of those symptoms which we regard, when taken collectively, as characteristic of genuine typhoid fever. Now, with regard to the statement that Dr. Woodbridge made, that you young men are guilty of malpractice and ought to be indicted and punished if you allow a typhoid patient to die—it is a very grave assertion. If, as has been asserted, this disease is found to depend upon a microbe which generates so rapidly as to be in excess within a few months of all the plants and shrubs upon the face of the earth, and if gray-haired men who have been in the practice of medicine so many years have not found any efficient treatment of typhoid fever, pray to heaven what has preserved their patients!

DR. HARDEN, Tennessee—When I read Dr. Woodbridge's treatment I sent and got some medicine of Parke, Davis & Co. Although I live in a section of country where during the summer

time I see on the average twenty cases of typhoid fever, I may say that since receiving this medicine I have seen only one case in which I felt certain of the diagnosis. There was no eruption, but then I seldom see the eruption in that section of the country. Having become convinced of the diagnosis about the fourth day, I immediately discontinued other treatment and put the patient on the Woodbridge tablet No. 2 every hour for twenty-four hours, then every two hours. The patient had no unpleasant symptoms and the odor of carbonate of guaiacol was very distinct in every movement. One point brought out by my friend from Nashville is worthy of consideration, namely that the bacteria have already entered the system when we see the patient. That is true, but if by antiseptics we can remove the nidus of those germs it seems to me we can do a great deal of good.

DR. MINOR, Ashville—In carrying out the treatment we should in order to test its real value follow the directions given by the author strictly. Now, none of the gentlemen have said anything about the diet. It seems to me that if Dr. Woodbridge favors solid diet and all of these gentlemen have modified the diet while they have only given one or two of these tablets, they can not get up here and say they have carried out his treatment.

DR. WM. OSLER, Baltimore—I had hoped to hear some remarks upon that part of the chairman's address which referred to the use of animal extracts in various disorders. Whatever we may think with reference to the bone marrow treatment of anemia, or of suprarenal extract treatment of Addison's disease, we must admit that the thyroid extract treatment in the class of diseases characterized by the loss of function of the thyroid gland is a positive specific. We have nothing to compare with it in the whole range of medication except quinin in malaria and iodid of potassium in syphilis. Take, for instance, a case of sporadic cretinism within the first five or ten years, or a case of myxedema in a woman who may have been helpless a long period, or a case produced by a surgeon removing the thyroid gland in toto, you can say positively that within from six weeks to three months there will be such a change in the patient as we are not accustomed to see under any other form of medication. I think, therefore, that the thyroid extract treatment comes upon an entirely different plane. It is used in congenital myxedema, in sporadic cretinism, in spontaneous myxedema, in the cachexia produced by removal of the thyroid, in all of which it acts as a specific. It was not my intention to discuss the subject of typhoid fever, but in view of the remarks of some of the gentlemen I must say that I have seen very few patients die whose bowels were constipated. If there is any one symptom which I dread it is diarrhea: if there is any one which I care little for it is constipation.

DR. PAUL PAQUIN, of St. Louis—It is my belief that the treatment of all microbic fevers rests on natural law after all. Whatever remedy we prescribe and whatever measure of treatment we apply, it must eventually act through nature's own forces in bringing about recovery. So with the Woodbridge treatment, which is supposed to act through its germicidal influence. Any remedy which may succeed in exalting nature's own forces in driving out the microbes and their products is certainly in the right line, whether it is calomel, or podophyllin, or whatever may be used. The same views apply to the use of animal extracts in myxedema, etc.

DR. J. B. MARVIN, of Kentucky—I think we should, in the language of the Congressman, ask where we are at? If you do not believe that typhoid fever is a specific infectious disease, then you can treat it empirically, make all sorts of claims about it, and we will not question your pathology nor your therapeutics. I occupy a position in a medical school, and am asked by students my opinion of the Woodbridge treatment, which I have learned about through Dr. Woodbridge's writings and hearing him speak. If I understand him aright, he claims that typhoid fever is a specific infectious disease, and by antiseptics he destroys the germs and cures the patient, so that we can discuss the method from a scientific standpoint. If that is so, we must appeal to bacteriology to get the life history of this germ. As stated by one of the speakers, this germ, after leaving the mucous membrane, invades in a very short time the lymphatic system and other tissues of the body, so that it is not lying on the surface of the intestinal tract where it can be washed off or reached by antiseptics.

When a man gets up and makes the statement that one who loses a case of typhoid fever is responsible, it is saying a good deal. I have practiced medicine a good many years, both private and hospital practice, and I do lose cases of typhoid fever, and I do not hang my head in shame on admitting it. We are all fallible. All that can come from such statements is to cause uneasiness on the part of the laity. Doctors say a child is threatened with typhoid fever, diagnosticate this disease in all

sorts of conditions, and get whatever results they choose. I do not believe a person is ever threatened with typhoid fever. He either has it or does not have it. I have never been ambitious to be enrolled in the list of abortionists.

Another thing: A doctor says he has seen twenty cases, and it appears that he has made his diagnosis very quickly. The first few days, I can not do it, and I question a diagnosis of typhoid fever made at the first visit. Can one, before the characteristic symptoms have appeared, make a diagnosis the first few days and claim to cure typhoid fever in from four to eight days?

Again, we must support these patients. The cause of the disease is bacteria, but can we give to a man antiseptics which will kill these germs? It is a delusion and a snare. I think intestinal antiseptics is a will-o'-the-wisp. It is turning the hand of progress back fifteen or twenty years.

DR. THOMAS, of Pittsburg, Pa. — I do not get up to teach any of these gentlemen how to treat typhoid fever. I have nothing new to offer, neither have I heard anything new offered. But some gentlemen do not believe in abortion. Now, if I had fever and ague, I would not engage the gentlemen to my left. We do abort a fever and ague, and why should we not make an effort to abort typhoid fever?

DR. STEWART, of Pittsburg — In 1890 Dr. ——— and I treated fifty-five successive cases of typhoid fever, not one of which ran a course of less than four weeks, and every patient got well. Another doctor near us had thirty-seven cases, all of which got well. I went abroad, came back in 1892, an epidemic of typhoid fever had broken out just before my return. The doctors in Pittsburg told me that out of, I believe, twenty-three cases, nine had died. They thought that, as I had been abroad, I would be able to cure these cases, so I turned my batteries upon them and out of eleven successive cases seven died. They said I ought to have stayed at home.

Now, the facts are just these: You may have twenty-five or thirty cases all run a mild course and get well; then you may have another series of cases which will die in spite of you. The same thing is observed in scarlet fever, and in other diseases. But I believe in treatment. That is all I have to say.

SOCIETY PROCEEDINGS.

The Association of Military Surgeons of the United States.

[Special Correspondence of the JOURNAL.]

The opening meeting of the Sixth Annual Session of the Association of Military Surgeons of the United States was held in the Broad Street Theater, Philadelphia, Pa., Tuesday, 10:30 A.M., May 12, 1896. Beside the officers of the Association and the speakers of the day, Professors John H. Brinton, M.D., William S. Forbes, M.D., and William Thomson, M.D., of the Faculty of Jefferson Medical College, in academic gowns were seated on the stage.

After an overture by the full band of the First Regiment Pa. N. G., and a prayer by Rev. H. A. F. Hoyt, Chaplain of the State Fencibles, Pa. N. G., the President of the Association, Colonel Louis W. Read, Surgeon-General Pa. N. G., formally opened the session, introducing the Hon. D. H. Hastings, Governor of Pennsylvania, who welcomed the Association in the name of the State, paying a generous tribute to the medical department of the National Guard of Pennsylvania, for its share in the splendid organization of that body, whose soldierly bearing has gained for it the designation of "Pennsylvania regulars," and which on all public occasions, when serving outside the State, has attracted equal attention and commendation with the United States regulars—results largely due to its efficient medical staff of which the President of the Association of Military Surgeons of the United States, Surgeon-General Read has been for over twenty years the official head.

MAJOR GENERAL GEORGE R. SNOWDEN, commanding the National Guard of Pennsylvania, then welcomed the Association in behalf of that body, recalling the pleasant relations, which have always existed between the medical officers and their military associates in the other corps. "One in particular, I remembered," he said, "who I always regretted had bound himself to the medical profession, for if he had not been so excellent a surgeon he would have made a magnificent commanding officer. Many others of them, in addition to ranking high in their profession have distinguished themselves in arms," instancing Warren, Montgomery, Mercer, Crawford and others. General Snowden declared "that civilization was gauged by the regard in which the medical profession is held," and concluded by expressing "the hope that at all times the two branches of the service, the medical and the non medical, should maintain the same pleasant relations as now exist."

THE HON. CHAS. F. WARWICK, Mayor of the city of Philadelphia, followed with the significant promise that "old Sol and I will make it the warmest welcome you have ever had in this city of ours."

BRIGADIER GENERAL THOMAS J. STEWART, Adjutant General of the State, specially represented the Medical Department, extending in behalf of the officers of that department a most cordial welcome, and assuring the Association "of the great joy, pride and honor we of the National Guard feel that you have selected our honored Surgeon-General, Col. Louis W. Read, to be your President. He has held the office of Surgeon-General twenty-two years, and has filled it ably and filled it well. We appreciate him as a man, and are proud of his magnificent record as an officer."

PROF. J. M. DA COSTA, President of the College of Physicians of Philadelphia, next welcomed the Association on the part of the medical profession, dwelling particularly on the fact that "medical men have always been regarded as indispensable to the proper conduct of armies. Esculapius himself served as an army surgeon, and his two sons, the Greek poet tells us, took care of the wounded before Troy. Greatly has the military surgeon ever been esteemed. Paré was handed down from one king of France to another as a precious legacy. The order directing him to the siege of Metz said, 'I send you my beloved Paré, equal to a reinforcement.' Larrey, picked up wounded on the field of Waterloo, was at once released and Napoleon's words in regard to him will pass on through centuries, 'to the most virtuous man I have ever known.' Washington refers in his will to Craig as 'my compatriot in arms, my old and intimate friend.'" Professor Da Costa then referred to the change in the nature of the duties of the medical officers. "At one time, indeed until recent years, he was much more occupied with disease than wounds. The army of Henry V. before the battle of Agincourt was reduced by illness from 59,000 to 10,000. Frederick the Great said that a single epidemic of fever cost him as many lives as seven battles. The havoc by illness alone in the Walcheren campaign is historic. In the Crimean War, the French lost by disease 70,375 as against killed by wounds 20,240; the Russians by disease 600,000, killed by wounds 30,000. During our own Civil War about 104,000 fell in battle or died of wounds, while over 186,000 perished by disease and 24,184 from unknown causes," a total of over 300,000 from causes not attributable to the enemy in arms—these latter amounting, in fact, to only one-third of those inflicted by that invisible, aggressive, powerful foe, whom only the medical officers and their subordinates had to combat. Professor Da Costa further stated that "the first time in modern warfare in which the proportion was changed was in the Franco-Prussian war, and was largely due to advancing knowledge in hygiene, and to the rigid enforcement of its rules. In 1870, out of a total of 40,382, only 12,180 were lost by disease and 28,082 by wounds, and in future campaigns it is the military surgeon and not the military physician who will be most at work, provided, however, the lessons of sanitary experience are heeded, and the commanding general understands that by taking and acting on enlightened advice he can save enough of his army to prevent defeat or to turn indecisive engagements into brilliant victories. Referring to the increased risk of the modern military surgeon, Dr. Da Costa stated that *three hundred and thirty-six* regular and volunteer medical officers were killed in battle or died of wounds, accidents and disease during our Civil War, at Gettysburg alone thirteen medical officers having been wounded "a proof of their heroism and devotion." During the recent hostilities between China and Japan, the casualties in the medical corps were enormous. The French military attaché reports that 4 per centum of the total killed and wounded among the Chinese officers were doctors. Notwithstanding the risk, there is no fear that medical officers will shrink from its encounter. Was ever Victoria Cross more worthily bestowed than upon Surgeon Captain Whitechurch, who, when the commanding officer was badly wounded during a sortie in the Chital campaign, a mile and a half from the fort and surrounded by the enemy, proceeded to his rescue and placing him on his shoulders, fought his way back, step by step, every now and then letting him down to head his men, constantly diminishing in numbers, in a charge to drive off the assailants, and whose first action when he reached the fort, though wounded himself, was to dress the wounds of his comrades! "Yet," said Dr. Da Costa, "this is only one more illustration of the gallantry and sense of duty so common among military surgeons. We have long looked upon them, and every day proves how truly, as uniting two professions—as possessing the courage and sense of nerve of the soldier, with the exalted devotion to duty and the high traditions of the doctor."

The first Vice-President, Medical Director Albert L. Gihon, U. S. Navy, having taken the chair, the President read his annual address, which will be published later in full. General Read referred to "the extensive and ever-extending field of medicine and the intricate and complex problems continually pressing for solution, in conjunction with the increasing individual responsibility of applying the resources at command that, years ago, disposed members of the medical profession to seek each other's counsel and form groups or clubs for the comparison of views and mutual improvement. The great advantages accruing from these comminglings prompted more extended social gatherings, until at the present time a large portion of the more progressive members in every civilized community are participating in local, municipal, national and international medical organizations. In the more frequent and familiar comparison of views and cases on all professional subjects in the local societies, closer habits of observation and a wider range of thought are induced, and bigotry and narrow prejudice give way to generous rivalry and personal friendships. In the larger gatherings, the formal preparation of papers and reports impels their authors to a wider range of study and greater mental discipline, while the collision with other minds in discussion develops all the aspects of the subject and enlarges the scope of mental vision by starting new trains of thought and begetting a broader and stronger mental grasp with purer and nobler aims in life." President Read then reviewed the great advances in professional knowledge in recent times, and appropriately dwelt upon its latest development in the Roentgen rays, stating the fact that "in the year 1890 Mr. Jennings, of Philadelphia, had associated himself with Dr. Goodspeed in experiments on spark photography. One evening, the 22d of February, 1890, at the close of work, with the table still littered by plate holders and apparatus, Dr. Goodspeed brought out the Crookes tubes for Mr. Jennings' amusement. Next day that gentleman wrote that he had had a curious failure among his plates—a negative spotted by two disks, but since no one could account for the phenomenon, comparatively uninteresting as it was, the plate was thrown aside and forgotten. Six years later, after the discovery of the Roentgen rays, it was recalled to mind and recovered. A duplicate was prepared under precisely the same circumstances. It was in a lecture on the evening of University Day that Dr. Goodspeed told the story and concluded thus: 'We can claim no merit for the discovery—for no discovery was made. All we ask is that you remember, gentlemen, that six years ago, day for day, the first picture in the world by cathode ray was taken in the physical laboratory of the University of Pennsylvania.' Such is the story of the development of a process entirely simple and of such sequence as to be almost obvious. Yet if its very simplicity had not concealed it, the story would have been cut short years ago, and America instead of Germany would have held the palm."

At the conclusion of the President's address, the Association adjourned until 3 P.M.

SECOND SESSION, TUESDAY, MAY 12.

VICE-PRESIDENT ALBERT L. GIHON, U. S. Navy, called the Association to order at 3 o'clock, in the assembly-room at the Hotel Walton, and the scientific program was at once begun.

The following, in the absence of the authors, were read by title, viz.:

"The Emergency Ration," by Capt. C. E. Woodruff, Assistant Surgeon, U. S. A.; "Experiments with Emergency Rations," by Capt. L. A. LaGarde, Assistant Surgeon, U. S. A.; "Tetanus Resulting from Powder Burns," by Capt. L. A. LaGarde, Assistant Surgeon, U. S. A.; "The Effects of Cannon Firing and Explosion on the Ear," by Dr. Samuel Sexton, New York city, after which, Col. C. H. Alden, Asst. Surgeon-General, U. S. A., read a paper entitled "Instruction of the Hospital Corps, U. S. Army," followed by a paper on "The Hospital Corps," by Major D. A. Kuyk, of the Virginia N. G., and this by one on "The Annual Encampment, and What it Teaches the Surgeon of the National Guard," by Capt. J. J. Erwin, Assistant Surgeon, O. N. G.

VICE-PRESIDENT GIHON then called upon the President, Surgeon-General Read, Pa. N. G., to open discussion on the several papers read, which he did by declaring that Col. Alden's paper had impressed him with a feeling of humiliation, mortification and annoyance, having always congratulated himself that Pennsylvania had the best hospital corps in the United States, his own experience of two wars entitling him to know something about it, and Asst. Surgeon-General Greenleaf, U. S. A., having commended it in an official report.

MAJOR W. H. EGLE, Service Brigade Surgeon of the Pa. N. G., and Major Weaver, of the First Brigade of Pa. N. G., described the organization of the Hospital Corps of that State,

and Lieut.-Col. Chas. F. Myers, Medical Director of the N. J. N. G., that of New Jersey, which he considers a perfect success. It is an independent body composed of sixty men, commanded by a captain who is a medical officer and a lieutenant who is not.

MAJOR FRANK T. LINCOLN, of Savannah, Ga., stated that he was extremely surprised to hear Col. Alden's eulogy of the Hospital Corps of the State of Georgia, because he knew there was no such thing in existence. He stated that the Medical Department of the Ga. N. G. was thoroughly well organized, the officers qualified and efficient, being compelled to pass a rigid examination before any one can obtain a commission, but this is not the case with the hospital sergeants and litter-bearers. Owing to the difficulty of inducing good men to enlist for this duty, he had come to the conclusion that the solution of the difficulty will probably be found in the enlistment of intelligent negroes for hospital duty. They make excellent nurses and while there is some reluctance to command them, he thought this was passing away and he was satisfied that in this way a Hospital Corps could be obtained, which could not be excelled anywhere in the United States or in the regular army.

SURGEON-GENERAL H. G. BYERS of the Wisconsin N. G., spoke of the difficulty he had in getting what was wanted, notwithstanding the utmost importance of having an intelligent and reliable hospital corps in every National Guard organization. It has not been found possible as yet to divorce them from the politicians. The line officers are generally prompt to render aid in case of emergency.

The Vice-President stated that inasmuch as the Association had heard from Col. Alden, it seemed but fitting that Captain Myles Standish should have something to say.

CAPTAIN MYLES STANDISH, Assistant-Surgeon M. V. M., stated that the State of Massachusetts mustered in its first man in the Ambulance Corps and enlisted under the statutes of the State in January 1885, which was two years previous to the Army and five or six years previous to New Jersey. The Ambulance Corps is a separate organization, of the same size as a company of infantry and has a captain and first and second lieutenants, all medical officers. The company has fifty-eight members, seven sergeants and ten corporals. There is no talk about hospital steward. They have an armory precisely like the infantry, are paid by the State, are furnished implements and have a drill every week in the year. They come willingly to enlist. The Adjutant-General has said that there is not an organization in the State which does so much to bring credit and appropriations to the National Guard as the Ambulance Corps.

MAJOR F. J. WOODS, of the New York N. G., spoke of the efficiency of the Hospital Corps of that State, which had recently been organized upon a separate basis.

COL. ALDEN closed the discussion and the Association adjourned its session, to reassemble at 10 o'clock the following morning at the University of Pennsylvania.

THIRD SESSION, WEDNESDAY, MAY 13.

The Association was called to order at 10:20 A.M., by President Read in Houston Hall, the use and privileges of which had been tendered by the House Committee at the request of the Faculty. The Vice-Provost of the University explained that this is a unique institution, being in fact a students' Club, with all the appointments of a well organized club and under the exclusive management of the students themselves. Its average attendance during the study season is a thousand members a day.

The session opened with the presentation of reports of the several Standing and Special Committees. The most interesting of these was the report of the committee on the "official Recognition of the Badge of the Association." Major Hoff, U. S. A., the chairman, stated that twenty-eight States had officially recognized the badge, but that similar action in the Army and Navy would require special legislation by Congress.

SURGEON-GENERAL BYERS of Wisconsin N. G., referred to the possibility of the badge falling into the hands of those not entitled to wear it—but Major Hoff said it was probable the Association would be able to prevent this abuse in the course of time, as had been accomplished in the cases of the Order of the Cincinnati, Military Order of the Loyal Legion of the United States, Officers of the War of 1812, etc.

The scientific program was then begun.

LIEUTENANT-COLONEL A. A. WOODHULL, Deputy Surgeon General United States Army, not being present his paper on "The Better Type of Medical Officers" was read by title.

SURGEON-GENERAL NICHOLAS SENN of Illinois National Guard, exhibited a new bullet forceps devised by himself for the extraction of the jacketed bullet, for which the old forceps is

absolutely useless, its sphere of future usefulness being, he feared, limited to the gynecologist. The new instrument is somewhat the shape of a bullet, so as to be used both as a probe and for grasping and extracting the jacketed bullet. When the bullet is located it is grasped by the two blades of the instrument, the tip of which has a very sharp point that it may follow the fine hole of the jacketed bullet. It is equally applicable for the location and extraction of the leaden bullet.

LIEUTENANT H. L. CHASE, Assistant Surgeon Massachusetts V. M., then read a very interesting and elaborate paper upon "Baths, Bathing and Swimming for Soldiers." It was a matter of regret that a companion paper on "The Physiology of Bathing and Swimming," by Lieutenant Henry G. Beyer, Surgeon U. S. Navy, was not received in time to be read in connection with the paper of Lieutenant Chase, which it was intended to supplement.

SURGEON-GENERAL FORSTER, Mass. V. M., commending the paper, explained that Massachusetts has three camp grounds with bathing and swimming facilities. Captain Jarrett, Assistant Surgeon N. Y. N. G., said that the camp ground at Peekskill, N. Y., was well supplied with bathing facilities, there being about two hundred baths. After each drill men rush for the baths, and most of the men bathe every day. In his own armory there is a French tiled swimming bath, twenty-five by fifty feet, with eight shower baths, and on the officer's floor private baths, needle baths, etc. Major Egle, of the Pa. N. G., said at the regular encampment at Mt. Gretna, there is an artificial lake of three acres of pure spring water which affords admirable opportunities for bathing, making it, in his opinion, the ideal camp ground of the United States.

The paper entitled "A General Consideration of Athletics; their Value in the Training of Soldiers," by First Lieut. William Allen Brooks, Jr., Assistant Surgeon Mass. V. M., was read by title.

A recess was then taken to allow the members to attend the clinic of Prof. J. William White in the surgical amphitheatre of the University Hospital and witness a demonstration of the diagnostic uses of Roentgen's rays.

The afternoon session convened at 2:30 p.m., in Houston Hall, and opened with the paper by Lieut. Thomas C. Craig, P. A. Surgeon U. S. Navy on "The Vitality of the Cholera Spirillum in its Relation to Certain Acids."

DR. EZRA H. WILSON, of Brooklyn, the Director of the Hoagland Laboratory, vouched for the accuracy of the experiments which he had witnessed. He stated that the destructive power of sunlight upon germs had been well established. The experiments conclusively established that the cholera spirillum could not survive exposure to direct sunlight more than four hours.

MAJ. CHARLES C. FOSTER, Mass. V. M., then read a paper entitled "Notes by a Medical Officer in the East." "Is There a Necessity for Differences Between the Standards of Physical Efficiency in the Regular Army and the National Guards?" by Lieut. Col. Charles R. Greenleaf, Deputy Surgeon-General, U. S. A., was read by title, as Major John Van Rensselaer Hoff, U. S. A., requested might be done with his own paper, entitled "What is the Most Practicable Plan of Sanitary Organization for the United States Army?"

MAJOR HENRY, U. S. A., the acting Secretary, read a telegram received from Brig.-Gen. J. D. Griffith, Surgeon-General (retired) Mo. N. G., to the effect that the experiments on which his paper on "The Effects of the New Gun in Field Service," was based were not completed, and asking that it might be deferred until the next annual meeting.

"Notes and Comments on the French Field Sanitary Service, and What We may Learn from It," was read by Maj. Valery Havard, Surgeon, U. S. A. "Modern Methods of Sewage Disposal as Applicable to Military Posts," by Maj. A. C. Girard, Surgeon, U. S. A., and "The Illustrated Travois," by Maj. W. C. Shannon, Surgeon, U. S. A., were read by title. "Some Thoughts on Wheeled Vehicles for the Transport of Wounded" was read by Maj. George W. Adair, Surgeon, U. S. A., and "What Standard of Visual Acuity Should Be Required of the Enlisted Men of Our Military Service?" by Capt. J. M. Banister, Assistant Surgeon, U. S. A., was read by title. Com. John C. Wise, Medical Inspector U. S. Navy, then read the paper by Lieut. Charles U. Gravatt, Surgeon U. S. Navy, on "Methods of Caring for Wounded in Field and Hospital of the Chinese and Japanese Armies." At the suggestion of Colonel Alden, U. S. A., the paper entitled "Synopsis of a Report on the Medico-Military Arrangements of the Japanese Army in the Field, 1891 and 1895," made to the Director-General, British Army Medical Department by Sur. Col. W. Taylor, Army Medical Staff, and presented by Col. Dallas Bache, Assistant Surgeon-General, U. S. A., was read by title.

MAJOR L. C. CARR, Surgeon Ohio N. G., called the attention of the Association to a litter which Maj. W. F. de Neidman, Surgeon Kan. N. G., desired to exhibit to the Association, a description of which was read by Lieut. H. A. Arnold, Pa. N. G. On motion of Major Hoff, U. S. A., the thanks of the Association were tendered to Major de Neidman for his courtesy in presenting his litter.

In response to the call of President Read, the delegations from the several States and Services represented named the following members of the Committee on Nominations:

California, Major W. D. McCarthy, of San Francisco.
Connecticut, Lieut.-Colonel L. B. Aling, of Norwich.
District of Columbia, Major G. B. Henderson, of Washington.
Georgia, Major F. T. Lincoln, of Savannah.
Illinois, Major Sullivan, of Chicago.
Iowa, Brig.-Gen. J. T. Priestley, of Des Moines.
Maine, Brig.-Gen. F. C. Thayer, of Waterville.
Massachusetts, Captain M. Standish, of Boston.
Michigan, Lieut.-Col. C. M. Woodward, of Tecumseh.
Minnesota, Brig.-Gen. J. F. Fulton, of St. Paul.
New Hampshire, Brig.-Gen. George Cook, of Concord.
New Jersey, Lieut.-Col. C. F. W. Myers, of Paterson.
New York, Capt. A. R. Jarrett, of Brooklyn.
Ohio, Capt. J. J. Erwin, of Cleveland.
Pennsylvania, Major J. K. Weaver, of Norristown.
Rhode Island, Lieut.-Col. C. H. French, of Pawtucket.
Virginia, Major D. A. Kuyk, of Richmond.
Wisconsin, Major T. W. Evans, of Madison.
U. S. Army, Col. C. H. Alden, of Washington.
U. S. Navy, Medical Inspector, J. C. Wise, of Washington.

FIFTH SESSION, THURSDAY, MAY 14.

The Association was called to order by President Read at 9:15 A.M. in the Union League Building.

Reports of Committees were deferred and the scientific program taken up. "Problems in Medical Administration, with Solutions; accompanied by suggestions as to the Application of this Method to the Instruction of the Medical Officers of the National Guard," was presented by Colonel Dallas Bache, Assistant Surgeon-General, U. S. A. "The Epidemiological Features of the Late Epidemics of Plague in China and Cholera in Japan," by Lieut. W. F. Arnold, P. A. Surgeon U. S. Navy. "Recent Advance in Anthropology Applied to the Physical Examination of Recruits," by Major P. F. Harvey, Surgeon U. S. A. "Outlines of the Sanitary Organization of the Army of Denmark," by Major John Van Rensselaer, Surgeon, U. S. A., were read by title. Commander J. C. Wise, Medical Inspector U. S. Navy read a paper on "Cooperation in Public Sanitation," and Major Paul R. Brown, Surgeon U. S. Army, a paper on "Modern Methods of Anthropometric Identification, so far as the U. S. Soldier is Concerned," advocating the Bertillon system, and eliciting considerable discussion among the officers of the Army as to the relative merits of the French system and that in vogue in the U. S. Army. Col. Alden described the latter in detail and claimed that the modifications devised by Col. Greenleaf and Major Smart, U. S. A., were all that were necessary. Since its operation was begun in July, 1891, "repeaters" have practically abandoned their game. About thirty-six thousand cards have been filed away—among them 4,000 cards of deserters and dishonorably discharged men.

MAJOR HARVEY, U. S. A., stated that while identification in the regular Army was based largely on accidental marks, the system of Bertillon deals more particularly with the congenital formation of the individual, and as no two men can possibly be precisely alike in the length of their bones and the configuration of their features, the system proposed by the French scientist, while more elaborate and difficult of execution, is an advance upon the present practice. He said that the paper, which he had read by title this morning, was in a measure supplementary to this system, looking to the prevention of enlistment of undesirable men by a study and interpretation of the marks of degeneracy indicating moral defects and criminal tendencies in the individual.

CAPTAIN MYLES STANDISH, Mass. V. M., thought that as the French system was associated with criminals, it would be difficult or impossible to adopt it in this country.

CAPTAIN JARRETT, N. Y. N. G., was also of opinion that in his State men would feel it an indignity to be thus measured and inspected.

MAJOR HOFF, U. S. A., inquired of Col. Alden if there had been any congestion of cards in the office of the Surgeon-General, and of Major Brown, whether the French system requires more or less time than the Army method.

To the first question Col. Alden replied that the cards were overhauled and as men outgrew the age of enlistment were

eliminated, and to the second, Major Brown claimed that he can examine a man thoroughly and make all the classifications and measurements in ten minutes, which he could not do by the other method.

MAJOR VALERY HAVARD, U. S. A., stated that his own experience with the Army system had not been satisfactory. Some men were referred to him for identification and he found it impossible to make sure that these men were originally enlisted and after awhile they volunteered to acknowledge that they had not been. Had they insisted on the contrary it would have been impossible for a jury to have convicted them on these cards. So far as the indignity and humiliation are concerned, he thought when a man is stripped and his marks and defects noted, he has been subjected to as much indignity as he can be. Therefore he preferred the most scientific system based on anatomic data.

MAJOR FOSTER, M. V. M., spoke of the necessity of physical examinations to preserve the efficiency of the regiments of the N. G.

MAJOR WEAVER, Pa. N. G., stated that Pennsylvania examines all recruits for her National Guard according to the Army plan.

COLONEL HENRY, N. Y. N. G., said that in face of the persistent opposition of the line at the outset they had succeeded in enforcing a modified system of examination in New York, and that commanding officers have now become convinced of the necessity for such examination and encourage the medical officers in insisting upon it.

MAJOR VALERY HAVARD, U. S. A., exhibited a litter on behalf of Frederick Remington, which belongs to the bicycle wheel class.

MAJOR D. A. APPEL, U. S. A., exhibited his improved litter-sling.

The Nominating Committee through its Chairman, General Cook, N. H. N. G., reported as officers for the ensuing year:

For President: Commodore Albert L. Gihon, Medical Director U. S. Navy (retired).

For First Vice President: Brigadier General Edward J. Forster (since deceased), Surgeon General Mass. V. M.

For Second Vice-President: Major John Van Rensselle Hoff, Surgeon U. S. Army.

For Secretary: Major Herman Burgin, Surgeon Pa. N. G.

For Treasurer: Captain James J. Erwin, Surgeon Ohio N. G.

For Editor: Lieutenant W. Lincoln Chase, Assistant Surgeon M. V. M.

Columbus, Ohio, as the place of meeting in 1897.

LIEUTENANT CHASE having declined the editorship on the score of pressing occupation, Major Charles C. Foster, Surgeon M. V. M., was elected to the office of Editor.

A vote of thanks was tendered Major J. Wilks O'Neill, Pa. N. G., Chairman and his associates on the Local Committee of Arrangements for the beautiful flag which they had had made and presented to the Association, and which on motion of General Cook, N. H. N. G., was adopted as the official flag of the Association, to be displayed at each annual place of meeting. The flag is of white ground bordered with green, displaying in its center the distinctive device of the Association—the Geneva Cross, American Shield and the motto, "*Omnia pro Patria Caritate*." The unfurling of the flag over the headquarters of the Association at the Hotel Walton on Tuesday morning was made the occasion of a pretty ceremonial, a military band of the Pa. N. G. playing the American, followed by the Swiss national airs; as the stops were broken and the flag unfurled the members greeted it with hearty cheers, and it continued to float from the tower of the hotel during the entire meeting.

At noon a recess was taken to attend a clinic at Jefferson Medical College to witness operations by Surgeon General Sean and Prof. W. W. Keen.

SIXTH SESSION, THURSDAY, MAY 14.

The final session was called to order by President Read at 3:30 P. M., at the Hall of the Union League, and the reading of papers resumed. "The Use of Kola for Military Purposes by Practical Experience," by Col. G. H. Penrose, Surgeon-General Utah N. G. "A Plea for Earlier and More Permanent Treatment of the Wounded on or near the Battlefield," by Col. W. H. Forwood, Deputy Surgeon-General, U. S. A., and "The Medical and Surgical Equipment of a XVth Century Military Expedition," by Lieut. H. R. Stiles, Assistant Surgeon, U. S. A., were read by title. "The Treatment of Sick and Injured Civilians at the Summer Camps," by Lieut. H. A. Arnold, Assistant Surgeon Pa. N. G., and "Methods of Instruction in First Aid," by Capt. J. E. Pilcher, Assistant Surgeon, U. S. A., were read by their authors. "A New Apparatus for Maintaining Apposition of Bones After Resection, or in Frac-

tures with a Tendency to Displacement," by Col. C. Parkhill, Surgeon-General, Colo. N. G., and "The Medical Department of the National Guard of Pa.," by Maj. Edward Martin, Surgeon Third Regiment Pa. N. G., were read by title. A paper on "Asbestos Surgical Field Dressings," was read by Maj. D. M. Appel, Surgeon, U. S. A., who exhibited a complete outfit of such dressings, and the lengthy and interesting program was concluded by the exhibition and description of a new centrifuge by First Lieut. Robert P. Robins, Assistant Surgeon Pa. N. G.

The President-elect then announced his committee appointments for the ensuing year, and the Association by resolution extended its heartfelt thanks to its retiring President, Surgeon-General Read, for his prompt and faithful attendance, his impartial rulings and his unflinching courtesy as presiding officer. Three times three cheers and a tiger were given for President Read, who replied happily in acknowledgement, and on motion, declared the meeting adjourned *sine die*, thus terminating the most successful meeting of the Association since its organization. Its roll of membership comprises 386 active members, 27 associates, 25 honorary and 22 foreign corresponding members. The active members represent the National Services and the National Guard and Volunteer Militia of forty-five States and territories, Arkansas, North Dakota, Oklahoma and South Carolina alone not being represented.

The lamentable death of the newly elected first Vice-President, Brigadier-General Edward J. Forster, the Surgeon-General of the State of Massachusetts within a few hours after the adjournment, was the only unfortunate occurrence connected with this meeting. Sitting on the salon deck of the Sound steamer for Fall River, Mass., while at her dock in New York, awaiting her departure, and conversing with his friend and fellow traveler, Col. Robert A. Blood, Surgeon M. V. M., he suddenly fell forward from his chair and quickly died from apoplexy. General Forster was one of the most zealous and energetic members of the Association, and his loss will be felt especially in the Executive Committee, where his opinions and counsels were greatly valued. The preceding report shows how often he was heard in the discussions at the general sessions.

SELECTIONS.

Spontaneous Healing of Laryngeal Ulceration in Pulmonary Tuberculosis.—According to the *British Medical Journal*, Dr. K. Clar has reported in the *Wiener klinische Wochenschrift* the case of a man who in 1884, at the age of 31, came to Gleichenberg with cavernous signs at the right pulmonary apex and catarrhal signs at the left apex. There was ulceration of the posterior wall of the larynx and of both vocal cords. At first iodoform insufflations were made use of, but owing to the obvious tendency toward spontaneous healing this was discontinued, and no local manipulations were thought necessary. Inhalation of the finely pulverized muriated alkaline water of Gleichenberg was employed, with much milk in the diet and mild hydrotherapeutic treatment. In August, 1886, on examination of the larynx it was found that cicatrization of the ulcers had taken place, but their position could still be easily made out. The ulceration on the posterior wall of the larynx had evidently been what Stork terms a "fissure" and it would be wrong to call it a tubercular ulcer. Infection of the ulcer with bacilli from the sputum might easily have taken place; if, however, it did take place it must have healed up again. In the following years the vocal cords gradually resumed their normal pale appearance, and in September, 1895, one could hardly distinguish anything abnormal in the larynx. The physical signs in the lungs have remained much the same, but during last year there was fewer and temporary increase in the catarrhal signs on the left side, which, however, improved during residence at the health resort.

Congenital Hypertrophy of the Liver.—An article on this subject was read at the Medical Congress at Rome last October, by the author of "Morphology of the Human Body," Professor De Giovanni. It was a plea for the value and importance of clinical observations and experience, when conducted on morphologic principles. He described several apparently most diverse

cases of ascites, cirrhosis of the liver, etc., which by his morphologic method he diagnosed as congenital hypertrophy of the liver and its consequent predisposition to morbid conditions. Treatment was in most cases simply a mild laxative and diuretic, with a milk diet and local treatment of complications. In one case fifteen liters of fluid were removed from the abdomen which had been so distended that it would not contract, and a large ellipse-shaped piece had to be taken out of it in front to reduce the size and restore circulation. Recoveries were permanent, as patients persisted in careful diet which he warned them was indispensable in the case of their predisposition. *Wiener klin. Rundschau*, March 8 and 15.

Ulcerative Endocarditis due to the Gonococcus.—Drs. Thayer and Blumer report in the *Archives de Méd. Exper. et d'Anal. Path.*, a case of ulcerative endocarditis associated with the gonococcus. The case was that of a woman who presented the clinical signs of acute endocarditis, but no evidence of gonorrhea. Gonococci were cultivated from the blood during life by mixing about two cubic centimeters of the blood from the median vein with melted agar agar. The blood was withdrawn by means of a sterilized hypodermic syringe. The mixture of blood and agar-agar forms an excellent culture medium for the gonococcus as has been shown by Wertheim. There seems no reason to doubt the identity of the organism thus isolated, for it showed those characteristics of morphology, culture, and reaction toward Gram's method of staining which serve to distinguish the gonococcus from other pyogenic cocci. The autopsy showed an ulcerative endocarditis and in the heart lesions large numbers of cocci were found, which, by their form and lack of staining by Gram's method, as well as their inability to grow on the ordinary culture media, must be accepted as gonococci. It is to be regretted, however, that the authors did not isolate the organism on suitable culture media at the autopsy and thus make complete the demonstration of its identity. The infection-atrrium in this case seems to have been the genital tract, for at the autopsy gonococci were found in the uterine cavity and in the vagina, but without any marked signs of inflammation of these parts.

Renal Changes in Diphtheria. The *British Medical Journal* reports that Dr. Reiche says that in eighty-five fatal cases of diphtheria before the serum treatment he always found more or less marked renal changes: seventy-five of the cases occurred in children under 10 years of age. There were no characteristic naked eye appearances. Microscopic changes existed chiefly in the parenchyma, in the interstitial tissue and in the glomeruli. The former were present in but slight degree. There was cloudy swelling, and sometimes fatty changes in the renal cells. A crumbling away of the central part of the cells with consequent filling of the tubules with debris was noted. Only the remains of the cells could be seen in some places. In a very small number of cases a coagulation necrosis had led to the destruction of the epithelium in places, but necrosis of single cells was much more frequent. In forty-four cases there was inflammatory proliferation in the interstitial tissue, and this was marked in seven cases. In some of the cases this was perivascular in distribution. The renal cortex was more affected than the medulla. The glomeruli were always involved. There was exudation into the capsular space, and alterations in the capillary loop as well as in the capsular epithelium. The exudation contained cellular remains, and occasionally red blood cells. Sometimes portions of the capillary tuft were stripped of epithelium, and the cells of the capsule were occasionally swollen. Casts were seen in two-thirds of the cases, mostly hyalin, rarely granular, with cellular debris: they were found chiefly in the straight tubes, etc. In three cases there were interstitial hemorrhages. The vascular distension was variable. Thus, along with degenerative lesions, there were others of an inflammatory and productive

character. These lesions are produced by the diphtheria toxins. Slight changes were also found in the liver, and sometimes in the pancreas. The author observes that the changes in all three organs were more common in cases of asphyxia.

Differential Diagnosis of Ileus.—Naunyn has an able study of this subject in the new periodical with the picturesque title: "*Communications from the Borderland Between Medicine and Surgery*" (*Mittheilungen aus den Grenzgebieten der Med. und Chir.*), page 38. In regard to operating, he reviews 288 cases, and states that the best results are secured if the operation is performed in one to two days after the commencement of the ileus, as the percentage of recoveries falls from 70 to 34 per cent. if the operation is delayed to the third day. Cases of ileus with hernia afford exceptionally favorable results. Of course he does not refer to strangulated hernia, but to ileus resulting from stagnation, adhesences and loops in the neighborhood of the hernial sac. The reason for this surprising fact is that the surgeon knows then exactly where to operate, which emphasizes once more the great value of correct local diagnosis. In differentiating ileus from simple obstruction, he notes that in the latter, gas can pass, and tympanites is absent. Vomiting and severe general distress are absent in hysterical tympanites also. Visible peristaltic action decides in favor of ileus, especially in a volvulus. It is very difficult to decide between ileus and acute primary peritonitis. Visible or palpable peristalsis favors the former, while the latter is suggested by commencing fever, continual vomiting and discovery of some etiologic points in the stomach complications, worm processes, etc. Indican in the urine has no diagnostic value. Naunyn describes in detail the important distinctions between acute and chronic ileus, and shows that peristaltic action, which is almost the only means of differentiating them, can also occur in a volvulus in acute occlusion. The exact location of the occlusion can only be determined when it is in the duodenum or upper jejunum, or in the descending colon. It is important to decide whether there is strangulation with the ileus, as an operation becomes imperative in that case; the diagnosis is founded on the rapid septic collapse, and a solid distended volvulus. A free serous hemorrhagic discharge seems to be a frequent accompaniment.—*Centralblatt für Chirurgie*, May 2.

Influence of Static Electricity on the Tension and Course of the Pulse.—Dignat has been making a careful study of the pulse of sixty-two patients before and after the electric bath, and notes a marked difference: 1, noticeable diminution of the amplitude of the pulsations after the bath; 2, greater regularity of pulsations after than before; 3, greater frequency of pulsations after franklinization; 4, decrease and sometimes total disappearance of diastolic and polycrotism. He was very careful to investigate the pulse always on the same side, with the patient always in the same position, the arm resting relaxed on a support, with a cylindric roll (always the same), held lightly in the fingers. He also verified before he began, each time, with the dynamometer of his sphygmograph (Dudgeon's) the exact pressure of the spring on the artery, and if there was any change from last time registered, he altered the spring until it showed the same figure as before.—*Journal de Méd. de Paris*, January 19.

Etiology of Leprosy.—According to the *Press and Circular*, Professor Kaposi has recently delivered some exceptionally interesting clinical lectures on leprosy, its varied manifestations and the diverse interpretations that have been placed upon its pathologic developments. For a long time the disease was conclusively shown to be hereditary, which was satisfactorily admitted from the histories obtained of families residing in districts where the genealogy of different stocks could be traced in the registers of different parishes. Danielsen and Boeck have spent much time in endeavoring to disprove or establish this doctrine. The latter followed healthy children, who had been born of leprosy parents, to America, who after a time had settled on that continent, and became afflicted with the disease. There may be a certain amount of error in connection with this question of heredity, as many of the families had intermarried and resided in the same neighborhood for generations, thus fixing the transmission temporarily, as we find it disappearing in many districts without any apparent cause, which would not occur if heredity was the base of transmission.

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It would greatly facilitate the prompt delivery of the JOURNAL to those members of the ASSOCIATION living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, MAY 30, 1896.

MNEMONICS OF ANATOMY.

To the student commencing the study of anatomy the number and variety of details he is required to memorize is generally appalling. Not infrequently he abandons the effort in despair; sometimes he contrives to retain a certain proportion of these details by the use of more or less appropriate "catches" or mnemonics. This use of *memoria technica* dates back to the early classic writers and nearly every one, even at the present day, has occasion to use some form of them—at least that familiar one concerning the number of days in the months. But for anatomy few are in use in this country and the ones generally heard are that about "vexatious Timothy" and a suggestive one relating to the position of the bones in the carpus.

In the old country, on the contrary, and especially in France, every medical school has its series of "catches" and some of them are thought to be of sufficient importance to be introduced into the standard treatises on anatomy.

Something more than two centuries ago BIMET published a poetic osteology¹ which seems the first effort to apply the mnemonic method to the bones. The following is a specimen quatrain:

L'occipital ressemble au devant d'un navire;
Il paroît le plus grand et plus épais de tous,
Afin de résister plus fortement aux coups,
Qui sans cette épaisseur luy pourroit beaucoup nuire.

¹ Quatrains anatomiques des os et des muscles du corps humain, par Claude Bimet, 1664.

There are 339 of these quatrains in the osteology alone; that part relating to the muscles is much shorter. BIMET had been preceded in myology by QUARRE, who published his work,² a quarto volume, in 1638. Some years later than BIMET's work appeared another osteology in verse by ABEILLE.³ These verses are of irregular lengths and we find, from the one selected on the use of the trephine, that surgeons then as now were chary of applying this instrument over the sutures—as witness:

SUR LE TRÉPAN.

Si tu veux sur le crâne en vray praticien
Appliquer le trépan pour guérir les fractures
Prens d'abord le conseil d'un bon chirurgien,
Évite surtout les sutures.

Fais un bon pronostic et d'ailleurs ne crains rien.

Another work of this character was published in Italian.⁴ The latest attempt to combine poetry with osteology is by a French author, E. ARTANCE.⁵ This writer explains in his preface that he composed the work for his own use and that he offers the first part to his "condisciples," hoping it will be beneficial. "If it is received favorably," he says, "I will publish the other parts; if not, I will keep them for myself." Evidently the work was not received favorably, for only the first part was published, including the description of the bones, joints, teeth and organs of sense. The first few lines of the twelfth verse—on the sphenoid—will give an idea of the whole:

Cet os dont la figure est irrégulière
Ressemble en quelque sort à l'oiseau mammifère
Par dix ou douze points ossifiés d'abord
Il offre à d'autres os six faces, double bord;
Une face inférieure ou dite gutturale, etc.

CATTELL, in a recent article entitled "Some Anatomical Mnemonics,"⁶ points out the utility of the system and gives some of the "catches" usually employed, in addition to a few original ones. But the most important work on this subject which has yet appeared is that by WITKOWSKI,⁷ the inventor of the well-known iconoclastic manikins. This is in two volumes of 960 pages, with 955 cuts or illustrations, and covers the entire subject of anatomy, with some hundred pages devoted to physiology and the like. Some of the illustrations are quite ingenious, as, for instance, the one representing the *extensores radii* as two malefactors between a large and small gendarme (the long and short supinators). Others, including one on page 72 of Vol. II, are decidedly Gallic. It is characteristic of medical students that several of the "catches" that are in use in the French schools, especially that of Lyons, verge or actually trench on the domain of pornography.

More use might profitably be made of mnemonics

² Myographia heroico versu explicata, auctore Guillelmo Quarre.
³ Nouvelle histoire des os selon les anciens et les modernes enrichie de vers, 1685.

⁴ L'anatomico in Parnaso o sia compendio della parti del corpo umano, espoto in versi da Lucio-Francesco Anderlini, 1739.

⁵ Abrégé d'anatomie descriptive en vers français, 1846.

⁶ International Medical Magazine, p. 724, 1894.

⁷ Memento d'Anatomie: Petits moyens mnémoniques-recueillis ou imaginés par le Dr. G. J. Witkowski. Paris, 1893-4.

in anatomy and their introduction into text-books would, undoubtedly, prove helpful to the student. Many teachers decry their use, but any one who instantly recalls the colors of the spectrum by repeating the familiar *vibgyor* will need no further argument to convince him of their usefulness.

A STUDY OF THE OPERATIVE TREATMENT FOR LOSS OF NERVE SUBSTANCE IN PERIPHERAL NERVES.

The far-reaching pathologic changes which result from loss of continuity in the peripheral nerves, and the relative frequency of such injuries, have for many years been the object of much study and research.

Clinical and experimental observations have long ago shown that the function of a severed nerve can be restored if the divided ends are brought into close apposition by means of a suture or otherwise, and that the outlook for a successful result is better the sooner after the injury approximation of the ends is secured. Return of function is possible even without careful suturing of the divided ends, as witness, for instance, the return of a neuralgia after resection of a nerve. The general rule remains, however, that severed nerves must be accurately sutured. Usually injuries to nerves are of such a nature that not much nerve substance is lost, the ends being readily united, but it occasionally happens that in lacerated wounds several inches of a nerve may be destroyed, that in the removal of tumors of nerves the resected ends may be far apart, that after extensive inflammation and suppuration following nerve injuries the stumps may become so imbedded in cicatricial tissue that it may be exceedingly difficult, if not impossible, to find the ends; in such cases resort to simple suture is out of the question, and a large number of methods have been suggested from time to time to obviate the difficulties connected with restoring the lost substance. Considerable experimental work dealing with these problems has been done, the most recent as well as thorough research in this direction being that of HUBER,¹ of Ann Arbor, who tried experimentally the various methods suggested for restoring lost nerve substance with a view to establishing their comparative value. HUBER's article is divided into three parts: 1, a review of the literature; 2, the author's experiments and physiologic observations; 3, the result of the microscopic examinations.

The various methods which have been employed in the treatment of nerve injuries with loss of nerve substance may be grouped under the following heads:

- Nerve stretching (*Schüller*).
- Implantation of a nerve segment removed from a recently amputated limb, or from a lower animal.
- Tubular sutures (*Vaulair*).
- Union of ends with catgut threads, or a bundle of catgut threads (suture à distance, *Assaky*).

e. Nerve flap from the central stump, or a flap from both central and peripheral stumps (autoplasie nerveuse à lambeaux, *Létiévant*).

f. Grafting of the central end of the peripheral stump of a divided nerve to an accompanying nerve trunk (greffé nerveuse, *Létiévant*).

g. Cross suturing the long central and peripheral stump in cases where two accompanying nerves are cut obliquely, and grafting the central short stump to central long one, and peripheral short stump to peripheral long one (*Létiévant, Tillmanns*).

h. Resecting the bone or bones in the extremity and suturing the nerve.

These various procedures have all been tried in practical surgery; in most cases the feasibility of the method was first demonstrated by experiments upon animals. A complete tabulation of the surgical cases in which a defect in a peripheral nerve was treated by operative means has not been made. HUBER collects twenty-three cases and the following table gives the general summary of the reported cases. It is almost unnecessary to add that it is an exceedingly difficult matter to give a correct summary of such complicated and often imperfectly observed or described phenomena as are dealt with in these cases.

TABLE GIVING SUMMARY OF REPORTED CASES.

Operation.	Nerve Operated Upon.	Operation.	No. of Cases Reported.	Successful.	Improved.	Failures.	No. Cases Observed 2 mos. or longer.	Observed less than 2 mos.	Incomplete Report as to Result.	Remarks.	Implanted segment necrosed once.	Report gives condition 16 days after operation.
Implantation.	Ulnar	Primary	3	0	2	1	1	2	2			
		Secondary										
	Median	Primary	4	1	3	1	3	1	2			
		Secondary										
	Ulnar and m'd'n	Primary	2	1	1		2					
		Secondary										
	Radial	Primary	3	1	2	2	2	1	1			
		Secondary										
	Sciatic	Primary	1	1			1		1			
		Secondary										
	Total		14	3	7	4	10	4	6			
	Ulnar and median											
Tubular suture.	Radial	Secondary	1	1	1		1					
		"										
	Ulnar and median	"	2	1	1	1	2					
	Median	Primary	1	1	1		1					
		Secondary										
	Ulnar and median	"	1	1	1		1					
Suture à distance.	Musculo spiral	"	1	1	1		1					
		"										
	Resection of bone to extent of admitting nerve suture	"	1	1	1		1					
		"										
	An arm nerve	"	1	1	1		1					
	Grand Total		23	7	10	5	18	4	6			

It will be seen that the operation for nerve implan-

¹ Journal of Morphology, Vol. XI, No. 3, 1895.

tation has been performed fourteen times, eight times as a primary and six as a secondary operation. Of this number three are reported as successful, seven as improved and four as failures. In one of the cases at least, namely, ATKINSON'S, the report covers a period of but sixteen days after the operation, at which time sensation is said to have become fully reëstablished. HOWELL and HUBER show, however, that in man sensation does not return to the peripheral part of a divided nerve until three months after suturing. Hence there can be no doubt but that in ATKINSON'S case the sensory impulses were carried along one of the other cutaneous nerves distributed over the extremity. All experiments bearing on this problem show that the implanted portions always degenerate.

HUBER'S experiments were made on dogs. With but few exceptions the ulnar nerve was used. When implantation was made a segment was taken from the sciatic of a cat. The length of the piece excised varied from 4 to 8 cm. The details employed in experiments with other methods were simple and uncomplicated. In all cases asepsis and careful suturing were secured. The irritability of the nerves was examined by means of induction shocks from a DU BOIS REYMOND coil under such conditions that the results obtained admit of comparison. The final functional results obtained are shown in the following table:

Operation.	Number.	No. where 120 days or more intervened between operation and examination.	Cases observed 120 days or longer.			Failures.
			No. in which regeneration was complete.	No. in which regeneration extended to middle of forearm and to muscular branch of flexor carp. uln.	No. in which regeneration extended to just below peripheral wound.	
Nerve implantation. . . .	26	10	5	4	.....	1
Bone tube implantation. . .	8	4	.....	1 (sec. impl.)	2	1
Implantation of catgut threads. . .	7	3	1	1	.....	1
Létiévant's flap operat'n	7	2	.....	.....	.....	2
Létiévant's grafting. . .	1	1	.....	.....	.....	1
Tillmans cross suturing and grafting. . .	1	1	.....	.....	.....	1

A number of animals were sacrificed from time to time in order to study the changes that occurred in the nerves experimented upon. It was found that the best method for demonstrating the developing axis cylinder is to harden in MUELLER'S fluid and to stain with STROEBE'S anilin blue-safranin solutions. HUBER shows that after primary implantation of a nerve segment between the resected ends of a peripheral nerve, the entire peripheral stump and about three-quarters cm. of the central stump degenerates: the myelin and the axis cylinders of the implanted piece are absorbed within ten days after the operation. Regeneration begins in the central stump and proceeds centrifugally; it consists of a down-growth

of the axis cylinders of the nerve fibers of the central end through the implanted segment and the peripheral part of the resected nerve. It requires at least 136 days for the regenerating median nerves to reach the peripheral part of the trunk, and 149 days in case of the ulnar. The down-growing axis cylinders travel along and in the sheaths of the old and implanted nerves.

He further found that in the flap method, the nerve flap degenerates throughout its whole extent, that in the central stump were many degenerated fibers, due to the traumatism inflicted while making the flaps, and that the budding axis cylinders were largely lost in the connective tissue between the nerve ends.

Without going into further details it is evident that the results of HUBER'S experimental research are of great practical importance. The following conclusions are certainly warranted from his study of the literature of this subject as well as from his personal observations:

1. That it is possible to restore the functional activity in a nerve with loss of substance, if the ends are united with a segment taken from some other nerve trunk, with catgut threads or with a bone-drain or tubular suture.

2. Of all methods enumerated and tried the best results are to be obtained after the implantation of a nerve segment the two ends of which are sutured by several catgut sutures to the end of the resected nerve.

3. The regeneration of the peripheral end which always degenerates so that only the sheaths of SCHWANN are met with, is the result of an outgrowth of new axis cylinders from the central stump, the budding axis cylinders following the paths of least resistance through the substance interposed between the ends of the nerve, thus reaching the peripheral part of the nerve.

4. Since the fibers in an implanted nerve segment degenerate so that only the collapsed sheaths containing a small amount of nucleated protoplasm remain, and the catgut threads used in a suture à distance, and the bone tube employed in a tubular suture, are almost entirely absorbed before regeneration has occurred to any extent, it must be concluded that the implanted substances can serve only as a guide to the budding axis cylinders.

5. That the degenerated fibers of an implanted nerve offer more favorable mechanical condition for the down-growing axis cylinder than does the connective tissue replacing various other substances, is shown by the fact that the new nerve fibers have a much straighter course and more regular arrangement in the nerve implantation experiments than in the experiments with catgut and bone-drains.

6. The same results may be obtained with these methods whether used in primary or secondary oper-

ations. The return of function takes place more slowly in secondary operations.

7. Nerve-flap formation from central or peripheral stump is not recommendable, because: 1. the flap degenerates; 2. the union with the central end is not so favorable for the budding axis cylinders as in nerve implantation, and 3. the growing fibers seem to bud into the connective tissue and not into the reflected flap.

8. Regeneration through an engrafted connection between the peripheral part of a divided nerve and an accompanying uninjured trunk is not possible.

9. In the LÉTIÉVANT-TILLMANN'S operation (cross-suturing the long ends of two divided nerves and engrafting the short ends to the accompanying long stump) regeneration of but one of the peripheral segments of the two injured nerves can be hoped for; the other peripheral segment remains degenerated; as there is no reason why a regeneration of both the peripheral stumps may not be attained after the implantation of a nerve segment between the respective ends of the two injured nerves, preference should be given to the latter method.

MEDICO-LEGAL USES OF THE ROENTGEN RAYS.

The surgical application of the ROENTGEN rays is already an old story, at least as far as the surgery of the bones, more particularly in the extremities, is concerned. Their medico-legal utility is a later demonstration, though it might readily be inferred from any brief consideration of their effects. A young woman, an actress, broke her ankle while descending a stairway in an English theater. A suit for damages was instituted against the proprietor, on the claim that the accident was due to a defective step. This seems to have been proven or admitted as the defense was made that the injury was exaggerated. A ROENTGEN shadowgraph, presented before the jury, secured the plaintiff her case, the evidence being held to be incontestable.

It will be easily seen how the pictures obtained by these rays will figure hereafter in damage suits, but this is only one of their possible medico-legal uses. In the May issue of the *Annales d'Hygiène Publique et de Médecine Légale*, DR. T. BORDAS of the Faculty of Medicine of Paris gives illustrations of shadowgraphs of fetuses, which are especially illustrative as regards the development and arrangement of the bones, and he suggests that it may be possible to obtain facts as regards the condition of the lungs, etc., that will be of medico-legal value in certain cases. He also shows how these rays can be made useful in detecting the nature of suspicious packages, suspected infernal machines, without incurring the danger of opening them. Certain of the explosives used in these, the fulminate of mercury in particular, are quite opaque to these rays, and metal clockwork would naturally show in a shadowgraph. There is quite a

range for investigation as to the relative behavior of different chemicals under these rays, that may in the future come before the courts in one way or another, and still another possible value they may have will be in certain questions of identity. An old fracture that is of importance in settling this question, a bullet with a history lodged in the tissues, or some other possible known peculiarity may reveal itself in the ROENTGEN negatives. On the whole the possibilities of the medico-legal value of the discovery seem quite important, and as the unexpected is always what happens, they may make their appearance in unlooked for situations. The subject is at least a suggestive one.

THE PERMANENT LOCATION.

The members of the ASSOCIATION will receive in a few days a ballot and return envelope addressed to the JOURNAL office. In accordance with the rule of the ASSOCIATION passed at Atlanta, sealed ballots will be received from June 1, to July 31, 1896. Every member is requested to vote on this question, and to sign his name legibly to the ballot, with the name of the place and his post office. These ballots, after opening the envelopes and counting, will be preserved until the next meeting of the ASSOCIATION, but the result of the count will be announced in the issue of the JOURNAL next succeeding.

The Trustees have set apart \$3,000 to be placed at interest as the commencement of the building fund, and it is hoped that a much larger surplus may be set aside next year. Meanwhile before investment, it was necessary to take the wish of the ASSOCIATION as to a permanent place of publication. The proposed method is absolutely fair, and the JOURNAL itself will take no part in the matter, whether the vote shall result in the establishment of the permanent headquarters of the JOURNAL at the National Capital at Washington, or whether it shall remain in the metropolis of the West at Chicago or go elsewhere, is not a matter for concern or interference on the part of the present management of the JOURNAL. The management only hopes that members may vote solely with respect to the advancement of the interests of the ASSOCIATION, without regard to individuals or coteries. The recent growth of the ASSOCIATION in every State in the Union, and the rapid increase in the number of those who are active workers in the field of organization, gives every hope of a wise ballot, and cheerful acquiescence in the result.

CORRESPONDENCE.

The Second Pan-American Medical Congress.

A REPLY TO REFLECTIONS UPON THE MEXICANS AS PHYSICIANS
AND AS A RACE.

GALVESTON, TEXAS, May 16, 1896.

To the Editor: The approaching meeting at the City of Mexico of the second Pan-American Medical Congress, and the

appeal of our most efficient Secretary General, Dr. Charles A. L. Reed, to attend it, have aroused in me a variety of feelings impossible to describe at this moment.

Dr. Reed has stated: "The enthusiasm with which not only the medical profession, but the government of Mexico has taken hold of the proposed meeting, guarantees its success. The generous patronage which the Washington meeting enjoyed from our Mexican *confrères* places upon us a pleasant obligation to reciprocate."

Would that the whole medical fraternity of this country entertained sentiments similar to those expressed by Dr. Reed. But there are exceptions to be deplored, exceptions that tend to delay at least the unity of the profession on this continent, to judge from the attitude of some of the physicians of this country toward our southern *confrères*, and especially toward Mexicans. And sad to relate, the matter seems to be a question of national prejudices, a racial battle, as it were, this a stumbling block to true progress in all human affairs.

Although I have taken them for what they are worth in my humble estimation, and to a certain extent overlooked, pardoned them, I have not forgotten, nor perhaps will ever forget, the insults heaped upon my people by American physicians, and I deem this occasion an appropriate one to recall and resent these insults. In an article entitled "Clinical Notes on Typhus Fever of Northern Mexico," read before the Texas State Medical Association at the April (1894) meeting, and afterward published in the Transactions of the same, Dr. Clarence Warfield has this to say about the Mexicans:

"Morality (a thing unknown) is at its lowest ebb. When, from sickness, one of these people die, no matter how contagious may have been the disease, the neighbors crowd in to view the remains, even little half-naked children climbing in over the doorstep to satisfy their already growing morbid curiosity.

"A Mexican family may be ever so poor, but one or more dogs form a part of their belongings, which, when night comes, and the floor is strewn with forms of all ages and sexes, some covered and some uncovered, lie down also and fill up the intervening spaces. These people rarely undress, the same old clothing worn continuously and dirt hiding the original color of underclothing, uncleanness and germ-laden atmosphere, all tend to encourage sickness of every sort. *Incest is of frequent occurrence, many fathers having children by their daughters and all living together.*

"They are morbidly afraid of the 'aire' (air) and 'sol' (sun) as causative agents of disease, and water as an intensifier of the same when once established, every case of sickness being, from their standpoint attributable to either one or the other, and it is a foregone conclusion that water will not be used, except for drinking purposes, throughout the trouble. *As this belief is more or less encouraged by their physicians, no one can convince them to the contrary.*"¹

Dr. M. B. Ward published in the September (1894) number of the *Tri-State Medical Journal*, a paper entitled "Some Observations Relative to the Practice of Medicine and Surgery in the Republic of Mexico." The article contains many assertions unworthy of an impartial, dispassionate judge. Its tone is strictly non-ethical. Some of the remarks made in that document not only lack foundation, but are positively ungenerous, not to say defamatory, insulting to our brother physicians in Mexico. I will not quote from Dr. Ward's article for fear of making my communication too long.

Some one has wisely said that "an individual opinion is a very indefinite quantity, and may represent a great deal of knowledge or absolute ignorance." I will modify this sentence by saying that "an individual opinion is a very indefinite quantity, and may represent a great deal of knowledge, absolute ignorance or intentional malice." Granting that Dr. Warfield's effusions and Dr. Ward's assertions are based on the true state of medical practice in Mexico (and I can bring forth evidence to the contrary), the articles of these gentlemen do not show good judgment or discrimination on the part of the writers, nor do

they (the articles) as a whole reflect credit on the profession of the United States, even though the latter be not at all responsible for the single opinion of any one of its members.

Why such articles should have been allowed a reading before bodies of undoubtedly conscientious, grave medical men, as the members composing the Texas State Medical Association and the Tri-State Medical Society of Illinois, Missouri and Iowa respectively, and afterward publication. I do not understand. The whole matter, it seems to me, has been unfortunate.

Is conduct like that observed by Drs. Warfield and Ward, I wonder, a reason why many American physicians desire to have the Code of Ethics completely abolished? Because, to say the least, the papers prepared by Drs. Warfield and Ward seem to be, or pretend to cast, a slur on the Mexicans as a people and on the practice of the whole medical profession of a sister republic. If Drs. Warfield and Ward have a grudge against the Mexicans as a race, or against Mexican physicians for non-professional conduct, or what not, they should complain in the proper manner, and not simply make and publish charges when at a safe distance: for this procedure is not only non-ethical and impolitic but cowardly also. Apart from this, Dr. Warfield's onslaughts on the Mexicans as a race, and Dr. Ward's harsh criticism on the Mexican practice of medicine and surgery are unwarranted, uncalled for, even supposing to be true what they have dared to assert.

Without any mental reservation whatsoever, I regard the course taken by Drs. Warfield and Ward in this matter, not only thoughtless but eminently insulting to the profession of Mexico and to the people of that country in general. I do not care much for the opinion of the ignorant in affairs like the present, but it pains me to see educated professional gentlemen of this country, apparently without cause or provocation (which is still worse), assailing regular brother practitioners of medicine in other countries. It can hardly be believed that such conduct should be observed in a country where that magnificent document, a document pregnant with sound and healthy thought, the American Code of Medical Ethics, was created; in a country, indeed, that is noted for the general good sense and calm judgment of its citizens. Both Dr. Warfield and Dr. Ward are to be censured severely for their policy. My own satisfaction in the matter after protesting, as I do most emphatically against Drs. Warfield and Ward's attacks on my countrymen and professional brethren, is that their conduct will not be endorsed by the large majority of educated American physicians. I could with incontrovertible proofs correct each and every statement made by Drs. Warfield and Ward in their unfortunate articles, but I refrain from so doing, unwilling as I am to become involved in an unnecessary and probably angry dispute, or to impose on the patience of the reading public.

The noble efforts of the eminent American Physicians who first conceived the happy idea that tends to the unification of the profession on this continent, by the creation of the Pan-American Medical Congress, whose first meeting at the city of Washington in 1893 was crowned with brilliant success, will certainly not be materially aided by a policy such as that put in practice by Drs. Warfield and Ward. In his magnificent and eloquent discourse, the President of the Congress, Dr. William Pepper, made these concluding remarks: "Let us acquire here a closer touch with each other, a deeper faith in our profession and its noble destiny, and a stronger determination to labor in brotherly coöperation for the loftiest ideals of service to science and the race." Can this possibly be accomplished by maintaining now or in the future an attitude similar to that observed by Drs. Clarence Warfield and B. M. Ward.

The unbiased testimony of all scientific observers who have devoted special attention to the study of this subject, from

¹ Italics are mine.—D. C.

Humboldt to Brinton, shows that the Mexicans, unlike the various barbarous tribes of North American Indians, belong undoubtedly to a superior stock, and as evident proof of this there stands out in bold relief the immortal monuments which vividly interpret their remarkable advance in the arts, literature and science. But if, as the result of conquest, the energy of the Mexican race has been temporarily paralyzed as has similarly been the case with other nations of antiquity, like the Greeks and Romans for instance, my people, on account of physical, intellectual or moral characteristics, should not, can not be placed on the level with any of the truly inferior races. But what is to be expected from those blinded by prejudices, from those who are sadly wanting in logical reasoning? People there are so biased as to be carried to ridiculous extremes; people who, again, like unprincipled politicians of to-day, will say and do anything, no matter how degrading, for the sake of notoriety, or to gain certain selfish ends. The question is now being discussed in this State, for example, as to whether the Mexican is eligible or not to American citizenship! And why? On account of his origin. For it is claimed that he is neither a white man nor a negro! And what of it? But I will not enter into further consideration of so trivial a matter.

And as for the standing of medical science and the profession in Mexico, I will only say that serious observation by unbiased minds will certainly convey a better general impression of those matters than the thoughtless, ungenerous, not to say false, statements made by Drs. Warfield and Ward.

In conclusion, I sincerely trust that a large contingent of American physicians may attend the Congress at the City of Mexico on November next and, laying aside all prejudices of race or other prejudices (prejudices of any kind should not be entertained by scientific medical men), let those physicians see and study for themselves the characteristics of the Mexicans as an ethnologic element, and note whether they are not as capable of achievement in all the higher pursuits as our brethren north of the Rio Grande. I can assure the American physicians attending the Congress that, on their return, they will not imitate the conduct of Drs. Warfield and Ward (as they will have no true cause for so doing), or like a certain Mr. Lancaster of this State of Texas, say that the Mexican belongs to "a race more uncouth than the negro, less intelligent, less friendly, and more like a savage." Very truly yours,

DAVID CERNA, M.D., PH.D.

The Antivivisection Bill and the Senate.

The following informal and unofficial correspondence is self-explanatory:

CHICAGO, May 14, 1896.

The Hon. S. M. CULLOM, U. S. Senate.

Dear Mr. Senator:—The views of the AMERICAN MEDICAL ASSOCIATION, and of the profession generally, are so opposed to the bill now pending in the Senate for the restriction of vivisection that I venture to ask your powerful aid in defeating the measure, which I understand has in the Senate no less adroit an advocate than Senator Gallinger.

Nearly every notable advance in the science of physiology, *i. e.*, knowledge of the functions of the organs of the body, and the most valuable facts in connection with animal chemistry, and the effects of medicines, have been made and recorded in consequence of experimentation upon the lower animals, and we therefore look with alarm upon a bill which if it become a law, will relegate science in this country to a back corner. The people who make the greatest outcry are those who know least about the subject as a rule, and should their arguments be brought to a legitimate conclusion, we should close up the butcher shops and become vegetarians. I have great sympathy with our cattle, but at the same time I have an appetite for roast beef which vegetarian sentiment and a diet of turnips

and cabbage will not appease. When our antivivisectionists rise up and demand the passage of laws that they insist are for the protection of animals, let us insist that they prove that they are vegetarians and that by no weakness they sacrifice one of the lower animals to man's needs. Let us banish red snapper and pompano from the menu in the Senate restaurant, and as for the succulent canvas-back, the reed bird and the terrapin, let the *gourmet* die the death, unless he be willing to regale himself on beans and Boston brown bread instead. I can not conceive that the mighty fisherman from Maine or the gallant Nimrod from Missouri would consent to such a bill. The shade of Isaak Walton would rise in wrath to see any of his devoted followers forsake his paths at the first onslaught of a vegetarian enemy.

Can't you help defeat this imbecile offspring of the long-haired traveling physiologists, and let our laboratories teach the students in peace, unvexed by the nonsense of these dyspeptic sentimentalists?

Faithfully your friend, JOHN B. HAMILTON, M. D.

UNITED STATES SENATE.

WASHINGTON, D. C., May 18, 1896.

DR. JOHN B. HAMILTON, AMERICAN MEDICAL ASSOCIATION, Chicago, Ill.—Your favor of the 14th inst. is received and noted. I know so little about medical legislation, or the proper legislation in the interest of medical science and practice, that I have generally allowed such matters to go along without much interest upon my part. All I can say is, that I am in favor of whatever legislation may seem necessary and fair in the interest and progress of science and practice of medicine and the development of knowledge in the direction of physiology or a knowledge of the functions of the body. Just what the bill referred to by you means, I do not know, but I will try to give it attention.

I should be against any legislation that would interfere with the privilege of satisfying the appetite with a good roast beef, or mutton, or chicken, or duck, or terrapin, and if you can convince me that this proposed legislation is going to in any way abridge the rights of those who are fond of good things to eat, I am "agin" it. I am not so particular about red snapper as I am about canvas-back duck or terrapin. I could even spare the reed bird, but I shall insist upon all the other good things mentioned in your letter, and am opposed to any interference with their free use. While I am fond of Boston baked beans, and not particularly opposed to brown bread, yet I would not surrender a well prepared sirloin steak for either. I am not very familiar with the history and characteristics of Isaak Walton, yet I believe he was called an "angler" and his name has become immortal on account of his relation to his writings setting forth the delights of fishing, and charming those who have never become familiar with such recreation, by his works. I am one of those who have known very little about fishing—scarcely knowing how to put a worm on a fish hook—yet I have always had a fondness for shad in the spring and for white fish almost any time, and am, therefore, against any bill which would interfere with the freedom of those who are fond of fishing as a recreation—or of eating a good fish as a food.

So you may gather from what I have said that I am with you as against any legislation which will in any degree circumscribe the advancement of science or the enjoyments of eating meats or fish as a food.

Very truly yours, S. M. CULLOM.

Proper Title of a Medical Officer of the Army.

GROVELAND, MASS., May 4, 1896.

To the Editor: I notice in the JOURNAL of February 1 an article entitled "Some Remarks about Asepsis in Military Service," read, etc., by Lieut.-Col. —.

At first one would wonder what a military man might know about asepsis, and although there is little of professional instruction contained in the paper, I infer that this Lieut.-Col. for some reason or other ignores his professional title. This craze makes me tired, Doctor. Time was when the honorable title of doctor would be considered an honor for a prince. In point of fact, there is to-day no more honorable title, and no good reason why physicians who respect their profession should be willing to exchange it for a complimentary military title.

I send you a communication received recently from the Secretary of War. For the sake of the profession and to put a damper on bombast and militarism in the usually dignified and modest profession of medicine, you may deem best to publish all of this. Sincerely yours,

W. THORNTON PARKER, M.D.
GROVELAND, MASS., Jan. 26, 1896.

To the Honorable Secretary of War, Washington, D. C.

Sir:—I respectfully write for information concerning the commissions of medical officers in the United States Army.

In the U. S. Navy and in the Marine-Hospital Service, medical officers are known as surgeons, passed assistant surgeons, assistant surgeons, etc., and even in the armies of Europe, where the most radical system of militarism exists, under monarchical rule, medical officers are known as surgeons, assistant surgeons, etc. But in our republican form of government, where the rights of citizenship are asserted to be preëminent, our surgeons have of recent years placed their medical titles in the background, and are addressed as captains, colonels, majors, lieutenants, etc.

While our forefathers warned us that one of the greatest dangers to the life of the Republic would be the development of military aristocracy, there seems to be in our little army of the present day a most extraordinary movement in this direction. In the medical corps of our army, which contains so many foreigners, a prominent medical officer who has enjoyed the exceptional rank and pay which our medical corps furnishes for many years, has only recently, if the report be correct, qualified as an American citizen.

I write this merely to ask if this system at present existing in the medical corps of the U. S. Army has the approval of the Secretary of War and of the general officers of the U. S. Army. If it has I should like very much to know it and if it has not I should like to be able to answer foreigners who point at it as a grievous inconsistency in our republican institutions.

Very respectfully yours, W. T. PARKER, M.D.
(Brief.) GROVELAND, MASS., Jan. 26, 1896.

W. T. Parker, M.D., asks information as to commissions of medical officers U. S. Army. Says that in the Navy and Marine-Hospital Service medical officers are known as surgeons, passed assistant surgeons, etc., while in the Army they are addressed as lieutenants, captains, majors, colonels, etc., and asks if this system has the approval of the Secretary of War and general officers of the Army.

Second endorsement.

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE, Jan. 30, 1896.
Respectfully returned to the Honorable the Secretary of War.

Medical officers of the Army are commissioned as assistant surgeons with the rank of first lieutenant, assistant surgeons with the rank of captain, surgeons with the rank of major, deputy surgeons-general with the rank of lieutenant-colonel, and assistant surgeons-general with the rank of colonel. In all official communications they are addressed in accordance with these designations. It is customary in social intercourse to address medical officers by their professional titles, and in my judgment there is no objection to this form of address. Some of our medical officers, however, insist upon being called by their military title. This is in accordance with the usage in other staff corps. There seems to be no question as to the

propriety of addressing a paymaster or a commissary or an adjutant-general by his military title; but in the case of a medical officer, upon whom the degree of doctor of medicine has been duly conferred, it would appear that in social and professional intercourse this title should have the preference.

GEO. M. STERNBERG, Surgeon-General, U. S. Army.

Third endorsement.

WAR DEPARTMENT, Feb. 1, 1896.

Respectfully returned to W. T. Parker, M.D., Groveland, Mass., inviting attention to the preceding endorsement hereon of the Surgeon-General U. S. Army. JOSEPH B. DOE.

Assistant Secretary of War.

The Pneumatic Dilator.

PHILADELPHIA, May 21, 1896.

To the Editor:—My attention has just been called to a passage in Dr. W. E. Owen's excellent paper on the "General and Special Treatment of Tuberculosis," in your issue of Jan. 11, 1896, which unintentionally of course upon Dr. Owen's part, is liable to be misconstrued into a recommendation by me of a certain instrument mentioned in the paper, Dr. Hawley's "pneumatic dilator." This apparatus may be capable of doing all that is said, but as I have never seen or used it, I can have no opinion about it specially worth expressing. The passage referred to is on page 67 and reads as follows: "By it [the aforesaid apparatus] the cardio-vascular and the pulmonary capacities are greatly increased, and to use the words of Solis-Cohen, 'resulting in increased function, increased elimination of waste products of function; with increased buoyancy of spirits which is no mean factor in treatment; in a word, heightened vitality.'" The remarks cited as from me (which, by the by, are not quoted *verbatim et liberatim* but slightly paraphrased) might, from the context, be thought to apply to the instrument exhibited by Dr. Owen. They are, however, a portion of my conclusions concerning the effect of *altitude* in stimulating nutrition in the prophylaxis or treatment of pulmonary tuberculosis, as may be seen by reference to page 789 of my article on Tuberculosis in Vol. I of "A System of Practical Therapeutics," edited by H. A. Hare, M.D., and published by Lea Bros. & Co., Philadelphia, 1891, from which they are cited.

I have so often and so positively expressed myself in favor of the use of pneumatic measures, and especially the inhalation of compressed air with exhalation into rarefied air, in the prophylaxis and treatment of pulmonary tuberculosis, under suitable conditions and in proper subjects, that I should not like this correction to be misunderstood as opposing any proper method of securing pulmonary expansion by pneumatic devices, though theoretically I should think the usefulness of the instrument mentioned in Dr. Owen's paper to be rather limited, and should not wish the efficiency of pneumatic treatment in general to be judged by the results such an apparatus can probably produce. But, apart from this, I believe it better that words written in connection with one therapeutic measure should not be applied, without full explanation, to another.

I have been very much gratified to learn from various expressions in Dr. Owen's thoughtful article that the views concerning the causation and the proper treatment of tuberculosis and especially of pulmonary tuberculosis, which I have put forth in the work alluded to, have favorably impressed one so careful as an observer and so clear and forcible as a writer. The larger my experience becomes, the more firmly am I convinced that our great object in the prevention and in the therapeutics of this affection, should be to increase the vital, *i. e.*, the resisting and recuperative powers of the organism in general and of the pulmonary tissues in particular. Neither drugs nor antitoxins can effect this. They may help, but they are secondary in importance.

Very truly yours,
SOLOMON SOLIS-COHEN.

"Can Such Things Be?"

ATLANTA, GA., May 12, 1896.

To the Editor:—In an Atlanta daily paper of this date I find the enclosed item, which fully explains itself:

WHAT MISS CLARA BARTON SAYS OF AN AMERICAN INVENTION.

Constantinople, Feb. 21, 1896. —When in London the other day I received two packets from the United States embassy, each containing an Electropoise. To-day I received your kind letter and The Journal.

Allow me to thank you heartily and gratefully for the splendid little machines. As you remember, I am not altogether a stranger to the virtues of the Electropoise (saw its work in Jacksonville, Fla., in 1888), and I will take great pleasure in passing your offering to afflicted humanity through my medical staff. I feel assured the physicians will avail themselves of such valuable aid.

Very sincerely yours,

CLARA BARTON.

In reply to a letter asking permission to publish the above, Miss Barton writes under date of April 23, through her private secretary, the letter given below:

Constantinople, April 23, 1896. —Your letter of request was duly received. Miss Barton has no objections to your publishing her letter, if by so doing the wonderful little instrument will be still more gratefully received by suffering humanity.

Very truly yours,

G. H. PULLMAN, Private Sec'y.

The item closes with mentioning the agents' names and office, and with the statement that any information about the "splendid little machines" will be cheerfully given by said agents.

Every one admires Miss Barton for her noble work and life of self-sacrifice which she has been engaged in for many years. Her use and indorsement, however, of the very worst of the patent frauds is, to say the least, a new departure, and not a consummation devoutly to be wished by any means.

Yours very truly,

L. B. GRANDY, M.D.

Injection of Antitoxin.

WHEELERSBURG, OHIO, May 19, 1896.

To the Editor:—Referring to Eulenberg's contention, as reported in the last number of the JOURNAL, that the sudden death of a healthy child at Hoechst-on-Main after an injection of antitoxin, could not have been due to the virulence of the serum, but was perhaps the result of embolism, the puncture of a vein, or the introduction of air, may it not be pertinent to inquire whether ordinary hypodermic medication as heretofore practiced by all classes of physicians, has been followed by sudden deaths similar to those reported after the use of antitoxin?

JAMES L. TAYLOR, M.D.

PUBLIC HEALTH.

"Domestic Medicine" Popular in Prisons. —It is recorded that in one of the large English prisons the favorite book in the library for the use of the prisoners, was that of Buchan's "Domestic Medicine." At first the curious fondness of the inmates for such a work was not apparent, but subsequently it transpired that the prisoners, anxious to play the rôle of malingerers and so escape their tasks, laid themselves out, with the help of the volume, to study carefully the symptoms of certain diseases with a view to deceive the prison surgeon.

Something Tangible in Sanitary Administration against Tuberculosis (Bovine). The French government has decreed that all cattle imported into France from foreign countries must be tested with tuberculin at the frontier before being admitted. In those cases in which the characteristic reactions denoting the existence of a tuberculous process are revealed the animals are, after being marked, refused entrance into the country unless the owner gives his consent to immediate slaughter. The tuberculin test is not applied to cattle which are formally declared to be imported for slaughtering purposes. In these cases, however, proof must be forthcoming within fourteen days that the animals have been killed in the presence of an inspector.

Smallpox on the Isle of Man in the 18th Century.—Dr. Charles Steele, of Clifton, sends to the *British Medical Journal*, certain interesting extracts from the parish register of Ballaugh church, Isle of Man, which gives the deaths in that parish from 1704 to 1799 from smallpox and other causes. Within that period smallpox killed in this small parish 166 persons, while the deaths from all other causes numbered only fifty. In fact, three out of four persons whose burials were registered in the parish met their death from smallpox. And yet there are a substantial number of our population who wish to go back to the eighteenth century for our treatment of the disease.

Amendment of Colorado Pharmacy Law. Sections 10 and 12 of the pharmacy law passed in Colorado in 1893 were amended in 1895; the former, raising the penalty from \$25 to \$250 for any person other than a registered pharmacist retailing or dispensing drugs; the latter, by incorporating a provision that the pharmacist failing or neglecting to procure his annual registration, or any person making any false representations to procure for himself or for another registration, or any person violating any other provision of this act, shall for each and every offense be liable to a fine of \$100.

Provision for Lost Diplomas in Florida.—Section 806, chapter 4, of the Revised Statutes of the State of Florida, provided for the examination, by the board of examiners, of the applicant for a certificate of qualification to practice medicine, "upon the production of his medical diploma from a recognized college." This the legislature of that State amended in 1895, by adding in this connection, "or in the event said applicant shall have lost his diploma, or the same shall have been destroyed prior to the year 1870, then upon satisfactory evidence to such board of such loss or destruction."

California Coroner to Appoint Physician.—In counties of the first class, it was enacted in California in 1895, the coroner shall appoint a competent physician, whose duties it shall be to perform autopsies upon the bodies of all deceased persons when inquests are held. Such physicians shall, after the performance of such autopsy certify in writing his professional opinion as to the cause of death, which certificate shall be filed with said coroner. The physician so appointed shall receive as compensation for such services \$2,400 per annum, to be paid out of the general fund of the county in monthly installments of \$200 each.

Improved Health Rate of Rome.—The following note from the *Medical News* shows the vast strides of sanitary improvement that have been made at Italy's capital: "Roman fever is almost a thing of the past. From 650 in 1881, the deaths from malaria ran down to 254 in 1891, while for the last five years the average has been 149, the number in 1895 being 125. These figures are all the more significant in that the population of Rome has increased from 300,000 to 467,000 in fifteen years. An equally remarkable diminution has taken place in the death rate from all other infectious diseases, so that Rome, even in the traditional unhealthy season, is one of the most healthy capitals in Europe."

Sewer-Gas Dangers Affecting Tall Buildings.—Sanitary Engineer C. F. Wingate writes to one of the New York City dailies that he has observed a danger from tall buildings, that has not been noted by others, namely the discharge of filthy sewer-gases from soil-pipes of comparatively low houses into the windows and light-shafts of adjacent occupied rooms. He instances one striking instance where "the entire family of the superintendent of a large office building, occupying spacious rooms on the roof, surrounded by lower buildings, but with a magnificent outlook over the harbor, have suffered from severe forms of zymotic disease, including repeated attacks of malarial fever, so that the family have been nearly decimated, and have

been forced to abandon their apparently ideal quarters. Growing plants were destroyed by the virulent odors which penetrated their rooms, so that it was impossible to open windows, or to occupy the apartments for living purposes."

New York City Board of Health and Its Anti-expectoration Ordinance.—On May 12 that Health Board adopted the following ordinance, to disobey which is a misdemeanor punishable by fine or imprisonment or both:

SEC. 222. Spitting upon the floors of public buildings and railroad cars and of ferryboats is hereby forbidden, and officers in charge and control of such buildings, cars and boats shall keep posted in such public buildings and in such railroad cars and in such ferryboats a sufficient number of notices forbidding spitting upon the floors, and janitors of buildings, conductors of cars and employes upon ferryboats shall call the attention of all violators of this ordinance to such notices.

The full Board voted for the resolution.

Practical School Hygiene.—At the meeting of the Auxiliary Sanitary Association of the Illinois State Board of Health in Springfield, October 22 and 23, action was taken looking to a radical improvement in school hygiene. A committee was appointed to confer with the State Superintendent of Public Instruction and the several County Superintendents of Schools with a view to drafting an amendment to the State school law requiring teachers to qualify physically as well as mentally before receiving certificates entitling them to teach—that is to say, that they shall at least be free from the danger of conveying pulmonary tuberculosis to the scholars under their charge; making a thorough knowledge of school hygiene a requirement for the certificate; and placing all public schools under medical supervision to the end that children presenting symptoms of any contagious disease may be examined by the duly appointed school physician, and on his authority referred to the family physician, to be admitted to school again only on the certificate of the latter. As 101 County Superintendents are counted on as friendly to this proposed legislation there is ground for favorable action thereon by the next General Assembly.

The Iowa Public Health Association held its fifth annual session at Davenport, May 19-20. Interesting papers on sanitary and hygienic subjects were read and the following resolutions favoring the establishment of a National Bureau of Health unanimously adopted:

WHEREAS, The discharge of sewerage into streams, ponds, lakes or other bodies of water is a serious and rapidly growing menace to public health by polluting the sources of water supply to a dangerous degree, and

WHEREAS, The power of the State committee or municipality is wholly inadequate to check or in any way control the most pernicious method of sewerage disposal;

WHEREAS, We believe the authority of the Federal Government is absolutely necessary to put a stop to the growing evil, therefore be it

Resolved, That the Association most earnestly desires and would most heartily approve the creation of a National Bureau of Health, among whose functions should be the control of all rivers, streams, lakes, ponds or other bodies of water, with reference to their sanitary condition.

Resolved, That the State Board of Health of Iowa and the State Board of Health of Illinois and that of Minnesota be requested to take as promptly as possible such action as shall lead to the drafting and formulating of a petition to Congress asking that a National Bureau of Health be created, or otherwise putting the necessary machinery in motion that this very important end may be obtained.

Not American Stock this Time.—Close upon the most recent of the repeated interdicts of American meats by hostile foreign governments comes a cable dispatch announcing that the food purity scare which has been so tenderly fostered by the agrarian politicians of Germany has received a sensation fillip by the seizure last week of 400 pounds of food infected with tuberculosis at the Berlin Trades Exhibition in the institution devoted to the sale of cheap food to the public, where thou-

sands of persons eat dinners daily that cost a penny a head. The infected meat came from Mecklenburg, and not from America, which country the German officials profess to regard as the place of origin of all of the diseased meats in the world.

In spite of the dictum of Baron von Hammerstein-Loxton, Prussian Minister of Agriculture, Domains and Forests, that it is impossible to put a Chinese wall around Prussia to prevent the importation of foreign animals, the provincial Governors have one after another closed their boundaries against the adjoining provinces, on the ground that the animals raised in the proscribed provinces are infected with foot and mouth disease and ailments of that kind, and now the frontier of Prussian Silesia has been closed against Russian hogs.

The *Reichsanzeiger*, the official organ, publishes a notice issued by the Governor of Dusseldorf, in Rhenish Prussia, closing the markets of that province against sixty districts throughout the empire, among which are Hamburg, Königsberg, Breslau, Magdeburg, Lüneburg, Wiesbaden, Cologne, Aachen, Dresden, Leipzig, Carlsruhe, and Mannheim, besides provinces like Mecklenburg, Saxe-Weimar, Brunswick, etc. In fact, there has never been such a sweeping charge of infection printed in Germany.

Malarial Conditions in Eastern Carolina; Artesian Wells needed.—In the *Bulletin* of the North Carolina Board of Health, for April, Dr. Julian Baker of Tarboro, discusses the conditions of the eastern section of his State as follows:

"The topographic and meteorologic conditions in Eastern Carolina furnish a most suitable environment for the life of the malarial germ: so our effort must be directed primarily to the prevention of the development of the germ outside of the body, and then its entrance into the body. Notwithstanding the fact that Sternberg failed to find the germ in the marsh mud of Louisiana, the low marshy lands of the Roman Campagna, the bottom lands of Mississippi, Arkansas and Alabama, and the low lands of our section are too familiar as favorite localities for the worst forms of malaria to controvert the fact that heat, moisture and decomposing vegetable matter constitute the favorable environment which we must first remove in order to prevent the germ's development. It is inexplicable at presents that these marshes and low lands have been known to become healthy without apparent change in previously favorable conditions for development; it is highly probable, though, that the germ will never disappear unless the environment is changed. Clearing, draining and cultivation will accomplish this in a measure. Oxygen being necessary, as claimed by Crudeli, to the existence of the germ, close sodding with grass after drainage is the best sanitary cultivation. The Carolina poplar or cotton-wood tree, eucalyptus and several others, have gained a reputation as absorbers of the virus from miasmatic atmospheres."

Doubtless one tree is as good as another for this purpose, and the claim of those mentioned is referred to, only to deny it absolutely. In Eastern Carolina the water supply is principally from shallow wells, ten to twenty feet deep, in wet seasons the water rising very near the surface level. The question of prevention resolves itself into one of purifying the water from shallow wells, or getting purer water from some other source. By boiling the well water all vitality is destroyed and dead organic matter is harmless. This is the only safe rule if any well-water is to be used.

"The custom prevails in some malarial sections to boil enough water in the morning for the day's consumption. After boiling it should be placed in a porcelain cooler and closed up. By using only boiled water the malarial attacks may be reduced to a minimum. It is a matter of common observation that, in families using boiled water, those who, for some reason do not drink it have been known to have malarial attacks while the others escaped. Purer and better water can be obtained from deeply bored or driven wells and cisterns. When proper care is exercised in collecting, no better water can be procured than cistern water. The Board of Health has done great good in disseminating information in regard to bored wells. They are coming into more general use, and wherever used malaria prevails to less extent: but the pump gets out of order, is troublesome to repair, and doubtless too, after a while, unless very deep, these wells become contaminated and their use is discon-

tinued. Artesian wells, where practicable, will fill all the requirements of pure drinking water, except in very rare instances. Their use is beginning to attract attention everywhere. Experimental wells are being sunk in many places, and no good reason exists why artesian wells should not be generally used in our section. Eastern Carolina needs purer drinking water. This can be obtained by boiling ordinary well water, by using cistern water properly collected, deep bored or artesian wells. Let our people realize this and put it into practical operation, and Eastern Carolina becomes at once the healthiest, the richest and the grandest section of our Commonwealth."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Florida: Pensacola, May 20, 1 case.
Michigan: Ionia, May 16, smallpox reported.
Tennessee: Memphis, May 16 to 23, 4 cases.

SMALLPOX—FOREIGN.

Alexandria, April 16 to 22, 2 deaths.
Bristol, May 2 to 9, 4 cases.
Buda-Pesth, April 8 to 29, 9 cases, 1 death.
Bombay, April 14 to 28, 77 deaths.
Calcutta, April 4 to 18, 10 deaths.
Callao, January 1 to April 1, 141 deaths; April 1 to 19, 10 deaths.
Cardiff, May 2 to 9, 2 cases.
Gibraltar, May 3 to 10, 1 case.
Guayaquil, April 24 to May 1, 5 deaths; May 1 to 8, 5 deaths.
Madras, April 18 to 24, 1 death.
Madrid, April 28 to May 5, 13 deaths.
Naples, May 2 to 9, 7 cases, 3 deaths.
Odessa, April 25 to May 2, 27 cases, 2 deaths.
Prague, April 25 to May 2, 3 cases.
Rotterdam, May 2 to 9, 1 case.
Rio de Janeiro, April 18 to 25, 3 deaths.
Trieste, April 18 to May 2, 1 case.
Tuxpan, April 25 to May 2, 1 case, 1 death.
Warsaw, April 25 to May 2, 4 deaths.

CHOLERA.

Alexandria (Egypt), April 16 to 22, 7 deaths.
Bombay, April 14 to 28, 19 deaths.
Calcutta, April 4 to 18, 565 deaths.

YELLOW FEVER.

Brazil: Ceara, March 1 to 31, 3 deaths; Rio de Janeiro, April 18 to 25, 96 cases, 68 deaths.
Cuba: Sagua le Grande, May 11, yellow fever reported.

BOOK NOTICES.

Fifteenth Annual Report of the State Board of Health of New York. Transmitted to the Legislature March 6, 1895. Albany, N. Y. James B. Lyon, State Printer. Pp. 775, 8vo, cloth, with supplement containing 18 maps.

This report is one of the best that this Board has yet produced. The Board does not devote much time to pedagogics, but goes "straight on" furnishing aid to towns and local boards of health, a complete report whereof will be found in this volume, with the maps showing the plans of sewerage and sanitary improvements.

In 1894 the State Legislature appointed a special commission on tuberculosis in cattle in the State of New York, and in this report a statement of the operations of the commission is given. The report states:

"Tuberculosis causes one in every eight deaths in this State, according to the statistics of the State Board of Health. No other disease approaches this as a cause of mortality to the human family. There is a complete unanimity of opinion now, in the scientific world as to its communicability from man to man, and from animals to man, and man to animals. That milk and its products will convey it, has been proven repeatedly. This has now passed beyond the experimental stage, and is no longer open to doubt. It has also been proven that lower animals fed with tuberculous meat become tuberculous as a result of such feeding.

"It may be accepted as a fact that milk from tuberculous cows in which the udders are distinctly affected, contain tubercle bacilli, and that such milk is a dangerous aliment, and that sterilization would not render it a desirable nutrient material, because of other poisonous products contained in it as a result of the disorganization caused by the disease. When it is considered that milk is the principal aliment during childhood and enters largely into the dietary for all ages, it is a highly important question.

"The channel of infection is more likely to be through the alimentary tract, since recent investigations have shown that the sun's rays are inimical to the bacilli tuberculosis. The danger of infection through the respiratory tract is therefore lessened.

"The New York State Board of Health examined 22,000 cattle during the year, and one-half following the passage of the tuberculosis act, and of this number, caused to be slaughtered about 800. So important was the work thought to be that the commission on tuberculosis in cattle was constituted on the 31st day of May, 1894, to further inquire into the existence of tuberculosis in cattle. During the short time since its creation this commission has carefully studied, by a system of special inspection, the prevalence, distribution, mode of infection and general behavior of tuberculosis in cattle, confining part of its work to a given area, which was thought to be comparatively free from general infection from other sources. In this district 947 animals were examined, and out of this number 66 were condemned and slaughtered. A dissection of each animal showed it to be tuberculous, showing 6.96 per cent. diseased, and it is believed that this is fair average if the State were taken as a whole. A large proportion of these animals were common stock, which fact controverts the opinion which obtained very generally hitherto, that common bovine animals have immunity from tuberculosis. Tuberculosis is not a respecter of breeds. The disease once introduced into a herd, spreads with certainty throughout, and with a rapidity proportionate to the insanitary surroundings. Cattle kept in well-ventilated stables, with free admission of sunlight, are less prone to the disease, while those kept in dark, ill ventilated stables, amidst filth and insanitary environments, develop the disease rapidly once it is introduced.

"The investigations of this commission have shown that tuberculosis is, under certain conditions, congenital, but its general diffusion is due to contagion. But a very small proportion of tuberculosis is disseminated by transmission. All the facts in the possession of this Commission, as a result of investigation, show that tuberculosis spreads with certainty when diseased and healthy animals are housed together. The contagiousness of the disease is established beyond a doubt, for in most cases, it can be traced from herd to herd in localities where dairymen deal with each other in the purchase of cattle from infected herds."

Yearbook of the United States Department of Agriculture, 1894. Government Printing Office. 8vo, cloth, pp. 608. Washington: 1895.

Of all the departments of the Government, few have made more progress in general usefulness than the Department of Agriculture. This has been almost entirely due to its scientific Bureau. This yearbook is a new departure and will surely increase the popularity of the Department.

This volume is divided into three sections:

1. Report of the Secretary for 1894, giving a general account of the operations of the Department.
2. Essays and papers by chiefs of Bureaus and divisions, on their general work, and on special studies of interest to the farmer.
3. An appendix made up of statistical tables useful for reference.

The contents of this yearbook are: 1. Report of the Secre-

tary. 2. The Federal Meat Inspection by D. E. Salmon. 3. Education and research in Agriculture in the United States by A. C. True. 4. What Meteorology can do for the Farmer, by M. W. Harrington. 5. Value of Forecasts, H. C. Dunwoody. 6. Soils in Relation to Crop Production, Milton Whitney. 7. Water as a Factor in the Growth of Plants, by B. T. Galloway and A. F. Woods. 8. Mineral Phosphates as Fertilizers by H. W. Wiley. 9. Fertilization of soil as Affecting the Orange in Health and Disease, H. J. Webber. 10. The Geographic Distribution of Animals and Plants in North America, C. Hart Merriam. 11. Hawks and Owls as related to the Farmer, A. K. Fisher. 12. The Crow, Blackbirds and their Food, F. E. L. Beal. 13. Some Scale Insects of the Orchard, L. O. Howard. 14. The more Important Insects Injurious to stored Grain, F. H. Chittenden. 15. The Dairy Herd; its Formation and Management, H. E. Alvord. 16. Suppression and Prevention of Bovine Tuberculosis, Theobald Smith. 17. Pasteurization and Sterilization of Milk, E. A. De Schweinitz. 18. Food and Diet, W. O. Atwater. 19. Pure Seed Investigation, G. H. Hicks, and eight other articles peculiarly relating to the farm. The yearbook of the Agricultural Department has "come to stay."

Borderland Studies, Miscellaneous Addresses and Essays, pertaining to medicine and the medical profession, and their relations to general science and thought by GEORGE M. GOULD. Formerly editor of *Medical News*, Philadelphia: P. Blakiston, Son & Co. 1012 Walnut Street. 8vo, cl., pp. 380. Price \$2.

The profound scholarship, the keen judgment, and the humor which pervades Dr. Gould's writings are destined to make them popular. Although a shudder goes through one when some old time image is swept away by a single stroke of the sword, yet we must admit that if there were no iconoclasts there would be no progress in civilization. If there were no reformers there would be no reform; if there were no revolutionists, governments would go on forever, grinding the poor and laying additional burdens on the patriotic; the chains of the slave would clank to deaf ears, and the race become covered with the dust of antique custom.

There is another thing that is evident in all the writing of Dr. Gould, and that is the absolute sincerity of the man. No weak or foolish sentiment appears in any article; it is entirely clear that he believes what he writes, and equally clear that no motives of policy govern. Whether perpetrated by friend or foe a wrong is a wrong, and as such to be pilloried. A master of satire, he rarely uses it for personal punishment, but merely for decorative purposes.

In this book we find some of the more thoughtful of the editorial articles as published in the *Medical News*, and essays published in the *Monist* and the *Open Court*. This volume places them on permanent record; even when one can not agree with all of them he must feel that medical literature is enriched by their preservation and the standard of American scholarship sustained by able hands.

Twentieth Century Practice, an International Encyclopedia of Modern Medical Science by leading authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York city. In twenty volumes. Vol. V. Diseases of the Skin. New York: William Wood and Company. 1896.

The contributors to this volume, with perhaps two exceptions, are well-known writers on dermatology, and several have text-books of their own. Surely, the duty of fairly depicting the state of knowledge on this subject could not have been intrusted to abler hands.

Charles W. Allen, M.D., New York; John T. Bowen, M.D., Boston; L. Brocq, M.D., Paris; L. Duncan Bulkley, M.D., New York; H. Radcliffe Crocker, M.D., London; James Nevins Hyde, M.D., Chicago; Moriz Kaposi, M.D., Vienna; H. Leloir, M.D., Lille; D. W. Montgomery, M.D., San Francisco; Arthur Van Harlingen, M.D., Philadelphia, and H. Whitehouse, of New York, are the contributors. The text is brought

up to date, the illustrations are excellent, and the publisher's part of the book is all that could be desired. This volume is a worthy companion to the other excellent ones of the series.

Transactions of the American Orthopedic Association, Ninth Session, held at Chicago, Sept. 17-19, 1895, Vol. VIII, 335 pages, 8vo, cl.

It is printed in clear type on fine paper, and illustrated with numerous cuts showing deformities and the apparatus for their treatment, some new to the profession. The society has fifty-two active and twenty-one corresponding and honorary members, and this list includes the names of many of the most prominent workers and writers on orthopedic surgery in the United States and foreign countries. The volume contains lists of officers and members, active, honorary and corresponding; constitution and by-laws, and thirty-eight papers by men of well-known ability.

The volume will be read with interest and profit by all surgeons interested in orthopedic work.

The following are the officers for the ensuing year:

President, Dr. Samuel Ketch, New York, N. Y.

First Vice-President, Dr. H. M. Sherman, San Francisco.

Second Vice-President, Dr. W. R. Townsend, New York, N. Y.

Treasurer, Dr. E. G. Brackett, Boston.

Secretary, Dr. John Ridlon, 103 State Street, Chicago.

City of St. Louis Health Department, eighteenth annual report of the Commissioner, for the year ending March 31, 1895.

This report of Dr. Homan is more than usually interesting. In addition to the report of the Health Commissioner the annual statements of subordinate officers, and of the superintendents of the City Hospital, Insane Asylum, Female Hospital, Poor House, and of the Physician to the Quarantine and Smallpox hospitals. "St. Louis," says Dr. Homan "is the focal point of all this drainage¹ and must bear the brunt of the attack as best she may, no place of any considerable size below drawing public supplies from the channel of the Mississippi, therefore the means of prevention and correction should be most diligently considered here and now." He therefore recommends the Smart bill to appoint a National Commission for the investigation of the pollution of water supplies where such pollution affects or threatens to affect the water supply of more than one State. It is to be regretted that the bill has not been favorably considered. That is one of the matters that the new department of Public Health will have to take up, when it is established.

Transactions of the New York State Medical Association for the Year 1895. Vol. XII. Edited for the Association by E. D. FERGUSON, M.D., of Rensselaer County. 8vo, pp. 603.

It contains a list of presidents and vice-presidents from the founding of the Association in 1884. Darwin Colvin, M.D., Clyde, is president, and E. D. Ferguson, M.D., Troy, secretary for 1895-96. Among the many valuable papers appears the address of the retiring president, Austin Flint, M.D., New York, on "The Coming Role of the Medical Profession in the Scientific Treatment of Crime and Criminals." E. H. Squibb, M.D., in his paper, "Brief Comments on the Materia Medica, Pharmacy and Therapeutics" of the year ending Oct. 1, 1895, gives in concise form a résumé of observations of effects of many of the newer additions to the pharmacopeia.

Obstetrical Accidents, Emergencies and Operations, by L. C. H. BOISLINIERE, A.M., M.D., LL.D. Late Emeritus Professor of Obstetrics in the St. Louis Medical College, etc. Illustrated. Philadelphia: 1896. W. B. Saunders, 925 Walnut Street. 8vo., cl., pp. 381. Price \$2.00.

This handbook comprises the essentials of the branches set forth in the title conveniently arranged and admirably stated. It seems to very happily present in a small compass the present teachings of the art. The publisher has well performed

¹ From the Illinois and Missouri Rivers.

his part of the book by furnishing excellent illustrations. It is a book which will be of great service to students, and as well to young practitioners, for everybody knows that the young obstetrician invariably has the most desperate cases.

A Compend of Gynecology, by WILLIAM H. WELLS, M.D., with 150 illustrations. Philadelphia: 1896. P. Blakiston, Son & Co. Price 80 cents. cl., pp. 262.

This is an excellent book of its class, well printed, profusely illustrated, and admirably compiled. Some of the larger books might study this book as an object lesson in the department of condensation.

A Compend of Diseases of Children, by MARCUS P. HATFIELD, A.M., M.D., 2d edition. Revised. Philadelphia: 1896, P. Blakiston, Son & Co. Cloth, pp. 220. Price 80c.

Another aspirant for classroom honors, is found in Dr. Hatfield's compend. It is with pleasure we note that the author has used the reformed spelling, and the metric system. There are few errors and the arrangement is excellent.

Proceedings of the Philadelphia County Medical Society, Vol. XVI, Session of 1895. ALFRED STENGEL, M.D., Editor. 8vo, cl., pp. 400.

It contains, in addition to lists of officers and members, forty-seven papers on the various branches of medicine and surgery, many of them valuable additions to the literature of the subjects on which they treat. The society now numbers nearly 700 members.

NECROLOGY.

ORIN D. TODD, M.D., of Eminence, Ky., died in Louisville on May 4. He had been ill for about six weeks. He suffered with a complication of troubles and died with symptoms pointing to serious lesion of the kidneys. Dr. Todd was 53 years old. His early education was obtained at the local schools of Eminence and his medical education was received at Jefferson Medical College at Philadelphia, graduating soon before the outbreak of the war, during which he served as a surgeon; at the close of it he settled in Eminence, residing there continuously until his death. He was a railroad surgeon of some prominence, and served as referee for the State Board of Health in Henry County since the passage of the Medical Practice Law a few years ago. He has been vice-president of the Kentucky State Medical Society and a prominent candidate for the presidency. No man had more friends than Dr. Todd and his death is a personal loss to many throughout the State as well as in his own county. No gathering of the State Medical Society was complete without Todd, and he was always down on the program to answer the toast of the "Ladies" or the "Absent Ones," which was always full of mirth and pleasantries, though he was unmarried. He was a most generous and noble soul, generous when it was to his interest to be otherwise; charitable always; happy, bright and cheery at the bedside of the sick; a comforting friend to the dying; a typical friend in need; generous and loving to his friends and kind and charitable to the stranger within his gate. His heart was a most genuine one, a lover of fun, a great, noble man with the heart of a great, noble boy. At his home there was no public gathering where Dr. Todd was not a welcome visitor; there was no private entertainment where his smiling face did not beam a welcome and a benediction. As a friend said: "There was no man among us so sincerely loved and no man so much deserved that love; how sadly he will be missed only the people of Eminence can tell, and all that section of country as well."

CARLTON PENNINGTON FROST, M.D., LL.D., dean of Dartmouth Medical College, at Hanover, N. H., May 24, of heart disease. Dr. Frost was born in Sullivan in 1830. He fitted for college at Thetford Academy and graduated from Dartmouth in 1852. In 1855 he graduated from Dartmouth Med-

ical College, and from New York Medical College in 1857, with the degree of M.D. The degree of LL.D. was granted him by Dartmouth in 1890. From 1857 to 1862 he practiced in St. Johnsbury, Vt. Thence he went to the civil war as a surgeon of the Fifteenth Vermont Volunteers and acted as surgeon of the board of enrollment from 1862 to 1865. At the close of the war he settled in Brattleboro, Vt., where he practiced until 1871, when he became a lecturer on science and practice of medicine in the Dartmouth Medical College, and was appointed professor of the same subject in 1871. He has served as dean for twenty-nine years, and since 1881 he had been on the college board of trustees. He had also been a trustee of the State Asylum and president of the State Medical Societies of New Hampshire and Vermont.

EMMETT THOMAS GAMMAGE, M.D., of Brooklyn, died May 9. He was born in Northampton, England, in 1840. He studied medicine and graduated from the Royal College of Physicians and Surgeons. He lectured throughout England in the interest of the charter movement, and was indicted for sedition, but was never tried. He came to this country in 1868, and settled in Brooklyn, where his work as a music composer and critic gained him some fame. He has been prominently identified with many musical societies, and was at one time president of the Brooklyn Choral Union. His widow and two children survive him. His daughter, Florence Maud Gammage, is well known as a concert singer.

AMOS H. JOHNSON, M.D., of Salem, Mass., died May 12, aged 65 years. Dr. Johnson was born in Boston, August 4, 1831. He was educated at Chauncy Hall School, Phillips Andover Academy, was graduated from Harvard in 1853 and from the Andover Theological Seminary in 1856. From 1857 to 1861 he was pastor of the Congregational Church in Middletown, Mass. In the spring of 1862 he entered the Harvard Medical School, obtaining his degree in 1865. In 1866 he settled in Salem as a practicing physician, where he had been located ever since.

ST. GEORGE BRIDGES, M.D., at Richmond, Va., April 20, of appendicitis. He had made a special study of appendicitis and was considered an authority on that disease.—Emil Custer, M.D. (University of Würzburg, Germany, 1845), at Manchester, N. H., May 18, aged 76 years.—Thomas F. Hines, M.D. (College of Physicians and Surgeons, Keokuk, Iowa, 1892), at Middle Creek, Ohio, May 13.

SOCIETY NEWS.

The Louisiana State Medical Society held its seventeenth annual session at New Orleans, La., May 12 to 15. P. E. Achmard, M.D., Acting President, delivered the annual address. The program included a clinic each morning at the Charity Hospital.

Pennsylvania State Medical Society.—At the annual session held at Harrisburg, Pa., May 19 and 20, the following officers were elected for the ensuing year: President, Dr. E. E. Montgomery, Philadelphia; Vice-Presidents, Dr. C. O. Shaw, Allegheny County; Dr. F. P. Ball, Clinton; Dr. T. M. Livingston, Lancaster; Dr. A. C. Wentz, York County; Secretary, Dr. W. B. Atkinson, Philadelphia; Assistant Secretary, Dr. Adolph Koenig, Allegheny County; Treasurer, Dr. G. B. Dunmire, Philadelphia; Members of Judiciary Council, Drs. M. A. Rhoads, Berks; John H. Packard, Philadelphia; John Curwen, Warren; delegates elected to Pan-American Medical Congress are J. M. Anders and Ernest LaPlace, Philadelphia; W. F. Bacon, York; R. J. Ramsey, Franklin County; A. M. Miller, Lancaster; E. M. Corson, Montgomery County; F. F. Davis, Venango County. The next convention will be held at Pittsburg in September, 1897.

MISCELLANY.

Reading Room for Students.—A Paris medical journal, *Médecine Moderne*, has founded a free reading room for the benefit of the medical students of the Latin Quarter, and the success of the new departure has surpassed all expectations.

The Medical Cricketer.—Mr. W. G. Grace, the adored champion of cricket in England, has been honored by national testimonial the value of which is not far from \$45,000. The major part of this handsome gift has been invested in income-bearing securities. Mr. Grace was admitted to practice as a surgeon in 1879.

Period of Gestation.—The supreme court of Nebraska held, April 7, 1896, in the case of *Davison v. Cruse*, that the probable duration of the period of gestation is a question of fact, to be shown by proper evidence in each particular case wherein that question is material. In this respect it says it is quite analogous to the existence of negligence as contributing to personal injuries.

Need Not Make Out Prescriptions.—A druggist who is a regular physician, the court of appeals of Kentucky holds, April 15, 1896, in the case of *Lindsay v. Commonwealth*, need not make out for himself prescriptions prescribed and filled by him as such physician and druggist for others, and preserve them as a protection from prosecution, as for example under the Kentucky law, for selling liquor without a license.

Sacral Eschar Following Vaginal Hysterectomy.—Both Legueu and Villar have called attention to this possible consequence of vaginal hysterectomy. In one case, four days after a tedious operation in which an enormous fibroma had been removed, the patient complained of pain below the kidneys, and a very large eschar made its appearance, suppurating and much distressing the patient, accompanied by incontinence of urine and feces.—*Bulletin Médical*, April 8.

The First Female "Master in Surgery."—Miss Louisa Aldrich-Blake has achieved the distinction of becoming the first Master in Surgery of the University of London. She has, by winning this distinction, capped an honorable career as a student at the London School of Medicine for Women, having distinguished herself in every part of her student course. Miss Blake is Curator of the Anatomic Museum at the Royal Free Hospital, London.

A Valuable Prize Divided Between Drs. Roux and Behring.—The French Academy of Medicine has divided the Prix St. Paul of \$5,000 between Dr. Roux, of the Pasteur Institute, and Dr. Behring, of Berlin, for their discovery of the anti-diphtheritic vaccine. The *Figaro* says that a large number of German and English savants have accused Dr. Roux of having wished to take to himself all the credit of this discovery. The truth is that Dr. Roux has constantly refused every prize or reward, unless a part thereof shall have been granted to Dr. Behring.

The Reason for the High Price of Eunuchs.—In Egypt lads from 7 to 10, are castrated by cutting off at one stroke the scrotum and penis with a razor, after which the child is buried in dry sand almost to his neck, to check the flow of blood, for four or five days. Another method is to sever the penis by means of a stout cord tied around it, the ends of which are violently pulled. The pain of each method is intense, and two-thirds of the children castrated succumb to these barbarous mutilations.—*Bulletin Médical*, April 15.

How the Attendant got the Bath.—The following narrative is taken from an English journal: In the west country, in Somerset, two women became insane during the same week. The relieving officer, with the assistance of a female attendant, removed them to an asylum. While the relieving officer and the medical officer were absent from the room, the nurses came and mistook the patients, for while one was taken to the bath-

room the other was left behind, and in her place the attendant who came with her, despite her protests, screams and oft-repeated statement that she was not the patient, was removed, stripped and bathed.

A Variety of Streptococcus Refractory to Marmorek's Serum.—Mery has succeeded in isolating a streptococcus from a patient with malarial fever, which proved extremely virulent on mice and rabbits, and yet resisted completely the effect of Marmorek's serum, tested again and again. It resembles very much the streptococcus found in strangles. Mery thinks that his discovery explains the variable action of Marmorek's serum, which has no effect on the new streptococcus, while destructive to the usual kind.—*Bulletin Médical*, April 22.

Clinical and Experimental Study of Infarction and Rotation of the Spleen.—Urso describes two cases he has operated upon for wandering spleen, and reviews the twenty-six cases on record of infarcted wandering spleen, combined with a twisted pedicle. He thus presents the anatomic and clinical picture of this complication of ectopic spleen. He also produced similar conditions in dogs by ligating the splenic veins, and found that the rotation of the spleen, when it occurs suddenly, may produce the symptoms of an acute strangulation. Twisting the pedicle sometimes produced infarction, of an embolic character. Infarctus of the spleen, he stated, is caused therefore by some interference in the circulation in the branches of the vena lienalis.—From *Policlinico*, Nos. 1-3, in *Centralblatt f. Chir.*, May 2.

A Great Benefactor, Mr. Ledger.—The *Independent* has the following brief personal note regarding the declining years of a true benefactor of his race: "One of the great, but not much talked about benefactors of mankind, is still living and in excellent health at Kenmore, Mr. Ledger, who about forty years ago after many trials and hardships, introduced that variety of cinchona calisaya known as Ledgerana, into the island of Java, when it began to be feared that the careless and destructive methods of gathering it by the natives of its South American home would wholly deprive the world of it. But this variety is very rich in quinin, and the great London firm that handles the main part of the product are afraid the world will not need all that now is produced. It is estimated that the quantity of bark now produced every year is fully ten millions of pounds."

"Taking Poison."—The supreme court of Illinois handed down two decisions March 28, 1896, in which it holds that the term "taking poison," as used in a policy of life insurance, means the voluntary taking of poison, or an intelligent and conscious act. In the first case, *Travelers' Insurance Co. v. Dunlap*, the death of the insured was caused by his mistaking a bottle of carbolic acid for peppermint. In the second case, *Metropolitan Accident Association v. Froiland*, death resulted from chloral being taken by mistake for distilled water. Here the policy provided, "I agree that this insurance shall not be held to extend . . . to poison in 'any way taken, administered, absorbed, or inhaled.'" The words, "in any way," the court holds relate to the mode or manner in which the poison is taken, and not to the motive of the insured in taking it. In both cases the supreme court affirms judgments, rendered for the respective plaintiffs, against the insurance companies.

Antitoxic Property of the Blood of Animals.—Phisalix announces that animals considered refractory to poisons (adders, vipers, frogs) succumb to large toxic doses, while on the other hand, animals considered susceptible resist small doses. It is therefore merely a question of degree. In the same way, the blood or serum of refractory animals is antitoxic, and can neutralize a large quantity of poison. Inversely the blood or serum of ordinary animals is not sensibly toxic, and yet ten to fifteen centimeters of the blood of a guinea pig added to a fatal dose of poison will retard its action. There exists, therefore, in the blood a small amount of some antitoxic substance, and conse-

quently the refractory condition of certain animals is merely an exaggeration of the normal condition.—*Bulletin Médical*, April 22.

Test for Albumin in Urine.—Dr. Adolf Jolles, of Vienna, according to the *Medical Press and Circular*, has brought forward a new test containing mercury, succinic acid and the hypochlorite of soda. He maintains that a good test for albumin should be free from color and sensitive in reaction, and thought the following fulfilled these requirements:

R Hydrarg. bichlorid.	5	ijss	10
Acid. succinici	5	v	20
Sodii hypochlorit.	5	ijss	10
Aque distillat.	5	xv	450

After filtering 4 or 5 c.cm. of the urine to be tested, 1 c.cm. of 30 per cent. acetic solution is added, with 4 c.cm. of the above reagent. The whole is well shaken and set aside to settle. In a second test tube, 4 or 5 c.cm. of the urine after filtration is treated with 1 c.cm. of the acetic acid as above and then set aside to settle in order to estimate the amount of mucin present. This eliminates any error from the absolute albumin present. The potassium ferrocyanid test is defective in this respect. The reaction is very sensitive and can detect 1 of albumin in 120,000 parts of urine. The reagent is free from color throughout, which is another advantage over the potassium ferrocyanid test. It is also superior to Spiegler's in defining accurately the amount present in the absence of chlorids.

A Missionary Hospital at Old Cairo.—The Church of England has through its veteran, Dr. Harpur, for several years conducted a little hospital of ten beds and a considerable dispensary work in the guardhouse of an old palace. Here from early morning often till late in the afternoon two doctors, English and Syrian, with their native assistants, are engaged in attending the sick and suffering. Since 1892 there has been a daily attendance of over 100, and during the past two years, of which a careful record has been kept, 10,849 persons have been treated, while 1,007 operations have been performed. The patients come from all parts of the country, even from as far as Suez, Assouan, Kafr-Zayat, Tantah and Zagazig, although, the largest number are from Old Cairo and the neighborhood. In 1894, 421 districts and villages were represented by the patients. In consequence of the large number of women attending the dispensary, the committee are sending out a lady doctor this year in addition to the present staff. The work is carried on under great difficulties, for the hospital is both inadequate and insanitary, and the whole accommodation of the mission is costly and uncertain. The committee of the C. M. S. have given a grant for the purchase of a site and for building houses for the doctors and lady workers, but a further sum of at least \$13,000 is needed for building the hospital and dispensary.

To Control Sale of Antitoxin in Connecticut.—A law was passed in Connecticut in 1895 that no person shall sell, offer, expose for sale, or shall receive or solicit any order for the sale or delivery, within that State, of any article known as diphtheria antitoxin, or any article prepared from the blood serum of any animal, and intended to be used for a medicine, unless the receptacle containing such preparation bears a label on which is placed the name and address of the producer, and upon such label, or upon a circular accompanying such receptacle, and inclosed with it in a sealed package, shall be printed or written the date of production and the value of the contents in antitoxin as measured by some generally recognized standard. Any person violating these provisions shall be fined not more than \$500, or imprisoned more than one year, or both. The State board of health may, from time to time, at its discretion, procure from any dealer in antitoxin or other blood serum medicine samples of such articles and cause the same to be tested, and if by such test it shall be found that the article tested is not such as it is represented to be on the package, but of infe-

rior quality, then the seller of such inferior article shall be punished as above. It shall be the duty of the county health officer in each county to prosecute violators of the provisions of this law.

Liability for Negligence in Making Examination.—The law does not exact from physicians and surgeons the utmost degree of care or the highest attainable skill in the practice of their profession, although they, by virtue of their relation toward patients, impliedly engage that they possess ordinary knowledge and skill, and that they will in the course of their employment exercise such proper care and attention as may be reasonably expected from members of their profession. Such is the statement of law made by the supreme court of Nebraska in connection with its decision of April 7, 1896, in the case of *Griswold v. Hutchinson*. This was an action brought against two physicians. The plaintiff alleged that he had employed them to treat his wife for what they pronounced an ovarian tumor, and that when they performed an operation therefor they found her only ailment was a fibroid tumor of the uterus, which fact they concealed from him. The court says that it was clearly established by the record that they were mistaken respecting its being an ovarian tumor. Some of the evidence in the case suggested that as careful an examination was not made as should have been for the purpose of determining on an operation. Indeed, the court says, on this point, that the testimony of the medical witnesses tended directly to prove the wrong alleged, viz., negligence in the examination, and the consequent unfortunate result thereof. On the trial, in the district court, judgment was entered in favor of the defendants on a verdict rendered in accordance with the peremptory instruction of the judge. The supreme court hold that this was error as to one of the defendants and reverses the judgment as to him. But as to the other defendant, Dr. Hutchinson, the court holds that the judgment in his favor was correct. When first consulted, he advised the plaintiff to consult some physician who was a specialist in that line, and his attitude toward the case after surrendering the patient to the other defendant was that of a friend and counselor only, and in no sense that of a physician or surgeon. On this ground the court exonerates him.

Practical Notes.

Favorable Influence of Strychnin in Chloroform Intoxication.—Evenchow states in *Wratsch*, No. 1, that in his experiments on dogs, he found that strychnin retards unmistakably the heart failure in collapse from chloroform, by its stimulating effect on the vasomotor center, which raises the lowered blood pressure.

First Trial at Kiev of Serum Therapy for Syphilis.—Wreden describes in the *Bolnitschnaja Gazeta Botkina*, No. 52, his experience with five young soldiers in the tertiary stage of syphilis, to whom he administered subcutaneous injections of mercurialized serum (10 c.cm.) It worked favorably from the first injection, diminished the pains and healed rapidly the ulcerations.

Alum Bougies.—Soak 5 parts gelatin in 35 parts water for 15 minutes, then add 10 parts glycerin and heat the mixture till it has evaporated to 40 parts. It must not boil, but can be kept at an even temperature by arranging the vessel at some distance above the heat. Add to this a warm solution of 1 part alum in 25 parts water, and heat until the mass become liquid again, and evaporate to 64 parts when it is ready to pour out. These bougies contain 12.5 per cent. alum.—*Bulletin de la Société de Pharm. de Bordeaux*, March.

Refuge for Pregnant Women and Mother's Milk Society.—These are two noteworthy benevolent institutions of Paris. In the former, women are received and physically cared for, while their work in a sewing-room attached, enables them to earn quite a little sum of money, which is given them when they leave. The children born average far higher physically than

usual. The other society supervises and assists mothers who have nursing children at their homes.

Retention of Dead Fetus. Labor Induced by Salicylate of Soda.—The fetus died at the fifth month and three months later the patient entered the hospital to be mechanically delivered. Nothing was done but to administer daily 6 grams of salicylate of soda for five days, when labor was induced and a natural delivery ensued. Vinay adds that medication alone is ineffective in inducing labor, unless the uterine contractions have already commenced, or unless some pathologic cause like the dead fetus, has produced a readiness in the uterus to respond. —*Gazette Médical de Liège*, April 30.

Straw Charcoal Recommended for Navel Bandages.—Wainstein describes in the *Shurnal bolesnej*, No. 10, a series of tests he has been making to determine the best material for navel bandages. The ideals of absolute cleanliness, rapid drying and healing are best secured by refraining from bathing, and by using the most absorbent bandage. This he asserts is straw charcoal (98 per cent.), after which come potassium permanganate and dry cotton. He also tried plaster of Paris, tannin, alum, glycerin and charcoal, and writes from an extensive experience, his views embracing the latest discoveries in regard to the superiority of hygroscopic bandages.—*St. Peters. Med. Woch.*, April 25.

Rectal Gonorrhea in Women.—Baer states that he has found this complication in 67 out of 191 cases of gonorrhea in women. He treats it with copious irrigation, using a 3 per cent. solution of boric acid, and to destroy the gonococci, a $\frac{1}{3}$ per 1,000 solution of argentamin. The erosions he paints with a 2 per cent. solution of argentamin. He has also found ichthyol effective.—*Deutsch. med. Wochenschrift*, February 20.

Tussol in Whooping Cough.—An epidemic of whooping cough gave a German physician the opportunity to test the virtue of tussol, which he found quite beneficial, in many cases restricting the duration of the disease to a couple of weeks. This JOURNAL, page 696, mentions another new remedy for whooping cough, chlorhydrate of phenocol. The practice of sending the little patient away from home is quite common, but it is strongly to be deprecated, as it often produces an epidemic in the place to which he is sent.—*Therapeutische Wochenschrift*, March 15.

Treatment of Wounds by Formalin.—Schleich announced at the Balneologic Society that he has discovered a new way of causing wounds to heal that renders the greatest triumph of modern surgery, antiseptis, entirely superfluous. With it there is no need for any carbolic or sublimate solution or iodoform gauze. The process consists in sprinkling pulverized gelatinized formalin in the wound, which produces some chemic change in the organism. The living cells take up the formalin, and it acts upon them in some way that has an accelerating effect upon the healing processes of the wound. Pus formations cease more rapidly than by any other method, while fever and inflammation subside immediately. He exhibited some patients operated upon a day or so previously, for various serious troubles, whose wounds had healed to a wonderful extent.—*Therapeutische Wochenschrift*, March 15.

Ether versus Chloroform.—Eisendraht has been studying the effect on 130 patients of the administration of these two anesthetics, testing the urine before and after, etc. He finds that preëxisting albuminuria is more frequently increased by the administration of ether than of chloroform. In healthy persons albuminuria is found in 25 per cent. of the cases after ether and in 32 per cent. of the cases after chloroform. Cylindruria follows the use of either in the same number of cases, 2 in all out of 130.—*Deutsch. Zeitsch. f. Chir. in Union Méd.* March 7.

Official Reports of the Antitoxin Treatment in Germany.—Replies

were received from 1,349 physicians to the circular sent out by the German government to collect statistics in regard to the treatment of diphtheria with antitoxin. The mortality in the 6,626 total cases treated, was 12.9 per cent. as a whole, and 19.5 per cent. in the hospital cases. There were sixty cases reported where the effect had been injurious, producing eruptions, albuminuria, pains in the articulations, cardiac troubles and nephritis, with three cases of general weakness. Forty-two of these recovered, and eighteen died. In 55.6 per cent. of the cases commented upon by the physicians, out of a total of 4,871, the beneficial effects of the serum were unmistakable. In 30.8 per cent. they were considered doubtful, and in 13.6 they were considered *nil*.

Non-Syphilitic Orbital Tumor Cured by Potassium Iodid.—Martin describes the case of a woman of 57, who applied to him for relief from pain in the orbit, more intense at night than during the day, with pronounced exophthalmus. The ophthalmoscope showed a venous stasis due to the compression of the optic nerve by a tumor. This pathologic condition had commenced eight months previously, after an attack of pleurisy. He supposed that it was a sarcoma, and as a waiting measure, he administered potassium iodid, one gram a day, intending to make an exploratory puncture and advise an operation later. But in one month there was marked improvement, and in two complete recovery. He adds that in similar cases this depuratory treatment should be followed, even when surgical intervention is necessary to prevent relapses, and states that not only potassium iodid is indicated, but possibly mercury, arsenic and various toxins, with whose properties we shall soon be better acquainted.—*Revue Gén. d'Ophtalmologie*, April 30.

Harrisburg.

THE PENNSYLVANIA STATE MEDICAL COUNCIL has rescinded its rules accepting licences from the New York Board of Medical Examiners. Physicians and surgeons who come into Pennsylvania hereafter from New York will be required to pass an examination before the State medical examining boards before they can practice, the same as those from other States and graduates fresh from medical and surgical colleges. The New York examiners have refused to accept the licenses issued by the Pennsylvania Council on the ground that the examinations in the State of Pennsylvania, are not up to the standard. A meeting of the council was held at which this retaliatory action was taken. The questions for the semi-annual examinations to be held June 16-20, were also prepared. The State Medical Board will conduct the examination in the senate chamber and house of representatives.

A HANDSOME PORTRAIT of the late Dr. T. J. Dunott, the Pennsylvania Railroad Surgeon and one of Harrisburg's best known physicians, who died in 1893, has been presented to the Harrisburg Academy of Medicine by Dr. J. F. Culp, of Steelton, Pa.

DR. HUGH HAMILTON of this city has been appointed secretary of the section on midwifery, diseases of women and abdominal operations in the second Pan-American Medical Congress.

Washington.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officers for the week ending May 16 shows: Number of deaths (stillbirths not included), 99; death rate per 1,000 per annum, 18.7; death rate per 1,000 per annum corresponding week last year, 17.1.

MEDICAL ASSOCIATION OF THE DISTRICT OF COLUMBIA.—The total membership of this Association is 358, not including 16 associate members.

MICROSCOPICAL SOCIETY.—At the twelfth annual reception, held on the 12th inst., seventy-five microscopes were in use, each exhibiting some interesting specimen, histologic or pathologic.

MEDICAL SOCIETY.—At the meeting held on the 13th instant Dr. Kerr read a paper on "Fractures of the Hip in the Aged,"

and Dr. V. A. Moore one entitled "Observations on the Number and Nature of the Bacteria Normally Found Present in Milk." At the meeting held on the 20th instant, Dr. S. S. Adams read a paper on "The Use of the Antitoxin of Diphtheria in Private Practice in the District of Columbia." Dr. Moore one on "Tuberculosis in Pigs," and presented some specimens showing the disease. The Society held a special meeting on the 18th instant to take suitable action on the death of one of its oldest and most respected members, Dr. Walter C. Briscoe, who died on the 16th instant at a sanitarium in Hopeworth, R. I.

DISTRICT HOSPITAL REPORTS.—The report of the Commissioner of Charities for the three months ended March 1, shows work done by the following hospitals:

The Central Dispensary and Emergency Hospital had 585 emergency cases, 89 ambulance calls and 10 autopsies; Columbia Hospital for Women had 499 medical and surgical cases treated, 87 operations performed and 1,335 prescriptions compounded; the Children's Hospital showed a total of 922 medical and surgical cases treated and 1,051 prescriptions compounded; National Homeopathic Hospital had 71 operations performed, 508 medical and surgical cases treated and 1,899 prescriptions compounded; in Freedman's Hospital there were 1,819 medical and surgical cases, and 1,340 prescriptions were compounded; the Women's Dispensary provided for 941 patients during the quarter; in the hospital of the Washington Asylum there were 171 patients received. Eight births occurred and 40 deaths.

WASHINGTON OBSTETRICAL AND GYNCOLOGICAL SOCIETY.—At the 247th meeting of the Society, held on the 15th instant, Dr. M. F. Cuthbert read a paper on the "General Management of Cases during Pregnancy and Confinement." Dr. Fry presented a uterus removed by abdominal section.

GEORGETOWN MEDICAL SCHOOL COMMENCEMENT was held on the 14th instant with eleven graduates.

CERTIFICATES OF HEALTH.—Senator Sherman has introduced a bill requiring all immigrants to the United States to exhibit upon landing in this country a certificate of health, signed by a medical officer of the Marine-Hospital Service, and providing that any immigrant who does not carry such a certificate shall be sent back to the port from which he came.

TO PREVENT CONTAGIOUS DISEASES.—Mr. Babcock has introduced in the House the bill of the Commissioners to prevent the spread of contagious diseases.

AGAINST THE VIVISECTION BILL.—Senator Gallinger presented a series of resolutions adopted by the AMERICAN MEDICAL ASSOCIATION, protesting against the passage of the bill regulating vivisection. Senator Proctor presented a memorial from Dr. Walter Wyman, Surgeon-General of the Marine-Hospital Service, and also a resolution adopted by the Pennsylvania Medical Society protesting against the bill, and there was also laid before the Senate a memorial from the Washington Chemical Society protesting against the passage of the bill.

DR. CARMICHAEL, of this city, who was operated upon at St. Luke's Hospital, New York city, on the 18th instant, for the relief of appendicitis, is improving rapidly.

Cincinnati.

CINCINNATI HOSPITAL.—The annual report of the Cincinnati hospital will be presented to the trustees next week, and will show an increase in work and usefulness. There is an effort being made to appoint an ex-boiler inspector superintendent of the hospital in place of Dr. F. M. Hendley. To those who will examine into the accounts, and the present condition of the institution in an unprejudiced manner it will be apparent that this would be a most deplorable move, for the staff would suffer the loss of several of its members who would resign in consequence, and surely the substituting of an inexperienced layman for a medical man of Dr. Hendley's experience and administrative ability would prove very detrimental to the hospital.

AN UNUSUAL CASE has appeared at Chillicothe under the care of Dr. S. Gorslene. A young man was bitten by a dog and in a few days began to manifest a most remarkable chain of symptoms. His skin resembled a week-old corpse, with general anasarca, marked dysphasia from laryngeal edema, articular inflammation, dyspnea and insomnia. He ranges from extreme violence to semi-consciousness. Other dogs who were bitten by this infected animal manifested the same symptoms as this case and they died in a few days in awful agony.

HEALTH OFFICER DR. J. W. PRENDERGAST has made several important recommendations in his annual report, among which are: The examination of cattle for tuberculosis by the injection of tuberculin; the establishment of an isolation hospital to consist of a number of small cottages located in the country, for the care of all city cases of diphtheria, measles, scarlet fever, etc.; and the erection of a disinfection station to be centrally located and where infected or suspected clothing, beds and furniture can be thoroughly sterilized by the most approved scientific methods at the expense of the city; dry air will probably be used.

THE WOMAN'S MEDICAL SOCIETY OF OHIO AND KENTUCKY was organized at a meeting held at the office of Dr. Ellen McCarthy, in the San Marco Building, May 22. The following officers were elected: President, Dr. Amelia J. Pryor, Cincinnati; Vice-President, Dr. Catherine Roebuck, Newport, Ky.; Secretary, Dr. Jessie Dillon, Cincinnati; Treasurer, Dr. Eliza Dickey, Cincinnati. The membership is limited to regular practitioners and the objects of the society are to encourage freer discussions of medical topics than are indulged in by the gentler sex at the Cincinnati Academy of Medicine, and to promote closer social relations between the members. The meetings are to be held bi-weekly.

THE BOARD OF MEDICAL EXAMINERS of the police department is wrestling with a knotty problem. Some months ago it ordered a number of policemen to exercise daily in the gymnasium in order to reduce their weight, and they have faithfully obeyed their orders, but in doing so a number have increased rather than diminished in weight, and now the question arises what influence will this have on the board when they pass on the fitness of the men for service?

THE LAURA MEMORIAL COLLEGE AND PRESBYTERIAN HOSPITAL held their annual meeting last Friday. The report of the medical department showed that 197 patients were treated in the hospital during the year. The receipts of the hospital from patients were \$3,303.98, making an average of \$32.06 from each patient. The expenses were \$6,317.29. A plea was made for free scholarships and better laboratory facilities.

ROBERT CAROTHERS has been appointed as one of the professors of surgery of the Laura Memorial College.

THE STATE BOARD OF MEDICAL EXAMINERS met at Columbus May 18 and discussed at length three important topics: The qualification of medical colleges; the licensing of opticians; and what constitutes the practice of medicine, this latter being left entirely to this Board to determine.

DR. W. H. DEWITT has been elected Medical Director of Christ's Hospital and Deaconess Home, to fill the vacancy caused by the death of Dr. C. G. Comegys.

THE MORTALITY REPORT for the week ended Friday, May 22, 1896, shows: Deaths from all causes 104; annual rate per 1,000, 15.42.

Detroit.

MEDICAL AND LIBRARY ASSOCIATION.—At the last regular meeting of this association, Monday, May 18, Dr. Guy L. Keifer read a paper on "The Antitoxin Treatment of Diphtheria," giving a general and brief report of cases which he had had under his personal observation. He verified the fact of its efficiency in prophylaxis, immunization and in treating after the disease is established, by the splendid results he had in his cases, and showed that it is not absolutely necessary to

have the treatment applied early, as in at least five of his cases the treatment was not applied until after the third day, when the disease had become well established. The Doctor cited a number of cases in which he had marked success, and in which he met with no deleterious effects with the exception of a slight localized pain at the seat of injection, and an eruption (urticaria) which appeared in some of his cases, from five to fourteen days after the injection, but disappeared rapidly. In order to give the serum treatment a thorough test he discarded all other treatment except the local application of a mild bichlorid solution, and such stimulants as he considered necessary. In all cases a milk diet was rigidly carried out. The mortality in the Doctor's cases which were not selected but treated in all stages of the disease, was one in fifteen or 6.66 per cent. In all the cases the temperature was reduced from one to three degrees within twelve hours after the use of the serum. In concluding his paper the Doctor said that in the future he for one would not feel justified in using anything but the antitoxin treatment, when he was convinced that he had a case of true Kleb's Loeffler diphtheria to manage.

THE WAYNE COUNTY MEDICAL SOCIETY, at its regular meeting, Thursday, May 21, listened to a very interesting paper by Dr. A. E. Carrier entitled, "Local Applications to the Skin." In the paper the Doctor pointed out the fact that pathologic lesions of the skin were identical in kind with those which occurred in other tissues of the body. The difference in symptoms being accounted for by a difference in structure of the organ in which the lesion occurs. Local therapy of the skin has two subjects in view, the relief of distressing symptoms, and the cure of the disease itself. He spoke of the great use that can be made of water. Tepid water macerates the epidermis. To prevent the parts from becoming sodden, we use salt, soda, or borax to increase the specific gravity of the solution, making it greater than that of the blood serum, and so preventing endosmosis. Water medicated with astringents, finds many opportunities for usefulness in parasitic affections, the water itself being of some use. On the other hand it is to be remembered that experience teaches us that many cases of eczema which will not yield to aqua solutions of certain preparations will readily yield the same preparations when used as ointments or powders. Soap finds a very valuable place in the treatment of skin disease. For simple cleansing, a neutral soap that has a slight excess of fat is the best. Soaps having an excess of alkali are very irritating and are to be used where we desire a stimulating effect. When used for this purpose the soap should be thoroughly rubbed into the part and then spread over it, and kept in place by a bandage for several hours. Soap may be the cause of many skin diseases. Ointments form a very valuable means of applying medicine, but they are something more than mere mixtures of fat and medicament. The coal tar products which form the basis of most salves are in themselves to some skins, irritants; but they have the valuable property of seldom becoming rancid. Decomposing salves or ointments work great harm. The consistency of the ointment is of great importance. It should be soft when we use it upon the scalp and should contain something to make it harder when we wish to get the prolonged action of the remedy. The ointment should not be used on surfaces containing an exudate as the effect of the drug is governed by the exudate. Powders are very serviceable preparations. Great care should be observed in preparing them, as from the mixture of the same, remedies of very different nature can be compounded. Powders are useful as protectives and absorbents.

HEALTH OFFICE REPORT for week ending May 23. Deaths under 5 years 25, total 70. Births, male 48, female 51, total 99. Contagious diseases: Diphtheria, last report 16, new cases 4, recovered 6, died 1, now sick 13; scarlet fever, last report 28, new cases 6, recovered 12, died 3, now sick 19; smallpox, none; measles, last report none, new cases 7.

Philadelphia.

UNIVERSITY OF PENNSYLVANIA.—Thomas McKean, Esq., Class of 1862, recently subscribed \$100,000 to the general fund of the University conditioned upon the raising of \$1,000,000 within a specified time. Provost Harrison has undertaken the task of completing the amount. Mr. Alfred C. Harrison has subscribed \$100,000 and J. William White, M.D., has promised to raise \$20,000. The annual commencement week is in June, and the examinations are now in progress.

JEFFERSON MEDICAL COLLEGE.—The 75th annual commencement was held at the Academy of Music. The address to the graduates was delivered by Prof. Theophilus Parvin, M.D., LL.D. The class numbered 227.

MEDICO-CHIRURGICAL COLLEGE.—The annual commencement of the college was held at the Academy of Music May 13, 1896, Dr. L. Webster Fox, Professor of Ophthalmology being the valedictorian. The number of graduates receiving the degree of M.D. was 54, in addition to which six took special courses.

THE SECTION ON GYNECOLOGY OF THE COLLEGE OF PHYSICIANS at its meeting on the 21st inst. had a varied and interesting series of papers. Dr. Robert H. Hamill presented a specimen and read the report on a "Case of Cesarean Section for Fibro-cystic Tumor Complicating Pregnancy, with Recovery of the Patient." By invitation of the Executive Committee, Dr. James F. Prendergast read a paper on "The Bicycle for Women." He considered that the advantages of this form of exercise when properly conducted, very greatly outweigh its objections and dangers. He stipulated, in the first place, that the person wishing to ride the bicycle should be taught a good method, so that the whole body should be exercised and not merely the lower extremities. Then a well adjusted saddle is of great importance, for women especially, and he praised the newer forms without any peak in front. Finally, the rider should not be permitted to indulge in the pastime to excess, at first, but should take up this form of exercise by degrees, so as not to cause undue amount of fatigue. With these precautions, he considers the bicycle a valuable adjunct to hygienic treatment and free from injury to the pelvic organs. Dr. Norris in discussing the paper, referred to a case of a patient suffering with lacerated perineum and relaxed muscles at the floor of the pelvis, who had refused operation and had become an enthusiastic rider of a wheel. A year later, he had again examined the patient and had found greatly increased tone and contractile force in the muscles of the pelvic floor, and such marked improvement that no operation was to be thought of. Dr. Longaker spoke of the height of the handles of some machines for ladies and condemned the very high handles equally with those which are too low. The handle-bar should be so adjusted as to allow the weight of the body to be distributed between three points, the pedals, the saddle, and the handles. In this manner of riding the exercise is extended to all the muscles of the trunk and limbs. Dr. Prendergast said that while a good saddle is not the only requirement it is a very important one, because very few women learn to support part of their weight upon the pedals in the act of riding on a bicycle. Dr. Richard C. Norris read the notes of "Three Cases of Tubercular Peritonitis" which had been subjected to operation. The difficulty of diagnosing this condition from ovarian cystomas was dwelt upon, and it was declared to be in some cases impossible to make out the condition positively before the abdomen is opened. The first case was submitted to celiotomy with removal of ovaries and tubes; universal peritoneal tuberculosis was found. She died in eleven hours, probably from tubercular toxemia, in the opinion of the reporter, although the possibility of a cryptogenetic infection, as suggested by Osler, was admitted. The second case, a colored woman 42 years of age, with symptoms of abdominal tumor and cachexia for a couple of years was subjected to laparotomy, removal of mass of tubercle and separation of adhesions between intestines, but the uterus and ovaries, being healthy, were not disturbed. Uninterrupted recovery followed. In the third case, a young colored girl, 17 years of age, a vaginal opening was made and tuberculous matter discharged; the symptoms having simulated a pelvic abscess. This patient also made a good recovery. The beneficial effects of operation upon peri-

toneal tuberculosis are observed in a very large percentage of the cases. The reason for this post-operative retrocession of the tubercular process in the peritoneum, and in the viscera of the abdomen was thought to be explained by the facts shown by experiments upon rabbits, that celiotomy is followed by increased resistance to infection and hyperemia, both of which are unfavorable to the further development of the tuberculosis. Dr. C. B. Penrose presented to the section a useful method of gauze drainage for the abdomen, which he had largely used during last winter, in at least thirty-five cases. He referred to the fact that the coils of intestine and the peritoneal surfaces adhere to the gauze and make it difficult to remove without the expenditure of an unjustifiable amount of force. His idea is to enclose the gauze drain in a thin rubber tubing made by cutting off the end of a rubber condom which is then slipped over the gauze and covers it where it comes in contact with the tissues, except at the extremity where the adhesions will be of little consequence. He had found it work very well in practice. Dr. B. C. Hirst, Chairman of the Section, read a paper on "Serum Therapy of Puerperal Septicemia." He had collected some thirty cases from current literature in which this method had been adopted. The serum employed was the anti-streptococcal toxin made in the Pasteur Laboratory in Paris by Marmorek, which he considered the best obtainable; he had no confidence in any form of anti-streptococcal serum made in this country which had been brought to his notice thus far. In the list of thirty cases, all of which had been treated by the Marmorek serum, there had been a mortality of 50 per cent., while the ordinary mortality of puerperal septicemia is only 25 per cent. Two patients, he declared, were evidently killed by the treatment, as their temperature record indicated that they would probably have recovered of their puerperal infection if the injections had not been given. Dr. Hirst further criticized the serum treatment by the anti-streptococcus serum by the statement that this at best was only claimed to be of use in streptococcus infection, but only 84 per cent. of clinical cases are of this character, the other 16 per cent. being distinctly something else, such as the staphylococcus pyocyaneus and ceruleus, pneumococcus, and so on. He had recently opened a large abscess after childbirth and had found it to contain only the pneumococcus. He therefore condemned the serum-therapy of puerperal septicemia as being not only inefficient but capable in itself of causing the death of patients who otherwise would recover. He believed that a more promising method of treatment was one which increased the number of white blood cells, causing a hyperleucocytosis, and referred to a recent paper in the *Centralblatt für Gynäkologie*, in which seven cases had been treated by this new method with very successful results.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 16 to May 22, 1896.

Capt. Richard W. Johnson, Asst. Surgeon, granted leave of absence for thirty days, to take effect about May 11, 1896.
Lieut.-Col. William E. Waters, Deputy Surgeon-General, granted leave of absence for two months, to take effect on or about July 1, 1896.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending May 16, 1896.

Asst. Surgeon H. D. Wilson, ordered to examination preliminary to promotion.

Asst. Surgeon C. M. De Valin, detached from the Philadelphia Hospital and ordered to hospital at Chelsea.

Asst. Surgeon E. M. Shipp, detached from the U. S. R. S. "Vermont," and to the U. S. S. "Monongahela."

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the fifteen days ended May 15, 1896.

Surgeon R. D. Murray, to inspect quarantine ports on Gulf Coast of Florida west of and including Apalachicola and the coasts of Alabama and Mississippi, May 1, 1896.

Surgeon P. H. Ballhache, to inspect quarantine ports on the coasts of Connecticut, New York and New Jersey, as far south as Sandy Hook, May 1, 1896.

Surgeon George Purviance, to inspect quarantine ports on coast of New Jersey south of Sandy Hook and on Delaware bay and river, May 1, 1896.

Surgeon H. W. Sawtelle, to inspect quarantine ports on the coasts of Louisiana and Texas, May 1, 1896.

Surgeon H. W. Austin, to inspect quarantine ports from northern port of Maine, to entrance northern port of Rhode Island, May 1, 1896.

Surgeon George W. Stoner, to inspect local quarantine station at Baltimore, Md., May 1, 1896.

Surgeon John Godfrey, to inspect quarantine ports on the coast of California, May 1, 1896.

Surgeon H. K. Carter, to inspect Cape Charles Quarantine Station, and quarantine stations at Newport News, Norfolk and Richmond, Va., and quarantine ports on the coasts of North and South Carolina, Georgia, Florida and the coast east of Apalachicola, excluding Key West, May 1, 1896.

P. A. Surgeon C. T. Peckham, to inspect quarantine ports on the coast of Washington exclusive of ports on the Columbia river, May 1, 1896. Granted leave of absence for thirty days on account of sickness, May 15, 1896.

P. A. Surgeon Eugene Wasdin, granted leave of absence for two days, from May 14 to 16, 1896.

P. A. Surgeon G. M. Guiteras, to inspect local quarantine station at Key West, Fla., May 1, 1896.

P. A. Surgeon J. C. Perry, to inspect quarantine ports on the coast of Oregon and the Columbia river, May 1, 1896.

Asst. Surgeon E. K. Sprague, to proceed from Mobile, Ala., to Boston, Mass., for duty, May 1, 1896. To defer departure for Boston, Mass., until return of Surgeon Murray, May 6, 1896.

Asst. Surgeon H. S. Cumming, to proceed to Norfolk, Va., for temporary duty, May 12, 1896.

Asst. Surgeon H. S. Mathewson, when relieved at Boston, Mass., to proceed to San Francisco, Cal., for duty, May 1, 1896.

Change of Address.

Ashmead, A. S., from Norristown, Pa., to 210 W. 4th Street, New York, N. Y.

Adams, S. S., from 1632 K Street, N. W., to 1 Du Pont Circle, Washington, D. C.

Brown, H. M., from Hillsboro, to 2362 South Elm Street, Walnut Hills, Cincinnati, Ohio.

Burr, Albert H., from 163 State Street to Room 1106 Reliance Building, Chicago, Ill.

Eaton, R. K., from Lowell to Ithica, Mich.

Egan, F. A., from 451 Faye Street to 510 Graceland Avenue, Chicago, Ill.

Grote, H. W., from Hyde Park Hotel to 40th Street and Cottage Grove Avenue, Chicago, Ill.

Gregory, J. H., from Chicago to Cave-In-Rock, Ill.

Harding, Geo. W., from Chicago, Ill. to Twelve Mile, Ind.

Hogan, D. D., from Chicago, Ill. to Arena, Wis.

Hardesty, T. O., from Chantilly, Mo. to Kampsville, Ill.

Ketcham, L. Y., from 1535 2nd Street to 6th Street and University Avenue, San Diego, Cal.

Knight, F. C., from Libertyville to Waukegan, Ill.

Kinyoun, J. J., from 210 New Jersey Avenue to Marine Hospital, S. E., Washington, D. C.

Krusemark, Charles, from 125 to 94 E. 22d Street, Chicago, Ill.

McNary, H. F., from Princeton to care Central Insane Asylum, Lakeland, Ky.

Partell, E. J., from 146 Huron Street to 157 Michigan Street, Milwaukee, Wis.

Robinson, L. A., from Chicago to Glenwood Springs, Colo.

Schram, A. W., from Chicago, Ill., to 200 24th St., Milwaukee, Wis.

Turek, F. B., from corner Clark and North Avenue to 555 Dearborn Avenue, Chicago.

Wood, E. S., from 628 Jackson Boulevard to 524 Michigan Avenue, Chicago.

Washburn, W. H., from 803 to 726 Grand Avenue, Milwaukee, Wis.

LETTERS RECEIVED.

Adams, W. A., Fort Worth, Tex.; Ashmead, A. S., New York, N. Y.; American Medical Review, New York, N. Y.; Atkinson, W. B., Philadelphia, Pa.; Alta Pharmacal Co., St. Louis, Mo.; Abraham, R., New York, N. Y.

Brandon Printing Company, Nashville, Tenn.; Bowers, J. E., Duluth, Minn.; Bulkeley, L. Duncan, New York, N. Y.; Bandery, K., St. Louis, Mo.; Burton, H. B., Troy, N. Y.

Chlorid of Silver Dry Cell Battery Co., (2) Baltimore, Md.; Cambridge, P. M., Germantown, Ill.; Connorton, John W. Publishing Co., The, Chicago, Ill.; Carter, Howard, St. Louis, Mo.; Coopwood, B., Tilton, Tex.; City Book Bindery, Battle Creek, Mich.

Davis, N. S., Chicago, Ill.; Didama, H. D., Syracuse, N. Y.; Drevet Mfg. Co., The, New York, N. Y.; Douglas, Richard, Nashville, Tenn.

Epting, R. B., Greenwood, S. C.; Elliott, A. R., New York, N. Y.

Gibson, A. L., New York, N. Y.; Greider, C. S., Harrisburg, Pa.; Greening, R. D., Mansfield, La.; Gould, Geo. M., Philadelphia, Pa.

Howland, B. M., Panama, Iowa; Hobbey, Thos., Amherstburg, Ont.; Hall, Winfield S., Chicago, Ill.; Haldenstein, R. J., New York, N. Y.

Humiston, W. H., Cleveland, Ohio; Hay, Thos., Philadelphia, Pa.; Hussey, E. J. & Co., New York, N. Y.; Hot Appliances Co., The, New York, N. Y.; Harris, Seth, Union Springs, Ala.

Ingals, E. Fletcher, Chicago, Ill.

Jordan, R. M., St. Louis, Mo.; Jennings, J. Ellis, St. Louis, Mo.

Kemper, G. W. H., (2) Muncie, Ind.; Keniston, Chas. E., New York, N. Y.; King, Ferdinand, New York, N. Y.

Lea Bros. & Co., (2) Philadelphia, Pa.; Loeb, H. W., (2) St. Louis, Mo.; Lord & Thomas, (2) Chicago, Ill.; Le Baron, R., Pontiac, Mich.; Longfellow, R. C., Cincinnati, Ohio.

Mills, H. B., Philadelphia, Pa.; McIntire, Charles, Easton, Pa.; Maltine Mfg. Co., New York, N. Y.; Milnor, M. T., Warrensville, Pa.; Miller, Dewitt, Kansas City, Mo.; Marshall Printing Co., Marshalltown, Iowa;

Mearny, Wm. B., St. Louis, Mo.; Morse, Lyman D., Advertising Agency, New York, N. Y.; McEnroe, J. F., Schenectady, N. Y.

Northrup, Wm. P., New York, N. Y.; Nye, H., Enon Valley, Pa.; Nisbet, I. H., Nashville, Tenn.; Neslon, Wolfred, New York, N. Y.; Niles, S. R. Advertising Agency, Boston, Mass.

Obits, Henry C., (2) Chicago, Ill.

Parmele, Charles Roomer, New York, N. Y.; Piper, R. J., Chicago, Ill.;

Parkinson, James H., Sacramento, Cal.; Pascal, H. S., New York, N. Y.;

Publishers' Collection Agency, St. Paul, Minn.; Pennington, H. V., Loudon, Ky.

Quinn, J. A., St. Paul, Minn.

Randolph, R. L., Baltimore, Md.; Ragan, Thomas, Jackson, La.; Reed & Currier, New York, N. Y.; Riley, C. M., St. Louis, Mo.; Rogers, H. W., Cleveland, Ohio; Rolfe, J. F., Stacyville, Iowa; Rodi, C. H., Calumet, Mich.

Shade & McConnell, Washington, D. C.; Shultz, R. C., Long Island City, N. Y.; Schadle, J. E., St. Paul, Minn.; Swartz, G., Providence, R. I.; Stanley, Edward, Sandusky, Ohio; Scott, X. C., Cleveland, Ohio;

Scott, J. W., Houston, Texas; Schneek, Jacob, Mt. Carmel, Ill.; Schering & Glutz, New York, N. Y.; Subscription News Co., Chicago, Ill.; Sharp, W. H., Parkersburg, W. Va.; Stewart, F. A., Wauwatosa, Wis.

Tager, A. H., Chicago, Ill.; Tyree, J. S., Washington, D. C.; Thomas, J. P., Pittsburg, Pa.; Tillers, F., Blue Earth City, Minn.

Wagner, Wm. R. & Co., Philadelphia, Pa.; Whitney, George F., New York, N. Y.; Weldman, W. M., Reading, Pa.; Whelan, Charles, Birmingham, Ala.; Woodbridge, J. E., Cleveland, Ohio; Wandless, Henry W., Dallas, Texas; White Rock Mineral Spring Co., (2), Waukesha, Wis.;

Woodbury, Frank, Philadelphia, Pa.; Woodruff, J. C., Charleston, S. C.

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No. 23.

ORIGINAL ARTICLES.

SURGICAL STERILIZATION AND STERILIZERS IN PRIVATE PRACTICE.

Read by title in the Section on Surgery and Anatomy, at Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 7-10, 1896.

BY EDUARD BOECKMANN, M.D.

ST. PAUL, MINN.

Last May I delivered an address in Buffalo, N. Y., before the "Association of Military Surgeons" of the United States, on "Asepsis in Military Service." This address printed in the transactions of that society and also in our own JOURNAL, Nos. 4 and 5, Vol. 26 (January 25 and February 1, 1896), considers at length the principles of sterilization, and gives at the same time a number of practical points just as applicable in operations in private practice as in operations in military service, for which reason I take the liberty to refer you to that for details.

With regard to the mechanical and chemic phases of surgical sterilization I have not much to add to or take from what I said last year. Supported by further experience I can this year more strongly than last recommend the 1 to 2 per cent. solutions of lysol at 120 degrees F. for combined mechanical and chemic disinfection of the operator's hands and the patient's skin.

Lysol possesses the undeniable advantage of being at the same time antiseptic and aseptic; it is a happy combination of a powerful disinfectant and soap (saponified cresol). It has the dissolving and penetrating properties of an alkali substance. I know of no agent which at the present time is better adapted and more reliable in the disinfection of the skin than lysol, with the possible exception of alcohol, which certainly, with good reason, receives the support of the world. Heretofore we have viewed alcohol in the light of a purely mechanical agent in the disinfection of the skin; this can no longer be successfully maintained. Alcohol is certainly a potent solvent of a great number of substances, sparingly however of fats. Alcohol must be viewed as a strong antiseptic, possessing the same significance for the skin as for anatomic preparations, taking up its moisture, penetrating and hardening them; a decided advantage over ether and turpentine, which certainly dissolve fat much more readily but which are much less hydrophile. In order to obtain the greatest possible antiseptic effects of alcohol it is obvious that the skin must be dried, and strong, preferably absolute alcohol used, and the skin energetically rubbed for some little time. Since experience has taught me that the germicidal principle in lysol acts as a powerful antiseptic in the above mentioned strength, and as a prolonged friction with absolute alcohol makes my skin uncomfortably hard and brittle, I reserve the alcohol for the field of operation only.

The last act in my sterilization of the skin consists in impregnating it with sterilized lanolin. By this procedure it is my intention to restore to the integument its fatty protective, which has been removed to the greatest possible extent by the preceding chemico-mechanical disinfection; at the same time I aim to cover up the remaining, inaccessible bacteria. Lanolin, which is rich in bacteria, is sterilized simply by heating the anhydrous article over the fire in an enameled vessel to about 350 degrees F., whereupon it is either run into collapsible tubes (sterilized in boiling water) or mixed with four to five parts of anhydrous ether, as soon as it has cooled below the boiling point of the latter, and then put into patent stoppered, sterilized glass bottles. Lanolin contains a great many impurities not soluble in ether, and which sink to the bottom as a voluminous, white sediment; only the clear, yellow solution is used.

Provided with lysol, absolute alcohol and ethereal solution of sterilized lanolin, we are enabled to disinfect the skin, the most dreaded bearer of infection, as safely, I imagine, as is possible at this time; and with as few and simple agents as can be demanded in operations in private practice.

While I practically occupy the same standpoint with regard to chemico-mechanical disinfection, I must take up the thread where I dropped it last year, as far as thermic disinfection is concerned. It is quite natural that surgeons who occupy themselves with operations in private practice, not only are interested in portable sterilizers, but also prefer such as are constructed for combined boiling in water and its steam. Inventive geniuses have also from time to time, at short intervals, endeavored to satisfy this popular demand, but they have all, as far as I know, up to the present committed the error of constructing their apparatus for under-steam, which streams through the sterilizing chamber from below upward; that is, a stream, which neither expels the air, nor penetrates the articles to perfection, and which consequently results in deficient condensation, besides leaving the articles moist. All sterilizers for streaming steam must necessarily be constructed for over-steam; the reasons being fully given in my article previously referred to. Personally I am not particularly in favor of combination sterilizers even when scientifically constructed, chiefly because boiling and steaming are different processes requiring an unequal time, steaming at least three times as long as boiling, not to speak of the time required to dry the dressings after sterilization. This entails the practical disadvantage, that instruments, for which boiling is our method of choice, suffer unnecessarily in the prolonged boiling but, as this can be avoided as I will explain shortly, I have in deference to the apparent popular demand revived the idea of a combination apparatus, which I described in the *Medical Record* a couple of years ago, and it is my improvement upon that apparatus which

I take the liberty to demonstrate upon this occasion.

My combination portable sterilizer consists, as you see, of four parts: 1. the boiling pan; 2. the hood; 3. the instrument tray, and 4. the steam chamber.

The boiling pan is made oval for the sake of the instruments; convenient dimensions being four to five inches high, eight inches wide and sixteen inches long. Around the upper border on its outside is constructed a groove half an inch deep. The center of the bottom is perforated by a small opening, into which is fastened a tube, which extends to the level

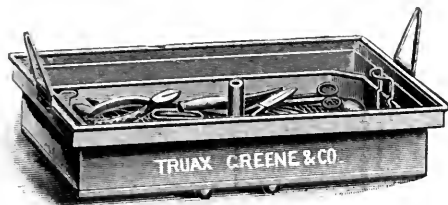


FIGURE 1.

of the upper border of the pan; under the opening at the bottom is placed the iron plate, familiar from my other sterilizers.

The hood, which fits closely within the outer lip of the groove of the boiling pan described above, and whose height is adjusted to that of the steam chamber, above which it extends half an inch, has a sloping roof, whose extreme top is perforated and fitted with a short tube or chimney. The hood is supplied with handles and can be fastened to the boiling pan by means of two hooks.

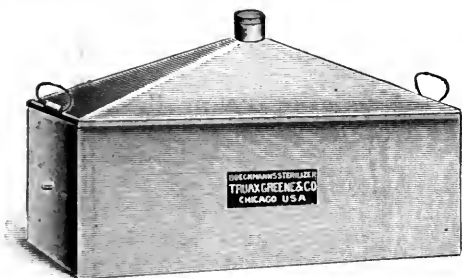


FIGURE 2.

The instrument tray is made to fit accurately within the boiling pan, the corners are cut off to allow for the legs of the steam chamber, the bottom is of galvanized wire and the frame is provided with two handles.

The steam chamber is of the same form and dimensions as the boiling pan: the chamber extends downward in a sloping bottom, whose lowest, perforated point is on a level with the upper border of the pan; into this opening is fastened a tube, which fits accurately outside that described in the boiling pan and

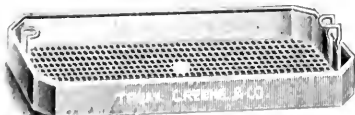


FIGURE 3.

which is of the same length; at the juncture of the steam chamber and its sloping bottom is placed a diaphragm of galvanized iron; between this and the opening beneath is a small square tin plate; the chamber rests upon four legs, is provided with handles and a sloping cover, perforated at the top underneath a handle.

Directions for use. The boiling pan is filled with a sufficient quantity of water, care being taken to fill

the groove at the same time; the hood is adjusted, and the whole placed over any good fire. While the water is heating, the instruments are arranged on the tray, and the dressings, etc. (previously washed) in the steam chamber; needles, drainage tubes, ligating and suturing materials are put separately in a small metal box (sterile catgut is brought along in hermetically sealed envelopes). When the water boils, the hood is removed, the steam chamber put in, whereupon the hood is replaced with a cork in the upper tube. The steam will now ascend between the hood and the steam chamber to the top; the cork at the top and the water in the groove and in the pan acting as locks, the steam is forced to work its way through the opening in the cover of the steam chamber into

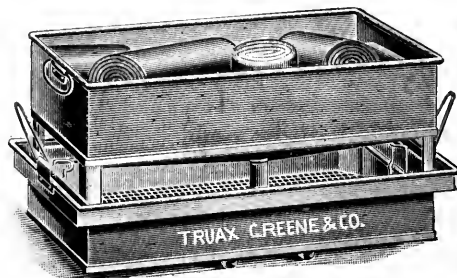


FIGURE 4.

this, through the articles contained, and out through the tube in the boiling pan. In the course of a quarter of an hour the sterilization is completed; the hood is removed, also the steam chamber; the instrument tray is now put in, the steam chamber is replaced, the hood likewise, *but without its cork*. For the preservation of the instruments a little soda or soap has been added (lysol serves the same purpose). In the course of five minutes the instruments are surgically sterile; during this time the steam will escape continuously through the open tube of the hood, both that delivered by the water and that contained in the steam chamber: simultaneously a draught of hot air will enter the chamber from below and when this is

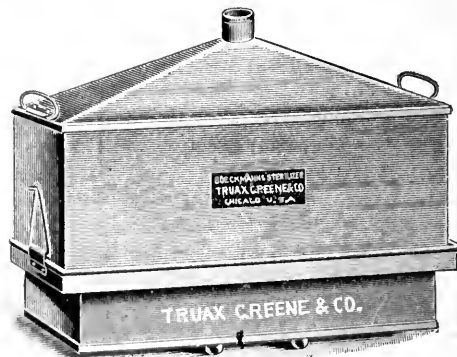


FIGURE 5.

removed, its contents are not only sterilized but also dry. A combined sterilizer of the dimensions above mentioned can without difficulty be transported in a suitable wooden case and as the preparation and sterilization of the necessities is an easy matter, there is no possible excuse for resorting to mercantile antiseptic goods in operations in private practice. The surgeon who relies indiscriminately upon antiseptic wares, which he buys, is a dangerous man!

Articles adapted to sterilization by steam can safely be transported to the place of operation in various ways. Bloch's method in double filtering paper being preferable; it is, however, always safer to sterilize on

the spot, and, as only half an hour is required for the whole procedure, it is also practicable. In urgent emergency cases a surgeon ought never to be taken by surprise and as time is valuable in such cases he should always have on hand a supply of sterilized articles.

One more remark with regard to operations in private practice; I will most emphatically impress upon all surgeons, with the possible exception of those few, who are masters both in surgical technique and in asepsis, to consider every wound at the end of an operation of some duration as slightly infected, and therefore to combine their asepsis with a judicial antiseptis. Thus I am in the habit of repeatedly dipping my hands during the operation in a weak, sterile solution of lysol ($\frac{1}{2}$ per cent. or even less). The small amount of antiseptic which in this way is carried into the wound, I have yet failed to find objectionable, and I use lysol, because it is at hand, and because it is alkaline like the fluids of the tissues. And when the operation is completed, I apply next to the wound an antiseptic dressing not exactly the customary iodoform gauze, because its preparation requires extraordinary facilities, but antiseptic and at the same time aseptic, hydrophilic ointments. Anhydrous lanolin absorbs moisture greedily; it is first sterilized, mixed while cooling with 2 per cent. lysol and run into tubes. A generous quantity is expressed over the wound, and over this the ordinary dressing is applied. Changing this dressing is unattended by the disturbance of the wound or the patient's comfort, as it does not stick like a dry dressing.

In the foregoing it has been my aim to dwell upon the most essential points in surgical sterilization and sterilizers in private practice, points, which I could stamp with some degree of originality.

SOME MECHANICAL CAUSES OF INTERFERENCE WITH THE ACTION OF THE STOMACH AND THEIR SURGICAL RELIEF.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY W. J. MAYO, M.D.

SURGEON ST. MARY'S HOSPITAL, ROCHESTER, MINN.

Mechanical interference with the action of the stomach naturally divides itself into two classes: 1, those which act from within the cavity of the stomach or its immediate connections, such as a tumor, cicatrix or a foreign body which may obstruct its inlet, outlet or prevent its normal muscular action; 2, those which act from without the stomach and interfere either by pressure or adhesions, obstructing its inlet or outlet or fixing some portion of its wall, thus preventing its functions.

Methods of diagnosis: For practical purposes the history, the physical examination, the distension with air and the test meal, constitute our main diagnostic resources. A careful history includes the early symptoms, pain, tumor or swelling, vomiting with its character, and such other evidences as suggest themselves. The distention of the stomach with air to facilitate mapping out its outline is an exceedingly important factor in the diagnosis. With an ordinary stomach tube and a valve syringe of the enema pattern, air can be easily and safely pumped into the stomach and it readily escapes upon disconnecting

the syringe. The test meal is of importance in the diagnosis of cancer. From a considerable experience I feel sure that the slight or non-presence of free hydrochloric acid is of some service, in the differentiation of chronic obstruction due to cancer, when taken into consideration with the physical examination and history, although of itself having corroborative value only. Many new methods of examination of the stomach have been reported. The use of a small electric light to illuminate the gastric cavity, also complicated apparatus for the purpose of reflecting or measuring the interior of the stomach, etc. All of these have little value to the practical surgeon at the present time, although possibly of future usefulness. The examination of the urine for the finding of certain products supposed to be indicative of cancer is interesting, rather than important.

Mechanical obstructions of the cardiac orifice of the stomach or the esophagus are most commonly due to malignant disease or the cicatrization following upon the action of caustics; more rarely to aneurysms or tumor pressure from without. The diagnosis of the location of the obstruction by means of esophageal bougies is easy and needs no comment, while the history and rational signs and symptoms point to the pathologic nature of the obstruction.

The treatment of those forms due to stenosis as a result of scar tissue is exceedingly trying. Some of the less resistant ones when seen early can be dilated by means of bougies used through the mouth, but after failure of catheterization in the usual manner the opportunity of more direct manipulations afforded by external esophagotomy has been pointed out by Sonnenburg, and should be borne in mind. In two out of three cases of cicatricial stenosis of the esophagus of my own this was well illustrated. One a male aged four, in which I was unable to pass a probe through the mouth, yet succeeded through the external esophageal incision. If unable to pass a bougie, retrograde dilatation by means of gastrotomy, is a rational procedure and with the string method of dividing the stricture introduced by Abbe, which I have used in two reported cases, enables us to deal with otherwise hopeless conditions. In the gradual dilatation which is so necessary in the successful after-care of these sufferers, I have found the olive tipped whalebone bougies the ones of most value and after the treatment is well advanced, the use of probes having several graduated bulbs on one stem as recommended by Solis-Cohen, is of great service.

Gastrotomy for the purpose of retrograde dilatation, is perhaps best done by Fenger's oblique left lateral incision through the abdominal wall, which brings this opening more directly in line with the cardiac orifice. For work on the pylorus or the removal of foreign bodies or gastric exploration, generally, the central incision above the umbilicus has many advantages.

Gastrotomy for the removal of foreign bodies, accidentally or purposely swallowed, or slowly collected such as hair balls, is an operation of great efficiency. Much credit is due Maurice H. Richardson for his work in this field.

Gastrostomy for the purpose of feeding necessitated by cardiac or esophageal obstruction when done by Fenger's method is subject to great annoyance in the way of leakage. This was particularly marked in a case under my care. Fortunately for the comfort of the little patient the purpose of the opening was

shortly obviated by relief of the obstruction. The necessity of repeated attempts to penetrate the strictured portion of the lower esophagus as well as for feeding purposes, made Fenger's operation, in this case, the only one available.

Other methods of operation while giving better closure, would equally prevent ready access to the cardiac orifice. Both the Witzel method and that of Frank are free from this annoyance and for temporary purposes the Witzel method is of the greatest benefit, as immediately after removing the tube the fistulous tract closes at once. In one instance in which I operated by this method this was so well marked that the accidental slipping out of the tube was followed in a few hours by great difficulty in reinsertion. Frank's spout method as it requires no tube is undoubtedly the best for permanent feeding, and as it is an operation which can be speedily performed it readily classes with the Witzel as far superior to that of Hahn, Van Hacker or Fenger in preventing leakage.

Obstructions at the outlet of the stomach are exceedingly common and too often pronounced malignant, without proper examination. This is especially true of the pyloric stenosis secondary to ulcer, and as even a tumor may be found, in the latter condition due to the peritoneal thickening over the cicatricial area, much care should be given in the diagnosis to determine the nature of the obstruction. The history of long previous ulceration with the presence of free hydrochloric acid and its slower course are among the readier means of differentiation and it should also be borne in mind that a non-malignant polypoid or valve acting tumor, at the pyloric orifice, may be the cause of the obstructive symptoms as well as a cancerous growth. For the relief of non-malignant stricture at the pylorus, Lorretta's method of divulsion is open to the objection of strong probability of recontraction, so common in other strictured mucous passages, such as the urethra.

The Hoenke-Mukuelitz pyloroplasty operation is the one of choice and is wonderfully well adapted to the average case. For example, I will briefly report the following case: M. M., age 46, has suffered from severe and painful gastric symptoms for seven years, for which he has been treated almost constantly, obstructive symptoms gradually becoming more prominent, and for the past eighteen months, he has daily vomited almost the entire amount of food taken and has lost eighty pounds in weight. Just above the umbilicus a small tumor could be felt, which was more or less movable and on dilating the stomach with air this mass moved to the right and upward, while the air-dilated stomach filled almost the whole abdominal cavity. By making pressure on the dilated stomach and listening with a stethoscope over the enlargement, a hissing of gas passing through a fine orifice could be heard. Test meals showed the stomach contents to contain free acid. Celiotomy showed, as expected, a cicatricial obstruction of the pylorus due to former ulceration. Pyloroplasty was readily performed, and as the patient took the anesthetic badly he was allowed to come out from under its influence and complained of no pain during the introduction of the Czerny-Lembert sutures in the stomach wall but required further anesthesia in closing the external incision. This lack of sensitiveness in the visceral peritoneum has been pointed out by Greig Smith. His recovery was prompt and the gain in weight remarkable.

For inoperable obstruction such as advanced malignant disease, gastroenterostomy is the operation of choice. Anastomosis by means of bone plates inaugurated by the master surgeon, Senn first popularized this operation, may however be open to the objection of too small an opening with too large a coapting surface for future contraction. The suture method is slow with danger of leakage and as the average patient is only too frequently at the point of collapse, from chronic starvation, the Murphy button even with the disadvantage of its possible passage backward into the stomach rather than onward into the intestine, is a quick and safe method. I have employed the button in three gastroenterostomies with two successes and one death, and in the latter case the union was perfect, although the patient on the verge of collapse from starvation due to advanced malignant obstruction succumbed to exhaustion on the fifth day. Of the two that recovered one is alive and well with a gain of forty pounds in weight at the present time, one and one-half years after the operation. This case was suffering from acute starvation and his condition would not warrant a pylorotomy, which a tumor of unknown nature indicated. In making a gastroenterostomy the jejunum should be caught at its origin and a loop formed with the direction of its peristalsis in the same direction as the stomach to prevent impaction of the upper portion, or as Kocher recommends, transversely to the axis of the stomach, thus allowing gravity to aid the passage of the food in the proper direction. The curetting of gastric cancer through a gastrotomy wound as advocated by Bernays has little to recommend it. Pylorotomy is but infrequently done. Its frightful mortality in malignant disease without reported permanent cures is not encouraging. The reason for this great mortality lies in the debilitated and starved condition of the patient at the time operation is resorted to, although Kocher has recently reported five primary recoveries out of seven pylorotomies. In the case previously referred to of tumor of doubtful nature obstructing the pylorus in which I joined the stomach and jejunum with Murphy's device, it was my intention to wait until the patient was in better physical condition as a result of the gastroenterostomy and then at a secondary operation resect the pylorus and close completely the end of the duodenum and the stomach utilizing permanently the existing fistula. He received so much relief from the first operation that he declined to submit to any further interference. I fully believe that preliminary gastroenterostomy would put the patient in much better condition for the major operation and by allowing permanent closure of both duodenum and stomach at the points of section would largely reduce the mortality. In any case it is better, as pointed out by Bull, to carry the gastric opening well away from the dangerous suture line.

Brandt has treated dilatation of the stomach caused by chronic catarrh, by plecting its anterior wall with a Lembert suture and he reports great benefit from this procedure, the object being to relieve the dependent portion allowing gravity to aid the gastric contents to work toward the pylorus. Cases of chronic dilatation of this character are usually due to some form of pyloric obstruction and this operation is therefore rarely indicated.

Interference with the stomach from without its cavity: Among the external causes of interference with the stomach, adhesion of the pylorus or duode-

num to the gall bladder due to the inflammation excited by gallstone, is not infrequent. In some thirty operations for gallstones, I have seen at least three cases in which the colics were infrequent but in which the gastric distress was constant and found to be caused by such adhesions, and relief was undoubtedly due more to the liberation of the adherent viscus than to the removal of the stones.

Adherent omentum: The most common cause of external interference with the action of the stomach is the fixation of some portion of the omentum in a hernial ring producing traction upon the stomach, and of these incarcerated omental hernias, the least often recognized are the button-like protrusions through little defects in the median line above the umbilicus. I have operated upon a small number of such cases with marked relief to gastric symptoms.

Irreducible omental hernia of any variety, are almost always accompanied by gastric distress and it is the rule that this disappears after the radical cure of the hernia. Not only do omental adhesions cause distress but they may fix or distort the stomach to an astonishing extent without symptoms directing attention to the hernial protrusions. In one instance a male, 54 years of age, had suffered for seventeen years from gastric pain and chronic indigestion. Test meals showed free acid. On dilating the stomach with air it was found to expand in a remarkable degree downward and to the right; careful examination revealed an old irreducible omental hernia of small size on the right side, which he had had for years. Radical operation on the hernia with liberation of the omentum promptly relieved the symptoms. These cases are common. Chronic gastric distress following abdominal operation is not infrequently due to post operative adhesions of bruised or ligated omentum and may necessitate secondary operation for their liberation.

DISCUSSION.

DR. ALEX. HUGH FERGUSON, Chicago—There are some very interesting points in this paper and it is a very clear representation of the surgery of obstruction of the esophageal and pyloric ends of the stomach, both by disease of those regions or by external violence. I do not think that I have ever heard of so much condensed into a paper, occupying but fifteen minutes to read, and I congratulate the author upon the mature opinions expressed and the manner in which he states the case. I fully agree with him in his opinion of treating non-malignant and malignant stricture of the esophageal end of the stomach and with the palliative treatment that he recommends for malignant disease of this region, discarding curettement and recommending Frank's operation as superior to Witzel's and Fenger's. This is certainly the proper operation and will give the patient considerable comfort, but it is only palliative. We are sorry that some radical means of extirpating the cancer can not be discovered, but disease in this locality, where the vessels are so closely approximated, is extremely hard to get at and a radical operation is a difficult question. Now we come to the pyloric end of the stomach, and I agree with the Doctor in his remarks about forcible dilatation. In preference to this, I believe the best operation is a pyloroplasty, making a longitudinal incision and enlarging the opening if necessary. That part of the paper was very interesting. Next to this comes gastroenterostomy which is a recognized operation. Dilatation in pyloric disease of the stomach can be done in several ways. Gastroenterostomy can be done in two classes of cases, first, those that are weakened and could not stand pyloroplasty, and secondly, where it is expected to be cured palliatively. It may also be done as a preliminary step of the complete removal of the pylorus. If the disease is well limited, I see no reason why the pylorus should not be removed. The Doctor spoke of cases of pylorotomy performed in America, eight of which have died and five recovered; of this eight six died from shock, one from imperfect suturing and one from a sponge being left in the stomach. I believe in encouraging pylorotomy for several reasons, not that I do not fully realize

the gravity of the operation and not that I am not aware of the mortality that follows. Supposing we have a diseased condition that is hopeless for any other form of treatment. The medical treatment for cancer of the pylorus has a mortality of 100 per cent., which is as much as any one could wish for; therefore if you can do a pylorotomy, it would be preferable to the palliative means. Pylorotomy permits of cure within certain limits, first when we know that the cancer is limited to the pyloric end of the stomach. Of over 900 cases reported, in 19 per cent. of them the disease did not reach the peritoneum. In 19 per cent. the patients died of starvation when the disease had not extended to all the coats of the stomach. We know from the same report that 43.7 per cent. of deaths take place while the disease is still local, that is before it has gone into the lymphatics and while the pylorus is movable. We know too from the same report that about 50 per cent. of them recover from the operation of pylorotomy, and a great many of the cases that have been operated upon have not been proper cases for operation as the disease has been too extensive. The ultimate result of pylorotomy, although not so very encouraging, is more encouraging than is the operation of gastroenterostomy. Some cases after this operation have run on for years. I know of one case which went on for three years and is to-day able to work on a farm. I agree with Dr. Senn in the remarks I heard him make this afternoon and also in those I have heard him make before. In order to have an indication for performing pylorotomy, we must have the disease limited and our patients not too much weakened by starvation. When we suggest operation in such a case, making sure that the patient can stand it, a pylorotomy is the rational and reasonable one to perform. We all know that it used to be taught that cancer of the breast was not a justifiable operation, but we know better now.

DR. DONALD MACLEAN, Detroit—I listened to Dr. Mayo's paper last night with about the same kind of pleasure that a father listens to a good epoch on the part of his son, as that is about the relationship which exists between Dr. Mayo and myself. I have had the pleasure of watching him develop from a green Western boy to one of the ablest of the younger American surgeons. So far as this paper is concerned, I agree with the other members of this section who had the pleasure of listening to it last night. As far as the treatment of gastric surgery is concerned, it would be out of place for me to undertake to discuss it to any extent, as it does not come in my way to do this kind of surgery. I have dabbled in surgery in various parts of the body for many years, and I have a firmly grounded belief that if the actual statistics of cases of operative interference for diseases of the stomach were put before us, it would be rather humiliating. I believe that a good number of operations are performed in cases in which, as a matter of fact, the patient should have the privilege of dying without any assistance from surgeons. I would be the last man to discuss any legitimate and proper effort to prolong life where there is a chance of doing so. Dr. Mayo's views on the subject are of a decidedly conservative nature and he does not advocate operating because the patient would die anyway. This, I consider a very poor argument and does not redound to the benefit of the patient or the honor of the surgeon. When surgical interference is decided upon in cases of organic disease of the stomach, my view is that it should be done after a most careful examination and because it holds the prospect of relieving the patient of suffering and prolonging the life. I think we, as the Section on Surgery, should record our belief that this is the proper doctrine and the proper idea to go upon.

DR. MAYO in closing the discussion said he did not wish to take up the time of the Section any further.

LIGATION OF EXTERNAL CAROTID ARTERY IN CONJUNCTION WITH EXSECTION OF JAWS, AND THE INOPERABLE DISEASES OF THE SAME.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

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A survey of the literature of surgery will demonstrate the fact, that of all the great vessels that we have dealt with, the external carotid has been less frequently subjected to ligation than any other, if we except its companion the internal. This has largely

due to the fact, that prior to the advent of the present era of surgery, the anatomic distribution of the branches of this vessel acted as a bar to its closure, on account of the danger of secondary hemorrhage at the time of the separation of the ligature. Since the advent of the antiseptic practice, which has rendered it safe to leave a ligature *in situ* without fear, this has ceased to be an objection, and this vessel has become one of those most accessible, and whose ligation is practically free from subsequent danger. When we consider its territory of distribution, and the structures supplied by it, we can well understand that a wide field of usefulness has been opened up by our ability to control the circulation through its various branches. We are thus enabled to cut off the blood supply from one, or both, sides of the head and face, as may be necessary, without interfering with the cerebral circulation; and without producing an anemia of any vital structures.

Reasoning along this line, six years ago I made use of this operation as preliminary to, and co-incident with, the removal of the upper jaw, and a further experience has confirmed all that I hoped to accomplish by it. After an experience of four operations in the removal of the upper jaw, and one of the lower jaw, I am convinced that the following facts can be claimed for the operation:

1. It absolutely prevents danger from hemorrhage, which, though not usually great, has been known to prove fatal in the hands of the best operators.

2. Shock is thus largely prevented.

3. The time of the combined operations is in most cases no greater, if not less, than that required for extirpation alone.

4. The return of the growth, when malignant, is materially lessened, if it may not be prevented.

As illustrating the application of the operation, with its immediate and remote results, I beg to submit the following cases:

Case 1.—Mrs. A., white, age 40, consulted me for tumor of the right upper jaw of about one year's duration. The occurrence of pregnancy had materially hastened its growth, and I was called to see her about the eighth month, with an urgent request for operation. At this time there was a development of the tumor pressing down the hard palate, preventing closing of the jaws, and seriously interfering with her nourishment. Not feeling that the condition was sufficiently urgent, I declined to operate until the completion of her pregnancy. On May 21, 1890, seven days after her delivery, the patient was transferred from the parturient bed to the operating table, and the operation performed with the assistance of Drs. Elkin, Purse and Stewart. The external carotid was ligated between the superior thyroid and lingual branches with catgut, and the wound closed with catgut sutures. On account of the deep neck, and enlarged veins, this was an operation of some difficulty, and occupied more time than has been required in any subsequent operation. The jaw was then removed without tying a single vessel, though there was profuse venous oozing during a part of the operation. The wound was closed with catgut, with the exception of that through the upper lip, which was closed with silk. Primary union occurred, and within two weeks the cavity was closed. The cancerous cachexia was quickly relieved, and the patient rapidly restored to robust health, which lasted more than one year. About the thirteenth month there was a recurrence which shortly ended her life.

Case 2.—Sarcoma of the upper jaw. Emeline H., colored, female, 64. Enlargement in the upper jaw about two years ago, and progressed slowly until a few months since, when it took on a very rapid growth. When seen by me there was a very large tumor, projecting forward in its principal line of growth, and also pressing down the hard palate, and filling up the mouth. The operation was performed at the Grady Hospital on March 8, 1894, with the assistance of the resident staff of the Hospital. The external carotid was tied immediately in the bifurcation with catgut, and the neck wound closed by

deep and superficial catgut sutures. The patient did excellently well, and at the end of six days the wounds were all healed; when she was seized with a stroke of cerebral apoplexy, and died the following day.

Case 3.—Mrs. J., age 54, white, brought to me by Drs. Crawford and Henley, of Abbeville, Ga., with the following history: Six months before she suffered from an abscess of the antrum, which was opened through the socket of the molar tooth, and treated in the usual manner. The abscess refused to heal, and in a short time the bone began to enlarge. This enlargement continuing, a diagnosis of necrosis was made, and a point opened for purpose of drainage and removing some bone, but there was very little discharge. When I saw her there was a large tumor apparently pointing through the center of the cheek, the skin adhering over its entire center. Yielding to the view that there might be possibly some necrosis, the case was held in suspension for a few weeks, though I expressed the opinion that it was a sarcoma. At the end of this time, on account of the rapid continuation of the growth, there was no doubt as to the diagnosis. Operation was performed Jan. 5, 1895, at the Grady Hospital. The external carotid artery was tied as in the other cases immediately in the bifurcation and wound was closed in a similar manner. In attempting to remove the jaw it was found that the adherence of the skin rendered it necessary to leave quite a circular opening in the center of the flap. The entire jaw was removed, including a complete removal of the floor of the orbit. The wound in the neck was dressed with a strip of iodoform gauze and collodion. The healing of the face was complicated by the opening, which was left to granulation, and by the peculiar and persistent edema of both upper and lower lids, requiring the puncture every other day for the purpose of removing the serum. I know of no condition that will illustrate the appearance of the lids better than the large effusion sometimes seen in the prepuce. This condition continued for a number of months, but finally disappeared. The wound in the neck healed under one dressing, and on the eighth day the iodoform gauze scab was removed, showing complete union. Though this was a most malignant case, the patient at this time is enjoying perfect health, sixteen months after operation.

Case 4.—Eliza N., colored, aged 30. This patient was seen at the clinic of the Southern Medical College in November, 1895. Large tumor of the upper jaw beginning four years ago, taking on rapid growth within the last few months, presenting the typical appearance of a sarcoma. The patient was operated upon at the surgical clinic Nov. 25, 1895, with the assistance of Dr. Elkin and the corps of students. The external carotid was tied with catgut in the bifurcation; the wound closed as in the last case with iodoform gauze scab, and the upper jaw removed without ligation of any vessel. Time of carotid ligation fifteen minutes—entire operation forty minutes. Patient made rapid recovery, the neck wound closing under first dressing, iodoform scab being removed on the seventh day; discharged from treatment two weeks after operation. History since that time is not known.

Case 5.—Emma H., colored, age 18, with the following history: Right side of the lower jaw beginning to enlarge about eight months ago. This enlargement has been continuous until the present time; has a tumor the size of a small orange, extending from just in front of the angle of the jaw, forward to near the symphysis. Diagnosis sarcoma. Operation at the Southern Medical College clinic Dec. 10, 1894, assisted by Drs. Elkin, Hurt and Davis. External carotid was tied in the bifurcation as in preceding cases. Wound closed with iodoform gauze and collodion. Right half of lower jaw removed from symphysis to articulation without ligating any vessel. Carotid wound healed under first dressing, scab being removed on the seventh day. The patient left for her home in Alabama twelve days after the operation, with all wounds healed. Up to this time there has been no recurrence of the disease. The time of the operation was forty minutes.

Case 6.—Illustrating the effect upon inoperable conditions produced by cutting off blood supply, the following two cases are reported: W. C. J., white, male, arrived at the surgical clinic of the Southern Medical College in December, 1895, with a typical and rapidly growing sarcoma of the right upper jaw. It was designed to make a combined operation as in the previous cases, but when the patient was placed upon the table, it was found that the universal adherence of the skin to the entire tumor rendered its removal impracticable; so it was determined to ligate the external carotid artery, with a view of starving out its growth. The vessel was tied as in previous cases, and the wound closed with iodoform gauze scab. The patient made a rapid recovery, being confined to bed only three days. Previous to the operation the right eye had been closed entirely by the pressure of the growth for the past three

months, and the nose pushed over to the opposite side by its encroachment. At the end of seven days, when he left for his home, the tumor had receded sufficiently to permit a perfect opening of his eye, and it also receded from its pressure upon the nose. It was estimated by a casual observation, that the growth had lost within one week, fully one-third of its size. This patient has not been heard from since he was discharged from treatment.

Case 7.—Mrs. F., white, age 54, a patient of Dr. Vaughn, of Fairmont, Ga., consulted me in December, 1895, for an ulceration inside the right cheek. There was a history in this case of a small sore forming in the mouth about eight years previously and gradually extending, until at the time of consulting me it had extended from the last molar tooth forward to the angle of the mouth where its elevated surface could be seen projecting, making a typical cauliflower excrescence. There was also an enlargement of the lymphatic glands of the neck. The diagnosis of epithelioma was made and patient advised to have the external carotid ligated in order to cut off the supply of nutrition from the growth, as it was clearly impossible to remove the diseased tissues. On Dec. 10, 1895, assisted by Drs. L. B. Grandy and W. B. Vaughn, the external carotid artery was tied in the bifurcation as in the former cases. On account of fat neck and high division of the vessel, this was about the most difficult operation of the kind that I have ever encountered, it being necessary to tie the large trunk of the facial and lingual veins, as they crossed just below the bifurcation. The exuberant growth of the ulcer was curetted away and the cavity packed with iodoform gauze. Time of carotid ligation one hour. The patient recovered without any disagreeable symptoms, except a persistent cough and some peculiar hoarseness, which I attributed to some temporary injury of the pneumo-gastric nerve. She left the city on the eighth day of the operation, wound nicely healed and the ulcerated surface rapidly closing up. Reports from the patient's physician state that she is in perfect health since, and with the exception of a small spot, the ulceration has disappeared. She reports her health better than for five years.

These cases serve to illustrate that the ligation of the external carotid is not a dangerous or very difficult operation, but some points in connection with the work are worth mentioning, as little is said upon the subject in text-books. The incision should be from two to four inches long, according to the depth of the neck, though I believe it is better to begin with the former and extend it if necessary. With a thin neck and a normal division a two-inch incision is ample. The center in this incision should be at a point parallel with the "Adam's apple." After the skin and deep fascia have been passed, the work is largely done with the handle of the scalpel and finger. In this way the vessel can be rapidly approached without danger. The chief obstacle to be encountered is the crossing of the vessel by the facial, lingual and superior thyroid veins, their combined trunks making, in some cases, an enormous vessel. These can be pulled aside when the division is at the normal point, but sometimes they must be cut between forceps and tied. The ends should be tied at once, as in one of my cases the forceps were, in the confusion of some accident, removed, with the result of a fearful hemorrhage for a few minutes. In only three cases have I seen the internal jugular vein, and this was when the common carotid was followed up to the dividing point. When the artery is reached it should always be remembered that the external carotid is the nearer to the median line, and should any doubt still exist, the first branch given off will decide the issue, as the internal carotid does not give off branches in the neck. In one case in which I operated the external carotid lay immediately above the internal. In the cases reported the point of division varied, in several cases being as much as an inch too high; it has never been too low. In my opinion this decides the difficulty of the operation; a high division, especially when combined with a deep neck, making a difficult one.

The point of ligation in my cases has varied somewhat. In the first case I tied the vessel above the inferior thyroid, though I did not tie any adjacent branches. This is unnecessary. In the last six cases I have placed the ligature immediately in the bifurcation, and below the superior thyroid branch. In preparing for the introduction of the aneurysm needle between the trunks it should be remembered that they are always bound together by a very tough areolar tissue.

As regards the material for ligature and sutures, as reported in these cases, I have used catgut, and making what is known as the "Ballance and Edmonds" knot. In the last six cases the only dressing applied by me has been the iodoform and collodion scab, and in each of these instances union has occurred absolutely under the first dressing, not a single one requiring a second dressing.

In conclusion I would say that in my opinion this class of work is now in its beginning, and that the future will demonstrate great benefits to be derived along the lines that I have set forth.

DISCUSSION.

DR. PARKER, New Orleans—My experience in ligation of the external carotid artery has been limited. I have seen it done several times for malignant growths. I was very much surprised at the length of time within which the growth diminished after ligation of the external carotid in Dr. Nicolson's case. The cases that I have seen have been where the anastomosis was so free that the rapidity of the growth was delayed but a short time. As to the knot to be employed I think the "Ballance and Edmonds" is the best. Lately I have employed kangaroo much more frequently than catgut. Another point mentioned by Dr. Nicolson was illustrated by a case I recently saw. When we come to ligate the external carotid artery and control hemorrhage in the removal of tumors of the superior or inferior maxilla, we should ligate the artery and remove the maxilla at once. I saw a case recently in which the external carotid had been ligated three days preliminary to removing the maxilla for a sarcoma. The hemorrhage was so free that I thought the patient would bleed to death on the table. If we are to ligate the carotid, we should do so at the same time that we remove the growth. I would like to hear the opinion of some of the gentlemen who have ligated the artery to prevent or delay a growth. In cases that I have seen it has not worked.

DR. EDMOND SOUCHON, New Orleans—There is a very important point in this paper which has not been touched, whether it be for a growth or for a hemorrhage, and that is the ligation of the two carotid arteries. I saw this operation performed once in New York for the removal of a very extensive sarcoma of the upper jaw. I notice in Dr. Nicolson's paper that sometimes the ligature was applied above the lingual artery. When the artery is ligated on one side, the location of the ligature is an easy matter, but when it is ligated on both sides, it is a question where we should ligate. It should be above the origin of the lingual artery and great care should be exercised in the use of the ligature. On account of the hemorrhage which may take place if the ligature is drawn too tight so that the coats of the artery are ruptured there is considerable risk and one should be very careful in order to avoid a secondary hemorrhage.

THE CHAIRMAN—I regret that Dr. Nicolson did not describe his incision. I am in favor of ligating the common carotid because it is easily gotten at. The gravity of the operation is not materially increased, but I do believe that the growth is delayed. I believe the collateral circulation is helped by ligating the common carotid.

DR. PARKER, New Orleans, said he had seen three or four cases in which both linguals were ligated for epithelioma of the tongue and in all of these cases the ligation did not seem to materially decrease the rapidity of the growth.

THE CHAIRMAN said there was a time when we thought that there was some prophylactic value in the ligation of these vessels, and unless such is the case, it seems to me that other operations are simpler and answer the purpose better.

DR. NICOLSON, in closing the discussion, said: As to Dr. Parker's remark concerning the lessening of the growth of the tumor, he can not be more surprised than I was, and I regret that I do not know how long this improvement continued. When I first him the man's eye was entirely closed by the

growth and the next week it was open. The anastomoses are so free and the blood supply so rapidly restored that I very much fear that this improvement did not last long. In reference to Dr. Souchon's remark about tying both carotids, I believe the time will come when the maxillæ will not be resected without tying both arteries. I performed an operation yesterday and intended to tie both arteries, but for fear that something might happen, I only ligated the one on the worst side of the neck. I did this on account of the lymphatic glands. When I reached around with my finger and brought up one of the glands, the external jugular vein came with it. The separation of this gland from the vein took some time and I had to discontinue after tying one vessel. I shall tie the external carotid on the other side within a few days if the patient will let me. In reference to ligating above the lingual, I could imagine nothing that would go further in preventing me from accomplishing what I want. To tie both arteries in the bifurcation is a good point. As seen in Dr. Parker's case, in three days the hemorrhage was so great as to require transfusion, and if one performs this operation expecting it to be a bloodless one, he will be very much surprised. The first time that I did the operation I was satisfied that I had tied the wrong artery. This extensive bleeding, however, can be quickly stopped by sponging, and I have never been called upon to apply ligatures in these cases. Healing has always been very complete. In reference to Dr. Souchon's remark about rupturing the coats of the artery, I was very much afraid to take up too much of the time of the Section and left out of my paper this and other points. I have been careful to avoid rupturing the coats, and always draw the ligatures until, placing my finger above, I find the circulation has been controlled. The knot I employ seems to be far more satisfactory than any others. (The author illustrated the "Ballance and Edmonds' knot.") In reference to the incision, one surgeon says one thing and one another. With a thin neck and the head drawn well back, all that is needed is a two inch incision. I was foolish enough to go around calling this a minor operation when I first performed it, but have since changed my mind, although I have completed it in less than ten minutes. The incision I have made has been parallel with the border of the sterno-cleido-mastoid muscle. When you get inside you can be guided largely by your finger. In my operation yesterday when I had my finger in position, I could perceive no pulsation. With the rapid breathing of the patient, feeling the pulsation is much easier to describe than to do. As to tying the common carotid, I dislike to take exception to this point. The claim of the external carotid over the common is its effect upon the superficial circulation. The mortality in the operation of tying the common carotid was 25 per cent., while that of the external is practically *nil*. Dr. Bryant, of New York, has done some work in this line and has said that the ligation of the common carotid when removing the upper jaw is unjustifiable. In a case where there is a malignant disease of the upper jaw, if on account of the glandular enlargement, it is impossible to reach it, I should not hesitate to put the patient to the risk of tying the common carotid.

VERDICTS OBTAINED THROUGH PERJURY.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

BY C. B. KIBLER, M.D.

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In presenting briefly a line of thought that might perchance be the means of bringing out a theme for discussion from the Fellows present, I present a subject that has not, to my knowledge, been even briefly presented before any body of railway surgeons, or before any medico-legal society up to this time. If such has been the case, I am free to say it has entirely escaped my observation.

It is barely possible that the theme lacks in interest, and perhaps is untenable. Yet it has occurred to me upon many occasions, when a claimant has procured a fat verdict from some innocent corporation, with the merits of the case built entirely upon air, together with the malingering symptoms set up by the claimant, prompted by the ever ready advice of his unscrupulous legal adviser, who perchance has taken the case on commission, or on the coöperative system,

that when the claimant has obtained his verdict and divided up the proceeds as best appeases the scruples of his attorney, which amount, by the way, is not always the lesser of the two halves, the astonishing rapidity with which the prosecutor regains his former good health prompts one to say that the verdict was rendered, not upon the true merits of the case, but that it depended and resulted from the unscrupulous testimony of plaintiff's apparent great suffering of pain, but strictly ephemeral in character, and from non-use, often showing atrophy of muscles.

With sympathetic friends as witnesses, who are quite prone to an elastic conception of the truth, at the same time quite forgetful of any important fact that might be at all advantageous to the defendant, and that ever-ready expert, who for a large consideration and statistics, might presumably be induced to so shape his views as to fortify the case against the corporation—with such an army, it is almost impossible for the sympathizing jury of twelve true and honest men to see any other way than to present a verdict which is supposed to be arrived at without bias, in such sum as will satisfy the claimant and make him comfortable for the balance of his natural life.

Corporations receive no respect or mercy at the hands of the ordinary jury of to-day. It matters but little how much merit or demerit any case for damages at the present time may possess. The usual result is quite probable to mulct the company for large damages.

Let it be clearly understood that no reference is here made to that class of cases in which corporations are honestly liable. This latter class almost invariably can be adjudicated through the proper claim department of any company, and generally with much better compensating results to the claimant than through the courts. It is to the malingering class I now wish to draw your attention.

It is true that it is often difficult to work out the wheat from the chaff in this line of cases, but when you see a claimant who has been so entirely incapacitated from the performance of any and all kinds of work appertaining to his vocation, before the case comes before the courts, and his ailment and symptoms greatly magnified and increased while the case is on trial, who, when the jury rendered a large verdict in his favor, and almost simultaneously with the receipt of the check for the payment of his supposed wrongs, proceeds to the almost magic recovery of his former good health—of this class of fraudulent claims I desire to speak, and can see no reason why, in a court of equity, such cases of fraud can not be made to convert to the rightful owner the proceeds of the verdict so fraudulently obtained.

I am not aware of any effort ever having been made by any corporation to recover in a court of justice in such cases, and I think, should it be proven that the attorney in the case accepted the pushing of all such cases before the courts, upon a commission to be paid him from the proceeds of the verdict, and it can be shown afterward that the case is fraudulent, that he would be equally co-respondent with the prosecutor, and likewise amenable to the same treatment as the claimant.

In the recovery of money so obtained he should, in fact, be made a co-defendant in such cases in courts of equity. If possible to recover in a few well-conducted cases, is it not possible that it will point out

the way whereby those who now present such cases in court would hesitate before pushing such alleged injuries into litigation, and thus be the means of eliminating from damage accounts vast sums of money now unlawfully and wrongfully obtained?

The question might be propounded: How are we to prove the fact that the recipient of such favors by the courts of litigation are malingerers? "Out of the fullness of the heart the mouth speaketh." Only by his actions, and this is quite easy of accomplishment. Let us suppose the claimant in his declaration alleges total disability of one of the extremities. By proper coaching in auto-suggestion he will carry out the play entrusted to him by his informant, but will he do so after he has obtained the balm of a good sized verdict that can alone soothe the pangs of imaginary pain? Think for a moment that he can not, by any process of law, be compelled to return any part of the proceeds of his ill-gotten gains. No! And thus in a very short time he will so forget himself that his own actions will be sufficient to furnish such proof as would be needed to convict himself.

There is but little use in reviewing individual cases before the Fellows of the Academy. We have only too many such examples of perfidy upon the records of almost every court in the land.

This question of perjury is one that does not carry its import and penalty deep into the minds of the majority of litigants who are unscrupulous enough to accept a large reward from corporations for the settlement of malingering claims. If a few well marked examples of such cases of perfidy could be carried to a successful issue and to a conviction, it would be well worth the time and means expended upon the subject, for the penalty in almost every State is so great as to debar the perjured person, upon conviction, from many of the rights of citizenship.

In Pennsylvania it becomes a misdemeanor and, upon conviction, a fine of \$500, imprisonment by separate and solitary confinement at labor for a term of years, and it forever disqualifies him from being a witness in any matter of controversy.

While doubtless this subject belongs to the legal department of railways, it is yet true that the aid of the surgeon must be called into the study of the surgical consideration of the same, hence making it a medico-legal one, and as such can be rightly considered and discussed by the Academy.

We are trespassing upon virgin grounds and, perchance, are ill fitted to consider and bring out a sufficient number of points, convincing in character, to maintain the position taken. With some degree of truth it can be said that such action would be beneath the dignity of a large corporation. We hold that when right and truth are on the side of the latter, nothing can be adduced by the malingerer to balance the scales in his favor. For right and truth should and must prevail.

With this brief recitation of this somewhat intricate subject, I desire not to prolong it, but gladly submit the question to the Fellows of the Academy who are more learned in legal lore than I.

DISCUSSION.

MR. BECKER—Although not a member of the Academy, I will simply make a suggestion: That the claim for injuries may be handled to more advantage in those States where statutes have been passed permitting an examination by physicians of the plaintiff before trial. It was long doubted whether the sanctity of the person was such that it would be unconstitu-

tional to adopt such statute. That matter has been put at rest by the U. S. supreme court, and by the court of appeals of New York, which have held that there was no constitutional prohibition, at least in the State of New York, which forbids the adoption of such statutes. There is now in force a statute in the State of New York in which it is the right of any defendant in a case founded upon personal injuries, to have an examination of the plaintiff before trial by competent physicians. I lately had occasion in practice to put that in effect in a case very closely allied to this referred to by our learned friend in his paper, and discovered with very little difficulty that no such extensive injuries existed as was claimed. It seems to me that the remedy is easily to be found there. In very few cases of a proper examination before trial would fraud escape detection, and the extent of the examination is largely in the discretion of the court. I know of no other State that has adopted that statute except New York; there is such statute in New York that permits the examination of the party, describes how it should be taken, in the presence of a referee, by a physician duly qualified. There is, however, a ludicrous feature about it. Some generous-hearted individual in the legislature secured an amendment to the statute, providing that in a case where a lady is the plaintiff, she is to be examined by a physician of her own sex. It is a ridiculous thing in the statute. A good many speak of it as a kind of joke; it was so regarded at the time it passed, but it slipped through without objection.

DR. HATCH—I represent the Burlington & Quincy. There is a case now pending, a threatened lawsuit. These parties were injured about six weeks ago and they demand damages from the railroad company, and they employed an attorney. I represented the company, told them that if the company was liable and they were injured it was not our desire to have any litigation and I demanded an examination of the parties which they absolutely refused. I contend that as a representative of the company I have a right to do this.

MR. BECKER—The supreme court of the United States held that the right does not exist independent of the statute. There is no right unless there is some statutory action that permits it.

DR. GARDNER—I can relate a case similar to the one my friend here relates. It is the case of an injury on the Southern Pacific last October. As chief surgeon of the company I was sent down by our chief attorney to investigate the case and asked for an examination of the case by our physician at Los Angeles. It was refused. The request was made by Dr. Ainsworth through me and I was to be present. The case finally came to trial and in that case the request, such as my friend Dr. Hatch spoke of, was placed in court as a request of the company to show that we wanted to treat them fairly and to make the examination by not only myself, but a physician in the employ of our company. As a result the case was non-suited and finally was disbarred entirely. The moment you place the fact before a jury that a man refuses to be examined by a competent physician, who is recognized as reputable in the neighborhood and in the city in which he lives, it bears a certain weight with the jury and invariably the verdict is the other way.

DR. MAYNARD—My judicial friend on the right here has presented this case well, but I object to papers of that character being read and printed by this Academy. I have had twenty-odd years' experience with railway companies, and I know there is no gentleman in this room who does not know that the general managers or the claim departments of the different roads are inclined to use us simply as adjuncts to the claim department, and I do not propose in my railway service to be held in any such light. The more papers we have in that line, and the more discussion we have printed, the more we will be likely to be regarded as adjuncts to the claim department of the different roads. Our motto is: "The higher the order of railway surgery the greater the protection to the employé, the

passenger and the company." and I think we ought to confine ourselves exclusively to that, and not make ourselves, any further than we can help, fifth wheels of the claim department.

DR. GARDNER—I take exceptions to those remarks. In my instructions in my department, I will not allow a surgeon in my service to appear as an expert under any circumstances but purely to testify as to facts. It is a procedure I have adopted in my service and I insist upon it. I shall never compromise, and a man in my employ who goes up as an expert loses his job.

DR. DALBY—I do not see very much relevancy between the remarks of Dr. Gardner and our friend from Cheyenne, so I expect we are all in line. I think Dr. Kibler's paper is a good paper. The question as to the merit or demerit of its publication in our proceedings is one for the Association itself to determine. I think that our relationship with the various attorneys and railway organizations is a very close one. No railway organization can go into court with a suit without depending and relying more or less upon the officers of that company. I do not believe that they look upon us as the fifth wheel or the seventeenth wheel of the claim department, but they certainly do look upon us as being able to give them some information which we do have and which I think it is proper for us to give. Speaking on the question of getting damages on perjured testimony, it is something that those connected with a railway have often seen. It is brought about by various conditions. In Salt Lake City, invariably every man, woman and child bring suit against a railroad company, it makes no difference whether they have any visible mark or not, the suit is brought and the jury will invariably find for them in various amounts. I recall now, among several instances, a case involving an examination of the injuries. Six or seven months ago we had a suit brought against the Union Pacific Railway on the part of a mother and daughter. The mother was a lady of middle age, and the daughter somewhere in the vicinity of 20. The mother claimed damages for injury to the spine, the daughter brought suit for a fracture of the nose. Neither of these cases had been treated at any time by any surgeon who had any connection with the company proper at all. They were each suing for \$5,000 damages. The solicitors of our road asked permission of the court to grant me the privilege of examining them, as the company itself had no evidence or no idea as to the extent of these alleged damages. The court finally permitted me to examine the daughter for a fractured nose, in company with her attending physician, but denied me the privilege of examining the mother. Where the distinction came in I do not know. But in carrying out the ideas of the paper that the doctor just read, obtaining verdicts on perjured testimony, there was a girl who had been enticed to go into court for a claim of \$5,000 for a fractured nose. Her attendant physician claims he examined her nose and found some irregularity in the nasal passage; in other words, the nasal passages were not alike. He described very graphically during the trial of the case the condition of the girl. As a matter of fact, and as he agreed with me in the examination I made with him, there was a turbinated bone, which merely loosened up the one muscle. That was where he found his fracture, and that was all that existed. At any rate the jury returned a verdict for her mother for \$5,000 and the daughter for \$2,500, and I got the reputation of being a railway hireling for my own testimony.

Otherwise All Right! Doctor: "Well, madam, how are you to-day?" Madam: "Oh, doctor, I have frightful pains all over my whole body, and it seems impossible to breathe; of course I can't sleep, and I have no appetite at all." Doctor: "Um—er well, otherwise you're all right, aren't you?" *Medical Press.*

CEREBRAL SYPHILIS, WITH REPORT OF CASES.

Read before the Chicago Pathological Society, April 13, 1896.

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CHICAGO.

I need offer no apology for the introduction of a subject such as this, as it is well deserving of our attention by virtue of its high degree of importance in diagnosis and treatment. The frequency of syphilis of the nervous system is becoming more and more appreciated, thus securing for it an earlier recognition and the establishment of a more definite train of clinical phenomena than formerly. Gray, writing only four years ago, would make no more than a tentative diagnosis of cerebral syphilis, unless there were present, 1, undoubted specific infection; 2, convulsions or hemiplegia, or 3, marked success of specific treatment. Gowers, in his great work, allots to nervous syphilis no special chapter, referring to it among causative agents in the production of endarteritis, cerebral softening, hemorrhage, insanity, etc. I need not dwell upon the widespread prevalence of syphilis, which is one of the most important diseases with which we have to deal. Additions are made daily to the already enormous literature. How many of these cases of syphilis have undergone treatment which can be called approximately curative? Those that submit to the proper régime are certainly in the minority. Only too many of them are lulled into a state of false security by the rapid disappearance of tangible evidence of the disease, and discontinue treatment despite the admonition of the medical attendant.

A chancre of doubtful nature heals under indifferent treatment, or perchance is cauterized; no "secondaries" follow, leaving the individual in doubt whether he is syphilitic, until a subsequent nervous affection is undeniable evidence thereof. Fournier says that just those cases in which the manifestations on the skin and mucus membranes are scanty or absent, are prone to be followed by nervous lesions later on. Especially does this seem to obtain in women, who also are often infected unknowingly, a circumstance which provokes distressing errors in diagnosis, especially among the better classes.

On the other hand, a conscientious course of treatment for one and one-half to two years or more does not necessarily insure immunity from further trouble. Recognizing, then, the ubiquitous nature of syphilis, we should ever be on the alert in cases of nervous, especially cerebral, disease, to establish a possible etiologic connection. It will appear that an early diagnosis of these cases of cerebral syphilis, before irreparable secondary changes have been wrought, is of incalculable importance. After secondary degeneration and softening have become manifest, treatment will avail but little, and can not be compared to the success achieved in cases where the alterations are limited mostly to the membranes and arteries. It is for us to heed the warning note that is sounded by the appearance of prodromal headaches, irregular palsies of cranial nerves or slight aphasia, and not wait until a greater calamity overtakes the patient.

A maxim to which I heard Max Joseph, of Berlin, allude is a good one, *ubi dubio, suppone luenem*, and safely applicable in medicine generally, as it can do no harm and may be the key to the solution of a perplex-

ing problem in diagnosis. Various well defined types of nervous disease, foremost locomotor ataxia and dementia paralytica, are said to occur with relative frequency following syphilis. Storbeck, of Leyden's clinic, has recently published a table showing the percentage of syphilitic cases in tabes according to forty-eight authors, from the 0 per cent. of Mayer to the 97 per cent. of Déjerme. In his own cases (108) about 30.6 per cent. had syphilis, which he thinks is not higher than might be expected from the frequency of the disease. Leyden is loth to admit any causative relation between syphilis and tabes. The relation of cause and effect in these cases has thus far been only statistical and not based upon pathology, nor supported by the results of treatment.

The cases to which I will refer are due to a direct involvement of the brain and its investments by the specific proliferative changes. These changes are the same in the brain and cord and cause outward symptoms in so far as they produce local anemias with their sequelæ or interfere with nerve conduction by pressure. The nervous involvement of syphilis is usually classed among the late manifestations, yet it has been known to follow infection from a few months to thirty years thereafter. According to Naunyn, nervous syphilis occurs most frequently during the first year following infection, and decreases year by year thereafter. Many cases have been reported of late, occurring within the first year and during the period of efflorescence (J. Hutchinson and G. F. Lydston). Most cases, however, develop after the lapse of several years. I will say that the tendency now is such as to disregard the arbitrary division of syphilis into "secondary" and "tertiary" periods, since the manifestations thereof are found to intermingle to a degree not consistent with any such classification.

Age is variable, averaging 30 to 35, youthful individuals being more often stricken, and males preponderate. To Sternberg (1860) and Heubner (1874) belong the honor of having first identified certain cerebro-spinal meningitic and arterial changes with syphilis. Save minor details their works still enjoy acceptance. Rumpf also asserts that syphilitic disease of the nervous system originates primarily in the blood vessels.

Syphilitic lepto-meningitis, like the tubercular, is prone to affect the base of the brain, about and posterior to the optic chiasm, whence it spreads to the convexity. Separate foci in different stages of development may coexist. The pia and arachnoid are primarily involved; as they span the interpeduncular space they appear thickened, opaque and pultaceous. The mass is granulation tissue, which becomes fibrous, sometimes cheesy. The membranes adhere to the cortex, which suffers to a variable degree. The new growth fills out the sulci, thereby smoothing the markings of the convolutions. The cranial nerves and cerebral arteries traversing these masses can not escape involvement, but they are often independently affected. The nerves are infiltrated with round cells producing nodular gummatous thickenings; eventually nerve atrophy occurs. Owing to their situation the optic, third and sixth nerves are first to be attacked, the others escaping more or less.

The arterial changes are those of an endarteritis obliterans; the intima becomes enormously thickened by the growth and organization of round cells, which invade to a lesser extent the other coats. There results progressive narrowing of the lumen and even-

tually complete occlusion of the same by the cell growth or by thrombosis. As in the nerves, small gummosities occur in the vessel walls. Aneurysms and hemorrhage are uncommon, thrombosis being the most frequent event. Section of the brain sometimes reveals no changes save the arterial. There is never any pus formation and gummata in the interior are infrequent. The effects, secondary and remote, produced in the central ganglia and internal capsule are of vital importance. The arteria fossa sylvii, which supplies motor regions of vital function, is commonly involved by endarteritis. By the narrowing of the lumen, aided by the varying degree of blood pressure, there are produced vacillating states of anemia, until finally occlusion by a clot produces ischemia in areas of variable size with resultant monoplegia, hemiplegia or aphasia. These latter, rarely hemiplegia, are also evoked by pressure of meningitis overlying motor centers; convulsions may then precede paralysis. If the deprivation of blood be not soon relieved by collateral supply or perviousness of the thrombus, softening with its sequelæ is inevitable.

All writers agree upon certain factors which enhance the tendency to nervous involvement. These are inebriety, venereal excesses, emotional disturbances, worry and overwork; sometimes trauma to the skull.

The character of the pathologic lesions, manifest by their insidious, vacillating and irregular growth and regression—the simultaneous involvement of widely separated areas—the far-reaching influence of impeded blood supply—all these elements obtain in determining a clinical picture of varying aspect. This irregularity, however, is one of the points of identification, together with phenomena which are uniformly constant. Headache is among the first fore-runners, often nocturnal and periodic and frequently localized. Its severity may reach an agonizing degree, accompanied by great sensitiveness to percussion of the skull. The cephalalgia may be accompanied by nausea, vomiting or vertigo. This may be the only complaint for weeks and months, even years, until superseded by the first signs of paralysis. There is usually an early psychic involvement, evinced by a change of character, the individual becoming moody, morose, sullen and hypochondriacal. He is, too, drowsy by day and wears a stupid sleepy look, but is restless and wakeful at night. The keen intelligence is blunted and the memory fails; he shuns society suspiciously. Sooner or later an inability to read and write is noticed and finally the first signs of paralysis appear. It is claimed that with the onset of paralysis headache and vertigo subside.

The palsies are very various, from a paresis of an ocular muscle to complete hemiplegia. Aphasia is frequent and may be the only motor disturbance. The speech, at first irresolute and halting, resembling paralytic dementia, finally becomes inarticulate and the function is completely suspended. The meaning of words is understood, as the aphasia is of the motor type.

I have already referred to the early affection of the optic, oculomotor and sixth nerves, less frequently the fifth, seventh and others. The optic disk reveals neuritis varying from a reddening and blurring of the contour with venous engorgement and swelling of the papilla, to complete atrophy, with a tendon like aspect of the nerve. Vision may be much reduced, and hemianopsia bitemporal or bilateral and

diplopia also occur. Oppenheim calls attention to the fleeting and transient nature of the subjective eye symptoms, especially the hemianopsia and contraction of the field of vision. The pupils may be sluggish and unequal and not react to light nor accommodation. Ptosis and strabismus are very common, more so than facial paralysis. The tongue is protruded to the side and the uvula is drawn from the perpendicular. Deafness is rare. These paralyses are often so disposed as to defy localization at one focus. The graver forms of paralysis, monoplegia and hemiplegia, may be of sudden apoplectic form onset or may develop after hours or days. Consciousness is usually retained, the patient experiencing the more or less rapid loss of power in his limbs. Death during such an attack is not the common outcome, but convulsions and coma are usually fatal. Polydipsia and polyuria occur in some cases, also atony of the bladder and rectum, generally transient. Paresthesias and anesthetics occur where sensory tracts are implicated. Fever is usually absent, although there may be some rise in temperature sometimes.

The course of the disease depends largely upon the gravity of secondary changes at the time of commencing treatment. Some cases continue for months or years with only headache or slight mental alteration, perchance paresis in the distribution of some cranial nerve. Others progress rapidly to convulsions, dementia and coma. Some are stricken with hemiplegia, terminating in contractures and atrophy. There may be periods of quiescence, but relapses are possible.

I can not too much emphasize the enormous importance of an early diagnosis, upon which the whole future of the case hinges. If recognized and treated early, the outlook is generally good but becomes progressively worse the later treatment is begun. According to Naunyn the prognosis is favorable during the first four weeks, and after the commencement of treatment, the bulk of improvement will have occurred by the end of the second week thereof. These are two valuable points to bear in mind when rendering prognoses.

The success of treatment is entirely dependent upon the amount of damage done to nervous substance secondary to the development of specific changes in membranes and arteries. If limited to these latter complete recovery can be assured. If the granulations be by treatment brought to absorption before the secondary alterations are of long standing and permanent, restitution is probable. Buzzard tells of an artery that had been almost occluded, tested by the sphygmograph, and yet it was again made patulous by proper treatment. Irreparable degenerative processes in brain and nerves, with muscular degeneration and atrophy can not be much improved.

We should be suspicious of the presence of brain syphilis under the following conditions:

1. Headache, periodic, nocturnal or localized, accompanied by nausea and vertigo, or the development of mental symptoms described above.
2. Isolated irregular paresis of cranial nerves, especially the third, preceded or not by the above or accompanied by aphasia, alexia and agraphia.
3. Hemiplegia, in youthful individuals occurring slowly or sudden, with no loss of consciousness.
4. Coma and convulsions excluding opium, epilepsy, alcohol, diabetes, uremia and trauma extending over days.

Naturally, our suspicions are confirmed by a clear specific history or the simultaneous appearance on skin or mucous membranes of typical lesions.

Is complete recovery possible? Mills says "it is possible to remedy some of the effects of nervous syphilis or to remove some of its symptoms; it is even possible that a cure may be effected; but this, as Gowers asserts, has never been proved." The fallacy of this statement is evident and shown by cases reported by Gray, Althaus, Lydston, Diller, Hutchinson and others. Three of my cases recovered completely; one was greatly improved when last seen; one, seen late in the disease, died; one is still under treatment, much improved. I believe that if the proper conditions before mentioned are present, that a speedy and absolute recovery can be secured in a large majority of the cases but that a relapse, as Fournier says, is possible, unless treatment be continued at least two years.

The treatment is that of a syphilis in general, but should be vigorous and the remedies should, when necessary, be pushed to the limit. The "schools" are divided on the relative merits of mercurials and iodids. Gowers claims that on the whole the iodids are the most useful and certain of the two. This opinion is upheld in America generally, and enormous doses of iodids are given, an ounce or more of iodid of potash in the twenty-four hours. Germans rely more on inunctions of mercury, but all use the "mixed treatment." I agree with Lydston as to mercury "first, last and all the time." His suggestion, however, as to its mode of application is as unique as it is impracticable, viz., to rub the patient's scalp and neck with blue ointment so that the seat of trouble may be sooner reached and more directly! This suggestion is totally at variance with the teachings relative to the absorption of mercurial ointment. The opinion has spread, based on experiments of Lewin, Müller, Joseph and others, that most of the mercury applied to the skin is in reality absorbed by the lungs, the lesser portion finding access directly through the skin. It is sufficient to apply the ointment without any rubbing, avoiding the hairy regions of the body. Spread upon cloths and hung up in syphilitic wards, patients therein recovered from milder symptoms without any other treatment, meanwhile excreting abundant mercury with the urine.

The cases to follow were treated with one drachm of unguentum hydrargyri and a drachm more or less of iodid of potash daily. In all of the cases, except the female, the question of syphilis is positive. Collectively they illustrate most of the variations of the subject under discussion and are typical cases of their kind.

Case 1. Male, age 28, chancre eight years ago. Aphasia, slight dementia, agraphia, alexia, unequal pupils, paresis of lower facial; recovery in four weeks.

The chancre, eight years since healed under indifferent treatment and had no characteristics of syphilis. No eruption nor sore throat followed. Five years later had a periostitis of sternal end of left clavicle. The present illness began with change in character: he became sullen and morose, walked the floor nights on account of headache and insomnia, whereas by day he was sleepy and would doze during conversation. After a few weeks an alteration of speech became apparent, it was slow and halting, finally becoming inarticulate. It was then found that he could not read nor write. Pupils reacted sluggish, right dilated; slight paresis of right lower facial branches; uvula deviated to left; tongue in median line. No sensory disturbances. Treatment was at once instituted, after three days its effects were apparent, and at the end of four weeks all signs had disappeared except an impairment of the mental

faculties, which remained somewhat dull and lethargic. For six months he used inunctions and ever since he has taken iodids off and on. At present, after nearly three years he is apparently perfectly well, does office work but is still eccentric. At no time during his disease were there any palpable signs of syphilis other than the nervous. In this case the meningitis affected chiefly the speech center, to less extent the base.

Case 2.—Female, married, age 43. No specific history; nocturnal headache and vertigo very severe for four weeks; then left hemiplegia and optic neuritis; recovery almost complete in three weeks.

This patient had five healthy children, two still births; youngest child about eight months old and healthy. Denies infection. No previous illnesses. Began four weeks ago with severe headache, worse at night, located in vertex and right temporal region; vertigo, vomiting and general malaise. Then she developed a left-sided hemiparesis, coming on in the course of a few hours with consciousness retained. Unable to walk, left hand grasp feeble, face somewhat drawn to right, sensation on left side impaired. No convulsions; speech unimpaired; pupils equal and react. Had complained of dimness of vision for few days previous; neuro-retinitis right side. Great sensitiveness to percussion over right temporal region. Treatment begun immediately after onset of paresis. Headache gone on third day and great improvement after one week. In three weeks muscular power almost restored, sensation returned; no headache; neuro-retinitis abating. She was feeling very well and passed from observation. Subsequent history not known. She also, when seen, had no signs of syphilis, but the character of the illness was highly suspicious of syphilis and was corroborated by the brilliant results of anti-syphilitic treatment.

Case 3.—Infection seven years ago. Complete right hemiplegia and aphasia without loss of consciousness; polydipsia and polyuria; complete recovery.

Patient was a male, age 42; acquired syphilis seven years ago; had slight eruption and sore throat. Was treated for eighteen months with inunctions and pills of protoiodid of mercury with iodids. He considered himself cured and took no treatment since. Patient is addicted to excesses in alcohol, tobacco and venery and owing to the speculative character of his business his nerves are continually on a high tension; he is of a violent and excitable temper. Returning home late one night after a turbulent celebration in honor of an important business transaction, he suddenly felt a sense of weakness in right side of body and tottered to the nearest support. He had had no headaches recently and was feeling as well as usual. He did not fall to the floor nor did he lose consciousness. After regaining his composure he found that he was not completely paralyzed, and a physician who saw him soon after was able to get a history from him. He also complained then of a headache on the left side. Next morning paralysis and speech worse, and in the afternoon, about eighteen hours from time of onset the condition was as follows: Complete motor aphasia; right pupil larger than left, reaction sluggish; tongue protruded to right; complete right hemiplegia and impairment of sensation. Atony of the bladder and rectum. Sensorium in a somewhat dazed condition. Knowing absolutely his previous history, he was immediately put on anti-syphilitic treatment and improvement progressed after the second day. After two weeks speech was normal; he could walk with support, sensation slightly blunted, flexes fingers and moves arm slightly. Sensorium clear, sleeps well, no headache; has great appetite and thirst, and voids large quantities of urine, which contains no albumin nor sugar. After four weeks, walks about and moves right arm freely, but not with former power yet; face symmetrical, tongue in middle line, pupils equal. Sensation and speech restored. After this, recovery was steady and uneventful and at the present time, nine months after the onset, patient is conducting a large business concern and says he never felt better in his life. He still takes mercurial pills. This case illustrates how after a fair initial course of treatment cerebral syphilis may follow later; that absolute recovery is possible.

Case 4.—Chancre eleven years ago; headache for last year; aphasia getting worse for two months with agraphia and alexia; improved.

Patient is a male, age 33, clerk, acquired syphilis eleven years ago. Habits regular and moderate. For the last year or so has suffered periodically with headaches, sometimes worse at night; no vertigo. Eight weeks ago while traveling on business he became aware of a heaviness of speech with defective memory. He would forget his destination, neglected his business and lost his former sharpness in business dealings. He gave up and returned home and sought relief in various quarters, but his condition became worse. None whom he

consulted treated him for syphilis, as he, like the preceding cases showed no palpable signs; one advised him to marry. After eight weeks his condition was the following: Patient could utter scarcely intelligible words; the foregoing history was obtained from his father. His expression was stupid and dull in contrast to his former brightness. All movements were slow and languid. Marked tremor of face and hands. Pupils equal and react. No paralysis anywhere save the speech; can not read nor write. Physical examination negative except very slight general adenopathy. Was at once put on specific treatment, but after a few days developed iodism and the drug was stopped, but the inunction continued. After about four weeks' treatment he is back at work, talks, reads and writes as usual; memory as before; tremor entirely disappeared; no headaches—in fact, he feels as well as he ever did, but is still using inunctions. He was apparently quite well for about ten days and then according to the family, he changed again. He became forgetful again, said many foolish and untrue things, was restless at night, squandered money carelessly; in fact, his character quite changed. He is using inunctions and increasing doses of iodids.

Case 5.—Papulo-pustular syphilid; headache, paresis of left arm and leg with no loss of consciousness; optic neuritis; in four weeks almost complete recovery excepting the optic neuritis.

Patient is a male, age 43. No previous illness; uses alcohol moderately; denies a chancre. For nine weeks he has suffered with headaches, worst at night; vertigo at times recurring in paroxysms and becoming worse. A few days ago he first noticed a weakness in his left arm and leg accompanied by a tingling sensation and numbness. This loss of power came on gradually and he was at all times conscious. Speech unimpaired, mental condition as usual. He says the paresis and the skin eruption appeared about the same time. On examination pupils were equal and react; face symmetrical; tongue protruded somewhat to left. Marked weakness of left arm and leg, but some motion is retained, as he can walk dragging his left leg. Knee reflex equal but pronounced; ankle clonus on left side. Hyperesthesia, especially of left arm. General macular, papular and pustular syphilid and mucous patches in mouth. General adenopathy; internal examination was negative. He complained of dimness of vision. Ophthalmoscopic examination showed on the right side venous engorgement, papilla reddened and blurred, slightly swollen. On left side the changes were less marked. Treatment was then begun and its effects were very evident by the end of a week in the cessation of headache and returning power on left side. In four weeks eruption had disappeared; both sides about equal in strength, reflexes equal, no clonus, sensation normal. The optic neuritis had abated considerably, but vision was still impaired. At this time he passed from observation and the further course is not obtainable.

Case 6.—Evidence of syphilis; headache and dizziness; change in temperament; drowsiness deepening into coma; optic neuritis; paresis right facial and left arm and leg; ptosis slight on left side; death in coma on tenth day; autopsy, no gross lesions disseminated endarteritis.

Patient, a male, cook, age 38, was already semi-stuporous when first seen, so that a good previous history was not to be had. He had some kind of skin eruption one year ago. For some weeks preceding present illness he is said to have had headache and vertigo, and his mild temper changed to a violent and irritable one with emotional outbreaks. His drowsiness deepened rapidly of late. Examination reveals patient semi-comatose, but he can be aroused sufficiently to answer some questions. Slight ptosis on left side; movements of eyes free. Pupils irregular and immobile; under atropin they dilated irregularly, tearing up iritic adhesions to lens. Interstitial keratitis on left side preventing examination of fundus. Optic neuritis on right side of moderate degree. Paresis in distribution of right lower facial. Tongue dry and protruded irregularly. Slight paresis of left arm and leg with hyperesthesia. General adenopathy. Reflexes normal. Involuntary defecation and urination. Temperature normal, pulse 95 to 90. The urine contained albumin with hyalin and granular casts and abundant leucin crystals, but no tyrosin: the amount could not be estimated. On the usual treatment he improved for the first five days—he became brighter, the paresis of left arm and leg disappeared, but the ptosis and right facial palsy remained. He can give a few simple answers, but is still very dull and sleeps a great deal. No tenderness on percussing skull. Urine contains less tyrosin. Occasional projectile vomiting. No convulsive twitchings were noticed. On the eighth day the drowsiness again deepened and patient died on the tenth day in deep coma. Autopsy: Slight meningeal thickening at base of brain; no fresh inflammation. Cranial nerves apparently nor-

mal. Endarteritis obliterans of anterior and middle cerebral arteries, but no complete occlusion nor thrombosis was found. No aneurysms nor hemorrhage. No gross macroscopic lesions of brain. Of the other organs of interest the kidneys showed a condition of subacute parenchymatous nephritis.

I believe that we have sufficient proof of syphilis in the keratitis, iritis, adenopathy and clinical course of the disease, although the post-mortem findings are not conclusive, being limited in the brain mostly to the arteries. I will not deny that there may also have been a uremic element in the case. I will offer no explanation for the presence of leucin in the urine, occurring as it does most commonly in acute yellow atrophy of the liver, phosphorus poisoning, leukemia and various infectious diseases.

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DISCUSSION.

DR. MOYER—It needs no emphasis at this time to point out the immense importance of syphilis as a causative factor in disease of the brain and spinal cord. There is, however, a trifling misconception growing out of the mere use of terms. I see the doctor has labeled his paper, cerebral syphilis with report of cases, and he referred to the fact that Gowers had no chapter in his work on this subject. He would probably not find one upon syphilis of the spinal cord, and yet most of our German confrères have a chapter devoted to these subjects. It is not, however, that the English and American neurologists and the practitioner of general medicine do not recognize the importance of syphilis in the etiology of these disorders. The term cerebral syphilis and syphilis of the spinal cord, as used by our German confrères, is incorrect, as it puts into the nomenclature a new pathologic entity, like chorea, tabes, etc., a something which is caused by syphilis. We do not think it is possible to distinguish clinically the cases of tabes and parietic dementia having their origin in syphilis from those caused by other conditions. There is no doubt that most of the cases occurring in the meninges along the base of the brain, involving one or more of the cranial nerves, or a cerebral peduncle, or perhaps a single branch of the third nerve, or those which occur with a comparatively abrupt onset of symptoms, those cases are almost without exception syphilitic, but I do not think this justifies the term cerebral syphilis; I should say rather they were such and such conditions, affecting certain portions of the brain as the case might be, which were caused by syphilis. There was one case described in the paper which to my mind might justify the term cerebral syphilis. It was the one in which a diffuse endarteritis was found, but no local lesions. I believe that makes a clinical type that perhaps ought to have a chapter in works upon practice labeled cerebral syphilis. I have seen several such cases in which there was a rather abrupt onset with scarcely any local paralysis, early interference with speech and sluggishness of the pupils; some exaltation of the mental functions, rapidly passing on into mild delirium, stupor and death. At the post-mortem, the findings are not different from those described by the doctor; but, as I say, this discussion really relates to terms and not to facts. The great importance of the doctor's paper is in directing our attention very pointedly to the influence of syphilis in these affections, and particularly in the cases that he describes, those presenting irregular manifestations and those with a comparatively abrupt onset, but this has been recognized for the last twenty years. Within the last eight or ten years, there has been an increasing importance attached to syphilis in the slow progressive degenerations, the ordinary cases of parietic dementia and tabes, and we must now admit, although

still denied by a few, that syphilis causes 80 or 90 per cent., or even more of these cases. There is, too, a striking difference in regard to treatment in this class of cases. Those with an abrupt onset are usually quite amenable to treatment; those in which the symptoms come on slowly and insidiously are most rebellious to treatment, no matter how energetically pursued, and I think the reason is found in the fact that the changes in these other conditions are really secondary. Take, for instance, an endarteritis that leads to a rupture of an artery or thrombosis. The secondary conditions are not amenable to anti-syphilitic treatment. The same applies to cases of insidious onset, in which specific treatment does so little and yet it is undoubtedly true that they are of syphilitic origin. The reason of it is that this slow, progressive syphilitic endarteritis has set up the secondary changes, sclerotic in character, and when those changes are once set up, it makes no difference what the cause is, the treatment is practically *nil*, no matter how energetically pursued. But coming to the practical point; the evidence is now so strong that in all these cases it is the duty of the practitioner, even in the absence of a history of syphilis and even where it is denied, to give an energetic anti-syphilitic treatment. I prefer the mixed treatment, but give the iodids in relatively very large doses.

DR. WM. HESSERT—I think that Dr. Moyer and I agree, only that we express our views in different ways. I meant to say that the subject of cerebral involvement by syphilis has been described as an entity under a special heading of late by German authors; especially Oppenheim in his last work gives a classic description of cerebral syphilis, meningitis and inflammation of the cerebral cortex. I admit certainly that the subject of cerebral syphilis is as old as the subject of syphilis itself, and thousands of years ago we may say that mankind was affected with the cerebral involvement just as they are now; but the point is that it was not recognized as of late years.

PNEUMONIA; THE NON-ALCOHOLIC TREATMENT.

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Contrary to all that has been written showing the pernicious effect of alcohol on the system in health and disease, and contrary to the admonitions of some of the greatest lights of the medical profession, past and present (a few of whom I may mention, viz., Sir Astley Cooper, Prof. Willard Parker, Dr. Benjamin Ward Richardson, Dr. Wm. B. Carpenter, Dr. N. S. Davis and numerous others equally as well known), as to its deleterious effects in disease, and notwithstanding the fact that the mortality rate from pneumonia is higher than fifty years ago, still we persist in using alcohol in pneumonia crouposa.

You can scarcely pick up a text-book or journal for reference as to the treatment of pneumonia, without being confronted with the fact that you must stimulate your patient with alcohol.

We boast of the great advancements made in surgery and medicine, and contrast our knowledge of to-day with that of fifty years ago. The contrast is certainly very great; our knowledge of materia medica and therapeutics is certainly very extensive; in diagnosis we have become very proficient, and we differentiate one disease from another with that degree of certainty that if some of the lights of the medical profession who lived fifty, or even twenty years ago, were to come to life, they would be amazed at the advancement made in diagnosis alone.

In treatment of disease their surprise might not be so great, because of the fact that we do not differ materially from the various ideas entertained in the past.

In pathology we have made the greatest advancements, and inasmuch as this article has to do only with pneumonia crouposa, we shall dwell on it more or less from a pathologic standpoint in order to show

why alcohol is contraindicated, and why it should not be used in pneumonia.

Pneumonia crouposa is distinctively an inflammatory disease, and as in all cases of inflammation occurring in any part of the body, so in the first stage of pneumonia we find a hyperemia or increased vascularity; engorgement.

In the second stage we have exudation, red hepatization, in which the alveoli and bronchioles become filled with a sero-plastic exudate, and that portion of the lung affected becomes partially solidified, and in it the blood current is apparently stopped.

The third stage is the one in which we find fatty degeneration of the exudate, and an extrusion of the same. It is called the stage of resolution.

Space will not permit, nor need we make a more elaborate description of the various minute pathologic changes that take place in the affected lung in order to prove the theory I advance. It will suffice to say, for all practical purposes, that we have an inflamed condition of lung to deal with, a congested, engorged condition of the blood vessels of the part affected, and later on a state of solidification in which all blood is excluded.

Now then, inasmuch as the foregoing statements are beyond dispute, having been accepted by all, we shall endeavor to prove from the above facts why alcohol is contraindicated in this disease.

In the first stage we find on microscopic examination the blood vessels to be distended with blood; that is to say, the volume of blood has been enormously increased and the capillary network surrounding the alveoli is greatly enlarged and all adjacent portions of bronchioles are similarly engorged; thus we have a hyperemia marking this stage of the inflammatory process, lasting from twenty-four to thirty-six hours.

We will now see what affect alcohol has on the system and compare it with the above.

According to the latest views, the physiologic action of alcohol on the arterial system is that it causes the heart to beat faster but not stronger. The increased heart beat is attributable to the dilatation of the arterioles; that is, there is less resistance to overcome and the heart therefore beats faster. It also, through its action on the vasomotor nerves, paralyzes the minute capillary vessels, and fills them with blood. In other words, it produces an hyperemic condition substantially the same as we find in the first stage of pneumonia.

Now then, if alcohol produces in health this condition of affairs, why is it not contraindicated in an already congested lung? Does it not assist in complicating a difficulty we are endeavoring to overcome?

Again, it is a well established fact that alcohol in the system diminishes oxidation, and inasmuch as the oxygen needed in the blood is received from the pulmonary air cells by the hemoglobin and serum of the blood, and in them conveyed to the systemic capillaries, where it comes in contact with and exerts its influence on every cell and structure of the body, and furthermore the feeble affinity it manifests for oxygen is offset by its strong affinity for water, albumin and hemoglobin. Therefore if alcohol is introduced in the circulation, instead of uniting with the oxygen, it manifests its strong affinity for the hemoglobin and sero-albumin, and consequently interferes with the reception of oxygen from the pulmonary air cells. In this manner the presence of alcohol prevents the hemoglobin from being converted into oxy-hemoglobin in

the pulmonary arterioles, and in the same ratio diminishes the amount of oxygen conveyed to the systemic capillaries, and in the same ratio the nerve sensibility and metabolic changes diminish.

Alcohol, as can be demonstrated, is a narcotic poison in large doses, and kills through suffocation by its paralyzing influence on the respiratory nerve-centers, and in small but continued doses it produces the same result by the structural changes which it produces in the organs and tissues of the body. By its action on the blood cells it checks oxidation by limiting their power of eliminating carbonic dioxid and of absorbing oxygen.

Therefore, if, as is above shown, alcohol prevents the elimination of carbonic dioxid and the reception of oxygen by the blood cells, how can we expect by introducing it into the circulation, that it is going to afford any relief to an already congested lung which is endeavoring to rid itself of an overabundance of carbonic dioxid, and to obtain more oxygen?

During the stages of red and gray hepatization up to the point when resolution takes place, we find the area of lung involved almost solid. The venous circulation falls abnormally and the right heart weakens from over-work, and as a result of this condition the patient has a flushed, anxious and slightly dusky countenance. We have substantially asphyxia, and in many cases the patient is in a semi-comatose condition. This condition is the result of carbonic dioxid poisoning and a lack of oxygen. The asphyxia is not necessarily due or dependent upon the amount of lung tissue involved, nor to any change in the heart muscle, but rather a toxemia which undoubtedly weakens the heart.

It is also an established fact that all natural molecular or metabolic changes, nutritive, secretory and disintegrating, taking place in the living tissues, are absolutely dependent on the presence and movement of blood containing its natural proportion of oxygen. Consequently it must follow that when this free movement of blood is interfered with, as it is in the solidified portion of the lung (as we find it in the second stage of pneumonia), the metabolic molecular changes taking place in the lung are interrupted, and as a result the blood is loaded with toxins. It is very evident, therefore, that we should direct our treatment so as to assist the system in ridding itself of these toxins.

Can we, by administering alcohol, accomplish this? I say unhesitatingly, no. I say so because of the fact that it is contraindicated, for the following reasons: The effect of alcohol in the system is to paralyze the minute capillary vessels and fill them with blood, thereby substantially producing a stasis. The removal of toxins, which have been produced by the diseased condition of the lung, is interfered with, and we have as a result a systemic poisoning.

How often have we observed, during the second stage of pneumonia, when a patient is apparently dying from asphyxia, the subnormal temperature, pulse hardly to be felt, cold perspiration, respiration labored and stertorous, a cyanotic appearance of the face and a more or less comatose condition? How often do we attribute all of the above symptoms to the venous stasis and carbonic dioxid poisoning, resulting from the diseased portion of the lung, to which it is true they may be due? But as a rule what have we been doing for the patient during this time? Filling him up with alcohol in order that we may, as

we have been taught, tide him over this condition by stimulating him.

The question now arises: How much of the above condition can we attribute to the disease and how much to alcohol? We shall answer the question in the following manner: The imbibition of small doses of alcohol produces through its action on the cerebro-spinal system a relaxation of all terminal capillaries, and there is no rise in temperature. In large doses or a very frequent repetition of the small dose, there is a partial paralysis of the terminal capillaries, a lowering of temperature, loss of muscular power, lack of coördination and finally more or less delirium, anesthesia and collapse. In larger doses it is a true poison.

Now then, inasmuch as the physiologic efficacy of alcohol is considered to be one ounce well diluted, taken in divided doses during twenty-four hours, any considerable quantity taken above this amount may be considered toxic, and being a true poison note the effect it produces on the system. In complete alcoholic poisoning, the temperature is subnormal, pulse hardly to be felt, cold perspiration, respiration labored and stertorous, pupils do not react to light and the lips are blue.

Observe the similarity of the symptoms of alcoholic poisoning and those of carbonic dioxid poisoning of the second stage of pneumonia, then ask yourself if you are justified in giving alcohol in any form in this condition. No more dangerous, pernicious treatment has ever been adopted or advised than to give, in this critical stage (or any other) of pneumonia, alcohol in any form or quantity. You are no more justified in administering alcohol in pneumonia than you would be in giving it in a case of alcoholic poisoning.

Dr. Henry Hartshorn stated in a paper read before the College of Physicians of Philadelphia, 1888, that pneumonia was much more fatal then than when the practice of venesection prevailed; and that the increased mortality could not be explained by change in type or change in constitution, and that it must be due to change in treatment; *ergo*, the modern treatment must be wrong. Then he goes on to prove, by statistics taken in Great Britain and Europe, and also this country, that the mortality from pneumonia was relatively twice as great then, than it was fifty years previously. It would be inferred from Dr. Hartshorn's article (as he says) that the reason for this greatly increased mortality, was we had dropped venesection and taken up a new line of treatment, and that, *ergo*, this new line of treatment was wrong.

Dr. Hartshorn is not alone in thinking that the modern method of treating pneumonia is wrong. Many of the older members of the profession will tell you that when they began the practice of medicine forty or fifty years ago, when it was customary to give a dose of calomel and bleed for almost everything, they did not have such a high death rate as we do to-day.

Dr. N. S. Davis, at the AMERICAN MEDICAL ASSOCIATION meeting in 1888, during the discussion on pneumonia, stated that it was a curious fact that the mortality was greater then than it was forty-five years before. He referred to the statements of a Canadian physician, "who stated that during a practice of thirty years he had adopted three plans of treatment. During the first decade the treatment consisted of blood-letting; the second decade constituted the transition from the blood-letting to the expectant plan; and the third the stimulating method. He found in

footing up his records that the mortality was least during the first decade and greatest during the last."

Although I must agree with Dr. Hartshorn and those older members of the profession as to the high mortality rate, still I can not attribute the higher mortality in this age to the lack of venesection. Some recent writers advocate venesection in special cases. I have never seen a case where I felt justified in venesection. I never could see any reason in blood-letting, particularly in pneumonia. I have noticed that those who do advocate blood-letting in pneumonia do so only in the early stages. The object, apparently, in venesection early in the disease is to relieve the over-loaded venous circulation, thereby assisting the right heart.

There are those of us who have never done any blood-letting, who have had sufficient experience in the treatment of pneumonia to warrant us in saying we do not think it should ever be resorted to. We have seen cases get well without being bled, that had they been attended by one who advocated blood-letting, and bled, the result would undoubtedly be attributed to the blood-letting.

The question of venesection has been so thoroughly discussed in years past, that we of this generation have considered it settled, and relegated to the past, but ever so often it seems we have to be reminded of the fact that it still has its advocates. We have such authors as Ziemssen, Hare, Austin Flint, Bartholow and others of equal note, to be cited as against venesection in pneumonia; consequently we say, do not bleed in pneumonia.

I attribute the favorable results in pneumonia of fifty years ago chiefly to two things: First to the almost universal use of calomel, and second, to the very limited use of alcohol. Calomel was used generally from the first to the last stage of the disease. The effect of this administration as a rule was to cause the bowels to move freely, oftentimes causing watery discharges; thus the physicians of those days were unconsciously using a remedy sanctioned by the leading lights of the profession of to-day; particularly by those who believe that pneumonia is a germ disease. Binz and others claim that calomel partly becomes converted into corrosive sublimate in the digestive tract, there unfolding its powerful antiseptic action. This disinfection and its coexisting purgative action, cleans the bowels to a very great extent of whatever germs may be present.

Whether we view the use of calomel from the standpoint of its being a germicide or not does not matter, but we do know that acting as a purgative it increases intestinal secretion, and has an indirect effect on the circulation by lowering the pressure of blood in the blood vessels, thus substantially producing what may be called a physiologic blood-letting, without the venesection and without the shock. It is not necessary that we should use calomel; any active cathartic or purgative would do as well; but the free movement of the bowels at the onset is indispensable, in fact is one of the cardinal principles in the treatment of pneumonia.

It is generally understood that if no complications set in, pneumonia (crouposa) is a very regular and typical disease. It is self-limited, and inasmuch as it is such, our chief aim should be to not interfere too zealously in natural processes, but by judicious handling bring about a favorable termination. Generally speaking the less medication the better.

Fothergill used to say that about every new remedy had to be used in pneumonia. The chief remedy in this disease is plenty of air. Liebmester (Ziems-sen's cyclopedia) says: "A patient with a high temperature can not take cold." Do not be afraid of too much air; good fresh air will be found beneficial in any case; but be careful to avoid drafts. See that your patient has plenty of nourishment, preferably in liquid form.

Do not give alcohol in any form during any stage of the disease. I firmly believe that the use of alcohol has been the chief cause of the high mortality in recent years. Let the fever alone. The danger is not from the fever but rather the heart, and inasmuch as all of the recent antipyretics act as heart depressants, we should be very cautious in their use in pneumonia. Stimulate your heart if necessary with digitalis, using a good reliable fluid extract; strychnia or nitro-glycerin. Oxygen should always be thought of when there is a tendency toward cyanosis. I have seen such excellent results follow its administration that I unhesitatingly say: Use oxygen in cyanosis and use it freely. I have never taken very kindly to cold packs or compresses and have resorted to their use only in a few cases. Still in those cases where I have used the cold compresses I was pleased with the result. Poul-tices are disagreeable things at best, and only tend to worry and fatigue the patient.

I use the chlorid of ammonia in preference to the carbonate, and use it up to the crisis and during convalescence.

OBSERVATIONS ON GUMMA OF THE HY- POPHYSIS; AND PRIMARY CARCI- NOMA OF THE URETER.

Read before the Chicago Pathological Society, April 13, 1896.

BY LUDVIG HEKTOEN, M.D.

CHICAGO.

GUMMA OF THE HYPOPHYSIS.

In hereditary syphilis, the hypophysis may be enlarged and indurated, due to connective tissue proliferation.¹ In acquired syphilis, gumma of the hypophysis has been described by Troisier,² Weigert,³ Barbacci,⁴ Birch-Hirschfeld⁵ and Sokoloff.⁶ In these cases there can not be much doubt concerning the truth of the diagnosis. In Troisier's case the origin of the gumma is referred to the capsule of the hypophysis. Boyce and Beadles⁷ detail a case of granulomatous infiltration of the hypophysis which they regard as tuberculous, but without having shown tubercle bacilli to be present. The same uncertainty of diagnosis is attached to Wagner's⁸ case of "tubercle of the pituitary," which he observed in a girl aged 13 years, without tuberculosis elsewhere.

The following case of gumma of the hypophysis consequently merits report on account of the rarity of the lesion:

Woman, age 45, died on the same day as she entered the hospital without being able to give any information concerning her history. The post-mortem was made twenty-four hours after death.

The anatomic diagnosis reads: Chronic interstitial nephritis; chronic perihepatitis and perisplenitis; syphilitic cirrhosis of the liver with gummata; gumma of the hypophysis; thick skull; chronic interstitial myocarditis. Bacteriologic examination showed the heart's blood, the lung, the liver, the kidney, and the spleen to be sterile. Only the liver and the hypophysis need to be described at this time.

The liver weighs 1,570 grams. It is adherent to the diaphragm, especially along the falciform ligament. The adhesions are firm and fibrous. The surface of the organ is irregular and in the vicinity of the falciform ligament are puckered cicatricial depressions in the bottom of which the tissue is firm and whitish in color. The consistence is firm. On the cut surface there is observed a marked but irregularly arranged increase in fibrous tissue, but this is also best marked about the insertion of the falciform ligament; here the substance of the organ contains whitish nodules or areas that are inclosed in puckered capsules of fibrous tissue from which trabeculae radiate in all directions. Larger, homogeneous districts are also present.

The hypophysis is about twice the usual normal size; it is firm, rather homogeneous and grayish-red on the cut surface; the walls of the sella turcica are rough. The hypophysis weighs 1.8 grams.

The skull, which is plagiocephalic, is unusually thick, measuring, at the line of the incision to remove the calvaria, from 8 to 10 mm. in thickness, its bone being very dense, the diploë almost entirely absent, or replaced by compact tissue.

Microscopic examination of the hypophysis shows the entire organ the seat of a diffuse round-cell infiltration, throughout which are scattered numerous multinucleated giant cells. Only in a few places are indistinct remnants of follicles present. There are present a few irregular areas of necrosis in which the substance is homogeneous or finely granular. Blood vessels are sparse and their walls are often diffusely infiltrated. There are no miliary tubercles at the periphery of the mass. Under high power the nuclei of the cells are seen to be oval, spindle-shaped and stained but lightly; or smaller, round and deeply colored. Irregular shaped nuclei are also present. The giant cells show the protoplasm to be red (eosin), finely granular or homogeneous, the nuclei being heaped up mostly at the periphery. Large, distinctly epithelioid cells are not present. The ground substance is homogeneous or freely granular with but slight filtration. In the distinctly necrotic districts are nuclear fragments of all shapes and sizes. Eight slides were examined carefully and repeatedly for tubercle bacilli (carbol-fuchsin) but with negative results.

The liver shows marked thickening in Glisson's capsule with areas of diffuse cell infiltration in which are giant cells and encapsulated necrotic districts. This is most marked near the surface of the organ. There are no tubercles in the sections. Tubercle bacilli were not found.

From this examination it is believed that the diagnosis of gumma of the hypophysis is justified upon the following grounds:

1. The absence of typical tubercles and of tubercle bacilli, the structure being that of a degenerating granuloma.
2. The presence of a distinctly syphilitic process in the liver.

¹ Lancereaux, *Traité historique et pratique de la syphilis*, 2d edit., Paris, 1873, p. 288.

² Bull. de la Soc. Anat., 1874, T. xlix, p. 25.

³ Virch. Arch., 1875, Bd. 65, p. 223.

⁴ Centralbl. für Allg. Path. and Path. Anat., 1892, iii, p. 301.

⁵ Path. Anat., 1894, Bd. i, p. 281.

⁶ Virch. Arch., 1896, Bd. 143, Heft 2.

⁷ Journal of Path. and Bact., Vol. i, No. 3, p. 359.

⁸ Arch. f. Heilkunde, Bd. ii, 1862.

3. The absence of tuberculosis in all of the organs ordinarily examined in a thorough post-mortem.

In this case the gumma was not large enough to give rise to any symptoms. In Birch-Hirschfeld's case (loc. cit.) the walnut-sized gumma gave rise to pressure symptoms. The present case is the only one associated with evident increase in the thickness of the skull and this association may very likely have been simply accidental or due to the same cause as the gumma, namely, the syphilitic infection. Gumma of the hypophysis is of evident clinical importance because the consecutive pressure effects ought to be removable under appropriate antisymphilitic treatment.

PRIMARY CARCINOMA OF THE URETER.

While it is not unusual for the ureter to become invaded by carcinoma extending from the uterus, the rectum or the urinary bladder, primary carcinoma of the ureter is very uncommon. Recent systematic works on surgery and on tumors contain no mention of carcinoma of the ureter. Indeed, the entire list of primary tumors of the ureter described in the literature is very short.

Lebert¹ describes a polypoid fibroma; Thornton,² a papillary fibroma, upon which a calculus was situated; Neelsen,³ a typical papilloma of the upper part of one branch of a partially reduplicated ureter causing a large hydronephrosis of the corresponding half of the kidney. Chian⁴ records a so-called cholesteatoma of the ureter, and Ribbert,⁵ a myosarcoma. Orth⁶ credits Litten⁷ and Hartman⁸ with having observed carcinoma of the ureter. Wising and Blix⁹ describe a case of primary carcinoma of the right ureter with secondary tumors in the mesenteric glands, the rectum and the liver, with hydronephrosis, in a woman 41 years old, whose urine did not contain anything abnormal. There was a hydronephrosis containing 1,000 grams of fluid. The upper 12 cm. of the ureter was spirally twisted, hard and thick, converted into a solid string the size of the little finger. On the cut surface there was no lumen, but in place of it a loose, yellowish gray disintegrating neoplasm. The wall of the rectum was the seat of multiple, submucous nodules due to extension from the metastasis in the retroperitoneal glands. The structure was that of a medullary carcinoma. Hedenuis¹⁰ describes hazel- and walnut-sized carcinomatous nodules in the mucous membrane of the pelvis and the ureter which were situated in the mucous membrane and pronounced by Hedenuis to be a primary carcinoma.

The following case concerns a married woman 50 years old, who had been in fair health until eight months before death, at which time she became aware of some pain about the right hip which was regarded as rheumatic. The pain gradually increased and soon the right lower extremity became swollen, and a swelling appeared in the right inguinal region. There was no history of any injury. Examination about one month before death showed marked emaciation, the heart and lungs apparently normal. Filling the lower right quadrant of the abdomen was a soft mass which seemed connected with the right ilium; the mass had

an irregular outline, and in the vagina it could be felt that the uterus was pushed to the left. The urine was normal, sp. gr. 1015. Death from exhaustion about eight months after the first painful symptoms appeared and after being bedridden for three months. The clinical diagnosis was osteosarcoma of the pelvis.

Anatomic Diagnosis.—Tumor of the pelvis involving the right ureter; hydronephrosis and atrophy of the right kidney; atrophy of the heart; pulmonary emphysema; chronic adhesive peritonitis; fibromyoma of the uterus.

The body is that of a senile woman, poorly nourished; rigor mortis present. The peritoneal cavity is empty; there is a retroperitoneal mass filling right half of pelvis and presenting on its pelvic aspect small, whitish, firm excrescences; the cecum is adherent to the tumor mass by means of firm, fibrous bands. The pleural cavities are empty and free from adhesions. The pericardial cavity is empty; the pericardial layers are smooth. The heart weighs 210 grams; the endocardium is smooth except that there are some whitish areas in anterior mitral valve. The heart's flesh is brownish and of uniform, rather firm consistence. The coronaries are normal.

The aorta is quite smooth. The lungs are very spongy and light; they contain but a small amount of blood. The bronchial glands normal. The spleen weighs 110 grams; its capsule is nodular and thickened. The liver weighs 1,200 grams; it is brownish in color. The pancreas and the gastro-intestinal tract are normal. The uterus contains a walnut-sized, submucous fibromyoma attached to the posterior wall of the fundus by a rather slender pedicle.

The tubes and ovaries are normal, the ovaries being small. The vagina is normal. The adrenals are normal.

The left kidney weighs 140 grams; the capsule is free, the surface smooth, the consistence firm; the cortical markings not distinct. The right kidney is not present as such; in its place is a cystic cavity containing about 800 c.cm. of a slightly turbid, grayish, thick fluid; the walls of this cavity, whose inner surface is smooth, are quite thin and directly continuous with the post-peritoneal tumor mass about to be described. The tumor appears to spring from the inner surface of the right ilium. It forms an irregular mass about the size of a child's head. On the cut surface it is whitish-gray in color; its consistence is soft and it contains numerous, small irregularly shaped cavities, filled with creamy semi-solid material. The ureter can not be identified at the upper limit of the tumor. A probe, passed upward from the opening in the bladder, becomes arrested about 2.5 cm. above. Careful dissection shows the ureter to be entirely lost in the tumor tissue. Upon removal of the tumor it is found that the inner surface of the ilium is eroded. The retroperitoneal glands are not enlarged.

Microscopic examination shows the structure of the tumor to be that of a typical medullary carcinoma. Throughout the section are large and small islands and districts of epithelial cells imbedded in a connective tissue stroma, which is composed of loosely arranged fibrillated connective tissue with but very few vessels. Only the smaller masses of epithelial cells are free from degenerative changes. The larger carcinomatous districts show a granular disintegration in their center, which might in some instances be mistaken for epithelial pearls; in many places the degenerative necrosis is very extensive and results in

¹ Anat. Path., II, p. 372.

² Trans. Lond. Path. Soc., Vol xxxvi, p. 269.

³ Ziegler's Beiträge, III, p. 279.

⁴ Prag. Med. Wochschr., 1886.

⁵ Virch. Arch., 106, p. 282.

⁶ Lehrbuch der path. Anat. Bd. II, 1889.

⁷ Char. Annalen, IV, p. 188.

⁸ Soc. Anat. de Paris, 1892.

⁹ Hygiea, 1878, p. 468.

¹⁰ Upsala Läkarförenings Föhr., Bd. 13, H. 1, quoted by Wising and Blix, loc. cit.

the formation of small cavities surrounded by a narrow zone of epithelial cells. The epithelial cells in the smaller, recent nests show innumerable, poorly preserved (twenty-four hours, post-mortem) karyomitic figures. The nuclei are rich in chromatin. The general characters of the cells in these recent districts of proliferation are those of the transitional epithelium of the ureter and the bladder, the cells varying greatly in their form, being oval, spindle- and club-shaped, and their nuclei polymorphous and often lobulated.

The reasons for regarding this carcinoma as originating in the ureter are the following:

1. The location—there being no other archiblastic structure in the vicinity than the ureteral lining—and the direct involvement of the ureter in the tumor, the larger part of the canal being entirely lost in the tumor mass, the hydronephrosis and complete atrophy of the kidney being due to complete destruction and closure of the lumen of the ureter.

2. The marked similarity of the epithelial cells of the tumor to the cells lining the ureter, the transitional character of the latter being well preserved in the tumor.

3. The absence of carcinoma elsewhere and the voluminous size of the primary retroperitoneal growth.

It is important to note that in carcinoma as well as other tumors of the ureter, occlusion of the lumen of the latter and consecutive hydronephrosis with atrophy of the kidney seem to occur quite regularly, as far as can be concluded from the few cases now at hand.

The thorough and systematic study of early carcinoma of the ureter, the earlier the better, would throw needed light upon the more exact origin and development of this rare, but interesting form of malignant epithelial tumor.

DISCUSSION.

DR. LE COUNT—I think there can well be added to the reasons that Dr. Hektoen cites for regarding the carcinoma of the ureter as primary, because of the fact that there is nothing else in that region that could give rise to the peculiar neoplasm the sections of which we see under the microscope.

BRIEF HISTORY OF A SUIT FOR DAMAGES FOR MALPRACTICE.

BY W. H. SHARP, M.D.

PARKERSBURG, W. VA.

At the last term of the circuit court of Wood County, W. Va., was tried a suit for damages for malpractice in the treatment of a patient suffering from an ovarian cyst, which case attracted much attention in our medical and legal circles, as well as in our community. The plaintiff was the husband of the deceased patient, bringing suit as administrator in behalf of her estate for benefit of her children. The defendants were Drs. T. A. Harris and W. C. Keever of Parkersburg and A. T. Keever of Belleville, Wood County, W. Va. The surgical history of the case is as follows:

Mrs. T., living eight miles from Belleville and twenty-five from Parkersburg, was a patient of Dr. Deem, a physician practicing in that neighborhood. She had an ovarian cyst, which Dr. Deem had tapped twice; the last time was about January 1. Her condition became worse. At neither time had tapping emptied the cyst. He then had Dr. A. S. Keever of Belleville called in counsel. Dr. Keever found her in a critical condition, too ill from septic infection to be moved and unable to lie down. It was evident that

if not speedily relieved she would soon die. Dr. Deem told him that she was not pregnant. It was agreed between her father and Dr. Keever that he bring Drs. Harris and W. C. Keever of Parkersburg to operate. This was on January 15. On the 17th they met at the house, Dr. Deem also meeting them. Dr. Harris explained to the father the desperate character of the case, owing to the condition of patient, who was evidently suffering from septic infection probably due to priorappings.

These surgeons had had considerable experience in abdominal surgery. On examining patient they found that she was four or five months pregnant, and it was evident that the fetus was dead and the uterus was trying to expell it. It then appeared that Dr. Deem, for purposes of diagnosis, had introduced a sound at prior visits. The os was so dilated and soft and flaccid that two fingers could be easily introduced. The waters were drained off and the uterus pressed down very low into the pelvis, so that the os was visible on separating the labia. The patient also had an ovarian cyst completely filling the abdomen. They decided to remove the fetus first without anesthesia; this was an unexpected complication for which they were not prepared. Turning the fetus and drawing upon one leg, that limb separated at the hip; the other leg did the same; then the arm at the shoulder, the fetus was so macerated. Dr. Harris attempted to extract by traction with a tenaculum buried in tissues of scalp; but it tore out like from wet paper. A blunt hook was then improvised from a piece of fence wire found upon the premises, which Dr. Keever prepared, disinfected, and removed rest of fetus. The placenta being adherent, was left for removal the next day. The patient's condition being as good as when they began, she was prepared; and under chloroform anesthesia abdominal section was made with strict antiseptic precautions. A twenty-eight pound ovarian multilocular cyst was removed. There had been leakage from the opening made by the last tapping. She rallied well and was left by Drs. Harris and Dr. W. C. Keever, the operators, in care of Drs. A. S. Keever and Deem. Dr. Keever was to remove the placenta the next day, and disinfect uterus, which was done. Thirty-eight hours after operation patient died, probably of exhaustion and septicemia present before operation.

Then followed the legal side of this case. Her husband brought suit as administrator against Dr. Harris and Dr. Keever for causing her death by their wrongful act and neglect under sections 5 and 6 of chapter 163 of code of W. Va., damages asked being \$10,000. The plaintiff's witnesses were Dr. Deem, the wife's father, a neighbor woman and a neighbor man. The husband because he was administrator was not put on the stand, in order to keep the defendants from testifying. They testified that the child was living and was destroyed by defendants; that the wire used was rusty and not disinfected; that the defendants incised the mouth of womb in removing fetus; that fluid from the cyst was allowed to escape into the abdominal cavity; that in this way the operation was unskillfully done. The plaintiff claimed that the operation for removal of tumor should have been postponed until another day, until she had recovered from the capital operation of removing the fetus, and that the wife died from shock and lymphatic septicemia resulting from the "wrongful, neglectful and unskillful" performance of the operation.

The defendant surgeons were now offered as wit-

nesses to show: 1. the condition of the patient on the 15th and again the 17th, the day of the operation; 2. what they stated in her presence to her father regarding the necessity for the operation and chances of life with and without it, and his instructions to them; 3. what they did and all the facts concerning the operation; 4. what took place while the patient was under the influence of anesthesia; 5, to contradict the statements made by witnesses who were present at the operation. The plaintiff objected to the witnesses testifying as to these matters, because they were prohibited by section 23, chapter 130 of the code of West Virginia, from testifying in regard to any personal transaction or communication had with the deceased. After hearing argument and examining authorities and decisions, the court held that this was a personal transaction and that the defendant could not testify as to anything said by them, done by them or others in her presence, or as to condition of the patient as they found it, or anything occurring when she was present. "That death had sealed the lips of one party to this transaction, and the law sealed the lips of the other parties to all communications, conditions and deeds done, to which she living could testify." No precisely similar case was cited, or indeed found. The defendants' counsel argued that this surgical operation was not a "personal transaction" within the meaning and spirit of the law. But the court so held it to be. Consequently it was a very one-sided case. The defendants could not testify that the patient's condition was desperate; that the fetus was dead and macerated; that the uterus was not incised; that the wire was properly prepared; that her condition was as good after the removal of the fetus as before; or that no fluid escaped into the abdomen from the tumor. Indeed, Dr. A. S. Keever was forbidden to tell her condition on the 15th, the day of his first visit. All hypothetical questions to the expert physicians and surgeons had to be framed upon the evidence given by Dr. Deem and his fellow witnesses. Negatives had to be proved by saying that the affirmatives could not be so, and even then it was hard to arrange a question that would bring out a denial of the plaintiff's claim or evidence that could suit the judge's decision. The jury disagreed, being ten for damages and two for acquittal. It appears that several of the States have laws similar to ours. I remember notably that New York, Virginia and Illinois were cited. In all probability the case will come up at a future term of court.

If such a decision was to hold in all the States having this law or similar laws in their codes, it behooves physicians and surgeons to have disinterested and intelligent witnesses with them in all cases where the patient may die, as suits for damages need not be confined to surgical operations, but can be extended to medical and obstetrical cases, and given the favorable opportunity and witnesses the administrator could make an estate for the family of the dead patient, because the defendant would not be allowed to contradict the very statements upon which the plaintiff's case stands.

Mr. W. G. Peterkin, in an article in the *Bar*, relating the legal points of this case and from whose article I have quoted, says: "It stands to reason that in many desperate cases an operation will save life or hasten death. Evidence tending to show the latter fact without explanation or palliation would of necessity raise an unfavorable inference against the surgeons in

the minds of many jurors. Doctors can not without the greatest professional impropriety take witnesses for their own protection, especially in cases of a delicate nature. Every law, humanitarian and professional, forbids their refusing to relieve a desperate case and yet the more desperate the greater their danger. From the nature of the case they can not get the 'transaction' into shape of a writing. They can not go upon the stand and contradict false statements made as to what occurred at the time of the operation, that being part of the 'transaction,' but must face without explanation or contradiction the testimony of persons who will in many cases be totally ignorant of every principle of surgery and medicine, and whose conclusions are drawn solely from the ultimate life or death of the patient, when often death would follow inaction, and the patient finally dies not from, but absolutely in spite of, the operation."

Indeed, the chief counsel for the plaintiff argued that rather than have attempted to save this patient under the desperate conditions as claimed by the defense, she should have been left alone to die in peace.

On the part of the medical profession some effort will be made to unite the profession in an endeavor to have the Legislature modify the law, so that we may be protected from such decisions. The employes of a corporation can testify in such a suit, although they are the only representatives of the corporation present and probably responsible for the neglect. Had it been a criminal charge for manslaughter in causing her death or of criminal abortion the defendants could testify; as a legal friend said to me: "The doctor had better get himself indicted on the criminal charge as the easier to meet."

TORTICOLLIS AND ADENOID GROWTHS.

Read by Title before the American Laryngological, Rhinological and Otological Society at its Second Annual Meeting, held at New York, April 17, 1896.

BY J. E. SCHADLE, M.D.

ST. PAUL, MINN.

Hypertrophied lymphoid tissue at the vault of the pharynx, according to my research on the subject, has not heretofore been recognized in its pathologic relation to torticollis.

That an intimate relationship does exist is, I believe, quite clearly demonstrated by the clinical features and satisfactory results obtained in the following dispensary case sent to me by my colleague, Dr. Gillette. In his note of reference Dr. Gillette says: "I refer this case to you, as I think it bears some resemblance to one which I sent you some months ago, and upon which you operated. The boy is about 3 years old and was under my care some three months since for rickets, from which he had a good recovery. The mother informs me that about six weeks ago he seemed to be suffering from a 'slight cold,' and she observed that he did not hold his head straight. A physician was called and ordered hot applications to the 'contracted side of the neck;' from that time to the present, she has continued this treatment and other domestic remedies with no improvement. It is, as you notice, a well-marked case of torticollis. The child has no fever, or any constitutional symptoms. The head is held perfectly rigid by the tonic spasm of the sterno-cleido-mastoid muscle, which is the only muscle seemingly involved. I find no evidence of nervous trouble, caries of the vertebrae or scoliosis,

neither is there any history or manifestation of injury; all I discover is the wry-neck and the hypertrophied tonsils. If you find any disease of the nose or throat, please treat it and have the child referred to me for observation."

The child presented the usual physical signs of obstructed nose-breathing. On examination of the throat I observed the tonsils congested and swollen. A rhinoscopic examination of the retro-nasal space not being practicable, I explored the cavity with the index finger and found it occupied by a mass of hypertrophied lymphoid tissue. Curettement was resorted to and the adenoid vegetations were thoroughly removed.

The case progressed favorably without any untoward symptoms manifesting themselves. On the second day after the operation the patient was seen and showed improved respiration and total disappearance of the wry-neck. It is now three months since the case was dismissed, and up to this time no symptom of a reappearance of the torticollis has been noticed. The general health has improved most markedly.

It may be well to state that the other case referred to in Dr. Gillette's letter was operated upon two years ago. The boy was 8 years old and suffered from wry-neck from infancy in a marked degree. It was a typical case of obstructed nasal respiration, produced by the presence of adenoid vegetations and chronic hypertrophy of the faucial tonsils. The three tonsils (pharyngeal and faucial) were removed. The boy has been well ever since.

THE BEST METHODS OF TEACHING.

Abstracts of papers read at the meeting of the American Academy of Medicine, Atlanta, Ga., May 4, 1896.

THE BEST METHOD TO TEACH SURGERY.

BY PROFESSOR J. S. WRIGHT, M.D., BROOKLYN, N.Y.

In teaching surgery the following points are important: The teacher must have large clinical observation as well as operative experience; he must be rapid in thought and have a good clear judgment. His knowledge must be well digested and at hand, so that he can call upon the storehouse of his practical knowledge for whatever he needs at any and all times and in every emergency. Though he may be influenced by the suggestions of his contemporaries he must rely, in the end, solely upon himself, since he alone is responsible.

In many ways a teacher is born, not made; that is, he has the teaching diathesis. He sees clearly the important facts of a case, knows how to present them to the medical student, distinctly, succinctly, impressively, for it must ever happen that the teacher who does not know a fact can not teach it to someone else.

It is of much importance to have the teacher familiar with descriptive, living and morbid anatomy. Descriptive anatomy is the groundwork; living anatomy is what we find it in the living body, and is no less essential; morbid anatomy is highly essential, as it is a deviation from the normal structure.

In theory at least the learner ought to be informed as far as possible in regard to these different kinds of anatomy. The teacher of surgery ought not to be required to spend time, at least to any extent, with the subject of anatomy, unless by way of supplementing the knowledge which the student already has. He may, however, deal with anatomy from the surgeon's standpoint.

The fact that a student ought to be prepared for receiving instruction in practical surgery is being recognized more and more. The most consummate teacher can not make a surgeon out of a young man who is unlettered, untaught, unprepared. On the other hand, we have seen that a surgeon may be developed, be his teacher ever so incompetent.

Recognizing the fact that there must be didactic teaching of what is purely elementary, that the principles of surgery must be taught by books and lectures, it remains to be said that the only really practical surgical teaching is at the bedside or in the operating room. The surgical disease must be studied at the bedside of the patient and its features in all their relations must there be learned. In the operating room the student must learn the steps and processes of operations. These he must see and assist in, and thus become familiar with the technique of surgical procedures. He must learn to apply his anatomic knowledge to the process of saving life. Let him follow each case to the end of its clinical history, whatever that may be.

The question is a search for practical truth, and this the student can get only in the presence of the operative process. An operation may be carried out upon a definite plan, or that plan may have to be changed. That is, the student must learn that the plan of an operation, however well arranged beforehand, may have to be changed, step by step, as the work proceeds. By actual observation he must try to learn the art of the surgeon. There is such a thing as doing too much; there is such a thing as doing too little; the thing to do is just enough. There is such a thing as taking too much time; there is such a thing as taking too little time; let the time be neither too great or too small. In all cases when the operation is completed let the surgeon stop work and let the student know why he does so. The student must be taught these steps, these processes, these limitations, and these results.

There are some points upon which I wish to lay stress: The time of medical study is too short. The entire field of medical education can not be traversed in three years. The time ought to be extended to four years, perhaps even five years ought to be taken for this important work. It is true that a general movement is now going on in the direction of taking more time to prepare young men for the practice of medicine and surgery. As things are now, if we take the average student, he either fails or may break down hopelessly during his course of study or at the close of his examination. This statement is not overdrawn if we keep the student up to the highest standard of excellence. There is a limit to the student's capacity for work. He must be given time to lay the foundation for a good preparation to enter upon his life's work.

The practice of antisepsis is no doubt difficult to carry out. It is, as a matter of fact, difficult to teach because it is not easy for the student to learn. It is perhaps easy enough for a student to acquire a knowledge of antisepsis, but the difficulty lies in practicing the art of antiseptic surgery, in which good results can be obtained by repeated trials only.

It is true that medicine is ever progressive and surgery is ever progressive, since development is the inherent law of vitality alike for science and art, and with the best of us when years of practice leave room for progress, when our most advanced students are

compelled to repeat the words of Michael Angelo, spoken when an old man: "Still I am learning." Why do we expect so much of a young man who has spent only a few years in the study of a science so comprehensive, of an art so difficult as surgery?

The standard of qualification and attainment should conform to an average capacity and a reasonable time for study. It does not comport with good teaching to break a man down in health in order to be sure that he has learned how to restore patients to a sound physical condition. Has the young man learned to study? Has he learned to think? Is he prepared to investigate and treat the diseases and injuries that he will meet most frequently in practice? Has he become familiar with sound and safe principles of practice?

Finally, lest the student giving his attention to rare and intricate diseases and injuries becomes a failure, lest he, with all his ambition, either through his own or his teacher's negligence fall short of a true success, let him ever repeat and remember words that might well be spoken by a man nearing the end of his career:

Had I but searched for truth with half
The zeal I sought for fame,
I had been wiser in my day
And left a loftier name.

THE BEST METHOD TO TEACH OBSTETRICS.

BY J. C. EDGAR, A.M., M.D., NEW YORK.

The fault of the earlier teaching of obstetrics in the United States was that the science was taught and the art neglected; this is, however, changing with the increased length of the medical course and the greater facilities, but not as rapidly as the improvement of teaching of the other branches. The best method of teaching is rather a system including several methods. A pre-knowledge of anatomy and physiology is necessary. Experience has taught that the following plan and arrangement of topics is best adapted to secure the ends sought after:

1. Systematic bi- or tri-weekly recitations during the second college year.

2. Demonstrations and manikin work; attendance upon obstetric clinics; and laboratory work during the third collegiate year.

3. A resident service in a maternity hospital, which shall include, (a) the examination of pregnancy under competent instructors; the actual confinement of patients by the student himself, under rigid supervision; (b) "ward" or in-door service; and (c) "out-door" or polyclinic service; (d) the attendance on the obstetric clinics of the hospital; (e) theoretic lectures (illustrative in character), and (f) recitations subsequently upon the previous practical work performed by the student.

4. Theoretic lectures (illustrative in character) upon advanced obstetrics.

A recitation has been found to be superior to the lecture, but the instructor must see that the text-book is supplemented by illustrations and the application, during recitation, of the subject of the recitation. For this purpose there should be plenty of blackboard space, pelvis entire and in section, diagram, models, wet and dry preparations and instruments. He should also carefully prearrange the whole course. In the recitation hour each member of the class, which should not include more than about twenty students, should be examined in some way. To this end some should be sent to the blackboard, some to examine specimens,

some to use the models, while some are being quizzed.

The classes for this division should not exceed thirty, and it is desirable that the instructor should be practically a demonstrator in a laboratory properly equipped for obstetric work. Bi-weekly or tri-weekly meetings for six or eight weeks will suffice for manikin work, which will include a review of the theoretic part already gone over. And here too each student is to be kept busy for most of the hour and the models, etc., should be more abundant than for the previous course, care being taken to so use the models as to prepare for the practical work afterward, and they should be occasionally supplemented by a demonstration on the living subject. At this stage it is well to have the student attend several clinics and if possible watch the delivery of several children.

The author believes that the student should not only witness deliveries, but should actually confine women and care for them and the child afterward; always under the supervision of an instructor. This is most valuable to the student, enabling him to observe the application of the knowledge he has acquired, and also to apply it himself. At first his service is rather passive, to observe and be present; and in the examination and diagnosis of pregnancy. Then, under great precautions, he is permitted to examine several cases in labor in the wards and then he is allowed to care during the entire confinement. After this he can be assigned to the care of women at their own homes. With a properly equipped operating room and amphitheater an entire clinic can be made of any case of labor in the maternity.

He expressed deep conviction that obstetrics should not be considered a specialty, but a department of medicine and surgery.

In all recitations, etc., the instructor should seek not only to render a service to his pupil but to medicine as well, by rising to something higher than the mere perfunctory performance of his assigned duties. No part of any subject can be properly understood unless it is studied in its relation to the whole; hence the relationship to the other departments should be made clear.

The day is past when midwifery does not receive equal attention with the rest of medicine, but because there was once such a time the student's attention should be called to it in order that in his future career he may not fall into the error of regarding midwifery as a thing apart from general medicine. It may not be amiss to cite a few instances demonstrating this; the toxemia of pregnancy is still toxemia, so with the transient glycosuria, with jaundice, cardiac hypertrophy, thrombosis, etc. These conditions in the pregnant women are more apt to teach us the etiology of these conditions than studies in the deadhouse. While gynecology may be thought to be a specialty, not so obstetrics.

This argument may appear at first sight a digression from the subject, but reflection will show not only the justice but the necessity of its introduction. His student career is the time when the physician is most impressionable and when facts are most readily brought home and fixed in his mind.

SOME RESULTS OF MEDICAL LEGISLATION.

BY J. M'P. SCOTT, A.M., M.D., HAGERSTOWN, MD.

The spirit of all law should avoid inequality and injustice, and in the manifestation of this principle the power of the State has been exercised to regulate

the various instrumentalities and institutions which are operating on the body politic, including the State regulation of the practice of medicine.

Historically, the right to certify to fitness to practice has always been claimed by the State through its law-makers. By their incorporation, medical colleges are creations of the State; the wisdom, or lack of it, in granting charters does not invalidate the statement. Because of this, the State would have the right to exercise control over the courses, etc., of the college. There are difficulties in this, and many States have obviated them by the adoption of methods to review their work in the individual by the examining and licensing boards.

This has been made a necessity by the departure from the high ideals belonging to the profession and the lowering of the standard, and that, too, by the very persons intrusted by the State with the power to confer diplomas. Four years' service upon a State examining board has forced this conclusion upon the author, and in proof of it a number of answers to the questions of the Maryland Board were quoted.

The Maryland Board endeavors only to present fair questions to determine whether the applicant may be safely permitted to enter upon the practice of medicine; endeavoring to be just to the medical colleges and fair to the applicant. The general acquiescence in the findings of the Board leads it to believe that its efforts have been appreciated.

The work of an examining board enables it to make suggestions that may aid the colleges in their work. The answers quoted above show the necessity of adopting a more thorough course and more critical examinations. It is gratifying to note that the colleges are moving in this direction; the contrast between the papers submitted now with those submitted at the earlier meetings is conspicuous.

The lack of academic training has been painfully manifest in many papers, so that the proper preparatory training should be demanded as essential to matriculation in all medical colleges.

SOCIETY PROCEEDINGS.

The American Surgical Association.

Annual Meeting, held at the Detroit College of Medicine, Detroit, Mich., May 26, 27 and 28, 1896.

FIRST DAY—MORNING SESSION.

The President of the Association, DR. LOUIS McLANE TIFANY, of Baltimore, called the meeting to order and read an address entitled

THE OPERATIVE TREATMENT OF TRIFACIAL NEURALGIA,

in which he stated that forty-five operators had participated in the hundred cases reported, of which number twenty-four had each operated upon one case only. He also mentioned that there was diminished sensation in these cases, and lessened lachrymation. He considered the curving of the tongue due to atrophy of the muscles but did not understand why the perception of heat and cold should be interfered with. As to tying the carotids, Dr. Park of Buffalo had successfully done this in two cases.

DR. S. J. MIXTER, of Boston, read a short paper in discussion of this subject, which was then thrown open for general discussion.

DR. W. W. KEEN, of Philadelphia, was very much disappointed to learn that the mortality of operations for the relief of trifacial neuralgia was 10 per cent. He had two deaths out of nine cases, one of which was due to sepsis and was avoidable. He explained the high mortality as being due, in his opinion, to the fact that the operations had been done by so many different operators, and thought that special operations should be reserved for those who have had some special training. In three

of the nine cases mentioned, trouble was experienced with the cornea, but in no case was the eye lost. The following is Dr. Keen's method of dealing with corneal ulcer: Sew the lids together at the margin so as to prevent the opening of the eye, take a circular piece of rubber plaster, cut out a circular hole in the center a little smaller than a watch glass, insert the watch glass in the hole thus made and place this shield over the eye, the non-adhesive surface being next to the patient's eye. Although the rubber plaster does not absolutely occlude the whole space, yet the inside of the watch glass is always moist.

DR. J. EWING MEARS, of Philadelphia, asked whether the President was clear in his own mind that the lesion exists in the Gasserian ganglion. If his experience with the operation upon the Gasserian ganglion demonstrates that the relief from pain is permanent, Dr. Mears felt that the real lesion had been discovered.

DR. GEORGE RYERSON FOWLER, stated that in one of his cases there was a recurrence of pain, although he was absolutely certain that he had removed the ganglion. Postmortem showed the existence of a neuroma upon the stump in that portion which occupied the foramen rotundum. He fully agreed with Dr. Keen as to the necessity of keeping the eye protected and mentioned an illustrative case. Concerning the sclerotic changes in the vessels, it may be that these are at the root of the pathology of these cases. Dr. Fowler referred to a case operated upon by Dr. Morton of Philadelphia, in which Meckel's ganglion was positively removed and yet the pain returned with all its former violence in less than two years, when ligation of the common carotid gave the man permanent relief. The author mentioned other cases in which ligation of the carotid had produced excellent results, and in one of which there was a deviation of the tongue toward the side operated upon. In this case the patient was unable to straighten the tongue. He referred to one case which died during an epidemic of sepsis, and stated that he saw no reason why there should not be an epidemic of sepsis as well as of smallpox and scarlet fever.

DR. JOHN PARMENTER, of Buffalo, mentioned the case of an elderly woman who had facial neuralgia, and also a small aneurysm of the external carotid, in whom ligation of the common carotid afforded complete recovery. He also cited a case in which he did an operation successfully on a man who had been subjected to three previous operations.

DR. H. S. WEEKS, of Portland, doubted if a surgeon was justified in resorting to intra-cranial operations before an extra-cranial had been done, in view of the large mortality. His plan is to trephine through the ramus of the jaw, seize the inferior dental nerve and pull it away, as he considers this method much better than cutting.

DR. N. P. DANDRIDGE, of Cincinnati, cited a case on which he had operated two and a half years ago, since which time the man had been relieved from pain, but there was marked deformity of the face on account of atrophy of the muscles. There was also a small sinus leading down to dead bone.

DR. CHRISTIAN FENGER, of Chicago, preferred the extra-cranial operation, as he considered it less dangerous. He called attention to the fact that the mortality from ligation of the common carotid was 18 per cent.

DR. JOSEPH RANSOHOFF, of Cincinnati, did not think 10 per cent. a very high mortality under all circumstances, and said if all the cases were included it would be nearer 50 per cent. In his opinion the lesion is not located in the Gasserian ganglion, but is a central affection.

DR. ROBERT ABBE, of New York, said the members should not be daunted by a mortality of 10 per cent., as in the next hundred cases it would be much less. In his opinion preference should be given to an anterior operation in the first place. Now that we know what to steer clear of, with the improvement in asepsis and the avoidance of operating on old people the mortality should be considerably lessened.

DR. W. W. KEEN said he had omitted to mention two methods of medical treatment which had been of great service; one recently suggested by Dr. Dana of New York, that of giving massive doses of strychnia, and the other was suggested by Esmarch, who has spoken of the value of purgatives.

DR. MAURICE H. RICHARDSON, of Boston, believed that attacking the ganglion should be done as a last resort, especially in old people and those who were unable to stand so formidable an operation as intra-cranial neurectomy. In many cases a simple operation would give considerable relief.

DR. FOWLER explained that the mortality of 18 per cent. in ligations of the carotids, included cases of aneurysm, gunshot wounds, etc. In fifty-two cases, where the vessels were not affected by disease nor complicated by carcinomatous tumors, the mortality was less than 5 per cent.

DR. P. S. CONNER, of Cincinnati, said the two most important points were the cause of the neuralgia and the results of operative interference. In a certain proportion of cases the exemption from pain ranged from three months to three years, while in another proportion the exemption was scarcely worth mentioning, as the pain returned immediately after the operation. In some cases the loss of blood during the operation and the shock from the operation had caused periods of freedom from pain. The propriety of the operation had been established, as a man would rather take forty-nine chances out of fifty to get relief.

DR. T. A. MCGRAW, of Detroit, was of the opinion that sufficient investigation had not been made of the possibility of the neuralgic conditions being due as well to motor as to sensory nerves, and stated that he was not at all sure that a division of some of the motor nerves might not be a great benefit.

DR. RICHARDSON stated that this operation had been performed and resulted in considerable facial deformity, but no relief of the neuralgia.

DR. S. J. MIXTER mentioned two cases in which merely reopening of the old intracranial wound had afforded some relief.

AFTERNOON SESSION.

DR. ALBERT VANDER VEER, of Albany, presented a paper on TUBERCULOSIS OF THE FEMALE GENITAL ORGANS (INCLUDING TUBERCULOSIS OF THE KIDNEY).

Dr. Vander Veer stated that this subject had been neglected until recent years, and that the modern ideas and progress depended upon careful histologic and bacteriologic examinations. Tuberculosis of the female pelvic viscera was not limited to any age, the extreme limits being ten weeks and eighty-three years. External genital lesions might be confounded with tuberculosis. Heredity was important as suggesting tubercular possibilities. Tuberculosis was extremely rare in the external genitals, but by no means infrequent in the uterus. Tuberculosis of the uterus could be demonstrated by microscopic examination of the discharges and by curetting. Gonorrheal infection was often grafted upon tuberculosis. Sometimes infection took place through the fingers or the instrument or the semen. Tuberculosis originated in the tubes and infected the uterus and cervix. The uterus could be infected from without or within, and the infection was aided by a lacerated cervix, pelvic peritonitis, trauma, etc. The symptoms were local irritation, a pea-sized wart near the vaginal outlet, a discharge from the uterus, etc. The differentiation between the ulcers of syphilis and epithelioma depended on age, history, local appearances, etc. Tuberculosis of the cervix might be mistaken for cancer. Many vaginal cases were infected from the tubes, and tubercular peritonitis might infect the vagina and tubes. The author mentioned several cases illustrative of the points mentioned.

With regard to tuberculosis of the kidney, there were two forms: 1, miliary tuberculosis; and 2, caseous or true tuberculosis. The author gave the details of one or two cases and referred at some length to Kelly's nephro-ureterectomy.

TUBERCULAR PERITONITIS.

DR. ROBERT ABBE, of New York, in reviewing this interesting subject, thought it gave a fairer understanding of the miliary appearances of the disease if we viewed it from the standpoint of the bacillus rather than, as others have done, from the gross appearance, which has led to the division into the ascitic, the dry and the caseating forms. A sudden tubercular eruption into the peritoneal cavity may be as acute in symptoms and duration as peritonitis from other causes. A slower outbreak may result in ascitic distension in three or four weeks, and a less virulent bacillus action may occupy months in inducing ascites and wasting. In other cases, possibly due to the route of invasion (penetration through lymphatics communicating mucous and peritoneal serous coats or by follicular ulcers allowing tuberculous milk to be the medium of infection) a dry or adhesive form follows in which hectic and rapid wasting result. Again, the bacillus produces an outpouring of thick lymph and flocculent serum, which rapidly becomes purulent, producing unsymmetrical cakes of thickened omentum, matted coils and encapsulated purulent collections. The bacillus product rapidly caseates and ulcerating fistulae may result. All phases of the disease may be regarded as representing the life history of the bacillus and its products. Tubercular peritonitis may be, and in the earlier stages often is, the only site of tubercle deposit in the patient, hence, if overcome here, a practical cure often follows. Even when other phases of infection (pleural, intestinal, bronchial) are seen, an operative cure of the peritonitis has often been followed by general recovery. The mode of entrance of the

bacillus is directly through the intestinal wall or through ulcerating appendicitis or tubal or ovarian tuberculosis, or through the blood. The claims of a few recent authors to having cured tubercular peritonitis by medical treatment were reviewed and credited.

The unquestioned cure of true tuberculous peritonitis by laparotomy was proved by two classes of cases, those who have long survived operation, and those who have come to autopsy long afterward, and have been found free from tubercles that studded the peritoneum at the time of operation. Experimental proof in animals corroborates also operation by simple laparotomy and evacuation of the ascites; closing the dry abdomen is credited with a large number of cures. Irrigation with warm salt solution is advocated by preference. Camphor-naphthol application, as used by Rendu, is advised for bad cases.

Dr. Abbe reviewed many interesting and illustrative cases in speaking of direct medication. The many theories advanced to account for the surprising cures were carefully considered, and it was said in conclusion that "the theory that is sustained by most facts is that based on the life history of the bacillus and the capacity of the animal economy, not only to suppress the activity of the organism by encapsulating it, but to remove it by absorption. The proper opportunity for conquests is not afforded in the presence of ascitic fluid, which acts as a veritable culture bouillon and by its fluidity aids dissemination. When, however, the peritoneum has been aroused by congestion, which follows evacuation, and a reactionary inflammation is set up, engendering cell hyperplasia, the intruder is walled in and retrograde degeneration sets in."

INTRA-THORACIC TUBERCULOSIS,

by DR. GEO. RYERSON FOWLER, of Brooklyn. The author went into the historic part of the disease at great length, and devoted considerable attention to the surgical treatment of pleuritis and empyema. Of all the organs in the human body the lungs are most frequently the seat of these affections. Inasmuch as there is no lung affection that can not be complicated by tuberculosis, it follows that pleural affections are most frequently tuberculous in character. Few patients who have suffered from pleurisy escape tuberculosis, and this fact increases the importance of the surgery of pleuritic affections in their relation to tuberculosis.

The author gave a brief discussion of the effects of the presence of the pleuritic effusion upon the progress of tubercular disease of the pulmonary structure. The view formerly held that the activity of the circulation in the lung tissue constituted a trustworthy means of protection against the occurrence of tubercular infection of the respiratory organs was combatted and reference was made to the observations of Laennec, who, in the early history, stated that stasis was incompatible with the progress of pulmonary tubercular affections, and Bier's observations, supported by those of Miller, in the treatment of tubercular joint disease by means of a constricting bandage, were held to confirm the views of Laennec in this particular. Note was taken of the fact that in any pleuritic affection, even when due without doubt to tubercular affection, the effusion is found to be serum. The suggestion follows that this effusion possesses some resisting influence over the development of the tubercle bacillus, while it undoubtedly forms a favorable culture medium for other organisms. The application and technique of exploratory puncture or thoracentesis, incision and drainage and Koenig's operation, the resection of a portion of rib, were gone into quite extensively. This was followed by a consideration of the operation of thoracoplasty and its indication. Schede's operation for extensive resection of the chest wall, including with the bony resection removal of the attached soft parts, namely, the intercostal muscles and thickened pleural membrane, was described. It was recommended that the edges of the incision should be approximated closely about the drainage tube and the dressing should be applied in such a manner that the tube passes through these. The drainage tube is then attached to a tube sufficiently long to lay over the side of the bed and touch the surface of a sublimate solution. When the patient can sit up the tube is fastened to a bottle at the waist, as suggested by Bulau, of Hamburg. By this method of drainage the patient is saved from the discomfort produced by soiled dressings.

The question of complications occurring in connection with thoracoplastic operations upon the chest wall, namely, pulmonary thrombosis, cerebral embolism, and the resulting paralysis, was alluded to.

The consensus of opinion at the present day seems to discountenance thoracotomy in tubercular patients, preference being given to repeated puncturing or at the most the method of permanent siphonage.

The question of the direct treatment of tubercular cavities was entered into quite extensively, and it was stated that some difficulty must necessarily be experienced in the selection of proper cases. In cases in which the disease had come to a standstill, any interference would be unjustifiable, for the reason that it is these cases that undergo cure by natural processes. In addition to limiting operations on tubercular cases to those that are circumscribed, the operation may be applied to certain cases of a doubtful nature which form at the expense of both pleura and lung, namely, pulmonary abscesses secondary to tubercular caries of the ribs. Three examples of this were quoted.

The operation of resection of the lung was discussed at some length, and attention was called to the fact that the pulmonary structure differs from all other structures in the body in its susceptibility to infection and its anatomic peculiarities.

The experiments of Glück, of Berlin, and Hans Schmidt upon the lower animals for resection of the lung were detailed, as also were those of Virondi, who produced localized tuberculosis in the lower animals.

DR. DEFOREST WILLARD, of Philadelphia, read a paper on
TUBERCULOSIS OF THE SUPERFICIAL GLANDS.

DR. WILLARD first detailed the method of tubercular infection of the lymph nodes. The route of entrance is usually by very slight abrasions or injury. Slight wounds are more liable to admit bacilli, as they arouse local resistance to a less degree than more severe injuries. The face and neck are especially common routes of entrance. The lymph glands act as filtration stations and often prove effective in overpowering the invading foes. They are likely to be successful in proportion to their amount of resistive force. An individual's resistive force may be lessened by hereditary impairment of cells or by the temporary condition of the tissues.

Local karyokinetic action may be successful, or if partially successful, caseation and absorption may occur with less resistive power, or if staphylococcus infection results suppuration follows. When once the glands have become infected, they are a perpetual menace to the general system and should be removed. Suppuration will sometimes effectually destroy all the invading bacilli, yet this is a slow and dangerous process, subjecting the individual to constant risks.

Infected glands should be removed if possible during the stage of duration. The removal of tubercular glands from the neck is frequently a most serious operation, provided connective infiltration is present, and especially if the chain of glands has dipped deep beneath the cervical vessels and nerves or has extended below the clavicle. These deep glands can only be safely removed by following the line of cleavage between the gland and the protection wall which has been partially thrown about it, each gland being cautiously shelled out. The jugular veins, the branches of the carotids and the pneumogastric and phrenic nerves should be carefully avoided. When a vein is injured immediate pressure with subsequent ligation or lateral suturing should be performed. If the phrenic or pneumogastric are injured they should be at once sutured with fine silk. Great care should be exercised to prevent the discharge of pus and caseating material upon the fresh wound; if such accident occurs the area should be thoroughly cleansed and disinfected. Temporary drainage is advisable when infection has occurred from such discharge; but in healthy operations with clean enucleation primary union without drainage can be secured.

In infection in the axilla the glands should be enucleated with the same care that is employed in the removal of carcinomatous nodule. The same rule holds good in regard to glands situated in other portions of the arm. In the groin many difficulties will be encountered, especially if the indurated glands extend deep about the femoral or saphenous veins. Secondary operations are advisable, if necessary. In cases that absolutely refuse operation, local and constitutional measures must be employed, including tuberculin and sero-therapy.

The author has more confidence in the local effects of iodine upon tubercular granulations than in iodoform. He has also had beneficial results from stimulation of cell growth by a mixture of aristol with nuclein or proto-nuclein, applied locally. Tubercularly infiltrated glands should not be allowed to remain and contaminate the general system.

Short papers on this discussion were read by Drs. J. McFadden Gaston, of Atlanta; Chas. B. Nancrede, of Ann Arbor; J. R. Weist, of Richmond, Ind., and G. W. Gay, of Boston.

SECOND DAY—MORNING SESSION.

DOES ADDITIONAL EXPERIENCE SHOW THAT CASTRATION IS A CURATIVE REMEDY IN THE TREATMENT OF HYPERTROPHY OF THE PROSTATE GLAND?

By DR. ALBERT T. CABOT, of Boston. He drew the following conclusions:

1. In the matter of mortality the operation of prostatectomy has a slight advantage over castration. It seems probable that with later statistics, reflecting the last improvements in the technique of prostatectomy, this advantage would be further increased.

2. Prostatectomy had the further advantage that it allows of a thorough examination of the bladder and of the discovery and correction of other conditions not before suspected. Stones are frequently removed in this way without adding to the gravity of the operation. In several reported cases of castrations the absence of improvement has led to the subsequent discovery of stones which have required other operations for their removal.

3. Prostatectomy has, on the other hand, the disadvantages that it confines the patient for a longer time, and that it is sometimes followed by a fistula. This occurred in one of the forty-two cases cited in this paper.

4. It is too early to know whether any permanent loss of vigor follows castration when done on old men. The nervous effects which sometimes immediately follow the operation suggest a suspicion that with the testes the system may lose some tonic effect exerted by those organs.

5. The functional results of the two operations seem at present to be as nearly equal as possible, and the tendency to relapse shows itself in about the same proportion of cases after either operation.

6. The reduction in the size of prostate after castration is largely due to a diminution of congestion. Later a degeneration and absorption of considerable portions of the gland may occur. The glandular elements are particularly affected by this atrophy.

7. Castration would seem to be especially efficacious in cases of large tense prostates when the obstruction is due to pressure of the lateral lobes upon the urethra.

8. Castration is of but little use in myomatous and fibrous prostates.

9. Prostatectomy has its especial field in the treatment of obstructing projections which act in a valvular way to close the urethra. There is, however, no form of prostatic obstruction which a skillful operator may not correct by prostatectomy.

10. Prostatectomy is then applicable to more cases than castration and is especially to be selected when an inflamed condition of the bladder makes drainage desirable.

DR. J. EWING MEARS, of Philadelphia, was very much struck with the mortality shown from the different operations. He was sorry to learn that no one had any information to offer concerning an operation suggested by himself as a substitute or castration, namely, ligation of the vas deferens.

DR. CHAS. B. NANCREDE, of Ann Arbor, said that as a result of his work with the operation of castration, he had been converted from a rather doubtful attitude towards the operation to a desire and willingness to do it again. He gave at some length the details of the case operated on by himself, which did very well after the operation, but the patient died in five or six weeks from an infection of his wound.

DR. L. P. PILCHER, said that from the statistics mentioned in Dr. Cabot's paper, it would seem that prostatectomy had a slight advantage over castration, not only in its results but also by affording opportunity to secure relief from other urinary complications at the time of operation. In his own hauds, however, all prostatectomy operations had been failures, but if the opinions of other surgeons could be ascertained, it would probably be found that a much larger proportion of fatal results really occurred than the figures mentioned by Dr. Cabot showed. The operation of prostatectomy has only been resorted to in cases of men who manifested considerable vigor, while on the other hand, castration has been performed in cases that were already extremely feeble, and could not stand a more serious operation, and frequently by surgeons who were not particularly expert in genito-urinary work.

DR. J. MCFADDEN GASTON, of Atlanta, spoke of a method of treatment that had recently been brought to his notice by a gentleman whose name he would not mention, the principle of which was to endeavor to reduce the size of the prostate by the employment of prostatic extracts in a somewhat similar way to the methods now employed with the thyroid extract.

DR. ROSWELL PARK mentioned two cases of castration performed by himself in which the subsidence in the volume of the prostate gland was remarkably rapid and complete. In his opinion there could not be a simpler or easier operation.

DR. ROBERT ABBE spoke of one case in which he had removed both testicles under cocain, with the result that the prostate was reduced more than one-half its size. He compared the operation of castration to that of removal of the ovaries.

DR. CABOT said the most important question was not the

ability of the operator, but the selection of the proper cases for the operation of castration. If a proper selection was made, he believed the mortality would be greatly reduced.

THE AMBULATORY TREATMENT OF FRACTURES OF THE LOWER EXTREMITIES,

by DR. LOUIS S. PILCHER, of Brooklyn. He mentioned a large number of cases of fracture in which the ambulatory treatment had been employed, and illustrated his paper with diagram of the apparatus employed. He described in detail the manner of applying the plaster bandage so as to form a sufficiently rigid and protecting case, and also explained the splints used in this method of treatment. He stated that the number of cases of fracture of the leg treated by himself up to the present time with the ambulatory dressing was twenty and the results that have followed this treatment in these cases have been very satisfactory.

This paper was discussed by DR. JOHN E. OWENS, of Chicago, who stated that cases of fracture of the lower extremity treated by this remedy might be divided into two classes, first, those that walk with the aid of crutches, but bear little or no weight upon the affected limb, and second, those that walk on the affected leg with or without the aid of pain or crutch.

After describing at some length his method of applying the dressing, demonstrating the apparatus in position and referring to cases in which he has used it, he concluded:

1. That the main object in the treatment is to enable the patient in a few days to get up and walk about on the fractured leg.
2. That union is accelerated in many cases; comfort, appetite, digestion and sleep secured; swelling, muscular atrophy, pneumonia and delirium tremens prevented and flexion and extension maintained.
3. That in the application of the dressing the foot is maintained at a right angle to the leg, and extension maintained until the deformity is corrected and the legs are of even length.
4. That the material usually employed is plaster-of-Paris in which wooden or metal strips may be included, there being a very thick plaster sole, separated from the foot by a layer of cotton about five centimeters thick, the plaster being carefully molded with the hand, so as to fit snugly against the upper end of the tibia and about the dorsum and ankle.
5. It is generally thought best not to apply the dressing until the second or third day after the accident.
6. The patient must remain under observation in order that any displacement, undue constriction or other defect may be noted.
7. In fractures of the thigh a combination of plaster-of-Paris and glue is recommended by some, while others have used special splints.
8. The plaster may be made to include the pelvis.
9. The dressing may be applied to the leg, and then allowed to harden after which the patient's hips are raised from the bed, extension being made to correct displacement and the remainder of the dressing applied.
10. An important feature of the dressing is its strong reinforcement and close application at the upper and back part of the thigh, thus securing a firm bearing against the ischium and perineum.
11. That the sooner the immobilization is effected the less will be the swelling.
12. That the method can be applied with great satisfaction, and that an exact fit must be secured.

DR. A. T. CABOT, of Boston, said that in two cases the use of Dr. Pilcher's apparatus had been a benefit in his hands.

DR. NICHOLAS SENN, DR. DE FOREST WILLARD, DR. CHRISTIAN FENGER, DR. J. EWING MEARS, DR. CHAS. B. NANCERDE and DR. GEO. W. GAY did not agree with the methods of treatment suggested by Drs. Pilcher and Owens.

DR. H. H. MIDD thought the apparatus might work very well in certain cases.

DR. MOORE stated that he had had good results from the employment of this method of treatment in two cases.

AFTERNOON SESSION.

THE TREATMENT OF TRAUMATIC LESIONS OF THE KIDNEY.

By DR. W. W. KEEN, of Philadelphia. After reading a tabulated list of 163 published cases of renal traumatism since 1878, the author stated that traumatic lesions have, as a rule, two advantages over the lesions of disease: 1, being apt to be unilateral, the other kidney is not injured, and 2, the injured kidney is apt to be healthy or fairly so. Gunshot wounds, on the contrary, have two disadvantages; 1, that the treatment of the kidney alone in many cases can not be solely considered; and 2, if the renal substance is only moderately injured, no one would be willing to do primary nephrectomy.

As to the treatment of gunshot wounds, they may be divided into: 1, those involving only the renal substance; 2, those involving the pelvis; 3, those involving the vessels, and 4, those involving the ureter. The incision in most cases, should be abdominal, either median or at the outer border of the rectus, and if the vessels are badly torn so that there has not only been a great deal of hemorrhage but the integrity of the organ is threatened, nephrectomy should be performed.

In treating the extravasated blood in case the kidney is not removed, if the bleeding is into the peritoneal cavity the blood must be removed by abdominal section, but if it accumulates in the peri-nephritic tissues alone it may be left undisturbed.

In treating the kidney, if the wound is sufficiently large for it to prolapse, it should be sutured and replaced if its condition is suitable, and the same procedure may be carried out if the pelvis of the kidney is opened. A partial nephrectomy would be advisable if a portion of the kidney is so far severed that its future integrity is threatened, and the fragment removed.

As the dangers of rupture of the kidney are primary and secondary, the treatment may be conveniently so divided. Usually it must be decided if a nephrectomy shall be done within the first few days or even hours, but it may occasionally be postponed and become a secondary operation, while the lumbar route will be best.

Of 116 cases of rupture of the kidney reported, 66 recovered. Secondary nephrectomy is nearly twice as fatal as primary.

ON SUSCEPTIBILITY AND IMMUNITY, WITH SPECIAL REFERENCE TO SURGICAL CASES.

By DR. ROSWELL PARK, of Buffalo. The author divided this subject into three classes *a*, local and general; *b*, congenital or acquired, and *c*, absolute and relative. Man seems to be immune from numerous infections, which are common to many of the domestic animals, for instance, hog cholera, symptomatic anthrax and chicken cholera, while he is in common with them susceptible to the infection of anthrax, glanders, tuberculosis and actinomycosis. Then, too, men differ among themselves in susceptibility to the same disease, and of course we explain this by saying that at the time of exposure their bodies were not receptive or more resistant.

Immunity may also be 1, local or constitutional; and 2, congenital or acquired, and acquired immunity may be natural or artificial. Immunity is, in some sense, a racial characteristic, as, for example, in the case of the Japanese, who, it is said, never have scarlet fever, but are more susceptible to beriberi than are Europeans, while the Negroes escape yellow fever and are less liable to malaria and dysentery than are Europeans.

The conclusions of surgical importance which may be legitimately reached from the study of the conditions dealt with in this paper are essentially these: That the surgeon in emergency cases has to do the best he can, not merely with the means at hand, but with the issues at hand, and here so long as he can control what may happen outside of the body, he has done his full moral and legal duty. On the other hand, in any case where patients deliberately come under observation, and where time may be afforded, it is the surgeon's bounden duty, bearing in mind a summary of the conditions which notoriously conspire upon the one hand, to lower vulnerability, upon the other hand to afford protection, to so alter the habits, the diet, the surroundings and the preparation of his patient as to restore his tissues and vital fluids, so far as possible, to their normal condition, before he interferes with their functions by an operation.

I have furthermore for years contended that since the inauguration of the so-called antiseptic era, and in our enthusiasm for combatting infection from without, we have lost sight of a most important truth, which we can not afford to disregard, viz., that in our enthusiasm for combatting infection from without, we have almost neglected the measures, first, for the recognition, and second, the successful prevention of infection from within.

THE EFFECT OF ANESTHESIA UPON THE TEMPERATURE.

By DR. DUDLEY P. ALLEN, of Cleveland. He dwelt very fully on the results obtained from a large number of experiments, principally upon dogs, and gave the details of each observation. Drs. Gay, Park, Harte, Fenger, Willard, Abbe, McGraw and Nancrede heartily endorsed Dr. Allen's methods and views.

DR. PARK, representing the Committee on the Nomenclature of Tumors, presented a printed report showing the method suggested by the committee of classifying tumors.

DR. J. McFADDEN GASTON, of Atlanta, demonstrated upon the cadaver an improved method of exploring the thoracic cavity.

DR. S. H. WEEKS presented his report as a delegate to the British Medical Association in 1895.

DR. CHRISTIAN FENGER read a paper on "Retention from Bending and Valve Formation (oblique insertion) in the Biliary Tract." He demonstrated, by morbid specimens and diagrams, his method of treating this affection.

A paper entitled "An Unusually large Periosteal Sarcoma of the Thigh Successfully Treated by Extirpation," was read by Dr. Joseph Ransohoff, of Cincinnati. The paper was discussed by Drs. Dandridge and Gaston, who mentioned cases somewhat similar to that of Dr. Ransohoff.

DR. J. COLLINS WARREN, of Boston, was elected President for the ensuing year, and it was decided to meet in Washington in 1897.

Chicago Pathological Society.

Regular Meeting, April 13, 1896.

DR. JAMES B. HERRICK, Vice-President, in the chair.

DR. ARTHUR R. EDWARDS read a paper entitled "Clinical Memoranda." (To appear in next issue.)

DR. WILLIAM HESSERT read a paper entitled "Cerebral Syphilis, with Report of Cases." (See page 1108.)

DR. LUDVIG HEKTOEN read papers on: 1, "Gumma of the Hypophysis;" 2, "Primary Carcinoma of the Ureter." (See page 1115.)

PRESENTATION OF SPECIMENS.

DR. LUDVIG HEKTOEN presented:

1. *Spindle-celled Sarcoma of the Liver*, in the Form of multiple Nodes and Nodules secondary to a Sarcoma of the Eyelid removed four Years before Death.

The liver was brought to the pathological laboratory of Rush Medical College by Dr. Koon, of Casmonia, Mich. It had been removed from the body of a man 60 years of age. Four years before death Dr. Koon had removed a small tumor of the eyelid which was diagnosed as an epithelioma. The liver weighed eighteen pounds and was the seat of innumerable large and small tumors of a whitish or grayish color. There were tumors found in the kidneys, pancreas and retroperitoneal region. Microscopically the structure was that of a medium-sized spindle-celled sarcoma.

This specimen illustrates one of the forms of secondary sarcoma of the liver, namely, the form which occurs in the shape of multiple nodes and nodules scattered indiscriminately through the substance of the organs, plainly due to embolism of tumor cells and masses.

2. *Diffuse, infiltrating Melano-sarcoma of the Liver*, secondary to Melano-sarcoma of the Eye; Ascites due to Occlusion of the Capillaries of the Liver by Tumor Cells and consecutive Thrombosis of the intrahepatic Branches of the Portal Vein.

Man, age 50, manufacturer, of dissolute habits, came under the care of Professor Holmes at the Presbyterian Hospital, Sept. 17, 1895, on account of loss of vision in the right eye which dated back about three years. Professor Holmes diagnosed the condition of the right eye, which was protruding and nodular, to be due to a melano-sarcoma of the choroid. Physical examination was otherwise practically negative. On November 15 some ascites had developed, and on the 25th of this month the ascites had become pronounced; there was jaundice and the urine contained bile pigments. The patient was passed into the care of Dr. J. A. Robison, and I have to thank both Professor Holmes and Dr. Robison for their permission to make this very brief extract from the clinical history of the case. The patient died Dec. 7, 1895, apparently from exhaustion. The postmortem examination was made one hour after death. The anatomic diagnosis reads: Melano-sarcoma of the right eye and the orbit; atrophy of the right optic nerve; metastatic tumors in the lungs, pleurae and left kidney; diffusely infiltrating metastatic melano-sarcoma of the liver; chronic congestion of the spleen; thrombosis of the intrahepatic branches of the portal vein; ascites; general bile pigmentation; chronic nephritis; chronic (left) orchitis; general arterio-sclerosis. The body is much emaciated; the skin and visible mucous membranes yellow; the right eye protruding, the eyeball nodular; the orbit is filled with a hard mass, the cornea turbid. The abdominal cavity contains a large quantity of yellowish fluid, the peritoneal layers are smooth. The pleural and pericardial cavities are empty. The heart weighs 450 grams; endocardium normal.

The lungs are edematous and contain a few small solid nodules that are grayish and in places almost black on the cut surface. Similar smaller masses are found here and there in the pleurae. The larynx, trachea and peri-bronchial glands are normal. The spleen is firm, very dark red in color, contains much blood and weighs 450 grams. The kidneys weigh 350

grams, the surface is irregular, the cortex thin, the consistence firm. In the left kidney is a small, subcapsular tumor nodule. The left testicle is firm, fibrous. The liver is very much increased in size, the left lobe being almost as large as the right; it weighs 4100 grams. The external surface is rather finely nodular, mottled bluish and gray in color; many small pin-head sized and a little larger gray tumor masses are seen on the surface. In consistence the liver is very dense and firm, like sole-leather or hard rubber. The cut surface is also irregularly nodular or granular, the predominating or ground color being bluish black with small gray districts here and there, so that the general appearance of the surface is best described as granite-like or variegated, like marble. The large vessels in Glisson's capsule and the branches of the portal vein are filled with rather softly coagulated blood. The gastro-intestinal tract is normal, but the mucous membrane is slaty in color. The pancreas is normal. The aorta and the splenic artery show a rough and irregular intima. The skull and the brain are normal, the vessels at the base being sclerotic. The interior of the right eye is partly filled with a firm tumor that seems to spring from the choroid, is quite black on the cut surface, and largely replaces the vitreous humor; at the entrance of the optic nerve the tumor extends for a short distance backward in the substance of the nerve and at the corneo-scleral junction of the internal aspect of the globe the tumor tissue perforates all the coats of the eye and spreads out into a walnut-sized retro-bulbar tumor mass which is grayish white in color with only here and there blackish or brownish dots and areas. The right optic nerve is smaller than its fellow and gray in color. Blood serum tubes inoculated from the heart's blood and the ascitic fluid remained sterile. The microscopic examination of the tumor of the eye and the nodules in the lungs and the left kidney shows the same stricture, namely, that of a small spindle-celled sarcoma, which in the eye, is melanotic, the cells here containing very much, dark brown, granular pigment, which also occurs free, between the cells. In the other places the majority of the tumor cells are not pigmented. The liver shows but extraordinary little true liver structure; it consists almost entirely of tumor tissue which is very much pigmented. Wherever the hepatic structure still remains the capillaries are found filled with small spindle-shaped, pigmented cells and in the large vessels, veins as well as arteries, are hyaline thrombi, in which are imbedded isolated melanotic cells. In some districts the tumor tissue is not uniformly pigmented. The connective tissue of the liver is not much increased and distinct bands of fibrous tissue are not present. From this examination it can be concluded that an almost continuous, capillary embolism, or immigration, of melanotic sarcoma cells took place from the primary choroidal melano-sarcoma, that these cells passed almost unhindered through the pulmonary capillary network—only a few small tumor nodules are present in the lungs—and became lodged in the capillaries of the liver which the cells reached by way of the portal vein as well as by way of the hepatic artery. Only a very few cells were diverted from this course as shown by the presence of but one metastatic tumor outside of the lungs, pleurae and liver, namely in the left kidney. In the liver this continuous capillary embolism resulted in the development of a diffuse tumor growth which replaces the liver tissue proper while it largely retains the normal external conformation of the liver. Larger nodules are not found in the liver. Finally the capillaries and smaller vessels become so packed with tumor cells that the portal circulation is obstructed, ascites develops, and thrombosis of the intrahepatic branches of the portal vein is induced. The development of ascites upon this basis—obstruction of the portal capillaries by melanotic sarcoma cells—is exceedingly interesting and has not been mentioned in the current descriptions of this remarkable form of secondary sarcoma of the liver, the diffuse infiltrating variety. This form of secondary sarcoma of the liver—it practically always concerns melano-sarcoma, may also develop years after the removal of the primary tumor. Thus in an instance referred to by Birch-Hirschfeld seven years intervened between the operation and the demonstration of a diffuse pigment sarcoma of the liver.

3. *Primary Large, Round-Celled Sarcoma of the Left Lobe of the Liver*; Sinus Thrombosis and Thrombosis of the Pial Veins of the Convexity.

Paul P., harness maker; was admitted to the Cook County Hospital (Service of Dr. Leahy, Dr. Ryan in charge) Sept. 24, 1895, and died Oct. 2, 1895. Extract from the clinical history: Well nourished; delirious; pupils equal and active; paralysis of right internal rectus; mouth drawn to the right; neck muscles rigid; double optic neuritis; right arm and leg are paralysed. Lungs and heart normal, pulse slow and regular. The liver dullness reaches from fifth rib to costal arch. In the left hypochondriac region is a hard mass that reaches

beyond median line and seems continuous with splenic dullness: it moves with respirations and is covered by a tympanic area. Gonorrhea: urine normal. The delirium gradually gives way to stupor that deepens into coma. There is conjugate deviation of the eyes to the left. Shortly before death the temperature rises to 100.8-102, and the breathing becomes rapid.

Clinical diagnosis: Tumor of the pancreas: multiple cerebral tumors? Meningitis?

Anatomic diagnosis: Tumor of the left lobe of the liver, tumor nodules in the mesentery, omentum, spleen and at the tail of the pancreas; thrombosis of the dural sinuses and of the veins of the lepto-meninx of the convexity: multiple capillary hemorrhages into the cortex about the left calcarine fissure: fibrinous pneumonia: thrombosis of inferior vena cava.

Extract from the protocol: General nourishment good, peritoneal cavity empty. Pleural cavities obliterated by firm adhesions. Pericardium smooth and shining.

Heart weighs 310 grams, endocardium normal. The lower lobe of the right lung consolidated, gray and granulated on the cut surface. Thyroid gland normal. Bronchial glands anthracotic. The omentum is adherent to the liver and contains two small, firm, reddish-gray tumor nodules. The left lobe of the liver is occupied by a large nodular mass about 10 cm. in diameter, which seems to have replaced all the liver substance proper. The right lobe is normal so that the liver may be said to consist of a normal right lobe which merges into an irregular tumor of almost the size of a child's head. Externally the tumor is nodular, firm; on the cut surface it is grayish-red in color: in the center are calcareous masses, and from the center appear to run radiating cicatricial bands that gradually disappear toward the periphery of the growth. But little liver tissue can be recognized around the tumor which merges gradually with the right lobe. The pancreas is normal. Situated above the tail of the pancreas and distinct from the latter is a firm, reddish-gray mass about as large as a hen's egg. The spleen is normal, but there is a small tumor mass underneath the capsule. The kidneys and adrenals normal; bladder, testicles and seminal vesicles also appear normal; the mucous membrane of the urethra is covered with a small amount of pus. The gastro-intestinal tract is normal. The vena cava contains a grayish, granular thrombotic mass adherent to the intima just below the entrance of the hepatic vein. The skull is normal; all the dural sinuses are filled with adherent, reddish-gray, rather soft blood clots, which extend into the veins of the lepto-meninx of the convexity, which stand out prominently like whip cords and contain red thrombi. The ventricles are empty and not dilated. There is some increase in the cerebro-spinal fluid, but no inflammatory exudate. The brain substance seems quite normal but the gray matter bordering upon the left calcarine fissure contains innumerable minute hemorrhagic extravasations, the puncta vasculosa are everywhere large and apparently very numerous, and the color of the white matter is quite pinkish. The jugular veins are empty, the intima smooth, and there is no thrombosis. The cavities and sinuses of the cranium are normal.

The microscopic examination of the tumor of the liver and the smaller nodules show that all present the same structure, namely, large, roundish cells with deeply staining, rather small nuclei. The cells are imbedded in a fibrillated vascular stroma which separates the individual cells one from the other at the same time as it is collected into broader bands that divide the tumor into smaller and larger cell groups. The large round cells seem to bear a very close relation to the vessels, which are very numerous and present thick walls and at times a proliferating intima. Any direct relation between the endothelium and the tumor cells could not be demonstrated. From the adventitia of the vessels pass the strands of fibrillated connective tissue forming the stroma. In the liver, hepatic cells or bile ducts can not be found in the central part of the tumor. Nearer the periphery the tumor cells compress the liver cells and seem to cause atrophy of the latter.

From these appearances the diagnosis of a primary large, round-celled sarcoma of the liver with metastasis at the tail of the pancreas, in the mesentery, omentum and the spleen, seems warranted because of the great size and evident age of the liver tumor, the comparatively insignificant size of the other tumors, and the absence of any larger tumor in any part of the body to which all the above growths might be secondary. Evidently the sarcoma originated in the perivascular connective tissue of Glisson's capsule in the liver.

The occurrence of such extensive thrombosis of the cerebral sinuses and lepto-meningeal veins, to which the marked cerebral symptoms are referable, is very interesting from a diagnostic as well as a pathogenetic standpoint, but the further consideration of this question must be left to some future time. While

the liver is the most frequent seat of secondary sarcoma next to the lungs, primary sarcoma of this organ is very rare. Hence the demonstration of this specimen. Arnold,¹ in 1890, reported two cases because he had thought up to that time that primary sarcoma of the liver did not occur. He was able to collect twenty-six cases from the literature which were reported as primary. Histologically these cases represent the principal varieties of sarcoma; the pigmented form, however, is almost always secondary. Thus Hanot et Gilbert² exclude all the instances reported as primary pigment sarcoma but one.

DISCUSSION.

DR. EDWARDS—The third case of sarcoma of the liver that Dr. Hektoen has presented, might have some clinical interest in that the tumor in that case was diagnosed as a carcinoma in the region of the left lobe, or the region of the fundus of the stomach: the exact source of origin of the tumor could not be determined because of the obvious broad attachment of the tumor. The main point of interest in the case is that the patient developed many months before death, very marked cerebral symptoms. He had symptoms some six or eight months when he was in the hospital for the first time, and at that time particularly his symptoms were vague; they were by no means focal. He received anti-syphilitic treatment, and there was, after a number of months, a distinct remission in the cerebral symptoms. He came back to the hospital; had been in the hospital for some time with this tumor and he began gradually to evince more pronounced cerebral changes. He had at first a distinct choked disc, the veins stood out very prominently, and besides the venous changes, secondary change in the disc itself. The optic inflammation and passive congestion, together with the mental symptoms, made it highly probable, arguing from the facts, that he had neoplasm of the abdomen, with a metastatic deposit in the brain. The cerebral symptoms were mainly diffuse, though it was said one convulsion was localized in one side of the body. He had a delirium, he had a strabismus, one internal rectus being affected. Our surprise at the postmortem was great, that, instead of having a neoplasm, which we might reasonably have expected from the abdominal neoplasm, there was a thrombosis in some, if not all, the cerebral sinuses.

DR. HOLBROOK presented a specimen of *Myosarcoma of Cerebellum*.

This specimen is of interest, not alone from its rather unusual pathologic condition, but from the long observed clinical history which it produced. The patient had been examined and treated and watched by a large number of physicians and specialists, and although the diagnosis of brain tumor had been indefinitely settled upon, there was great variance of opinion as to the variety, the location and complication. The specimen is taken from a case which was admitted to the Presbyterian hospital in January, 1895, and was put under the service of Dr. Robison, who has kindly consented to let me give the clinical details. The clinical history is briefly as follows: A year before admission severe gastric disturbances appeared which were called bilious attacks, with persistent vomiting and constipation of bowels. Cerebral symptoms developed a short time later: especially diffused headache, the headache localizing at times in the occipital region and in the posterior cervical region. Shortly after these symptoms developed, the patient noticed interference and impairment of vision. The tumor, you will notice, is located on the left side. The first impairment of vision was naturally in the right eye. This continued until the eye was completely blind, the left eye being involved shortly after and upon admission to the hospital after the space of a year, the patient was able to distinguish light from darkness and marked outlines with the left eye. Upon admission the examination of the eye showed the pupillary reflex to be prompt and normal and the pupils to be dilated equally upon both sides. Other symptoms: General weakness on the right side of the patient's body although he was a right-handed man; there was no paralysis or anesthesia noticed at that time, and the reflexes were as were to be expected, all normal excepting for the right knee jerk, which was exaggerated.

About four or five weeks before his death the patient developed convulsions; these would occur at intervals of days at first, and finally occurred two or three times daily. The first convulsion consisted of muscular spasms on the left side of the body, but after this the convulsions were started on the left side, but also involved the right side. During this time the patient's eyeballs were noticed to be anesthetic, but these were the only signs of anesthesia found, even the cornea could be touched with no action on the part of the patient. The night

¹ Ziegler's Beitrage, viii, 1890.

² Etudes sur les maladies du foie, Paris, 1888.

before the patient died he was in constant convulsions; in the morning he was comatose and died very suddenly. The autopsy was held about twenty-four hours after death by Dr. Hektoen. The patient was well nourished; no metastatic tumor was found in any portion of the body; there was a congested condition of the organs of the thorax and abdomen. On cutting open the skull cap, the calvaria was found to be very thin, especially so in some rough and reddened spaces; the dura was seen to be flattened over the area, the convolutions under the dura were seen to be flat, showing a diffused and general pressure which seemed to be equable; the fissures were obliterated. On removing the skull, the lower part of the base of the skull was found normal, and the brain was cut open; the ventricles were found to contain a fluid which passed freely from one ventricle to the other, and distended the ventricles very markedly. The growth to which I would particularly call your attention was on the left cerebellar lobe. I have located it upon diagrams. The growth as here represented is 6 centimeters long, 4 wide and 3 deep. It impinges upon the medulla so as to compress the left half, and has displaced the right half, as can be seen on the specimen. The pia mater over the growth was free; it is attached firmly to the cerebellar substance, from which it evidently arises. It impinges upon the last six nerves. The substance of the cerebellum around the tumor is considerably softened; the tumor was of a medium consistency. On making microscopic examination, the tumor was found to be a myxosarcoma; the blood vessels are numerous; there are some hemorrhagic areas which you will notice in the section, which, however, are not numerous nor characteristic. The history of twenty-seven months is rather long for a sarcoma with the symptoms as given; perhaps the myxomatous degeneration had much to do with modifying the malignancy. I think the symptoms which are given and one which I omitted, that of the complete loss of hearing in the left ear, are easily made compatible with the anatomic findings.

Illinois State Medical Society.

Abstract of the Proceedings of the Forty-Sixth Annual Meeting, held at Ottawa, May 19, 20 and 21, 1896.

FIRST DAY—MORNING SESSION.

The society met in the First Baptist Church, and was called to order by the President, DR. D. W. GRAHAM, of Chicago.

Prayer was offered by the Rev. Dr. Burhoe, of the First Baptist Church, after which the president made a verbal report of the work of the Executive Committee, as *ex-officio* Chairman. Then followed the reports of the Committee of Arrangements, Committee on Registration, etc.

Dr. C. W. HALL, Kewanee, offered the following resolution, which was unanimously adopted:

WHEREAS, Resolutions concerning vivisection were passed by the AMERICAN MEDICAL ASSOCIATION at Atlanta; therefore be it

Resolved, That the resolutions mentioned and published in the JOURNAL of the AMERICAN MEDICAL ASSOCIATION express the sentiments of the Illinois State Medical Society, and that our Secretary be requested to send copies of these resolutions to the members of Congress from our State.

FIRST DAY—AFTERNOON SESSION.

Section One. Practice of Medicine, Medical Specialties and Therapeutics.

Chairman, DR. J. T. McANALLY of Carbondale: Secretary, DR. C. W. HALL, of Kewanee.

The first paper read in this section was by Dr. E. FLETCHER INGALS, of Chicago, entitled

ORRHOTHERAPY IN DIPHTHERIA.

The author stated at the outset that as a result of the work of Pasteur and the numerous investigations which have followed in the same line, it is now generally believed by bacteriologists that many diseases, especially those which seldom affect individuals more than once, are self-limited by the formation within the blood of a product capable of destroying the toxic material that excites the disease, hence called antitoxin. In such diseases, if life be prolonged until a sufficient quantity of the antitoxin has been developed, the toxic agent is destroyed and recovery follows if no serious complications have arisen. In diseases that can be communicated from man to animals and vice versa, such, for example, as rabies, anthrax and diphtheria, advantage has been taken of this fact by inoculating animals with the attenuated toxic principle in small but steadily increasing quantities until an antitoxin is developed in the

blood in sufficient quantity to render the animal immune to the further pernicious effects of the contagion.

The author then referred to the law enunciated by Behring that blood and blood serum which had in this manner been rendered immune might be transferred into another individual with the effect of rendering the latter also immune, no matter how susceptible he might be to the disease. The investigations of Kitasato, Aronson, Roux and Behring were considered at some length.

Coming to the question of diphtheria, the author stated that the diphtheritic poison had been introduced into animals, preferably into the horse, until immunity to its further effects had been obtained. The animal was then bled, the blood allowed to separate and the serum preserved under the name of antitoxin.

One thousand antitoxin units is considered the ordinary curative dose, but in severe cases, or those not treated until the third day, 1,500 to 2,000 units are often employed, and sometimes these are repeated until altogether from 4,000 to 6,000 units are administered in a single case. The dose considered necessary for immunizing a healthy individual is about $\frac{1}{4}$ the curative dose. The serum is administered by hypodermic injections, preferably in some part of the body where there is an abundance of loose cellular tissue, as at the lower angle of the scapula, in the gluteal region, and upon the abdominal or chest walls. Dr. Chantemesse reports that he has had quite as good results when administering the antitoxin per rectum as by hypodermic injections.

Attached to the paper was a table showing a large percentage of complications after the antitoxin treatment. By far the most frequent complication was a rash, usually urticarial, sometimes erythematous, or having the appearance of scarlatina. A rash was observed in 45.9 per cent. of all cases. This was accompanied by fever in many cases amounting to 29.6 per cent. of the patients presenting a rash. In some instances the rash persisted for many days, but usually it had run its course by the end of the third or fourth day. There were a few instances of effusion into the joints and abscesses were found at the site of injection in 2.3 per cent. of the cases.

The consensus of opinion of observers as to the symptoms manifested after curative doses of the antitoxin is that the temperature may be either reduced or rendered higher, though it appears that in the majority of cases it is rendered somewhat lower in the next twelve or twenty-four hours. The pulse is strengthened and the general condition appears to be improved in the same time. Extension of the diphtheritic membrane to other parts is checked and the membrane commonly begins to loosen within twenty-four hours. The remedy, however, does not prevent suppuration of the cervical glands, does not prevent paralysis, and does not favorably modify paralysis when it has once appeared.

The reports of clinical investigations taken as a whole are greatly in favor of the antitoxin treatment. There is still some skepticism as to the efficacy of the remedy based upon the fact that no crucial experiments have been reported. It is well known that the mortality in diphtheria varies from 10 to 75 per cent. in various epidemics or in different portions of the same epidemic: therefore, accurate information can not possibly be obtained by comparing the death rate of any year with that of any preceding year, or even by comparing the death rate of one month with that of preceding or succeeding months. Until in the large hospitals alternate cases are treated by antitoxin alone and by other methods, we will have no certain information upon the subject. The report from the municipal hospital of Philadelphia approaches nearer a crucial test than any other the speaker had been able to find. It unfortunately shows a higher death rate with antitoxin than without it, even though the antitoxin was given mostly to those cases that were considered to be especially favorable for its action, and in extreme conditions it was withheld.

Dr. Ingals closed his paper with the following language: "Until more definite information is obtained conservative physicians may well be excused for declining to experiment with this remedy upon their patients; however, the wide belief that it does much good and the comparatively certain knowledge that it does but little harm suggests that our duty to our patients demands that when diphtheria exists we should administer the antitoxin, if it is desired, but that at the same time we should use such other remedies as have been proven of most value in combatting this disease: but we should hesitate to recommend it as a prophylactic measure. We believe that the experimentation in the treatment of diphtheria by serum is in the right direction, and we hope that the enthusiastic friends of orrhoterapy may be largely vindicated; yet we can not search far into the history of medicine to find that very many of the remedies now employed have in the begin-

ning been lauded excessively, and that not a few of those that were formerly supposed to be extremely efficacious have been found to be practically worthless."

TREATMENT OF TUBERCULOSIS

was the title of a paper read by DR. N. S. DAVIS, JR., Chicago, in which he said that the establishment of serum antitoxin as a successful remedy for diphtheria by the elaborate experiments of Behring, Kitasato and others, suggested the employment of serum prepared by analogous methods for tuberculosis. Tuberculin and the products derived from it had fallen into almost complete disuse. A few still employed them. Serum was employed as a cure for tuberculosis in 1890. Recently serum from horses, made immune to tuberculosis by inoculations successively with viruses of gradually increasing virulence, has been prepared and tried independently in Italy, France, Austria, and in this country. Good results are reported with much uniformity from the employment of this serum in cases that are not complicated by serious infection with other microbes than the tubercle bacillus. The ordinary dose is 2.5 c. c. administered hypodermatically daily, or every second day. Much larger doses have been employed, but not with proportionately better results. The heart and arteries are not affected by these injections. A leucocytosis follows them. Increase in the number of red blood corpuscles and hemoglobin occurs as general improvement takes place. As a rule the urine is not materially modified. In a few instances albuminuria and peptonuria have been provoked, but no serious lesion of the kidneys. Appetite is almost uniformly improved after the first few injections and increase in bodily weight rapidly follows.

The author's experience with this treatment is limited to a single case now under observation, and from it he says he can not yet draw conclusions. The treatment seems to be harmless, and in suitably selected cases, to promise improvement. Much more time must elapse before we can with confidence pronounce such improvement a permanent cure.

Creasote and its derivative, guaiacol, and their compounds, continue to be generally used. In the early stages of pulmonary consumption these drugs often prompt improvement both general and in the diseased lung. Many observers have ascribed these good results to the effect of the preparations upon digestion and nutrition.

Dr. Davis maintains that for the treatment of consumption we must still rely chiefly upon hygienic and symptomatic treatment. A life in the fresh air, in suitable climate, with rest or properly regulated exercise, a generous but varied diet, and mental as well as physical comfort, promise greater success than any of the possible specifics now being experimented with.

DR. JAMES B. HERRICK, Chicago, read a paper entitled

THERAPEUTIC USES OF THE THYROID EXTRACTS.

He reviewed at considerable length thyroid therapy, and presented the conclusions that one feels justified in drawing from a study of the work already done in this line of the employment of this remedial agent in various diseases. His deductions concerning thyroid extract are:

1. It is curative in myxedema (idiopathic, cretinism, operative).
2. Many cases of obesity are cured by it.
3. Simple hyperplastic struma, particularly in the young, is frequently cured or improved.
4. In one, two and three the remedy has to be continued for an indefinite time in order to prevent relapse.
5. It may prove of value in some cases of tetany.
6. In skin diseases it is of doubtful value to say the least.
7. The same is true of mental and nervous diseases.
8. In exophthalmic goitre it is contraindicated.
9. The results are practically the same whether fresh glands, extracts, or dried glands are employed.

This is probably true also of the thyroiodin of Baumann.

HOME CARE AND TREATMENT OF EPILEPTICS.

This paper was read by DR. A. L. WARNER, of Kankakee, after giving an outline of epilepsy, the author stated that the percentage of complete recoveries from this disease was small owing to its obscure nature and to the fact that only in a small number of cases does treatment seem to have more than a palliative action. There is also a great difficulty in getting patients to take the long and systematic medication required and to live in accordance with the rules laid down by the physician, and if treatment is not given early and a cure effected, the epileptic habit which is established, in itself becomes a grave and difficult complication. There is very little doubt but what many cases of epilepsy could be prevented by proper systematic treatment.

In referring to the preventive treatment, the author called especial attention to the fact that even slight head injuries may sooner or later become active factors in the causation of epilepsy and such injuries should be closely examined and receive proper treatment not only for the injury itself, but to prevent the possibility of a person becoming subject to epilepsy at a future time.

The treatment of epilepsy resolves itself into 1, the treatment of the convulsive seizure; 2, treatment, medical, hygienic and surgical, to prevent the recurrence of seizures, and 3, treatment of complications.

When bromids fail to give favorable results alone, their influence can often be increased by giving them in combination with other drugs. Fleschsig's treatment, consisting of giving one-quarter of a grain of extract of opium morning and afternoon, increasing at the rate of one-half grain daily until 15 grains daily is reached, then discontinuing the opium and substituting 30 grains of bromid of potassium three times daily, gradually reducing the amount to a point where it can be continued with safety for a long period of time, has been highly recommended by those who have used it, but while it seldom effects a cure, it has special advantages in cases of long duration and where the patient is of an irritable and violent disposition.

The surgical treatment of epilepsy has come more prominently into use during the past two years. Under aseptic conditions, trephining for elevation or removal of depressed bone has become common, and even excision of portions of the cortex of the brain have been made by some with the view of destroying the supposed explosive center. Operations for the removal of diseased tissues, and meningeal and brain tumors have also been followed frequently with good results.

Finally, the author stated that it was to be regretted the progressive State of Illinois had not yet provided a hospital for epileptics, where they could be cared for and treated in a systematic manner by physicians and nurses who made a specialty of this disease, and in the event of its being of an incurable nature, to have a home provided by the State in which they may have comforts and surroundings suited to their peculiar needs.

HYSTERO-EPILEPSY.

DR. HUGH T. PATRICK, Chicago, first defined hystero-epilepsy as not epilepsy at all in any sense of the word, but hysteria pure and simple. He then proceeded to describe a typical paroxysm of hystero-epilepsy, an attack which he said is rarely seen, but serves well as a basis for the description of the incomplete or aberrant forms which are of frequent occurrence. The different periods and sub-stages were accurately described and illustrated by a number of well executed drawings. He showed that in an attack of hystero-epilepsy there is nothing after the first or epileptoid period that in the least resembles epilepsy. A patient who struggles, has to be held, who makes exclamations, tears the bedding, or tries to bite himself or others, is not an epileptic. A patient who shows marked opisthotonus, rolls over and over, or performs acrobatic feats, is not an epileptic. A patient who assumes striking postures or shows exalted psychic action during the attack, is not an epileptic. An attack that lasts fifteen minutes or more is not epilepsy.

DR. PATRICK then gave in detail the points in the differential diagnosis between an hysteric attack closely simulating epilepsy and true epileptic convulsions.

In conclusion, he insisted that hysteric convulsions are not confined to Paris and the Salpêtrière, but are of rather frequent occurrence in this country in the small towns as in the large cities. He has seen in the last few months a number of cases of hysteric convulsions which had been thought to be epilepsy, and had been treated as such for various lengths of time.

DR. J. B. MAXWELL, of Mt. Carmel, read a paper entitled,

STATUS OF EPILEPTIC LEGISLATION.

Among the special reasons for the establishment of a colony of epileptics he gave:

1. For the welfare of the epileptics whose numbers justify the outlay.
2. For the welfare of the insane, who should not be compelled to associate with them in the hospitals.
3. To diminish, so far as possible, the overcrowding of the hospitals for the insane.
4. To remove the epileptics from the almshouses, where it is a hardship for many of them to be, as under favorable circumstances they would be able to work and might be restored to health. The benefit that must accrue to epileptics in particular, and society in general, would be great, and scores, if not hundreds, who now refuse to enter the dark portals of the hospitals for the insane, or the forbidding gates of the institu-

tion for the feeble-minded, would be glad to enter the home or colony for epileptics. The speaker is convinced that too much time has already been lost and he strenuously recommended immediate legislation in behalf of epileptics.

FIRST DAY—EVENING SESSION.

The First Vice-President, DR. J. M. G. CARTER, Waukegan, took the chair, and after a musical selection rendered by the Eolian Quartet of Ottawa, the President, DR. D. W. GRAHAM, of Chicago, delivered the annual address. He selected for his subject,

THE MUTUAL RELATIONS OF THE MEDICAL PROFESSION AND THE PUBLIC.

(This address will appear in full in a subsequent issue of the JOURNAL.)

DR. HAROLD N. MOYER, of Chicago, then followed with an address entitled,

NEEDED MEDICAL LEGISLATION IN ILLINOIS.

He said that medical legislation in this State had been fairly fruitful in the past. An examination of what had been accomplished, while pregnant with promise for the future, is still far short of what should be. To this State belonged the proud distinction of having first placed upon its statute books a law regulating the practice of medicine. This was followed by our best piece of law-making, the anatomical bill, which, as amended, is as nearly perfect as could be wished. By it anatomical study has been placed within the reach of students of medicine to a degree and with a perfection that leaves nothing to be desired.

The law regulating the admission of insane patients to our hospitals, which has been in operation for the past two years, was rendered much less effective than it otherwise would have been, by a stupid amendment which has made its construction very difficult. As it was prepared by a committee of this Society, and submitted to the legislature, it was a symmetrical bill, providing not only for a trial by jury, but also for the appointment of a commission and for self-commitment. These were all separately described in the bill and provision made for carrying them out.

Dr. Moyer then passed on to the consideration of expert testimony, saying it had been taken up and considered at the last session of the legislature, and a bill regulating this important branch of judicial procedure narrowly missed enactment. In his judgment this bill ought again to be brought forward and an effort made to pass it. By many it was thought to be too conservative, but the speaker feels convinced that in this as in many other cases, to go slowly is to go surely. As at present proposed, the law is restricted to expert testimony in criminal cases. It alters the manner in which experts are summoned, without in any way changing the rules of practice and evidence, after they are in court. That some reform is needed in this regard is shown by the fact that not a week passes without some article appearing in the medical press upon this subject, and it forms a perennial topic in all medical society meetings.

Closely related to this subject is the question of compensation of expert witnesses, a matter intimately related to the personal rights of physicians. Dr. Moyer then referred to the case of Dr. J. N. Dixon, of Springfield. Dr. Dixon is now prosecuting on appeal in our Supreme Court a case involving the rights of physicians in this respect. The trial court went farther in summoning Dr. Dixon and compelling him to testify than the speaker had ever known a court to go in the State of Illinois. Another matter which required legislation was that which related to public inquests and the coroner system.

The author paid an eloquent tribute to the late Dr. John H. Rauch and his *confrères* who had so well laid the foundation of higher professional education.

Finally, the time for an Examining Board had arrived. The various schools could then meet on the common ground of anatomy, chemistry, pathology, bacteriology, and above all a thorough test of a candidate's knowledge of the English language, and general scientific attainments.

SECOND DAY—MORNING SESSION.

DR. C. B. HORRELL, of Colchester, read a paper on

DIAGNOSIS OF TYPHOID FEVER.

Two potent factors essential to success in a physician are a good diagnostician and a good collector. A physician should never be too busy to thoroughly examine each and every case that presents itself to him, and it will redound more to his reputation to carefully investigate and properly diagnose half a dozen cases a day, than to superficially and hastily examine and indiscriminately in a routine way prescribe for half a hundred.

The speaker had not always found the diagnosis of typhoid

fever an easy task, not even in simple uncomplicated cases. He insisted that without careful and exhaustive physical examination of the patient and investigation of his surroundings, the physician was likely to be placed under the embarrassment of a mistaken diagnosis. The author said that if his paper would be the means of stimulating a more systematic and perfected study of physical diagnosis in general, its object would have been attained.

THE TREATMENT OF TYPHOID FEVER.

DR. JAMES P. LYTLE, of Princeton, read a paper on the above subject. After dwelling at considerable length upon the various treatments of typhoid fever the author said that whatever may be our present or future treatment of this disease, good judgment and common sense in its management would ever remain the chief elements of success. The late Dujardin-Beaumez recognized this. At the end of a busy life full of years and good works, he left this legacy as the result of his experience, "That the best treatment for typhoid fever is a good physician."

DR. JOHN A. PRINCE, of Springfield, read a paper entitled,

PELVIC ABSCESS.

The author dwelt upon the surgical treatment, citing a few cases that had occurred in his own practice. He believes that in nearly all cases the infection is from the tubes, and that whether the abscess is a true pyosalpinx, an ovarian abscess, or independent of the uterine adnexa, the tubes constitute the channel of infection.

The surgical treatment resolves itself into the various methods of evacuating the pus. The various methods might be classified as follows: 1, laparotomy with extirpation of abscess mass; 2, laparotomy with cleansing and drainage of abscess cavity; 3, drainage by vaginal hysterectomy; 4, drainage by vaginal incision; 5, aspiration.

Laparotomy with complete extirpation of the pathologic tissues involved in the abscess is, he thinks, the ideal method, and where practicable should be employed.

Vaginal hysterectomy for the cure of pus cases was of very recent origin, and as the speaker's experience was limited to one case, he was not prepared to speak with authority.

As regards aspiration it is merely a palliative measure, and should not be considered among the methods of cure. He had been best satisfied with the results obtained by complete enucleation, but in some cases after opening the abdomen, it had been found impossible to remove the mass and gauze packing had been employed, and while the ultimate results had been good, convalescence had been slow and protracted.

THE NECESSITY OF CLOSE INSPECTION IN HEAD INJURIES.

The author, DR. R. E. LEWIS, Macomb, emphasized the importance of investigating every case which comes under observation. Sufficient time had now elapsed since the inauguration of operative procedures upon the cranium and brain for the cure of various mental and physical defects, to judge somewhat correctly of their merits, and in looking over the reports of cases with subsequent histories in the hands of the most competent operators, the speaker was astonished to find so small a percentage of actual cures resulting from what at first seemed brilliant and promising results. After relating an interesting case of depressed fracture of the skull, which the author had treated successfully, he drew the following conclusions:

1. All scalp wounds will bear close inspection.
2. The trouble resulting from pressure on the brain should be removed before they arise.
3. This work should be done by the general practitioner in the rural districts, as well as by skilled surgeons in the city.

DR. JOSEPH B. DELEE, of Chicago, read a paper entitled,

CRANIOTOMY ON THE DEAD CHILD.

He gave the following indications for craniotomy:

1. All cases where the child is dead, an indication for the termination of labor arises. This operation should be done instead of the forceps, when the maternal soft parts are unprepared for rapid delivery. Such cases are eclampsia, placenta previa, premature detachment of the normally implanted placenta, prolapse of the cord with danger to the mother from any cause. In short, do not apply the forceps on the dead child. The only exception the speaker would make to this rule was the case of a multipara, with the head low down and the soft parts well prepared.

2. Cases of contracted pelvis when the conjugata vera is not smaller than 2½ inches. To do a hard version or extraction or a forceps, or a Cesarean section is not justifiable when the child is dead.

3. In neglected transverse presentation embryotomy should be done. The thought of a version should not be entertained for a moment.

DR. EMMA B. STANDLEY, of Alexis, contributed a paper on
(CLEANLINESS IN OBSTETRICS.

The first step in cleanliness in obstetrics was for the physician to be clean himself, when called upon to attend a woman in confinement. He should be clean in morals, words and expression; clean in person, providing himself with all the necessary aids to help him in his work as an obstetrician. She thought the day was passed when a physician would allow a woman after the babe was born and placenta removed, to lie undisturbed for twenty-four hours or more, without the soiled things upon her bed being removed. Her plan has always been to allow the mother to rest for a little time after delivery until the babe is attended to, then a bowl filled with warm water is brought and a disinfectant added, and the pudendum thoroughly cleansed, being careful not to expose the patient. As the bed proper is protected with rubber cloth, the soiled bed-clothes are easily removed, the vulva being protected with a soft disinfectant pad in order that no lochia may escape upon the bed while this is being accomplished. When possible, the speaker prefers to confine a woman upon a couch, or another bed near by, and then after the woman is rested and cleansed, have her lifted into a comfortable bed.

At the time of confinement the author has found a hot bath to be both cleanly and a help to such women, using a bathtub, or if that is not to be had a washing tub is used to bathe them in. This relaxes and assists nature. Another help to cleanliness in obstetrics was the rectal enema of warm water that the bowels might be thoroughly moved. This had a relaxing effect upon the sphincter ani muscle and perineum and prepared the way for the advance of the child far better than if the physician had a loaded rectum to contend with. The author next considered cleanliness of the cord, saying that she had found the subnitrate of bismuth a good dressing. The uncleanly practice of drying the diapers and putting them again upon the babe without washing was too often done. This produced soreness from the decomposing urine and should be condemned by the physician.

SECTION ONE—SECOND SESSION.

DR. GEO. G. CRAIG, of Rock Island, read a paper entitled,
HYDROTHERAPY IN THE MANAGEMENT OF HIGH TEMPERATURE
IN TYPHOID FEVER.

The author stated that notwithstanding all that had been written and said upon this subject, the practice had been confined essentially to a few hospitals in large cities. That it was not more generally adopted was due to the fact that more trouble and care are required than in treatment with medicine. In the second place the new departure was looked upon with disfavor by a large class of people, who could not bear the idea of plunging a patient with a temperature of 105 into a tub of cold water to have him "catch his death of cold."

He enumerated the methods generally used for applying hydrotherapy in the treatment of typhoid fever. Like any other remedy, judgment must be exercised in the selection of the mode and manner of administering it in each individual case, bearing in mind that statistics prove that the nearer the exact technique of Brandt is and has been followed the better the results. We must consider the prejudice and fear on the part of the patient or friends and adapt the treatment to the circumstances, but it was the duty of the physician, however, if he believes that a larger percentage of cases recovered under this treatment to use it. In all cases the physician could not let his views be known, and in hospital practice particularly, and in private practice when possible, the author believes that we should adopt it as a whole or in part.

SECTION TWO—SECOND SESSION.

DR. O. B. WILL, Peoria, read a paper entitled "Some Observations Respecting the etiology of Ectopic Pregnancy."

DR. J. B. MURPHY, Chicago, followed with a demonstration of the

SURGERY OF THE GASSERIAN GANGLION,

and reported cases. He confined himself almost exclusively to the technique of the more recent operation, after reviewing the results of previous operations for the removal of the ganglion. Internal medication and anodynes had absolutely failed to permanently relieve the intractable neuralgias of the face. Reference was made to the methods advised and advocated by Rose, Horsley, Andrews and others for the removal of the ganglion. Dr. Murphy then described in detail and illustrated a slightly modified technique of the Frank Hartley operation. He said there had been forty-seven cases collected up to date with only two deaths. One of the patients died shortly after the operation from shock. The other death was presumably due to the advanced age of the patient.

DR. JOSEPH B. BACON, Chicago, contributed an interesting paper on "Dermoid Cysts as a Cause of Fistula in Ano."

(To be continued.)

American Laryngological Association.

Annual Meeting held at Pittsburg, Pa., May 14, 15 and 16, 1896.

The session was opened by an excellent address by the President DR. W. H. DALY, Pittsburg, Pa.

THE PROPHYLAXIS OF NASAL CATARRH.

DR. CARL SEILER, Philadelphia, stated in this paper that there is but one primary cause which produces this prevalent disease and that any other cause is merely the expression of a predisposition called into action by the former. Anything which produces acute inflammation of the anterior and posterior nasal mucous membrane will lay the seed for pathologic changes in that very tissue, causing chronic infiltration and the subsequent deposit of connective tissue.

The earliest causes of nasal catarrh in childhood are primarily over-clothing, over-feeding, and consequent over-heating of the body. There seems a curious apathy on the part of parents and the family practitioner as well, in regard to this condition, in allowing one attack after another of acute coryza to develop a chronic catarrhal condition. It is therefore the duty of medical advisers to instruct parents in the method of applying those preventive measures which may be readily instituted. When an acute coryza has developed the accumulation, inspissation and putrefaction of the mucus should be at once prevented. The same care should be given to the nasal mucous membrane that is now given to the teeth, and a normal condition of that tissue would be the rule rather than the exception.

A child should therefore be taught, as soon as possible, to snuff up a warm saline solution in the nose. The solution may be snuffed up either from the hollow of the hand or from a small cup, or glass, three or four times a day. A douche or atomizer should not be substituted for this method of artificial application for nasal cleansing. The simpler method is preferable because of its readier application and because of the child's natural abhorrence to the use of any instrument. Moreover the douche and the atomizer do not accomplish their purpose any more successfully than does the simpler method and the extra pressure which is brought to bear on the mucous membrane by such appliances can readily produce more harm than good. Antiseptics may be added to the solution at the discretion of the physician in order to prevent putrefaction and inoculation with the septic material. As important, however, in the treatment of such a case is the proper feeding and clothing of the child so that the general system may not be over-heated. The skin of the neck and arms, moreover, should be so hardened by cold water applications in the form of sponging night and morning that moderate exposure will not readily give rise to acute coryza. The author believes that American children in particular are, as a rule, too much clothed, too much confined indoors, and are overfed with heat-producing food. Too often when these children leave the nursery they are mere hot-house plants and it takes a long course of out-of-door sports to inure them to exposure.

These seeds sown in the nursery frequently develop later in life so that it is not an uncommon observation for college youths who led an active athletic life during their academic course to be attacked with phthisis when they settle down to the business of life, the tuberculosis having been kept in abeyance only by the out-of-door exercise which they enjoyed at college.

THE OPERATION FOR DEVIATION OF THE NASAL SEPTUM.

DR. ARTHUR W. WATSON, Philadelphia, believes that of many operations which have been devised for the relief of this condition none have as yet proved entirely satisfactory because the fact is lost sight of that a deviated septum is longer than a straight one and no provision is made for the reduction of the amount of tissue. The first step, therefore, in the operation, should be to reduce the septum to a size that will fit into a straight line between the points of attachment of that portion of the nose. This can be accomplished by removing a portion of tissue in the general line of deviation. If the deviation is horizontal an elliptical piece should be removed by incisions gradually convergent at either end. If the line of deviation is vertical a triangular, or wedge-shaped piece, should be cut out, the apex being upward and extending as high as possible, and the base reaching to near the base of the septum where it may be joined by a horizontal incision. Where both forms of deviation are met with in the same case, both forms of incision should be

used. The excised portion should always include the protruding angle, and the amount of tissue to be removed can be estimated by the eye. It is important to avoid cutting the mucous membrane on the side opposite the incision as the membrane helps to hold the edges in line and thus facilitates union and prevents perforation. The incision should be made on the convex side of the septum. To bring the body portion into line the crushing forceps may be used to advantage, either Adams' or Dr. Rau's.

The second part of the operation and the part which is most frequently neglected is the retaining of the septum in position. The author believes that one reason for failure in this operation is that the retaining force is not kept up long enough. From three to four weeks should be allowed for the healing of the cartilage. The best support for the cartilaginous septum is a steel pin with a flat ring head, the ring being covered by a piece of rubber tubing. The pin should be inserted from the concave side of the septum just back of its anterior edge and passed diagonally through to the other side, then across the vertical incision if there is one, and then back into the septum until the head lies on the septum within the nostril. Care should be taken not to produce a deflection in the opposite direction. This method leaves both nostrils free for respiration and cleansing. By padding the head of the pin, as described, no ulceration takes place and it may be worn for three or four weeks without discomfort.

Should the deviated bony septum require additional support a piece of iodoform gauze folded to the desired thickness may be placed between the septum and outer wall, at the point of deviation. As the bony portion unites more quickly than the cartilaginous the latter may be dispensed with in a week or ten days, leaving the pin to do the rest. In order to perform this operation properly the parts should be well illuminated and as free from blood as possible. Cocain anesthesia should be used in preference to ether.

INTUBATION IN THE ADULT; WITH SPECIAL REFERENCE TO ACUTE STENOSIS OF THE LARYNX.

DR. W. E. CASSELBERRY, Chicago, said although chronic stenosis of the larynx, especially of the syphilitic and tuberculous types, has received due attention in reference to treatment by intubation in the adult, the management of acute stenosis by the same means has received, as yet, but little notice. It does not suffice to assume that the adult may be dealt with exactly like the child, or that the treatment of acute stenosis with its associated state of helplessness and exhaustion, is identical with that of chronic stenosis. Important distinctions obtain both as regards the technique of the intubation and the possible scope of the operation. The six cases related embrace four of laryngeal diphtheria, one of acute edema of the larynx and one in which the stenosis was of obscure origin but probably also edematous. The diphtheritic cases all terminated favorably, but presented various difficulties in the performance of the intubations; notably in one, the necessity to intubate with the patient in a recumbent or semi-recumbent posture in bed, to accomplish which the best position was with the patient on the right edge of the bed and the operator standing to the patient's right, in which position one's right arm rises in front of the patient's mouth without awkward twisting of the operator's body. In another, at one time, spasm of the glottis, which was actually seen to occur in the laryngeal mirror, rendered a third effort necessary before the tube slipped into place. It was done under laryngoscopic view, by holding the tube firmly at the entrance of the larynx for a few moments, which excited cough and with it the opening of the glottis. All the cases showed some intolerance to the presence of the tube, as manifested by more frequent expulsion than with children. One case nearly succumbed from accumulation of viscid mucus, not in the tube but in the trachea and larger bronchi below and around the tube, which condition was at once suspended by the extraction of the tube. The case of acute edema of the larynx was complicated by chronic spasm of the masseters which prevented wide distension of the jaws. In consequence intubation failed, the patient being measurably exhausted by the two efforts made. Tracheotomy was performed, but the patient died just as the operation was completed, presumably from failure of the heart in connection with secondary edema of the lungs. Immediately, postmortem, the diagnosis was confirmed, and the feasibility of intubation demonstrated in acute edema of the larynx with a patient recumbent, possibly collapsed, but uncomplicated by "setting" of the jaws, by (after death) forcibly distending this patient's jaws when the tube could be passed and repassed with ease. The liability to pressure decubitus by the tube in acute edema of the larynx should be remembered and not too large a tube inserted.

The other case which was presumably one of edema of the larynx or of subglottic edema terminated favorably without difficulty.

The following conclusions as to technique are formulated:

1. For one accustomed to the use of the laryngoscope, intubation on adults is easier and more certain under its guidance; therefore, for a patient of adequate composure and able to maintain the sitting posture this method should be selected.

2. A patient lacking only composure, one whose inclination is to resist rather than to assist the operation, may be closely wrapped in a blanket to pinion the arms and legs, seated in a straight-back chair, the head inclined slightly backward, the mouth gagged and the finger used as a guide, as in children.

3. A patient lacking strength to move from bed and composure or strength for laryngoscopic insertion, should be placed close to the right edge of the bed so that the operator can stand at the patient's right side, the head and shoulders should be well raised by pillows, the neck moderately extended and the method otherwise fulfilled by the sense of touch. Kneeling on the bed in front of the patient is unnecessary.

4. A patient who is moribund, or nearly so, may have the tube inserted while in the recumbent position. The operator should stand at the patient's right, who should therefore be placed on the right side of the bed.

Spraying the fauces with a 5 per cent. solution of cocain facilitates introduction by whatever method and tends to lessen the liability to premature expulsion.

The extraction of the tube is especially easy under laryngoscopic illumination, otherwise it is done in accordance with the same principles as regards the position of the patient, as pertain to its introduction.

The author's posture method of feeding, subsequent to intubation, by inclining the patient's head and shoulders downward, in which position fluids may be swallowed without gravitating through the tube into the lungs, can be successfully used with adults, but naturally with more difficulty at first than with children, on account of unmanageable weight and size. It is best done by hanging the head and shoulders over the edge of the bed downward nearly to the floor. Otherwise, adults more readily than children may be fed upon semi-solids, as custards, stiff corn-starch and oysters, which will slide over the top of the tube without entering it.

Regarding the scope of intubation for acute stenosis in adults the four cases of laryngeal diphtheria herewith reported all of which terminated favorably, justify the conclusion that this operation may with advantage be substituted for tracheotomy in that disease.

Concerning acute edema of the larynx, the indications are not so clear. The operation is technically feasible in uncomplicated cases even when exhaustion is extreme, and I would consider a single attempt justifiable, provided, in order to guard against pressure decubitus the smallest size of the adult's set of tubes is first selected. When complicated by having the jaw "set" or by pharyngeal swellings, which might obstruct the top of the tube, either or both of which conditions may be encountered in cases of acute edema of the larynx, secondary to peritonsillar abscess, Ludwig's angina, phlegmonous angina, retropharyngeal abscess, etc., intubation is absolutely contraindicated and fruitless efforts thereat can only serve to intensify the exhaustion and suffering of the patient.

There are other conditions or acute exacerbation of chronic states which might be remedied by intubation. In a case of arthritis deformans which suffered an acute exacerbation involving the larynx, the dyspnea was so urgent that I expected for several days to be compelled to intubate at any moment. Traumatic edema of the larynx, as by scald, corrosion or fracture, might in suitable cases be treated in this way. Laryngismus stridulus or reflex spasm of the glottis, though rare in adults, might constitute another indication. Also edema of the larynx secondary to chronic syphilis or tuberculosis might come within the same category, since the edema may figure as an acute exacerbation, provoking sudden and urgent dyspnea.

The treatment of chronic stenosis of the larynx and trachea by intubation is not included within the scope of this paper.

LARYNGEAL PHOTOGRAPHY WITH THE AID OF THE ARC LIGHT.

DR. T. R. FRENCH, of Brooklyn, in his early experiments, made use of sunlight as the illuminating agent and the results were unsatisfactory, owing to insufficiency of illuminating power. He has recently called to his aid the arc light, and with the most gratifying results, not only with the larynx, but also with the naso-pharynx and posterior nares. As the distance between the camera and object was very short it was

difficult to adjust the light to the sensitive plate so that a proper focus could be obtained. The requisites therefore are a small diaphragm, a rapid shuttle, a very sensitive plate and a powerful light. The necessary outfit for the latter consists of a two thousand candle power arc light partly enclosed in a metal box, the anterior face of which bears a condensing lens at a distance of nine inches from the box, lens giving a focal distance of twenty inches. The lamp and accessories are fitted to a narrow board attached to a table with a device for raising and lowering the light. A shelf beneath the table carries the rheostat.

The matter of technic is the same as with the sunlight condenser (see *New York Medical Journal*, Dec. 13, 1884.) The pencil of light must be caught upon the head mirror some few inches inside the focal point. The focus is then found and with it, perhaps, a good picture. If the first effort does not succeed, the focus and necessary amount of light being known, there is no trouble in securing at the second sitting as many photographs as desired. No longer time is required with apparatus in good order than in making the usual careful laryngoscopic examination.

Dr. J. E. BOYLAN reported a case of

SPINDLE-CELLED SARCOMA OF THE NASAL PASSAGE.

He exhibited specimens and slides and said: At the time of introduction the patient, who had suffered from repeated and obstinate epistaxis and occasional acute pains in the head, presented a broad and flattened nose with a noticeable bulging under the margin of the left nasal bone. There was oozing of blood from the nostril on that side and the left passage was found to be totally occluded. Upon tilting up the tip of the nose, an irregular brown-red mass at once became visible, filling in the cavity almost to the anterior opening, which was found to be limited by the posterior nares behind and to spring from the side wall. Circumstances prohibiting a more radical operation, the growth was removed with the wire ecraseur in two sittings and the site of the attachment thoroughly curetted. Hemorrhage, which was quite profuse, was arrested each time by plugging with iodoform gauze. The removed growth appeared as a soft liver-colored tumor of irregular surface about the size of a hen's egg, having had an attachment about an inch and three-quarters long and having apparently originated in the inferior turbinated body. Expert microscopic examination showed the growth to be a spindle-celled sarcoma. A year from the date of operation inspection of the patient developed no signs of recurrence. May 10, 1895, twenty-two months after date of operation, patient announces by letter that he finds himself without symptoms of recurrence and in excellent health. The case is offered as a contribution to the accumulating number of those which tend to modify a hopeless prognosis of sarcoma of the nasal passages. Twenty-one cases taken from the literature since Bosworth's tabulation are enumerated and their results referred to. In conclusion, the importance of publishing the subsequent history of cases operated upon, over a period of several years, is urged.

Dr. CHAS. M. SHIELDS, Richmond, read a paper on

NASO-PHARYNGEAL FIBROMATA,

reporting two cases and exhibiting specimen and slides. He said the first occurred in a white man, aged 23. The tumor was attached to the vault and left lateral wall of the pharynx and completely filled the post nasal space. It extended also through the left nasal space to the anterior orifice and was attached for half its length to outer wall of the nose. It crowded the septum to the right to such an extent as to close that nostril. Nasal respiration was completely stopped. He presented the typical "frog face" and had the "dead" voice. After injecting a 10 per cent. sol. of cocaine into the left nostril a filiform bougie was with difficulty worked through to the throat, and to its anterior end a piece of silk was tied which was in turn fastened to the sharply bent loop of a cold wire snare. By this means the loop was drawn through into the mouth and well rounded before being pulled back into the pharynx where it was adapted around the tumor with the finger of the left hand. For five hours the snare was screwed up when the wire broke.

The next day the loop of a galvano-cautery snare was drawn through in the same manner and dropped into the cut begun by the cold snare. It cut through in a few minutes and the piece drawn down and out of the mouth. Its base measured one and one fourth by one and two fifth inches. A second piece sending a projection into right nostril was also removed with the cautery snare and was about half the size of the first. Then that filling left nasal space was in like manner removed. After fourteen months the patient returned for examination and then small pieces were removed. These occupied position over site of original growth.

The second case was being treated at the time the report

was made and Dr. Shields stated as his reason for such early mention the fact that it occurred in a woman of the negro race. Nélaton, Gosselin and other early observers considered women to possess immunity, and Morell Mackenzie considered naso-pharyngeal fibromata rare in that sex; but we know that females are not wholly exempt. As regards race, however, Dr. Shields considered it unique, never having seen a case reported or occurring in a negro. Bosworth states that he has never seen a case reported in that race. The woman was 48 years of age. The tumor filled the entire post-nasal space, pushing the soft palate well forward. It was attached both to the vault and posterior wall of the pharynx. A piece cut from the lower part and examined microscopically showed it to be a true fibroma. It had begun to attract attention three years ago. The patient was otherwise in good health. Electrolysis was being tried but not with very encouraging results.

In the treatment of these tumors Dr. Shields thought that ligation, evulsion, the use of chemical caustics, the thermocautery, etc., were not worthy of consideration in comparison to the use of the hot or cold snare, and he was of the opinion that few, if any, cases now required the resection of the superior maxilla or any other preliminary operation removal through the natural passages being possible. As to the comparative advantages of the hot or cold snare, the size and location of the growths would usually determine; but usually he preferred the former. He used irido-platinum wire in the galvano-cautery snare, finding it more elastic and stronger. Some very hard, dense tumors could not be cut through with the cold wire, as is evidenced by reported cases of the wire breaking and as in the first case reported in his paper. With the cautery snare, we have an instrument which we can use with the certainty of its cutting through any growth and accomplishing in a few minutes what the cold snare may require hours to do. The current should be turned on for a few seconds and then the patient allowed a few minutes rest before heating the wire again. In this manner the wire never became so hot as to cause troublesome hemorrhage and the pain attending the operation is very much lessened. Finally, while removing the tumor every portion of the remaining bone is thoroughly cauterized, thus securing any benefit that may result from that practice.

TUBERCULAR INFECTION OF THE LYMPHOID TISSUE IN THE PHARYNX, WITH SOME REMARKS ON LARYNGEAL INFECTION.

JONATHAN WRIGHT said this paper was meant as an addendum to the paper read by him on the same subject last year. He repeated Dieulafoy's experiments in twelve unselected cases of inoculating guinea pigs with tonsils and adenoids which in each case were examined histologically and bacteriologically with negative results. The animal experiments made by Dr. W. H. Park also resulted negatively. Tubercle bacilli having been found by Strauss and others in healthy noses and throats, I am inclined to think that Dieulafoy's results were due, as Cornil suggested, to surface contaminations. Dr. Botey of Barcelona, has published results closely resembling Dr. Wright's in similar experiments. Dr. Chappell had a case of tuberculosis of the naso-pharynx following an operation for adenoids. Tissue taken from this and subjected to the same examinations as in the twelve unsuspected cases was found by Dr. Wright to contain tubercle and tubercle bacilli histologically, while Dr. Park, by animal inoculation, also obtained positive results. This goes to prove that Dr. Wright's methods were not at fault in the twelve cases that were supposed clinically to be non-tuberculous. In making sections of tissue taken from a tubercular larynx he met with indisputable evidence of the penetration of the intact epithelium by tubercle bacilli, but whether this is possible in healthy throats he is not prepared to say.

(To be continued.)

Herbert Spencer's Little Joke.—Herbert Spencer plays billiards rather well for a philosopher and he is never wholly sorry when he wins the game. Once, at the Athenaeum Club, he played fifty up with an antagonist who began by putting the red into the top pocket, and getting into position for the spot stroke, ran out without giving the author of the "Synthetic System" a chance of handling his cue. It was very provoking, and at last Mr. Spencer felt constrained to speak. "Sir," he said, "a certain ability at games of skill is an indication of a well balanced mind; but adroitness such as you have just displayed is, I must inform you, strong presumptive evidence of a misspent youth." *Golden Penny.*

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Original communications are only received with the understanding that they are exclusively contributed to this JOURNAL.

INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the ASSOCIATION living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, JUNE 6, 1896.

GYNECOLOGY AMONG THE INSANE.

When some twenty-four years ago DR. STORER published his little work calling attention to the need of gynecologic treatment for a certain proportion of the female insane, it was undoubtedly with better reason than could justify a similar appeal at the present time. His voice was then like one crying in a wilderness; now it would be but one of many clamorous ones, all proclaiming the importance, even the predominance, of the sexual element in the mental disorders of women. At the present time all and more than he asked for has been gained. Women physicians are being generally added to asylum staffs, with the special design that they shall attend to the gynecologic and special needs of the female inmates, and in some States their employment has been made compulsory by law. It would certainly appear that professional and public attention was sufficiently aroused, and that the necessity of further appeals no longer existed.

It is not very long since, however, that in one of the States of the Union, the gynecologic zeal of an asylum physician was rather summarily checked by higher State authorities who considered that the tendency was to overrun the proper limits in this regard, and that, in their capacity of supervising guardians of the insane, it was necessary to administer an official snub to the enthusiasm of the superintendent. The liability to one-sided and partial views is here, as everywhere, present, and it would be well if a judi-

cious conservatism could sometimes be applied to overrule in other cases than the one above cited. The operative furor, which is deprecated by so many prominent gynecologists and surgeons, is especially unfortunate when exercised on those who, from their mental condition, are incapable of acting for themselves in judging of their own needs. Extensive mutilating operations like castration, which, notwithstanding the statement of SPITZKA that it became obsolete many years ago, is still popular in some quarters, are particularly objectionable in this point of view, and some interesting legal questions might be, and to a certain extent have been, raised in regard to them. It would be better in any severe gynecologic operations, were it practicable, to follow STORER's original suggestion and have all such passed on by a consulting board of competent specialists, and as an additional precaution it would be well to have, as far as possible, full legal sanction for any procedure that may involve the risk of life or of the future well-being of the patient. The practice of castration for any phase of insanity alone, whether in male or female, without some organic disease of the parts that may justify it, has no sufficient weight of authority in its favor and is condemned by the experience of practiced alienists. The most evident advantage that it possesses is in the fact that it may serve a purpose in the prevention of the production of future degenerates, but this is hardly an argument that will be adduced in its favor in the present state of our civilization. For any other purpose it has hardly an excuse, as repeated experience has shown its insufficiency as a remedy for mental disease, which it more often aggravates than helps.

The claims that are made of the value of gynecologic procedures in asylums suggest sometimes a disbelief from their very extravagance. It is the duty of every physician who has to treat insanity to neglect no physical condition that may have any possible bearing upon the case, and diseases of the sexual organs fall as naturally under this head as any others. It may often happen that their continuance has an unfavorable effect, and their treatment should therefore certainly not be neglected. But in estimating its benefits a judicious caution should be observed, for in recent cases, in which alone it is likely to be actually curative, there are many other possible factors in a properly treated case. When we hear of its producing a good proportion of cures in old chronic demented of many years' standing, the question naturally arises whether the results have been adequately observed, or if so, whether the operation has been the curative factor, as every one of experience is aware that remarkable effects sometimes follow the most various and apparently inadequate causes. A change of residence, a severe spell of sickness, a local issue like a carbuncle or boil, has been followed in chronic

insanity by a temporary betterment, and sometimes even by a permanent recovery, and the same is true of surgical operations other than gynecologic ones. The advocates of a more general and active gynecologic treatment of the insane are in danger of overdoing their case: they attempt to prove too much.

There are some special reasons why a certain conservatism is advisable in this regard with cases of insanity which are evident to those who have had practical experience in hospitals for the insane, and the employment of female physicians as gynecologists does not entirely relieve the disadvantages of this special line of practice in such institutions. Certainly the tendency to greater conservatism, which is evident amongst the best specialists in general practice, should not be unshared by those who have to do with the insane. The rule should be that operative procedures of this kind are, with certain restrictions, justifiable in the insane under the same circumstances that they would be advisable or desirable in the sane; they are not excusable if performed simply for a supposed curative effect they may have on the mental disorder itself.

It would be interesting to have the true facts as to the cases of insanity that have been actually benefited by radical gynecologic operations as compared with those that have originated from or have been injuriously affected by the same. In view of the utterances of certain very high authorities in gynecology, as well as the general consensus of the best alienist opinion, it is a serious question whether the occasional excessive zeal in this direction is not an actual source of peril at the present time.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

This is the name of the old association of medical superintendents of asylums for the insane, founded in 1844. Recently they held a four days' meeting at Boston, Mass., which was largely attended and of more than usual interest. The president, DR. RICHARD DEWEY of Chicago, Ill., in his annual address discussed at some length the question of corrupt and fraudulent commitments and unjust detentions in insane asylums. Recently in certain districts much agitation of the public mind has been manifested, and the papers have created the impression that great wrongs were covered up in many asylums. DR. DEWEY found from a very wide inquiry and study of the alleged cases no basis whatever for such a fear. A certain number of ill-balanced, highly nervous persons, and paranoiacs have paroxysms of mania and melancholy and are unable to control themselves; these are committed to asylums; also a number of drug-takers who are clearly insane for the time. They recover in part very quickly in asylums, then claim to have been unjustly committed. Such men revel as martyrs, and seek to make the asylum and its

managers odious. Lawyers, newspapers and the public generally are credulous enough to accept their statements. Later, many of these cases become permanently insane and commit crime, but their previous history is forgotten. Not a single case of fraudulent commitment in any large or small asylum is on record. The oft repeated statements to the contrary are entirely without proof. The conditions requiring so much concealment and collusion are not possible in a public asylum.

DR. CHAPIN, of the Philadelphia asylum, followed giving the history of several cases which had been taken out on a writ of *habeas corpus* and found to be insane. He asserted that in his experience of over a quarter of a century he had never known of illegal detention of sane persons in asylums.

DR. McDONALD, the State Commissioner of Lunacy in New York, expressed the same opinion, and affirmed that the statements of lawyers in New York and other cities about particular cases were entirely unverified. Gynecologic operations in asylums were discussed at some length, and the opinion prevailed that they were not curative, and were only valuable as removing contributing causes. The thyroid treatment of catalepsy and other neuroses had been followed by good results. Among the notable papers were the following: "The psychic Influence of the night Season;" "Paraphasia and Word-deafness;" "Disorders of the muscular System in Insanity;" "Psychology of Idiocy;" and DR. HALL's address on scientific psychology. Other very excellent papers were read and discussed with unusual clearness.

The sneer that American superintendents of the insane are not as a rule scientific men, is flatly contradicted by the papers and discussions of their annual meetings. This Boston meeting brought out the fact, that in some of the eastern and western asylums elaborate psychologic studies and experiments are going on which promise the most important results. The old-time methods of housing the insane entirely from the economic basis and treating them in great classes is passing away. The delusion that any medical man can be a successful superintendent of the insane, exists in some States, and the frequent changes is always a sad loss to the interests of science and the asylums. Fortunately this is passing away, and most of the members of this Association, have been trained through a long period of service as assistants to the heads of asylums, where they remain a lifetime. A large number of the members of this Association have been managing asylums nearly all their professional lives and have become more familiar with the clinical side of lunacy than it is possible in any other way. This Association and its work should be better known among the profession. Its proceedings should have a wider circulation among the general medical public and in this way some of the misconceptions of insanity would be corrected.

THE ALCOHOLIC QUESTION.

The agitation of the question of the medicinal value of alcohol continues with increasing interest both in this country and Europe.

The impression prevails that much of this agitation is carried on by partisans on both sides, especially in this country. In a certain sense this is partially correct, and while many medical men have strong convictions concerning alcohol, there is a constantly increasing desire to ascertain facts that support or disprove present theories. In Europe the question is treated more coolly. The moderate drinker and abstainer join with equal interest to study the action of spirits, and examine the conclusions with scientific fairness. In this country we have the Medical Temperance Association, who affirm that total abstinence is the proper standpoint from which all studies of alcohol must be made. On the other side the committee of fifty, composed of teachers in colleges, ignore all questions of personal interest, and believe that the facts can be more clearly studied by moderate drinkers, and persons who have experience in the use of spirits.

The latter have begun some elaborate researches concerning the action of spirits; the former have confined themselves to clinical experience of daily practice and in hospitals. So far it is evident that many conclusions widely differing from the present theories are to be sustained, and that the rôle of alcohol in medicine must undergo a great revolution.

At the Atlanta meeting the question of the stimulant action of alcohol was denied, and some European experience cited in proof. This called out sharp protests and contradictions. The same thing occurred in Zurich at a meeting of the alienists and neurologists last fall. In this instance elaborate psychologic experiments with instruments of precision were put in evidence, and the opposition only questioned the meaning of the evidence, not the evidence itself. The program of the Atlanta meeting contained the title of twenty papers devoted to alcohol and inebriety, showing that this general subject is becoming very prominent in medicine. At the present time wide differences of opinion must prevail until more authoritative studies shall settle the facts. The denial of the stimulant and food value of alcohol is not sentiment or mere opinion, but is founded on evidence that is believed by many eminent men to be correct. On the other hand, the opposite conclusions supposed to be settled beyond question, and supported by experience of equally good men, should be open for re-examination without prejudice. The physician who from personal experience finds greater success in the treatment of disease without the use of alcohol, and the physician who depends upon it in certain cases as the best remedy known, are entitled to equal consideration. Protests against each other and denials

of theories take the subject out of the field of science and prove nothing. If alcohol has a medicinal value all new studies and researches will bring new proof and evidence. Reopening the question and submitting the facts to a new examination is not "fadism" or sentiment, but scientific. To suppose that any present theories of alcohol in medicine are settled simply because they are accepted by the general medical public, is not the spirit of the age. In reality, the position of alcohol in medicine is questioned by an array of facts that point to very different conceptions from those at present entertained. These facts are ascertained and presented by medical men both in this country and Europe, who are by no means "cranks" or "extremists" in any sense. The whole subject demands renewed study, and the theories held so tenaciously by some physicians require new facts to sustain them, something more than the conclusions of foreign experimenters of years ago. Clinical study and experience of more accurate character is required before authoritative theories can be supported as presumable facts. The discussion of this subject requires less dogmatism and broader reasoning, and more appeals to facts and less theorizing.

LIMIT TO POWER OF HEALTH OFFICERS TO
CONDEMN ICE.

Circumstances may exist which seem to demand quick and summary action for the protection of health and life, and in such a case an officer upon whom authority for the purpose is conferred will not be held responsible for a sacrifice of property which the exigencies of the situation appear to require. But no decision which it has found, the court of appeals of Colorado goes on to say, goes further than this, and, where the necessity for immediate action does not exist, a judgment condemning property must be the result of a trial before a regularly authorized tribunal, in a proceeding to which the person whose rights are to be affected is a party, and in which the burden of proving the charges is upon the complainant, and full opportunity is given to the adverse party to make his defense. In the case in which these general principles are stated, *Munn, Health Commissioner, v. Corbin*, the above court, April 13, 1896, holds void an order of the health commissioner for the seizure and destruction of certain ice condemned as impure and that every step taken by him in the proceeding in which the order was made, was in violation of law. It appears that the first notice of any kind ever received by the ice company from the commissioner was one that the ice had been condemned and its sale forbidden.

The next notice was a citation to appear before the health commissioner, and show cause why it should not discontinue its business in the city of Denver, and why ice brought by it into the city should not be destroyed. And at the subsequent "hearing" there

was no evidence introduced that the ice was impure or unwholesome, but, upon the admission of the ice company that the ice came from a certain lake, that the company sold it to its customers, and that it was the same ice which the bacteriologist of the bureau of health had examined and stated was infested with germs of a variety dangerous to health, judgment went that it be seized and destroyed. Here the court holds, proper notice was not given to the owner of the ice and this was not the kind of hearing to which the ice company was entitled. In justification of the health commissioner's proceedings reliance had been placed on a provision of a city ordinance that he might condemn or cause to be destroyed any fluid or substance intended for food or drink whenever he was satisfied that its consumption might be dangerous to health. But the court says it can not consent to a construction of such provision which would empower a man, merely because he is distinguished from his fellow citizens by the title of health commissioner, to go about the city giving orders for the destruction of property, whenever by some mental operation of which he alone is cognizant, he has concluded that its use might be dangerous to health. He must become satisfied of the noxious character of the property in a legal way, by the application of legal methods, and as the result of an investigation conducted in accordance with the rules governing judicial proceedings, of which due notice has been given to the owner of the property, and at which full opportunity is accorded him to resist the proposed action, and make his own defense. In so far as an ordinance may empower the health commissioner summarily to make a final and conclusive order for the destruction of property, except under extraordinary conditions, the court holds it is invalid, and no justification to the officer so proceeding. It also holds that if a state statute must be so construed as to commit the fate of property, regardless of surrounding conditions, to the arbitrary and irresponsible decision of one man, and so clothe him with an authority which might be used without limit for purposes of oppression, it is in violation of rights guaranteed by the constitution, and therefore void.

CORRESPONDENCE.

The Bracelin, A Chlorin Solution Only.

CHICAGO, May 26, 1896.

To the Editor:—In a recent issue of the *JOURNAL* I noticed that Dr. Martin Matter is again not only assailing Bracelin's bactericide, but indulging himself in a series of sinister-handed compliments concerning me personally. A wily but unscrupulous old lawyer at one time was giving what he termed "valuable pointers" to a younger member of the profession in handling a jury, which were as follows:

1. If the facts in the case are in your favor and the law against you, stick to the facts and say nothing about the law.
2. If the law is in your favor and the facts against you, stick to the law and disregard the facts.

3. If the law and the facts are both against you, ignore both and vigorously abuse your opponent and his client.

In this way you will take the minds of the jurors away from the merits of the case and stand a chance of getting a verdict in your favor.

Dr. Matter must have gotten some "pointers" from such a source. Let me assure him, however, that verdicts obtained in this way usually recoil upon their recipients.

He first assailed me and the remedy through the columns of the *Chicago Tribune*, in which he said: "His success will depend largely upon the gullibility of the public." He also drew a conclusion that is, at least, laughable, if not logical. He says: "They [meaning the bacilli] can not grow in the fluid itself, a fact which J. J. Russell has garbled from the report [Gehrman's] as evidence of its [the bactericide's] antiseptic power." He might equally assert that water is poisonous to rats, because they can not live in it!

After my reply was published and after I had exploded his "rat-in-water" illustration by showing the difference between the rat and the bacillus in its habits, customs, tenacity of life and peculiarities, and that what was death to the former was life to the latter, he seemed for the time to be quieted; but like the phoenix arising from its ashes, he again breaks out anew through the columns of the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, where he feels safe in the thought that not being a physician I shall not be permitted to follow him.

But, Mr. Editor, as you are fully aware, there are certain ethics governing journalism as well as the practice of medicine, and, having opened your columns to the gentleman for, in my opinion, an unjust, uncalled-for and unreasonable attack upon Bracelin's bactericide and upon me personally as well, I ask the privilege to reply to him through the medium he has chosen.

As evidence of the germicidal power of Bracelin's Bactericide (which is chlorin) allow me to quote from a letter received by me from Dr. H. John Tillotson, who had used the Bracelin remedy very successfully in a typical case of diphtheria. He says: "I used the Bracelin remedy as directed, and it worked like a charm, as I had expected it would do. The membrane disappeared within forty-eight hours, and the child was practically well in three days."

Dr. Matter refers to me in his article as "the genial and enterprising agent," and says I am "one of the most remarkable men in this country." For these kindly mentions, although lacking in sincerity, I thank him. As sarcasm is not argument I proceed at once to the facts.

I am engaged in calling the attention of the *medical profession* to the merits of this chlorin method of treating diphtheria, scarlet fever and diseases of the respiratory organs, but especially to its almost infallible curative qualities and absolute prophylactic properties in cases of diphtheria. To prove its merits I have been supplying it to Chicago physicians, free of charge, and with what success let the scores of successful terminations, reported by physicians and published, answer. In doing this work all I ask is an impartial consideration at their hands.

The gentleman does not like this remedy, but it will be observed that he does not cite any case where it was used by him or any other physician and failure followed. I unhesitatingly say that the animus of his opposition to the remedy is prompted wholly by jealousy. It may be interesting to know that this remedy was used with his consent on a patient of his who was suffering from pneumonia; that both he and his consulting physician pronounced the patient beyond recovery; that although delirious and practically unconscious, within five minutes after the corrected chlorin vapor was put into his lungs he opened his eyes and said: "I can now breathe easier." From that time on inhalations were continued, the patient recovered rapidly and is now well and goes about telling his friends that the remedy saved his life. In fact it acted

so satisfactorily in Dr. Matter's better judgment that a few days thereafter he came all the way from the South Side to my office and asked for and received from me, gratuitously, an abundant supply of the remedy with inhalers, and assured me he would give it a good trial in several cases he had and report to me the results. If he used it all it must have been with success, or he would naturally have cited its failure as the real grounds of attack upon it in the JOURNAL.

It was not until after the mother, son and daughter of the Eppstein family had written me a letter thanking me for the service I had rendered in bringing to the aid of their physicians in the case the remedy which apparently saved their father's life. This letter of gratitude from the wife, son and daughter of Mr. Eppstein was published in the *Tribune* and afterward came to the notice of Dr. Matter, and it seems suddenly changed his good opinion of the merits of the remedy.

After saying that chlorin is totally absent he says: "I have myself verified the presence of a slight amount of hydrochloric acid and menthol in the air inhaled from it." So his chemical test is made by smelling the air inhaled from it. It is true that there is about one per cent. of menthol in it, put there to destroy the disagreeable odor of the chlorin. Let me assure you, Mr. Editor, that it does contain an abundance of chlorin, with a corrective.

He again refers to the alleged report of Dr. Gehrman of the City Health Department in order to make a point against the Bracelin remedy. In doing so, he even disregards the truth. As Dr. Gehrman has passively made contradictory statements, as a bacteriologist, in regard to this remedy, he will hardly thank his friend (?) for making him say: "It differs from all known antiseptics in one particular: The latter kill bacteria; but the bactericide does not." This would seem cruel, following what Dr. Gehrman said at a meeting held in the Health Commissioner's office on December 18th, in the presence of Drs. Cotton, Murdoch, Hawley, Bracelin, the Commissioner of Health and the writer, on being asked the result of his investigations by the Commissioner. He said:

"I am not prepared to say, so far as I have gone, that the vapor itself is a very strong germicide, but I will say that the liquid is very powerful and will kill Loeffler's bacilli in short order. I took five culture tubes containing serum which were all inoculated with the diphtheritic bacilli and subjected them to a treatment of Bracelin's liquid, each for one, two, five, ten and fifteen minutes respectively, and I found that the germs in all of the tubes were positively killed, except in the one that was exposed to the liquid for only one minute, and in that one I found life, but in the other four the bacilli were dead."

At the same meeting he further said: "I can see no possible danger in the inhalation of the vapor generated by the liquids constituting Bracelin's Bactericide."

For the purpose of prejudicing the profession against the use of this remedy, he is trying to connect it with a remedy misnamed "Omnicura" and says: "Under the fostering genius of Mr. J. J. Russell it has come to blossom like an octopus at the side of Omnicura." Permit me to say, emphatically, that there is not now and never has been, directly or indirectly, any more relation or connection between Bracelin's Bactericide and the so-called "Omnicura remedy" than there is between the Kleb's Loeffler bacillus and the Ferris Wheel; either in ownership, discovery, similarity of application or mode of introduction. Bracelin's remedy is the discovery of a way to use chlorin by Dr. Bracelin, a regular physician of twenty-one years' practice and in good standing in the profession. He asks physicians to give this remedy an impartial trial and thereby help him to prove what he claims, after which he will publish the formula for making the corrective by which he removes from chlorin its suffocating and irritating qualities while still preserving its therapeutic power.

As the best evidence of which the case is susceptible I will, in the presence of any gentleman who is sufficiently interested

to know the truth, take a bottle of chlorin solution and place a teaspoonful of it in the Bracelin Inhaler with the acid to liberate the chlorin and develop at once a gas which is impossible for any human being to inhale. I will then put in another teaspoonful of the nascent chlorin, thereby doubling the dose, and add to it a few drops of Dr. Bracelin's corrective which I will first put upon my tongue to prove its harmlessness and render it as capable and as pleasant of inhalation almost as the air we breathe. This kind of proof should satisfy the most skeptical.

In a sneering way he speaks of the enduring fame that will henceforth attend the physician who writes a letter to *The Tribune* glorifying the Bracelin cure and says his name will be handed down to future generations. Whether it will be so far reaching into the dim vista of coming generations I can not say, but I firmly believe in the perpetuity of the names of those who show an honest disposition to benefit the condition of their fellow-men.

Should any Chicago physician desire to test this preparation, clinically, I shall be pleased to furnish it to him gratuitously.

J. J. RUSSELL.

What the Good Book Says about Doctors.

SAN DIEGO, CAL., May 26, 1896.

To the Editor:—In these days of Christian science, substitution(?), faith healing, proprietary medicines, *et id genus omne*, it is refreshing to recall the language of our ancient friend Ecclesiasticus, quoted verbatim from the 38th chapter of his sensible treatise. (I know not why it was relegated to the apocrypha.) Hear him.

1. Honor a physician with the honor due unto him for the uses which ye may have of him; for the Lord hath created him.

2. For of the Most High cometh healing, and he shall receive honor of the King.

3. The skill of the physician shall lift up his head: and in the sight of great men he shall be in admiration.

4. The Lord hath created medicines out of the earth: and he that is wise will not abhor them.

5. Was not the water made sweet with wood that the virtue thereof might be known?

6. And he hath given men skill, that he might be honored in his marvelous works.

7. With such doth he heal (men) and taketh away their pains.

11. Give a sweet savour and a memorial of fine flour and make a fat offering as not being.

12. Then give place to the physician, for the Lord hath created him; let him not go from thee, for thou hast need of him.

14. For they shall also pray unto the Lord, that he would prosper that which they give for ease and remedy to prolong life.

Very sincerely yours,

C. M. FENN, M.D.

Sero-therapy—et id omne genus.

SAN FRANCISCO, CAL., May 23, 1896.

To the Editor:—The announcement in your issue of May 16 (quoted from *La Semaine Médicale*), of two cases of mania cured at Montpellier by injections of serum from a recovered maniac, suggests boundless expectations from sero-therapy and other new agents. It is presumptive that insanity is a germ disease, and that bacteriologists will soon differentiate its specific microorganism. At present we can only speculate whether homicidal and suicidal mania, kleptomania, pyromania, dementia, etc., are due to the same or separate microbes; but obviously one ought to choose cultures from cases resembling the particular type of insanity under treatment.

We may anticipate also the early discovery that the vices of

gambling, drunkenness, unchastity and mendacity (already supposed to be evidence of mental deterioration) are due to specific microbes and amenable to sero-therapy. The only difficulty would be in determining whether the supply be derived from a subject thoroughly cured: but we may hope that full guarantee may be afforded by some further application of Roentgen's ray, or by the aid of thought-transference and mind-reading.

With thorough development of therapeutics on the lines here indicated, it is evident that our noble profession will soon depopulate asylums, reformatories and penitentiaries, and retire into innocuous desuetude both the clergy and the Salvation Army, or divert them into new fields of activity. Meanwhile surgeons must not allow physicians to absorb all the new glory of the healing art, and I am sure they will not be found wanting. For instance, when sero-therapy has done its work in reforming a prostitute, the surgeon is expected to restore by a plastic operation the original credential of virginity.

Finally, the physician will not neglect his own interest in this work of benevolence, but will always be provided with the serum of a reformed swindler for administration to his patients, and thereby secure prompt payment of his bills.

~ S. S. HERRICK, M.D.

A Leprosy Congress.

NEW YORK, May 27, 1896.

To the Editor:—Regarding an International Congress for the prevention of leprosy, as proposed by Dr. Goldschmidt, I have the honor to transmit the following letter:

"HONOLULU, HAWAIIAN ISLANDS, April 28, 1896.

"Dear Dr. Ashmead:—At a meeting of the Board of Health held on the 22d inst., I presented your correspondence with Dr. Goldschmidt in regard to the International Medical Congress for the discussion of leprosy. It was decided to inform you that the Hawaiian Government takes deep interest in the efforts of Dr. Goldschmidt to hold a congress and that the sending of a delegate will be considered, if an invitation is received.

"Sincerely yours, L. F. ALVAREZ, M.D.
"Bacteriologist to the Hawaiian Board of Health."

Very truly yours, ALBERT S. ASHMEAD, M.D.

PUBLIC HEALTH.

Cholera Vibrio in Hen's Eggs.—Golowkow announces in *Wratsch*, No. 7, that he has demonstrated beyond a doubt that the cholera vibrio can penetrate the shell and enter hen's eggs.

The Illinois State Board of Health Auxiliary Sanitary Association held its third annual meeting in Springfield, Ill., May 22 and 23. About thirty members were in attendance. Dr. B. M. Griffith presided. Dr. Arthur Reynolds, of Chicago, read a paper on "The Duties of Local Boards of Health as Instructors of the Public." Prof. A. W. Palmer, Professor of Chemistry at the University of Illinois, read a paper on "Water Analysis and the Means Provided by the State University for making Analysis of the Water Supplies of the State." Papers were read by Assistant Attorney General M. L. Newell, Dr. C. W. Oleson, of Lombard, Dr. A. G. Patton, of Monmouth, and others. The following officers were elected for the ensuing year: President, Dr. B. H. Griffith, Springfield; Secretary, Dr. John W. Scott, Springfield. The President will appoint Vice-Presidents from each congressional district.

Submersion by Sewage Causes Fatal Septicemia.—According to the *Medical Press and Circular*, a drain laborer lost his life in an unusual manner. His exposure occurred while he was engaged in examining a drain which had become blocked. In doing so, he took a large bar and broke the drain pipe near to the spot where he considered the blockage to be. No sooner had this been done than the retained sewage was suddenly, and with force, discharged into his face and over his clothing,

some even entering his mouth. For some days afterward, he continued to do his work without complaint. Ultimately, however, throat symptoms began to develop, and he was admitted into University College Hospital, where he soon died. The evidence of the house surgeon was to the effect that death took place from acute blood poisoning, the result of inhaling the products of highly decomposed sewage. While in the hospital the man asserted that he could still taste the sewage matter which had gone into his mouth.

Prompt Notification to the Interior.—The Secretary of the Treasury has ordered that after arrival at a quarantine station of a vessel upon which there appears, or has appeared during the last voyage, a case of cholera, smallpox, typhus fever or plague, and after quarantine measures provided by regulations of the Treasury Department have been enforced and the vessel given free pratique, it is ordered that notification of the above-mentioned facts be transmitted by the quarantine officer to the commissioner of immigration at the port of arrival, whose duty it shall then be to transmit, by mail or telegraph, to the State health authorities of the several States to which immigrants from said vessel are destined, the date of departure, route, number of immigrants, and the point of destination in the respective States of the immigrants from said vessel, together with the statement that said immigrants are from a vessel which has been subject to quarantine by reason of infectious disease, naming the disease. This information is furnished to State health officers for the purpose of enabling them to maintain such surveillance over the arriving immigrants as they may deem necessary.

Not to Marry in Connecticut.—A law was passed in Connecticut in 1895, that no man and woman, either of whom is epileptic, imbecile or feeble-minded, shall intermarry or live together as husband and wife, when the woman is under 45 years of age. The penalty for violating or attempting to violate this enactment is imprisonment not less than three years. Any selectman or any other person who shall advise, aid, abet, cause, or assist in procuring, or countenance any violation of the foregoing provisions, or the marriage of any pauper when the woman in such marriage is under 45 years of age, shall be fined not less than \$1,000, or imprisoned not less than one year, or both. Every man who shall carnally know any female under the age of 45 years who is epileptic, imbecile, feeble-minded or a pauper, shall be imprisoned in the State prison not less than three years. Every man who is epileptic who shall carnally know any female under the age of 45 years, and every female under the age of 45 years who shall consent to be carnally known by any man who is epileptic, imbecile or feeble-minded, shall be imprisoned in the State prison not less than three years. But nothing contained in the above shall be construed as affecting the mutual relations of any man and woman lawfully married.

Discriminating against Medical Colleges.—At the last session of the Iowa General Assembly the act relating to the State Board of Health—the medical members of which form the State Board of Medical Examiners—was amended as follows: "But no one of the seven physicians appointed shall be an officer or member of the faculty of any medical school in this State, and the Governor shall have the power to remove any member of said Board for good cause shown." Against this legislation, the secretary of the board, the veteran Dr. J. F. Kennedy, enters a vigorous protest, on the ground that it is an unjust and unnecessary discrimination against an honorable, competent and intelligent class of physicians, who are citizens and tax-payers. It declares that all such, however well qualified in every other respect, if they are connected with a medical college of Iowa, are unfitted to act as members of the State Board of Health, or to assist in determining what curriculum of study or facilities for teaching shall be required of medical

schools. The law is unique, Iowa being the only State whose legislature has declared that a professorship in a medical college unfits its possessor for membership in the State Board of Health. Dr. Kennedy adds: "This law has greatly encouraged the enemies of medical colleges. It must be apparent to all that there is in Iowa, and has been for two or three years, a growing prejudice against medical colleges and their students—a prejudice greatly intensified by some occurrences in this city last winter. To all who would gladly see the medical colleges of Iowa reduced in number, if not entirely wiped out, this legislative thrust at their teachers is significant and hopeful."

Progress of Water Filtration.—Experience is rapidly accumulating in favor of the filtration of all water supplies for large cities. In such places as The Hague (3.4), Berlin (4.0), Rotterdam (4.8), Breslau (6.1), Dresden, (6.9), Amsterdam (8.5), the prevalence of the acute intestinal diseases has been greatly lessened since resorting to filtered water, and the typhoid fever mortality has been reduced to the figures given in parentheses, which are per one hundred thousand of population. In London, with 83 per cent. of its supply filtered from the Thames and the Lea, there has been a similar reduction. Professor Frankland, F.R.S., in a recent address on the water supply of the great metropolis, points out the efficacy of complete filtration, and maintains that, as a factor in the production of a pure water supply, perfect filtration is of greater importance than the purity of the source from which the water is drawn. "The line of demarkation between the past and the present water supply of the metropolis is . . . to be drawn, not when the intakes of the river companies were removed to positions beyond the possibility of pollution by the drainage of London, but must be drawn at the time when efficient filtration was finally secured and ever since maintained, that is to say in the year 1884." His conclusion is that "for half a century, at least, we have at our doors, so to speak, an ample supply of water, which for palatability, wholesomeness and general excellence will not be surpassed by any supply in the world." And this notwithstanding, as *The Hospital*, May 16, notes that just at the present moment the innocence and harmlessness of London water is being seriously called in question by various metropolitan sanitary authorities.

Filtered Water Supply for Cincinnati.—The plans for an improved water supply for the city of Cincinnati provide for taking water from the Ohio River some distance above the city and above the mouth of the Miami River. The water is to be purified by sedimentation and sand filtration. Large reservoirs will be constructed which will allow the water to stand six days for sedimentation before it is delivered to the filters. There will be twenty-two acres of filter beds constructed independent of each other, so that a daily bacteriologic examination of the delivery of each bed may be made. The filter beds will be open, but are planned so that they may be covered if this is found necessary on account of ice. The estimated cost of the work is six and a half millions of dollars. Mr. John W. Hill, C. E., president of the Engineering Commission which has prepared these plans, has collected the statistics concerning typhoid fever mortality and the water supply of a large number of places, from which the following facts and figures, as to deaths from typhoid per 100,000 of population and source of water supply of 31 American cities, are worthy of study:

Brooklyn, impounded and well water, 19.0; New York, impounded from the Croton and Bronx Rivers, 20.4; Davenport, filtered from the Mississippi River, 21.4; New Orleans, rain-water from tanks and cisterns, 21.4; Boston, Lake Cochituate and Sudbury River, 32.6; Detroit, Detroit River, 33.8; Dayton, driven wells, 36.0; Buffalo, the Niagara River, 39.2; Providence, the Pawtucket River, 39.2; Covington, the Ohio River, 39.4; San Francisco, impounded from mountain streams,

40.2; Minneapolis, the Mississippi River, 45.4; Baltimore, Lake Roland and Gunpowder River, 45.8; Newark, impounded from the Pequannock River since April, 1892, 45.8; St. Louis, the Mississippi River, 47.0; Newport, Kentucky, the Ohio River, 47.5; Philadelphia, the Schuylkill and Delaware Rivers, 48.2; Denver, the South Platte River, 48.3; Cleveland, Lake Erie, 49.2; Cincinnati, the Ohio River, 52.4; Quincy, Illinois, filtered from the Mississippi River, 58.0; Knoxville, filtered from the Tennessee River, 61.9; Jersey City, the Passaic River, 75.0; Washington, the Potomac River, 76.6; Louisville, the Ohio River, 79.4; Chattanooga, the Tennessee River, 80.0; Chicago, Lake Michigan, 84.0; Pittsburg, the Allegheny River, 91.7; Lowell, driven wells and the Merrimac River, 92.4; Atlanta, filtered from the Chattahoochee River, 92.8; Lawrence, filtered from the Merrimac River, 96.2. These rates are exceeded only by Alexandria and Cairo in Egypt, supplied by the river Nile, and the figures of which in 1894 were 100 and 135 per 100,000 respectively.

Cholera in Alexandria.—The *British Medical Journal*, May 16, states the following:

"Notwithstanding every effort of the sanitary authorities, cholera is increasing in Alexandria, and there is now some danger of its spreading to the provinces, where it had been completely stamped out. It has already broken out in villages in the neighborhood of Alexandria. In a communication received from our Cairo correspondent, we are informed that very great difficulties are met with in dealing with the outbreak, partly from the insanitary condition of the town, but largely from the hostility of an ignorant press, which had throughout the winter not only denied that the disease officially pronounced to be cholera was cholera at all, but had excited the population to oppose the measures necessary for the control of the disease. In 158 cases which have occurred since December, 136 of which have been fatal, the bacteriologic evidence has been conclusive. The water supply of the town is unfortunately drawn from a canal, and is at any moment liable to contamination, for already cases are occurring along the banks of the canal. The position is clearly one to cause considerable anxiety."

The official reports received by the U. S. Marine Hospital Service, May 19, give the following mortality: Alexandria, 28; Cairo, 24; Tura, 1.

National Conference of State Boards of Health.—The eleventh annual National Conference of State and Provincial Boards of Health will be held in the city of Chicago, June 10, 11 and 12, inst. The program embraces addresses of welcome by the Governor of the State and Mayor of the city, with response by Dr. J. N. Taylor, of Indiana, President of the Conference; report of the Committee on Vaccine Farms, and discussions of the following topics: What substantial progress is being made in sanitary work in the several States and Provinces? What should be done with immigrants who arrive on vessels infected with smallpox? Is it not possible to have uniformity of laws and rules for the transportation of corpses and does not sanitary science provide sufficient knowledge and skill to transport a corpse dead of any disease in such manner as to be safe to the public? How to obtain the vital statistics of a State? How may cities obtain potable water when compelled to depend upon rivers polluted by sewage for their supply? A National Department of Public Health; Is such an institution desirable, and what should be its functions and its relations to State Boards of Health? What precautions should be taken on railroad trains to prevent spread of tuberculosis? Is it necessary to use isolation, placarding, or other quarantine restrictions in the prevention of typhoid fever? Should the State and Provincial Boards of Health have supervision, and be responsible for the purity of antitoxins manufactured or used within their respective States or Provinces? How far shall the State Board of Health have control of the manufacture and sale of milk products, especially the daily milk supply? What are the proper limits to the functions of State Boards of Health in dealing with questions of local sanitary

administration? The omnipresent hog: Should the flesh of hogs fed in and about slaughter houses be used as food for human beings? On Wednesday evening the conference will be addressed by the Hon. Lyman E. Cooley, of the U. S. Deep Waterways Commission, on the sanitary aspect of the great Chicago Drainage Channel, and the following day the delegates will be "personally conducted" by the Sanitary District Trustees on a tour of inspection of the channel, to be supplemented on Friday by a visit to the cribs, intakes and tunnels of the city water supply, which it is hoped may be made fit to use, in some remote future, by the completion of the drainage undertaking.

St. Louis.—The terrible calamity which has befallen the city of St. Louis is not to be measured by the tale of the dead and wounded thus far compiled; still less by the money value of property destroyed or the losses involved in interruption of business and suspension of productive industries. Serious as these are—probably exceeded in magnitude only by the similar results of the great fire of 1871 in Chicago—the ultimate effects on health will dwarf them into relative insignificance.

Last year St. Louis had a death rate of 16.48 per thousand on its estimated population of 570,000. In 1871 the death rate of Chicago was 20.87 per thousand; but in 1872 it rose to 27.67 and the total deaths increased from 6,976 to 10,156 in a population increased by probably less than 30,000. The actual increase of the death rate was 32.6 per cent. And the causes of this enormous increase were to be found in the overcrowding of the remaining dwellings, in the exposure, impure water and contagion imported by the multitudes who flocked to the city for employment in the work of rebuilding. Typhoid fever and smallpox prevailed beyond any previous record; infant and child mortality was frightful; cholera infantum was 25 per cent. higher than the highest recorded in fifty years. Nor did these baneful results end with this class of diseases. In 1873 the deaths from the nervous diseases shot up 58 per cent. beyond the average previous to 1871, the result of the profound shock of those fateful few hours and of the intense strain of the months that followed.

With the effects of the St. Louis disaster on the nervous system there is little that the health authorities can do. But it behooves them to use every effort to limit the causes of directly preventable diseases. On the 16th one of the great national conventions will assemble in the stricken city; thousands of visitors will be attracted, both by the convention and by the city itself. These must be protected from the conditions which now afflict the citizens and guarded against aggravating those conditions. The Health Department will have its hands full. Fortunately, it is well equipped, thoroughly organized and under the charge of a competent medical man of first-class executive ability. Dr. Max Starkloff may probably be relied upon to do at least as effective work as if he were a "business man" who knew nothing of sanitary matters and public hygiene. And he will be loyally aided by the entire medical profession of the city.

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General, U. S. Marine-Hospital Service:

SMALLPOX (UNITED STATES).

Louisiana: New Orleans, May 16 to 23, 14 cases, 6 deaths.
Tennessee: Memphis, May 23 to 30, 2 cases.
Indiana: Indianapolis, May 29, 1 case.

SMALLPOX (FOREIGN).

Birmingham, May 9 to 16, 1 case.
Buda Pesth, April 30 to May 6, 1 case, 1 death.
Cairo, April 23 to 29, 5 deaths.
Cardiff, May 9 to 16, 1 death.
Corunna, April 25 to May 16, 5 deaths.
Dublin, May 9 to 16, 1 case.
Genoa, May 9 to 16, 4 cases.
Licata, May 2 to 9, 1 death.

Montevideo, April 4 to 11, 2 cases; April 18 to 25, 1 case, 1 death.

Moscow, May 2 to 9, 1 case, 1 death.

Naples, May 9 to 16, 6 cases, 4 deaths.

Osaka and Stio, April 25 to May 2, 17 cases, 1 death.

Prague, May 2 to 9, 4 cases.

Rio de Janeiro, April 25 to May 2, 7 cases, 1 death.

Sunderland, May 2 to 16, 1 case.

Trieste, May 2 to 9, 1 case.

Tuxpan, May 2 to 9, 4 deaths.

Warsaw, April 18 to May 2, 5 deaths.

YELLOW FEVER.

Havana, May 14 to 21, 12 cases, 4 deaths.

Rio de Janeiro, April 25 to May 2, 70 cases, 60 deaths.

CHOLERA.

Egypt: Alexandria, April 23 to 29, 6 deaths; May 19, 28 deaths; Cairo, May 19, 24 deaths; Tura, May 19, 1 death.

SELECTIONS.

The Valedictory Address of Prof. Theophilus Parvin delivered at the Commencement of the Jefferson College, abounded in practical suggestion and was a strong appeal in favor of a higher ethical standard among physicians in their intercourse with each other and their patients. He urged his hearers to be manly, and said that the possession of stature is no proof that the psychic nature corresponds. As a marked exception to the rule that "tall men had ever empty heads," as Bacon believed, he exclaimed, "There rises before me, in all his grand proportions, with his great brains, his dignity, and commanding presence, the most eminent of all the graduates of Jefferson, and the greatest of her teachers, whose professional peer can not now be found upon the continent—Samuel D. Gross." He referred to melancholy cases occasionally encountered, of moral osteomalacia, which he denounced as deplorable illustrations of men unworthy of confidence, and he warned his hearers against time-servers and human jelly-fishes, or molluscs. In speaking of this resemblance of some men to the lower animals he said:

"The monkey, the lion, the dog, the donkey, the cat, the tiger, the vulture, the weasel, the parrot, with 'the rest of the honorable company that came out of Noah's ark,' may be found among human beings. Dr. Johnson has truly described certain men as 'screech owls,' and some remember the fierce rhetorical contest between two public men in our country, each of splendid ability—Conkling and Blaine—one of them calling his antagonist a peacock; the retort was that he was a turkey-gobbler. I have a medical friend, ready in his recognition of these resemblances, who finds in the form and features of some men a bloated bull-frog. The ape and the peacock are not unfrequent degenerations from the normal type, the one in face, the other in action. The fox is in some cases plainly revealed. The lessened separation of the small, twinkling eyes, the sharpness of the nose, and the furtive expression indicate the vulpine face and character. The fox-man has the cunning and audacity of the fox; he seeks to impress people with his superior knowledge and ability, keeps his name before the public as much as possible, looks so wise, is artful in all his words and ways. He is little scrupulous in taking a brother-practitioner's patient, and preserves no golden silence as to the supposed or real errors of another. He generally has some useless fad which he never fails to impress with the solemnity of the moral law upon a client, and endeavors to make a patient believe she is wonderfully beautiful, or gifted with extraordinary intellect—she may be princess or empress, Juno or Venus, or Madame de Stael. If an operator, he does not hesitate to invite laymen to witness his skill, or make known his achievements to a newspaper reporter."

He next referred to some tendencies and practices, which he considered highly injurious to the welfare of the profession at

the present day: "Not only the prevailing love of wealth, but the over-crowding of the profession and the multiplication of specialties and specialists, are causing a moral deterioration of the profession. Medicine is becoming more mercenary, more of a trade. Means of advertising are employed by some specialists that bring uncompensated evil. Here is a doctor that sells his patients to get other patients in return; or here is a specialist who divides his fee with the physician who sends him a patient. How can merit hold its place against such venality? I hope the practice I denounce is not common, nay, I do not believe it is, but it ought not to exist all. Why is there not lifted up from the leaders some adequate denunciation of the accursed conduct? Alas! in regard to some of these leaders, one is compelled to ask in sorrow, *Quis custodiet custodes?* Look at the means used to advertise, the soliciting of patients by over-zealous kindred or friends, or paid workers, at many contributions to medical journals, simply and solely advertisements, at plagiarisms, the use of instruments, or methods that have been adopted from others, either without any or only insufficient acknowledgment; and the pirates never punished, but treated with like forbearance as the dead."

"There must be a healthier public professional sentiment, so that just punishment shall be awarded transgressors, whether thieves of patients or of reputation, of places, or of power, or of papers, when the slanderer shall meet his due in general professional contempt, especially when he plays piety for pecuniary reward, and banks upon pretended religion." The character of the perfect gentleman was held up as worthy of imitation by every physician.

"It is impossible for avaricious men and misers to be gentlemen, for avarice is selfishness, a pure egoism, while in the character of the gentleman there is necessarily no small element of altruism. The gentleman may wear a calm exterior, but feel most profoundly, and if his feelings are deeply touched by insult, by ingratitude and treachery, be prompt to subdue them and bear the wrong in silence if redress be impossible. He may be thought cold, but just as a rippling stream covered with film of ice flows on its serene way, the music is by no means abated. Nay, more, this man so reserved, apparently so cold and distant, this gentleman whose seeming indifference chilled you, if only there be congenial companionship, if warmed by the sun of love, touched by the fingers of affection, is no longer distant and reserved, but frank, outspoken, full of all genial life, just as the statue of Memnon broke forth in richest melody when touched by the rosy fingers of Aurora. Very often the true gentleman is misunderstood and misrepresented because so many can not comprehend him. So many doctors fail to cultivate gentlemanly manners, gracious courtesies, loving sympathies. Even sometimes their manners are so coarse, they are so devoid of feeling, that they are called, not gentlemen, not even men, but brutes. Heaven save you from ever justly receiving such a name! Yet these brutes are sometimes very much in evidence, very much in the public papers, and, it may be, happy in their coarseness and vanity, so that I often think Rousseau was mistaken when he wrote that if there ever was a man upon earth made happy by his vanity, it is past a doubt that he was a fool. Manners tell what a man is. Spenser wrote:

True is, that whilom that good poet said,
The gentle mind by gentle deed is known:
For a man is by nothing so well bewrayed,
As by his manners; in which plain is shown
Of what degree and what race he is grown.

"Not only be a man, not only be a gentleman, but likewise be a student—a student of medical literature, so that you may keep abreast of all true progress: but especially study your cases. Lord Bacon thought that medicine had not advanced, in part, for this reason: 'The discontinuance of the ancient and serious diligence of Hippocrates, who used to set down a narrative of the special cases of his patients, and how they proceeded, and how they were judged by recovery or death.' Let not this reproach fall upon you."

Dr. Parvin next inveighed against excessive drug giving, and said: "When I was a boy, I read as the motto of a newspaper published at Washington, 'The world is governed too much;' and for some time past my motto has been, 'The world is drugged too much.' The great majority of human beings eat two-thirds more food than they need for the best physical and intellectual life; and when the stomach so often rebels against such excess of supplies, and indicates that it wants rest, we ply the tonics and pamper the patient with daintily contrived dishes, tempting to do the worst thing. A great part of fashionable cookery for the sick—the fad of the present day—is mischievous, and is calculated to prolong sickness rather than promote convalescence. I wish you would read the recently published book by Dr. George S. Keith, 'Plea for a Simpler Life,' and I am quite sure that, observing its precepts, your own lives will be longer and stronger, and your patients will not be made drug-stores."

In conclusion, he urged the recent graduates to aim at high ideals:

"Not only study medicine, but also do not neglect literature and philosophy. The senior Gross once said that the doctor who knew medicine only, did not know medicine. Just now, too, the study of philosophy commends itself especially to the physician, for there is a strong movement toward idealism, and human thought is becoming more and more idealistic, while materialism, it is to be hoped, passes away never to return. Philosophic, moral and social questions are affected by this influence directly, and medicine will be. You can not be a doctor, a learned man, without giving study to the prevailing philosophy of the day. Still less can you ignore the question of religion. The longer I live the more tolerant I become as to differences of religious beliefs, and the less I think of creeds, the more of character and conduct—a man's profession is not half so important as his action—alas, they are very often in conflict." According to a beautiful legend the robin "plucked a thorn from the crown of thorns, and ever after its breast has been stained with a blood purer than the blood of the knightly Charlemagne; and so you can pluck thorns from bleeding brows, help the weary ones to bear the cross, and lessen some of the *Misereeres* that are forever ascending, ascending from the sorrow-stricken fields of earth to the infinite and peaceful heavens. What is popularly called success may fail some of you, but if the failure comes after honest, heroic effort, living only an honorable life and just, then you sink to foundations of higher honor.

'Children of God! inheritors of heaven!
Mourn not the perishing of each fair toy;
Ye were ordained to do, not to enjoy,
To suffer, which is nobler than to dare.
A sacred burthen is the life ye bear,
Look on it, lift it, bear it solemnly,
Stand up and walk beneath it steadfastly;
Fail not for sorrow, falter not for sin,
But onward, upward, till the goal you win,
God guard ye, and God guide you on your way.
Young pilgrim warriors who set forth to-day.'

BOOK NOTICES.

The Stomach, its Disorders, and How to Cure Them. By J. H. KELLOGG, M.D. Illustrated. Modern Medicine Pub. Co. Battle Creek, Mich. 1896. 8vo, cl., pp. 370.

This is a popular work, intended for the general public, although the author disclaims an attempt "to displace the wise family physician, but rather to aid and abet him in the management of a class of maladies which requires, perhaps more than all other the thorough coöperation of the patient." This sounds well, and the general hygienic directions are excellent and well told—but we doubt if the chapters on treatment are judicious in a book of this character. Especially in cases where the patient can not get along without a prescription, or some appliance. Lavage as recommended, p. 196, should surely be performed under the direction of a physician, rather than by the patient himself, and if the author desires the book to have more of a scientific character, he would do well to lessen the amount of advertising worked into the text for the Battle Creek Sanitarium Health Food Company, page 226. The products of that company may indeed be excellent, but are there not others? It is to be noted also that all medical preparations

and appliances recommended in the text are to be procured from the Sanitarium Company or the "Modern Medicine" Co. These palpable advertisements bring an otherwise valuable book very close to the border line, where regular medicine gives way to the itinerant vender, and yields the latter the field. The frontispiece with its remarkable coloring, is not calculated to increase respect for its scientific accuracy. Cobalt lungs, Venetian-red colon, Gamboge small intestines and raw umber livers may be picturesque, but scarcely natural.

Publications du Progres Medicales. Traitement des Maladies des Femmes par l'Electricité par le Dr. L. B. REGNIER, etc. Précédé d'une préface par le Dr. LABADIE-LAGRAVE, avec 32 figures dans le texte. 8vo, paper, pp. 303. Paris: Progrès Médical, 14 rue des Carmes; Felix Alcan, 108 Boulevard St. Germain.

There is no question now that electricity occupies a distinct place in gynecologic therapy, and it is the mission of such books as this of Dr. Regnier to assign its limitations and fix the measure of its usefulness. "The idea of making electricity useful in therapeutics," says Dr. Regnier, "is as old as its discovery, and the therapeutic applications have followed with equal pace the new discoveries which have been added little by little from the day of its study. If the applications of electricity to therapy have taken on to-day a very great extension, it is because electric science and physics has made very great progress in the last fifteen or twenty years."

The first part contains five chapters: namely, 1, Historic Introduction; 2, Electric Methods Employed in Gynecology; 3, Gynecologic Instruments; 4, Process of Mensuration of Currents; 5, General Technique.

The second part has four chapters, viz: 1, On Diseases of the Vulva and Vagina, which is subdivided into sections describing the treatment of each of the diseases named, except the last, which deals exclusively with anomalies; 2, Diseases of the Uterus; 3, Diseases of the Ovaries; 3, Diseases of the Tubes.

The third part of the book is devoted to disorders of the menstrual function and extra-uterine pregnancy. There has been a great deal of skepticism in this and other countries in regard to the curative influence, nay, even the beneficial influence of the electric current in many of these affections. We believe there is no doubt that the growth of myofibroma has in some cases been arrested and that in others the tumor has disappeared. Now, if even a reasonable proportion of these cases can be cured without a resort to the bloody, cruel and mutilating operation of hysterectomy, ought it not in all suitable cases to have a fair trial? There will remain enough hysterectomies after we have eliminated all that can be cured by electricity.

Occasional Papers on Medical Subjects, 1855-1896. By W. HOWSHIP DICKINSON, M.D., F.R.C.P. 8vo, cl., pp. 244. London, New York and Bombay: Longmans, Green & Co. 1896.

"The papers which have been brought together in this volume," says the author, "were written as opportunity occurred during the last forty years." Scattered among transactions and medical periodicals, the articles have not been generally accessible on this side. Several of them, however, are as well known in America as in England. The work is fairly illustrated. The contents are: 1, On the Action of Digitalis upon the Uterus; 2, Three Cases of Angina Pectoris, depending upon Occlusion of the Mouths of the Coronary Arteries; 3, Perforation of the Sigmoid Flexure of the Colon, probably due to the Irritation of Feces; 4, On the Changes in the Nervous System which follow the Amputation of Limbs; 5, On Counter irritation, considered in reference to the remote and indirect Effects of local and morbid Changes; 6, On the Enlargement of the Viscera which occurs in Rickets; 7, On the morbid Effects of Alcohol, as shown in Persons who Trade in Liquor; 8, On the Pathology of Chorea; 9, On Chorea with reference

to its supposed Origin in Embolism; 10, Cirrhosis of the Liver in Childhood; 11, Hereditary Albuminuria; 12, On Albuminuric Ulceration of the Bowels; 13, Places and Commonplaces in Renal Disease; 14, Lecture on the Cardio-vascular Changes of Renal Disease, with some Observations on the larger Arteries; 15, The Practice of Medicine at St. George's Hospital Forty Years Ago; 16, On the Presystolic Murmur falsely so-called; 17, Alkalies in Rheumatism.

Dr. Dickinson's admirers, and they are many, will be pleased to see this collection of essays in this form.

Transactions of the Chicago Pathological Society, from October 1894, to November 1895. Volume I. Chicago. AMERICAN MEDICAL ASSOCIATION Press, 1896.

This is one of the most active medico-scientific bodies of Chicago, and its proceedings are always of interest. Our readers will recall that of the papers have appeared from time to time and enriched the pages of this JOURNAL. The Publication Committee have done well to place them in book form for preservation. The many rare and important specimens described in these "Transactions," make the work one of great value and of enduring interest.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections. In Photo-Lithochromes from Models in the Museum of the Saint Louis Hospital, Paris, with explanatory wood cuts and text by ERNEST BESNIER, A. FOURNIER, TENNESON, HALLOPEAU, DU CASTEL, with the coöperation of HENRI FEULARD and L. JACQUET. Edited and annotated by J. J. Pringle, M.B., F.R.C.P. London: The Rebmman Publishing Co. Ltd. Philadelphia: W. B. Saunders.

The fasciculus under notice is part third of this useful work. The design of the authors, Publisher and Translator is to make the models in this famous museum the common property of the profession. The work proceeds slowly, but with care and faithful closeness to the originals. We have in this number reproductions in photo-lithochrome of the models showing Tertiary Syphilitic Ulceration of the Tongue; Dermatitis Herpetiformis in Concentric circles; Syphilitic Gumma of the Thigh; Disseminated Epithelioma of the Face, sebaceous in type at the outset, with various intermediate types.

The explanatory text is quite remarkable for conciseness, the lessons are mainly told by the pictures themselves, and the reader is not wearied by tedious discussions, but enough is said for full understanding of the models.

Diets for Infants and Children in Health and in Disease. By LOUIS STARR, M.D. Philadelphia: W. B. Saunders, 1896. Flexible covers. Price, \$1.25.

This is a handy book of blanks, on which the physician may write the directions for the diet and regimen of his infant clientelage, tear them out and deliver to the nurse as often as required. It is not only a labor-saving appliance, but there are a few pages at the end containing printed directions for the preparation of diluents and foods, which may also be removed and handed to the nurse. In the management of children, the control and regulation of the diet is of the utmost consequence, and a carefully prepared list with directions, such as is found in this book, will be found very useful by all general practitioners and as well by those whose practice is exclusively confined to pediatrics.

Cerebral Hyperemia the Result of Mental Strain or Emotional Disturbance, the so-called Nervous Prostration or Neurasthenia. By WILLIAM A. HAMMOND, M.D., 2d edition. Washington: Brentano's, 1895. 16mo, cl., pp. 118.

The first edition of this book was published nearly twenty years ago, and found a place in the library of nearly every progressive physician soon after publication. Time has made no modification in the well-known views of the author, so far as the causes, symptoms and pathology are concerned, but the chapter on treatment has been augmented by the addition of statements concerning the use of animal extracts and certain new therapeutic remedies not known when the original work was issued.

How to Feed Children, a Manual for Mothers, Nurses and Physicians. By LOUISE E. HOGAN, Philadelphia: J. B. Lippincott Co., 1896. 12mo., cl., pp. 236. Price \$1.00.

This little book contains the substance of papers on the subject that have appeared in sundry magazine articles during the past year, and a great many facts culled from the latest editions of the standard authors. The advice given is sound, and the general principles of dietetics adhered to throughout. We commend the book.

A Manual of Anatomy. By IRVING S. HAYNES, Ph.B., M.D. Illustrated. 8vo. cl., pp. 680. Price \$2.50. Philadelphia: W. B. Saunders, 1896.

This is an excellent hand-book of regional anatomy. Osteology is omitted. The contents are: The head, anterior; the neck, anterior; head and neck, posterior; the brain; the upper extremity and thorax, anterior; the upper extremity and thorax, posterior; spinal cord; spinal nerves; the perineum, male; the perineum, female; the abdomen, exterior; the abdomen, interior; the lower extremity, anterior; the lower extremity, posterior. The illustrations are mostly photographs of dissections of the regions as explained in the text. The index is full and complete.

ASSOCIATION NEWS.

Second Pan-American Medical Congress.

PHILADELPHIA, PA., May 23, 1896.

To the Editor: Please announce to the profession that it is important for all who propose to attend the Second Pan-American Medical Congress to be held in the City of Mexico, Nov. 16 to 19, 1896, to inform me early in order that arrangements may be made with the railroads for transportation, and that the Secretary in Mexico may be properly informed as to the number likely to attend. It is necessary to have full information three months in advance, in order to arrange with the railroads. I will shortly send you a form for the certificate to issue to those who desire to go as delegates. I think also it will be well for me to issue a general circular to the societies urging them to appoint delegates.

I am glad to announce that I have received replies from Senator M. S. Quay, Congressman Robert Adams, Jr., Senator McMillan and from the Commissioners at Washington, all of whom appear to be impressed with the justice of our request and will aid to defeat the obnoxious antivivisection bill.

Yours very truly,

WM. B. ATKINSON, M.D.

SOCIETY NEWS.

Medical Society of West Virginia.—The 29th annual meeting will be held at Wheeling, June 10, 11 and 12, 1896. Officers: President, J. A. Campbell, Wheeling; Vice-Presidents, Harriet B. Jones, Wheeling; B. M. Smith, Davis; V. T. Churchman, Charleston; J. H. Kelley, Parkersburg; Secretary, G. A. Aschman, Wheeling; Treasurer, J. W. Johnston, Davis.

Papers to be read: "An Interesting Case," by Thomas A. Harris, Parkersburg; "Whooping cough Pneumonia—its Etiology, Symptoms, Prognosis and Treatment," by W. W. Golden Elkins; "The Evolution of the New Physician," by C. F. Ulrich, Wheeling; "Should not Legislative Enactments Authorize the Revoking of the State Medical License," by J. C. Irons, Elkins; "Gunshot Wound of the Brain—Operation, Recovery," by H. Yokum, Beverly, and W. W. Golden, Elkins; "The Wheeling Smallpox of 1895—its Lessons," by S. L. Jepson, Wheeling; "Nature's Antiseptics," by J. Schwinn, Wheeling; "The Present Status of Gastrostomy," by F. J. L. Hupp, Wheeling; "Hysterical Analgesia," by C. C. Hersman, Pittsburgh, Pa. "Massage in Surgical Affections," by C. A. Wingerter, Wheeling.

Medical Society of New Jersey.—The 130th annual meeting will be held at Asbury Park, June 23 and 24, 1896. The pro-

gram will consist of "A Demonstration of Bassini's Operation," by S. E. Milliken, New York. Papers: "Clinical Observation. Referring to Auto-Intoxication of gastro-intestinal origin," by Philip Marvel, New York. Annual Address of the President, William Elmer, Jr., "The Relation of the Physician to Sanitary Science." "Fibroid Tumors of the Uterus—Obstructing Labor, Subsequent Disappearance of the Tumors—Remarks on Uterine Fibroids as a Complication of Pregnancy," by George H. Halleray. Discussion upon subject presented at last meeting, "Is the Therapy of Anti-toxin Serum, Nuclein Solution and Typhoid Extracts so fully established as to receive the Endorsement of the Profession." Alex. McAlister was appointed to take the leading part in the discussion. "Antisepsis and Antiseptics from the Standpoint of the General Practitioner," by C. R. P. Fisher. "Chloroform Narcrosis," by Floy McEwan, Newark. The officers are: President, William Elmer, Trenton; First Vice-President, T. J. Smith, Bridgeton; Second Vice-President, D. C. English, New Brunswick; Third Vice-President, C. R. P. Fisher, Bound Brook; Corresponding Secretary, E. L. B. Godfrey, Camden; Recording Secretary, William Pierson, Orange; Treasurer, Archibald Mercer, Newark; Standing Committee: H. W. Elmer, Bridgeton; Henry Mitchell, Asbury Park, and H. G. Wetherill, Trenton.

Connecticut State Medical Society.—The 104th annual session of this society was held at New Haven, Conn., May 27 and 28. Dr. Seth Heill of Stepney, President. Amendments to the Medical Practice Act were proposed and accepted and the committee instructed to take measures to have them adopted. Section 8 provides that no person whether a graduate or not shall practice medicine in the State without a certificate from the examining committee. Officers elected for the ensuing year were: President, Rienzi Robinson of Danielson; Vice-President, Ralph S. Goodman, Thomaston; Secretary, N. E. Wordin, Bridgeport; Assistant Secretary, Julian La Pierre, Norwich; Treasurer, W. W. Knight, Hartford.

The Indiana State Medical Society held its forty-seventh annual meeting at Fort Wayne, Ind., May 28 and 29, with about 200 delegates in attendance. Dr. M. F. Porter of Fort Wayne presided. Before adjournment the convention introduced a resolution to memorialize congress against the passage of the antivivisection bill.

The following officers were elected for the ensuing year: President, J. H. Ford, Wabash; Vice-President, W. A. Batson, Ladoga; Secretary, F. C. Heath, Indianapolis; Assistant Secretary, Dr. Rooker of Shelbyville; Treasurer, A. C. Bukon, Fort Wayne. The next annual meeting will be held at Terre Haute.

Ohio State Medical Society.—The following are the officers recently elected: President, Dr. F. C. Larimore, Mt. Vernon; First Vice-President, Dr. M. Stamm, Fremont; Second Vice-President, Dr. C. F. Clark, Columbus; Third Vice-President, Dr. John S. Beck, Dayton; Fourth Vice-President, Dr. Geo. W. Crile, Cleveland; Secretary, Dr. Thomas Hubbard, 205 Ontario St., Toledo; Assistant Secretary, Dr. H. M. W. Moore, Columbus; Treasurer, Dr. J. A. Duncan, Toledo. Next place of meeting, Cleveland, the third Wednesday, May, 1897.

Missouri State Medical Association.—The Medical Association of the State of Missouri held its thirty-ninth annual session in Sedalia, Mo., May 19 to 21, with Dr. C. Lester Hall, Kansas City, presiding. There were about 300 delegates in attendance. Among the papers read were the following: "Report on Progress of Serum Therapy," by Dr. John M. Langsdale, Kansas City; "Diphtheria," by Dr. J. M. Allen, Liberty; "Intestinal Auto-infection," by Dr. S. G. Gant, Kansas City; "Curative Effects of the Toxin Treatment in Cancer," by Dr. G. Wiley Brown, St. Louis; "The Early Diagnosis and Treatment of Certain Lung Diseases," Dr. Paul Paquin, St. Louis; "Importance of Early Diagnosis of Tuberculosis of Bone," by Dr. George Halley, Kansas City; "Cerebral Embolism, Presenting Pathologic Specimen," by Dr. Brummell Jones, Kansas City; "A Case of Original Paranoia," Dr. A. E. Mink, St. Louis; "Additional Case of Friederich's Disease," Dr. F. R. Fry, St. Louis.

The following officers were elected for the ensuing year: President, Dr. John H. Duncan, of St. Louis; First Vice-President, Dr. C. H. Walton, of St. Joseph; Second Vice-President, Dr. J. M. Langsdale, of Kansas City; Third Vice-President, Dr. J. J. Russell, of California; Fourth Vice-President, Dr. Thomas Chowning, of Hannibal; Fifth Vice-President, Dr. J. H. Britts, of Clinton; Recording Secretary, Dr. J. M. Jackson, of Kansas City; Assistant Recording Secretary, Dr. Thomas Hall, of Marshall; Corresponding Secretary, Dr. A. F. Dresel, of Sedalia; Treasurer, Dr. W. E. Evans, of Boonville.

NECROLOGY.

J. H. LEDLIE, M.D., one of the oldest physicians in Pike County, died at Pittsfield, Ill., May 25. He graduated from the Royal College of Physicians and Surgeons, at Dublin, Ireland, in 1854, and came to America the same year. He located in Pittsfield in 1858, and enlisted in the 98th Illinois Volunteers August, 1862, as surgeon, and at the close of the war was mustered out with the rank of lieutenant-colonel.

J. T. PEARMAN, M.D. (Rush Medical College, Chicago, Ill., 1868), in Champaign, Ill., May 25, aged 66 years. He has been a resident and prominent citizen of Champaign for thirty-five years. He served in the civil war as surgeon of the 15th Indiana Volunteers, and was a trustee of the University of Illinois from 1881 to 1887.

D. W. CARLEY (Rush Medical College, Chicago, Ill., 1856), May 27, of Bright's disease. He was one of the oldest residents and physicians in the State, and was a surgeon of volunteers in the late war.

W. R. ROBINSON, M.D. (Chicago Medical College, Chicago), at Macomb, Ill., May 24, of erysipelas.

MISCELLANY.

University of California, Medical Department.—The commencement exercises of this college, San Francisco, were held May 22. Seven women and forty-two men received their diplomas.

The Fourth International Congress of Hydrology, Climatology and Geology will be held this year at Clermont-Ferrand, among the picturesque scenery and mineral springs of the Cevennes region. The opening day is September 28.

Gonorrheal Epidemic.—At a recent medical meeting at Riga, the infection was reported of 326 girls, from 4 to 16, traced to the use of a common bathroom, where all contracted blennorhea urethralis.—*St. Peters. Med. Woch.*, April 18.

Official Investigation of the Contagiousness of Tuberculosis in Hospitals.—The authorities of Paris have appointed a committee consisting of twenty-two of the best known physicians and city officials to investigate this subject and determine the preventive measures to be taken, if it is found they are needed.

Fetid Endometritis of Elderly Women.—Maurange has had several cases of fetid discharges, inflammation and hemorrhages, presenting the exact picture of an uterine cancer, which he has simply treated locally with creasoted glycerin after dilating the cervix and tamponed with gauze. A few of these disinfecting treatments produced a complete cure. He warns against confounding this endometritis after the menopause with a cancer, from which it is only to be differentiated by histologic examination. *Gazette Méd. de Paris*, May 9.

Effect of Acoustic Sensations on the Pulse and Respiration.—Following the suggestions in the works of Mosso and others, and using a sphygmograph and pneumatograph similar to Marey's, with a noiselessly revolving kymographion, a series of experiments in Wundt's laboratory have established the fact that pleasurable acoustic sensations sensibly retard the pulse and respiration for a time, while unpleasant sensations accelerate them. As pleasure changes to annoyance from repetition, the slower pulse and respiration change to faster. The reverse is the case when voluntary attention changes into involuntary, the pulse then grows slower to normal or even slower than normal. *Centralblatt f. Physiologie*, April 4.

European Approval of American Laws in Regard to the Ophthalmia of the Newborn. The Société d'Ophthalmologie has been having its annual congress at Paris, May 4-7, and Lucien Howe, of Buffalo, described our laws to prevent blindness from this cause. The association regarded them with favor, and several urged their adoption in France. All agreed that attending

physicians and midwives must be made to realize their great responsibility in this respect, more than some of them do at present. The suggestions of "*Docteur Buffalo*" are being quoted with approving comment in many of our foreign exchanges.

The National Medical Review of Washington is now "the official journal of the Medical Society of the District of Columbia." All papers and discussions that are given before that society will be published in the official journal. This society now has about three hundred active members, and includes a number of the most prominent medical men in the army and navy. The editor announces that his journal will be enlarged and otherwise greatly improved, in order to carry into effect this new arrangement.

Recovery from Mænnlicher Bullet Wound in the Head.—The *Cronica Médica* of Feb. 15, describes a double trephining performed on a soldier wounded at the time of the attack on Lima about a year ago, followed by complete recovery although the bullet had passed through the right parietal region, penetrating the bone and producing absolute hemiplegia, convulsions, etc. Dr. Olochea notes in his report the efficacy and harmlessness of exploratory punctures in such cases, and the great benefits to be derived from muriate of ammonia in cerebral contusions. It cured in this case the first paralysis of the left arm, until the increasing inflammation produced general hemiplegia.

Still another Method of Extirpating Cancer of the Breast.—Tansini of Palermo describes his method in the *Riforma Médica*, No. 11, which he asserts will prevent future relapses. He makes a pear-shaped incision, the large end embracing the breast and the small end terminating in a couple of incisions meeting at the axilla. After the tumor is removed with the pectoralis major, he makes a similar incision in the back, and applies the flap thus procured to the open space in the breast. The flap cut in the back is raised except at the small end which reaches to the insertion of the latissimus dorsi. It is then applied to the open space in front, twisting it a little to bring it around in front over the wound. The edges are then sutured, and the edges of the wound in the back are pulled together, and also sutured, as can be readily done owing to the elasticity of the skin, a couple of liberating incisions being made if necessary.

The Cortical Mechanism of Reflex Phenomena.—Physiologic and pathologic research have convinced Pándi that it is incorrect to regard the brain as the center of intelligence of the so-called lower centers (including the spinal cord), as opposed to being the seat of reflex phenomena. It seems to him sufficiently demonstrated that the reflex phenomena of the intact organism, the rapid as well as the slow, are all accomplished by means of the cortex cerebri. He could not find a single physical or clinical fact to show that the sub-cortical substance was able to produce a reflex movement or even a tonus without abnormal stimulus. After complete severance of cortical communication the lower means of communication then act vicariously, and substitute all the functions of the brain, the lowest as well as the most complicated, but of course these functions never attain as high a degree of perfection as the cerebral.—*Centralblatt f. Physiologie*, April 4.

An Ambulance Surgeon Commended.—A Brooklyn citizen sends a letter to one of the papers in which he dispenses praise of one of a class that is more often blamed than praised in the public press:

Dear Sir—I take the liberty of writing to you to congratulate you and the citizens of Brooklyn on having in their employ a man of great force of mind and body. I refer to Ambulance Surgeon D., of the A. B. Hospital, who on last Wednesday evening succeeded, through true courage and skill, in saving the life of a little girl who fell into the water from Erie Basin dock. All signs of life were extinct to the eyes of the large crowd at hand, yet this gentleman, ignoring the cries of the

bystanders, kept steadily at work for twenty long minutes, when the child gasped; still working at the end of a half hour the child cried and was saved. Well did the doctor deserve the praise showered upon him, to have succeeded in reviving an apparently lifeless child. This gentleman deserves public commendation as a shining example of the typical saver of life. It would give me the greatest pleasure of my life to present him with a medal suitable for such a humane act.

Hematologic Study of Professional Fasting.—Succi has been fasting again in Vienna, at the "usual low price of admission," but the doctors have left him entirely alone. The *Klin. Rundschau*, however, publishes a study of his blood made a year or so ago by Professor Tauszk, which it commends to its readers on account of its timeliness and the difficult linguistics of the original in a Budapest publication. He found that during the thirty days of the fast the red blood corpuscles first decreased in number, but then afterward increased. The white corpuscles in general and the mononuclear cells diminished in numbers, while the eosinophilous and polynuclear cells increased. The blood became less alkaline. Ranke states that the number of red corpuscles in animals is less during their winter sleep, but Dupérier announces, on the other hand, that they increase in number in inanition, which coincides with the results of the above investigations. Succi lost 14 k.g. in weight during his fast.

"Disinterested Interest," a Lesson Learned at Atlanta.—A short editorial in the *Lehigh Valley Medical Magazine* indicates that the editor had an especially interesting and profitable visit to the Atlanta convention. He writes concerning the abandonment of selfishness by medical men when they go to medical congresses; everything should be done "by the good, with the good and for the best." The golden rule should be the manual of proceedings, and the avoidance of all self-seeking contentions the motive of every participant. He says:

To eliminate the element of personal benefit in our efforts for associated good is as difficult of accomplishing as it is desirable. While probably the majority of the six hundred or more registered at the Atlanta meeting had no personal axe to grind as far as the management of the Association is concerned, the most of them were unconsciously put to turning the grindstone. Now it is to favor a friend who wishes a friendly favor; again it is to favor a friend in order to, in some way, down his rival; or, it is to quietly make of another a cat's-paw. But, with all this, there was much of the laboring for the good for the good's sake; and the efforts in this direction are yearly becoming more apparent. The moral of the whole is for each member of the rank and file to think for himself and act upon his conclusions, whether in county, state or national organizations. The advantage to be gained should be a common advantage; the interest in the Association should not be because of self.

Colorado has Changed its "Gold Cure" Law.—In 1895 the general assembly of the State of Colorado repealed the "Gold-Cure-Institutes" law of 1893 and enacted a new law in its stead. The principal features of the latter are that a friend of a habitual drunkard, or any officer of any charitable organization may file a petition in the county court, setting forth the sex, financial condition, age, nature and extent of the disease of such drunkard in reference to the use of alcoholic, narcotic or other stimulants, and stating the belief of the petitioner person making affidavit that such disease has passed beyond the control of such drunkard, and asking for an order to send the latter to an institute for the treatment of such disease, at county expense. Such petition or affidavit shall be approved and signed by ten freeholders of the county. Five days' notice of the time of hearing thereon is to be served on the drunkard, unless the latter voluntarily appears. He must have been a bona fide resident of the county for at least six months preceding and consent to be treated and be financially unable to pay for the treatment. The county attorney is also to attend at the hearing on the petition. The institution to be selected, by the county judge, must be located in the state of Colorado, and show that not less than 75 per cent. of the persons who have been treated at it for drunkenness have been cured thereat for at least one year.

A New Preparation of Cannabis Indica.—The current number of the *American Therapist* has the following from the *Therapeutische Wochenschrift* for March 1. The writer mentions "a new watery fluid extract of cannabis indica, termed extractum cannabis indicæ aquosum fluidum, and states that, according to R. Cowan Lees, it possesses all the beneficial properties of the plant, but does not give rise to that state of intoxication, bordering on poisoning, which follows the use of even medium doses of the alcoholic preparations. It has no effect on the secretion of bronchial mucus, and consequently in suitable cases it seems more efficient than opium, and it has a manifest anodyne and hypnotic effect in pulmonary affections. Lees has observed the best results from its use in tuberculous disease of the lungs, in which it materially alleviates the paroxysms of coughing while at the same time it exerts the precious stimulating and cheering effects of cannabis indica. It is, furthermore, of value in digestive disturbances connected with constipation and as a soporific in the diseases of children. The medium dose for an adult is from thirty to sixty grains; for a child less than a year old, from fifteen to thirty one-hundredths of a grain for each month of age; for older children, from a grain and a half to three grains for each year of age."

Connection Between the Pancreas and Diabetes Mellitus.—Known to the ancients who gave it its name, it is only within the last few years that science has attained an insight into the causes of diabetes, through Minkowski's experiments on dogs, from which he announced that extirpation of the pancreas produces typical, fatal diabetes mellitus in all its progressive stages. Others have produced glycosuria with various experiments, notably Mering's diabetes produced by administering phloridzin to dogs. But this passes away with the suspension of the phloridzin, as is also the case with glycosuria produced by excesses of various kinds. The close connection between the pancreas and diabetes, is also shown by Hansemann's report on the necropsies made at the Pathological Institute at Berlin: Cases of diabetes without apparent pancreatic lesions, 8; cases of diabetes without information in regard to the pancreas, 6; cases of pancreatic lesions without diabetes, 19; cases of diabetes with pancreatic lesions, 40. All the latter but one showed general atrophy of the pancreas. Dieckhoff's seven necropsies of diabetics all showed atrophy, and in a recent case reported from New York, a typical diabetes supervened in a patient after extirpation of the pancreas. Wellberg adds that a transient or intermittent form of glycosuria is frequent and apt to be disregarded, but it should be carefully watched, as it is liable to lead to grave diabetes mellitus unless the diet is changed and other precautions taken, especially in cases where there is a tendency to obesity, gout or nervous troubles.—*St. Petersburg Med. Woch.* of April 18.

Presumption as to Trade Marks on New Inventions.—With the aid of a physician, the party who was plaintiff in the case of Shaw v. Pilling, which was decided by the supreme court of Pennsylvania April 13, 1896, invented an atomizer, and although he did not, and perhaps, not being the sole inventor, could not, patent it, he adopted and attached the name of his partner, Burgess, to distinguish his make of atomizer. It was the defendant's error or misfortune to have assumed that this was a case within the imperative rule of ethics, enforced as a by-law of the College of Physicians of Philadelphia, and declared by the supreme court of Pennsylvania to be highly honorable to the medical profession, that a physician who discovers a remedy, or a surgeon who invents or improves an instrument, does not take a patent or trade mark for it, but dedicates it at once to the service of humanity, and though it may become known by his name, it is, nevertheless, free for all to use, and the name is regarded as merely descriptive of the article. They sought to avoid the consequences of their mistake of fact (assuming that it was innocent) by showing that other dealers made the

same mistake, and they asked the trial judge to say that, under the circumstances, the plaintiff could not appropriate a descriptive name of this kind as a trade mark. But the supreme court says that a man's property is not to be taken away so easily. The descriptive name of the instrument was an atomizer. That was public property, and could not be appropriated as part of a trade mark by any one. But when the inventor and manufacturer of a new kind of atomizer put his own or his partner's name to it, the court holds that the presumption was that he did so to indicate the origin and maker, and intended the name as a trade mark: that defendants and some other dealers misunderstood the facts was not sufficient to excuse a violation of plaintiff's rights.

Study of Diuretics.—Sobieranski presents the results of a series of experiments in the line of Ludwig's theory of urinary secretions. Animals killed at various intervals after the injection of indigo-carmin, showed that the substance was secreted by the glomeruli alone, and only absorbed by the convoluted tubules. After injections of carmin-sodium, it was never found in the basal epithelium of the convoluted tubules, which proves again that this epithelium does not secrete. Further experiments proved that after the administration of diuretics, and while the system is fully under their influence, the injection of indigo-carmin varies in its effects. With caffeine the cells of the convoluted tubules were no longer stained, only a weak coloration here and there in the secreting epithelium, which he explains by the assumption that caffeine paralyzes the absorbing power of the convoluted tubules and to this he ascribes its diuretic action. The diuretic salts, sodium chloride, nitrate and acetate, produce their effect through the blood increasing the secreting power of the glomeruli while only slightly affecting the absorbing function of the tubules. Urea and kindred substances stand between these, as they raise the osmotic co-efficient of the glomeruli on one hand, while they diminish the absorbing power of the convoluted tubules on the other.—*Centralblatt f. Physiologie*, April 4.

Dissatisfaction in the British Army Medical Staff.—A Brigade Surgeon of over thirty years' service, makes known the grievances of the Army Medical Officer in a letter to the *Lancet* of May 9, 1896. He defends the professional status of the members of the medical staff affirming that in all the wars of the last forty years they have shown themselves to be not only good officers but good medical men: and that in peace time the results of practice in military hospitals compare favorably with those of civil hospitals, so that the soldier has little to complain of in this regard, although it is a well recognized fact that medical advice which is obtained for nothing is very lightly regarded by all classes. The effort to degrade them by depriving them of military rank is the main subject of dissatisfaction. Not that medical officers are ashamed of the title of doctor or are in the least degree desirous of being taken for combatant officers, but as they lead an entirely military life, accompanying the soldier on all his campaigns, sharing to the full his hardships and dangers for however big or small the expedition may be if it involves a risk to the soldier, there is found the army surgeon ready at hand to afford help in case of need—they are military men in every sense of the word, though not combatant officers and naturally desire to possess military titles which show, not to military men only, but also to civilians with whom they associate what rank they have earned and hold in the army. Such titles as were formerly in use do not convey this information; nor were they ever used except officially. A surgeon of one month's service and an inspector general of thirty-five years active service were both addressed simply as "doctor." They object to this. The Brigade Surgeon cited is convinced that the endeavor to deprive army surgeons of their military rank earned by hard service in the field and to make them, as General Buller expressed it in his recent

speech at Netley, merely an annex to the army, is at the bottom of the prevalent discontent, and until this is removed good men will not be induced to join the Army Medical Department.

Practical Notes.

Smoker's Gingivitis.—Vian recommends to rinse out the mouth with a teaspoonful of the following mixture in half a glass of warm water: Salol, 1 gm.; spirit. menth. pip., 100 gm.; tinct. catechu, 4 gm. Use externally.—*Memorabilien*, April.

Marchal's Process of Preserving Instruments from Rust.—A very small amount of alkali is sufficient to keep metal from rusting, so that if steel, iron, nickel or copper instruments are dipped in five grams alcohol containing one or two grams of either borate, carbonate, bicarbonate or benzoate of soda, they will not tarnish.—*Gaz. Méd. de Liège*, May 14.

Two Cases of Rupture of the Uterus.—Chéron, in the *Bulletin Médical*, April 22. In one case the child was found at the necropsy in the peritoneal cavity, its head under the left false ribs, the thighs in the uterus and its feet in the vagina. The promonto-pubic diameter of the pelvis was only six centimeters. In the other case there was shoulder presentation, and the lower segment of the uterus was torn, the peritoneum not affected. The case at first went well, but death followed from peritonitis a week later.

Hydatic Cysts in Both Fallopian Tubes.—Doleris has collected eighty observations reported of hydatic cysts in the true pelvis, but none mention their origin. He had a case recently where the operation revealed a long tumor, filling both tubes, which were contorted. The enucleation was very difficult, and the uterus had to be removed in order to be sure that all the tumor was extirpated. Doleris mentions that the patient was the wife of a butcher, and constantly surrounded by dogs.—*Bulletin Médical*, April 22.

A Case of Biliary Calculi with Rupture of the Gall Bladder.—Schabad describes in the *St. Peters. Med. Woch.* No. 3, the case of a young woman who showed suddenly symptoms of acute peritonitis, with a sensitive area in the abdomen and perforation of the anterior wall of the rectum, death ensuing in twenty-five days. The necropsy showed general non-suppurating peritonitis; among the intestines were found three calculi the size of a walnut: the gall bladder had been ruptured and a couple of calculi protruded from it. The case is instructive, as it shows that an operation, even after perforation, might have resulted favorably. Few cases of ruptured gall bladder survive so long.

Berger's Study of 10,000 Cases of Hernia.—This work of 204 pages just published in Paris, contains the results of an amazingly thorough and detailed investigation of 10,000 cases, with full particulars as to age, sex, occupation, etc. The work was all done in Paris, and therefore the author's conclusions are misleading, if applied to places where such supreme facilities for prompt treatment and procuring of proper bandages, etc., do not exist. He states, for instance, that irreducible hernia only occurs once in 28.8 cases, and that strangulation and peritonitis occur in only 6.45 per cent. of the cases of femoral hernia, in 1.91 per cent. in umbilical hernia, and in 1.43 per cent. inguinal hernia.—*Centralblatt f. Chirurgie*, May 2.

Regeneration of Extirpated Exophthalmic Goitre and Section of the Cervical Sympathetic. Partial excision of bronchocele is usually followed by the subsidence of the remaining part, but Jaboulay describes a case of exophthalmic goitre in which he had removed the growth five times in the last three years, with constant regeneration of the extirpated tissue. Finally he decided upon section of the sympathetic, between the first and middle cervical ganglia. The immediate result was favorable the exophthalmus, tremor and palpitations ceased, but in three or four weeks the two latter returned. He explains this by the fact that the fibers for the peri- and intra-ocular muscles were

rendered functionless, but not those for the accelerans cordis, which does not connect with the sympathetic, but with the rami communicantes through the ganglion inferius. He therefore suggests, to ensure the cessation of the palpitations, that the branches of this ganglion should be cut, but the ganglion itself must be left undisturbed, as it is a trophic center.—*Centralblatt f. Chirurgie*, May 2.

Somatose.—Since Hildebrandt announced the virtues of somatose at the Wiesbaden Congress of 1893, it has come to be appreciated by many, who estimate it as far more valuable than the preparations of peptone. Scognamiglio has been making a series of tests to determine its exact effect on the composition of the blood. His subjects were three chlorotic patients who showed each by the Thoma-Zeiss method a remarkably small number of red corpuscles with a large excess of leucocytes. No other treatment was given, and the number of blood corpuscles was counted at intervals of five days. They showed a steady increase, amounting to 4,500,000 per c.cm. at the end of a couple of months. The number of microcytes and poikilocytes also diminished. At first the amount of hemoglobin was only 8.9 per 100 c.cm., but this amount rose to the normal 13.5 to 14.5 per cent. The *Wiener klin. Rundschau*, March 15, closes its notice of this study with the remark that it demonstrates once more the fact that in somatose we have a preparation of "inestimable value."—(See *Riv. Clin. e Terap.*, February, 1896.

Total Amputation of the Tongue by the Transhyoid Method.—Vallas, of Lyons, recently removed a cancerous tongue as follows: 1, preliminary ligature of the two lingual arteries, thus preventing hemorrhages and the necessity of tracheotomy; 2, osteotomy of the hyoid bone (see *Prov. Méd.*, January); 3, removal of the mucous membrane of the mouth through the mouth, the whole length of the inner side of the inferior maxillary bone; 4, the tongue is grasped with the forceps, through the hyoid wound, and brought down and out through it; 5, two strokes of the scissors, following on each side the upper edge of the hyoid bone, detach the hyoglossus and complete the section of the base of the tongue. By this process the tongue is cut out its entire length. A coarse thread passed through the roof of the mouth on each side helps to close the large opening left and favor the reconstitution of the mylohyoid tissue. Vallas adds that the median section of the hyoid bone is not followed by any trouble in breathing, as he has already performed many similar operations. In the case above the patient can talk, only he can not utter the lingual syllables. He swallows without difficulty since the wound has healed.—*Province Médicale*, March 14.

Sudden Death in a Case of Fracture of the Patella—Dangers of Massage.—According to *La Médecine Moderne*, Dr. Cerne has had an unexpected fatality in a case of simple, transverse fracture of the patella, with little separation of the fragments and but slight effusion into the knee joint. The effusion soon disappeared. At the end of three weeks the patient, who was strong, active and of good constitution wished to know when he could rise and leave the hospital. He could easily raise his limb from the bed. There was some motion, but limited, in the knee joint. The leg, however, was clammy, both above and below the articulation. The surgeon intended to apply a silicate dressing, but was desirous first of facilitating the absorption of the exudate, of promoting the nutrition of the quadriceps (which, according to most authors, atrophies), and of rendering the joint somewhat mobile. He accordingly prescribed gentle massage to the thigh, as was his usual custom. There was at this time no appreciable pain in any part of the limb. Massage had been practiced on several occasions, particularly on one day, when on the next the patient was suddenly seized with suffocation and died within a few minutes. At the autopsy the pulmonary artery was found obliterated by

large thrombi derived from the deep femoral vein. It is not possible to demonstrate that massage brought about this result. Nearly twenty-four hours had elapsed since this massage had last been performed, but it is highly probable that the practice was what determined the migration of a clot, and that this was done by the breaking up of the femoral thrombus.

On the Non-Irritant Use of Boric Acid Solutions.—Dr. John E. Bacon, of Buffalo, writing to the *American Therapist*, commends boric acid to a higher confidence among the profession as meeting all indications for a non-irritating antiseptic quite as well as most of the elaborate and expensive compounds now being pushed by our enterprising manufacturing chemists for recognition by the profession. With care in its use, especially in respect to its proper dilution, the remedy is destined to go to the front. He offers the following formula and suggestion for the avoidance of unnecessary irritation: "After an extended trial of many formulæ for nasal sprays the writer has concluded that the vast majority of them are too irritating to be used in any but atrophic cases, in which a moderate amount of stimulation is useful. After spraying a hypertrophic case or a normal nose with Seiler's solution, for instance, a copious mucous discharge will be excited and continue for an hour, showing the irritating action of the spray. Boric acid in saturated solution is slightly irritant to the nasal membranes, but is not in solutions of less strength; for example, a formula like the following will be soothing to an inflamed membrane and non-irritating, while it is just as useful for cleansing purposes: Acid boric, gr. v; sodii bicarb., gr. v; glycerin, ʒi; aquæ dest., q.s. ad ʒiii. M. Sig.: To be used in atomizer after being warmed."

Detroit.

A NEW CHEESE PTOMAIN.—A semi-official announcement says that Dr. V. C. Vaughan, Ann Arbor, and assistants have extracted a new ptomain from poisonous cheese.

THE MEDICAL MEN OF THIS CITY organized themselves into a league some time ago and on May 21 they perfected their organization. The purpose of the league is to draft a bill and to influence legislation to get the same passed and signed by the Governor, that will debar from practice in this State all who attempt to come here and practice without due qualifications. The following officers were elected: Dr. E. L. Shurly (R.), President; Dr. E. S. Sherrill (R.), Corresponding Secretary; Dr. S. H. Knight (H.), Recording Secretary; Dr. D. F. W. Robbins (R.), Treasurer; Executive Board, Drs. J. H. Carstens (R.), R. C. Olin (H.), D. A. MacLachlin (H.), H. J. Mulheron (R.), E. H. Covey (E.). It will be observed that in this list all schools are represented. There will be ten vice-presidents, to be appointed by the executive board. The next meeting of the organization will be held some time in June.

WAYNE COUNTY MEDICAL SOCIETY.—Thursday, May 28, this society held its last regular weekly meeting until after the summer holidays, the next meeting being September 3.

AT THE REGULAR MEETING of the Detroit Medical and Library Association, held Monday, May 25, Dr. Delos Parker read a paper entitled, "A Few Ideas Concerning Chloroform and Ether."

HEALTH OFFICE report for week ending May 30, 1896: Deaths: total 64; under 5 years 30; births, male 53, female 46, total 99. Contagious diseases: diphtheria, last report 13, new cases 9, recovered 3, died 2, now sick 17; scarlet fever, last report 19, new cases 8, recovered 3, died 1, now sick 17; measles, last report 7, new cases 1, recovered 5, now sick 3.

Louisville.

INFIRMARY.—Articles incorporating the "Gray Street Infirmary" have been recently filed with the county clerk. The incorporators are the members of the faculty of the Hospital College of Medicine, the Medical Department of Central University. The officers are: President, Frank C. Wilson; Vice-President, S. G. Dabney; Secretary, J. E. Hays; Treasurer,

H. H. Grant. The indebtedness is not to exceed \$15,000. The object of the infirmary is to maintain an institution for the treatment of all diseases, the care of the sick and the distribution of medicine. There is no capital stock and there will be no pecuniary benefit derived.

VISITING STAFF.—The Board of Safety has made its annual report as to the visiting and consulting staff at the City Hospital under its control. Quite a sensation was created among the profession when they announced that hereafter the Kentucky School of Medicine would not be recognized in the appointments; the rule heretofore being that each school was entitled to representation on the staff, for three months in the year and the non-school men to the rest of the year. The appointments made did not include any of the Kentucky School faculty, the reason being that, as stated by the board, it had not taken out the regular number of tickets to clinical lectures during the past year: the appointment of a resident at the Hospital from the graduating class at the Kentucky School would also not be recognized. This injustice called forth a merited rebuke from the faculty of the Kentucky School, and when it was shown that each member of the graduating class had his hospital ticket, and that the decrease in numbers was the result of the enforcement of the longer term, the school was recognized and appointments will be made as heretofore.

NURSES.—The annual commencement of the Louisville City Hospital Training School for Nurses was held in the amphitheater of the hospital on the 22d ult., diplomas being bestowed on eight graduates. Addresses were made by Dr. Louis Frank and by Dr. George W. Griffiths, and the diplomas were presented by his honor, the Mayor.

DR. JNO. A. OUCHTERLONY has been confined to his bed with sickness for several weeks past but is much improved at this writing.

STATE MEDICAL SOCIETY.—The annual meeting of the State Society to be held in Lebanon on June 10, 11 and 12, bids fair to be one of the largest meetings in its history. The subjects chosen for discussion this year are "Bright's Disease" and "Fractures," with a number of papers bearing upon each subject, and beside a number of interesting papers will be read on other subjects. The chairman of the committee of arrangements has done his duty well and the meeting is expected to be a notable one in every respect. The meeting will be presided over by Dr. Jno. A. Lewis, of Georgetown. The program will be issued by June 1.

THE PUBLIC SERVICES.

Vacancies in the Medical Corps of the U. S. Army.—There are at present three vacancies in the Medical Corps of the U. S. Army, and it is expected that at least three more will occur during the present year. As usual, an Army Medical Board will meet in Washington early in October for the examination of candidates. The requirements for admission to the Medical Corps are stated in a Circular issued by the Surgeon-General of the Army, dated May 21, 1896, and approved by the Secretary of War, as follows:

"Permission to appear before the Board is obtained by letter to the Secretary of War, which must be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident, and inclosing certificates, based on personal acquaintance, from at least two reputable persons as to his citizenship, character and habits. The candidate must be a citizen of the United States, between 22 and 29 years old, of sound health and good character, and a graduate of some regular medical college, in evidence of which his diploma will be submitted to the Board. The scope of the examination will include the morals, habits, physical and mental qualifications of the candidate, and his general aptitude for service; and the Board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars.

"The physical examination comes first in order, and must be thorough. Candidates who fall below sixty-four inches in height will be rejected. Each candidate will also be required to certify that he labors under no mental or physical infirmity or disability which can interfere with the efficient discharge of any duty which may be

required." Errors of refraction, when not excessive, and not accompanied by ocular disease, and when correctible by appropriate glasses, are not causes for rejection.

"The mental examinations are conducted by both written and oral questions, upon:

"I. Elementary branches of a common school education, including arithmetic, the history and geography of the United States, physics, ancient and modern history and general literature. Candidates claiming especial knowledge of the higher mathematics, ancient or modern languages, drawing, analytic chemistry or branches of natural science, will be examined in those subjects as accomplishments and will receive due credit therefor according to their proficiency.

"II. Professional branches, including anatomy, physiology, chemistry, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics and the diseases of women and children.

"Examinations will also be conducted at the bedside in clinical medicine and surgery, and operations and demonstrations will be made by the candidates upon the cadaver.

"Hospital training and practical experience in the practice of medicine, surgery and obstetrics are essential to candidates seeking admission to the Medical Corps of the Army, who will be expected to present evidence that they have had at least one year's hospital experience or the equivalent of this in practice.

"To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the elementary branches of a common school education, by a medical officer of the Army stationed most conveniently for this purpose, who will act under instructions from the Medical Examining Board."

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 23 to May 29, 1896.

First Lieut. Benjamin Brooke, Asst. Surgeon, is granted leave of absence for four months, on surgeon's certificate of disability.

Capt. Ashton B. Heyl, Asst. Surgeon, the order assigning him to duty at Ft. Canby, Washington, is revoked; he is relieved from duty at Ft. Thomas, Ky., and ordered to Ft. Riley, Kan., for duty, relieving Capt. Thomas U. Raymond, Asst. Surgeon. Capt. Raymond, on being thus relieved, is ordered to Ft. Canby, Washington, for duty.

Change of Address.

Burns, R. J., from Chicago, to Box 172, Rockford, Ill.
Caldwell, J. R., from Chicago, Ill., to West Liberty, W. Va.
Dillard, B. A., from D'Arbonne, La., to Garrison, Tex.
Guthrie, F. A., from Chicago to Aledo, Ill.
Krause, A., from Chicago, Ill., to Tripp, So. Dak.
Kirkpatrick, C. D., from Centerville to Rutledge, Mo.
Kors, M. L., from Chicago to Virginia, Ill.
Larsen, L. A., from Chicago, Ill., to Colfax, Wis.
Lowry, E. E., from Rose Hill to Ft. Recovery, O.
Murrell, T. E., from Albuquerque to Santa Fe, N. M.
Medico Legal Journal, from 57 Broadway to 39 Broadway, New York, N. Y.

Nye, Geo. L., from Hurricane to Wytheville, W. Va.
Peck, Geo., from Elizabeth, N. J., to "Cherry Cottage," Cooperstown, N. Y.

Riggs, W. J., from 88 Washington Avenue to 22 Pennsylvania Avenue, Allegheny, Pa.

Simpson, B. L., from 3500 A. Bell Avenue to 4555 A. Delmar Avenue, St. Louis, Mo.

Thompson, S. W., from New York, N. Y., to Owego, N. Y.
Wells, J. E., from Mt. Olivet to Cynthia, Ky.

Wagley, Thos. J., from Cleburne, Tex., to care of Thos. Cook & Son., Paris, France.

Winslow, C. E., from South Hill Street to 226 Bradbury Block, Los Angeles, Cal.

White, Persis, from Kansas City, Mo., to Princeton, Ill.
Wilmer, F. M., from Oconee to Assumption, Ill.

LETTERS RECEIVED.

Ashley, A. A., Red Oak, Ia.; American Medico-Surgical Bulletin, New York, N. Y.; Ashmead, A. S., New York, N. Y.; American Laundry Machinery Co., Cincinnati, O.; Ashmun, G. C., Cleveland, Ohio.

Bychowier, Victor, Boston, Mass.; Brundage, Amos H., Brooklyn, N. Y.; Burrell, B. H., Denver, Col.; Barton, Mrs. Kate B., Zanesville, Ohio; Barker, E. O., Guthrie, Oklahoma Ter.; Busey, S. C., Washington, D. C.; Borland, E. B., (2) Pittsburg, Pa.; Bernstein, Edward J., Baltimore, Md.

Crook, J. A., Jackson, Tenn.; Columbus Phaeton Co., Columbus, Ohio; Collier, L. B., Merrill, Wis.; Cook, Emma D., Detroit, Mich.

Ensign, W. O., Rutland, Ill.; Eaton, R. R., Ithaca, Mich.
French, J. M., Milford, Mass.; Foote, A. E., Philadelphia, Pa.; Feltwell, A. L., Altoona, Pa.

Gihon, A. L., New York, N. Y.; Gochenauer, D., San Diego, Cal.; Gillette, W. J., Toledo, Ohio.

Howle, W. P., Oran, Mo.; Herrick, Jas. B., Chicago, Ill.; Herrick, S. S., San Francisco, Cal.; Howell, F., Clarksbury, W. Va.; Hall, Thos. Jr., Boston, Mass.; Hopkins, M. J., St. Louis, Mo.; Hummel, A. L., Advertising Agency, New York, N. Y.; Hare, H. A., Philadelphia, Pa.

Ingals, E. Fletcher, Chicago, Ill.
Kingsley, B. F., San Antonio, Tex.; Knapp, Philip C., Boston, Mass.

Leszynsky, W. M., New York, N. Y.; Leng, F. J., Chicago, Ill.
Mundy, Howard L., Kansas City, Mo.; Mitchell, Edwin W., Cincinnati, O.; Meserve, Chas. F., Raleigh, N. C.; McClellan, B. R., Xenia, Ohio;

Malsbary, Geo. E., Cincinnati, O.; Mason, F. M., Rossville, Ill.; Mettler, L. Harrison, Chicago, Ill.

Noble, Chas. F., Philadelphia, Pa.
Ormsby, O. B., Murphysboro, Ill.; Opie, Thomas, Baltimore, O.

Paquin, Paul, St. Louis, Mo.; Pantagraph, Ptg. & Sta. Co., Bloomington, Ill.; Pearson, M. W., Ware, Mass.; Purvis, C. B., Washington, D. C.

Rives, Wm. C., New York, N. Y.; Riddell, W. C., Helena, Mont.; Reik, H. O., Baltimore, Md.

Schmidt, F. W., Riverdale, Ill.; Smith, C. J., Pendleton, Ore.; Simmons, Geo. H., (3) Lincoln, Neb.; Stowell, C. H., Washington, D. C.;

Souchon, Edmond, New Orleans, La.; Steiger, E. & Co., New York, N. Y.; Sternberg, Geo. M., Washington, D. C.

Tyree, J. S., Washington, D. C.
Whitney, Geo. F., New York, N. Y.; Weedon, L. W., Tampa, Fla.;

Work, J. A., Elkhart, Ind.; Wellington, J. R., Washington, D. C.

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ADDRESS.

PRELIMINARY EDUCATION, PROFESSIONAL TRAINING AND PRACTICE IN NEW YORK.

Address before the sixth annual meeting of the National Confederation of State Medical Examining and Licensing Boards, Atlanta, Ga., May 4, 1896.

BY JAMES RUSSELL PARSONS, JR.

DIRECTOR OF EXAMINATIONS, UNIVERSITY OF THE STATE OF NEW YORK.

A few years ago the terms "American doctor" and "Philadelphia doctor" were current in Europe as synonyms for incompetency. This fact was most disagreeably impressed on my mind when as United States consul at Aix-la-Chapelle I was asked to testify in a case before the German courts touching the value of a Buchanan diploma.

The circumstances connected with this German trial were vividly recalled last month by one who seemed anxious to equal the record of Buchanan in selling medical degrees to all comers.

A young pharmacist who had never studied at a medical school asked me if I thought a medical degree from the Wisconsin Eclectic Medical College worth \$35. In response to my questions, he submitted certain letters, the first from the president of the institution which offered the diploma (see JOURNAL, Vol. XXVI, p. 838), the second, which we herewith give, from the Secretary of State of Wisconsin, answering a question asked by the young pharmacist.

DEPARTMENT OF STATE, MADISON, WIS., April 14, 1896.
Mr. —, Albany, N. Y.

Dear Sir:—In reply to yours of April 10, will say that the Wisconsin Eclectic Medical College of Milwaukee is a regularly incorporated company of Wisconsin. I know nothing in reference to its reliability. Would refer you to Dr. Walter Kempster, Commissioner of Health, Milwaukee, Wis., for information in regard to same. Yours very truly,

HENRY CASSON, Secretary of State.

The examination blank referred to in the first letter includes thirty-seven questions. Thirty-five dollars and a rudimentary knowledge of the purpose of a cathartic seem to be about the only requirements for an M.D. degree from this enterprising institution.

History repeats itself but with less frequency in this direction than formerly, and the evil resulting from this reckless distribution of diplomas is largely nullified because in thirty-five States and three Territories these diplomas no longer constitute a license to practice medicine.¹

In 1888 the United States was almost the only civilized country in the world that did not as a rule protect its citizens from the imposition of quacks. Many

of our distinguished physicians and surgeons were known and honored abroad, but the genius of the few could not atone for the incompetency of the many; in the absence of proper restrictions it was impossible for the American medical profession to attain a position of eminence.

Since 1888, when my testimony was desired by the German courts, how great the change! At that time only five States in the Union exacted an examination for license to practice medicine, and the laws in those States were crude, imperfect and for the most part inoperative.

A licensing examination is now required in twenty-two States. Indeed, if we count Texas, where laws conflict, the roll includes twenty-three.

In 1893 the Massachusetts Legislature passed an act requiring plumbers to be examined for license. After this the practice of medicine could not long remain unrestricted, and as a matter of course the law of 1894 followed.

At the present time there are laws to regulate medical practice in all States except New Hampshire. In this State not even registration is required.

Though Harvard shares with Johns Hopkins² the honor of first requiring college graduation as the preliminary education for M.D. degrees, we have long been forced to recognize on the part of New England lawmakers a singular indifference to provisions restricting the practice of medicine.

In "Customs and Fashions in Old New England" Alice Morse Earle tells us that in "1631, one Nicholas Knapp was fined and whipped for pretending 'to cure the scurvey by a water of noe worth nor value which he sold at a very deare rate.'" One is almost tempted to suspect that this whipping took as much out of the New England lawmakers as it did out of Mr. Nicholas Knapp, for since that remote date scarcely a rumor has reached us of any equally vigorous remonstrance with unqualified practitioners.

As a result New England has been a specially promising field for quacks, not many of whom were considerate enough to follow the example of the celebrated "rain water doctor." Of this worthy it is recorded that he "worked wondrous miracles and did a vast and lucrative business" till he opportunely ended his career by tumbling into a hogshod of his own medicine.

As already stated twenty-three States now require licensing examinations. Of these examinations, sixteen are before a single board; four before two boards, allopathic and homeopathic; three before three boards, allopathic, homeopathic and eclectic.³ In eleven States candidates for examination must be graduates of medical schools; in three of these eleven

¹ As I was about to leave Albany for Atlanta a letter reached me from Dr. Kempster stating that proceedings had already been instituted by the Attorney General of Wisconsin to revoke the charter of the Wisconsin Eclectic Medical College. He added that graduates of this institution were not permitted to register in Wisconsin. It seems impossible, however, to prevent the registration of worthless diplomas in those States whose laws require merely the presentation of any sort of a certificate of qualification to unqualified local officers.

² Recent action by the University of Michigan contemplates a similar requirement.

³ In Alabama each county has an examining board; in Texas and Florida each judicial district. Florida also has a general homeopathic board.

States they must have studied medicine four years; in two States they must have attended at least three courses of medical lectures, though a diploma is not required. One of these States, Minnesota, will require four courses but not a diploma after Jan. 1, 1899. In six States applicants must have a competent preliminary education, though the provision is indefinite except in the New York law.⁴ Montana requires of applicants graduating after July 1, 1898, four courses of six months each. In New York the increase from three to four courses of six months each takes effect Jan. 1, 1898, but does not apply to students matriculated before that date and graduated before 1902. In ten States the licensing examination is the only test of fitness for practice, plainly a much more unsafe standard than indorsement of diplomas from accredited schools without a licensing examination.

The laws of thirteen States and three Territories⁵ demand either approval of medical diploma or examination by State or other duly qualified boards.

Illinois, a type of this second class, has done much to elevate the standard of medical education in the United States.

This leaves only eight States and three Territories in which it is necessary merely to present the diploma or other certificate of qualification to unqualified local officers.

We do not contend that many State medical laws are satisfactory. Indeed with few exceptions they are far from perfect. But we do assert positively that the advance in this country since 1888 is without a parallel.

But I will not trespass on your patience by speaking more at length of State medical laws in general. It is my purpose briefly to call your attention to what has been done in New York since 1888.

The University of the State of New York, established in 1784, is one of our oldest institutions. It is not a teaching body but a State department and at the same time a federation of 640 institutions of higher and secondary education. Its administrative departments are five in number, Regents office, Examination, Extension, State library, State museum. Its objects, as defined in the University law, are "to encourage and promote higher education, to visit and inspect its several institutions and departments, to distribute to or expend or administer for them such property and funds as the State may appropriate therefor or as the University may own or hold in trust or otherwise, and to perform such other duties as may be intrusted to it."

To the examination department, organized in 1889, are entrusted all examinations conducted by the regents, including preacademic, academic, extension, higher, professional and technical. These examinations require annually 1,500,000 question papers, which are printed in the department on our own presses, by our own employees.

In all examinations under the University, as fully set forth in the academic syllabus, "it is the aim to test as far as practicable the thought-power of candidates. Definitions, rules, principles and laws are of little value without a knowledge of their applications."

The system of alternative questions is in vogue; the question papers are framed along broad fundamental lines, and, if students are adequately prepared, the chance of failure is reduced to a minimum.

The excellent results achieved by these examinations are largely due to the sympathetic cooperation of teachers and professional men throughout the State. Intelligent criticisms and suggestions are earnestly requested and always meet with careful consideration.

Academic examinations in 73 branches are held by the regents of the University in January, March and June in about 500 New York secondary schools; at the summer schools in August, and at central points in September, for professional and technical students only. They are also given once a year in other States when expenses are provided.

The method of conducting regents' examinations was prescribed in 1864. Since 1870 all papers claimed by principals as meriting 75 per cent. have been re-examined at the regents' office. In 1895 259,932 academic papers alone, not including those written by professional students, were submitted to the department. Of this number 28,701 or 11 per cent. were rejected.

The phenomenal growth of these academic examinations under the revised system of 1891 is especially remarkable in view of the fact that they are purely voluntary and that the University discourages all tendencies to over-examination.

The regents were not required to certify to the preliminary education of those seeking admission to any professional study till 1882, when the court of appeals adopted a rule that all law students, unless college graduates, must pass certain regents' examinations. These requirements were raised in 1891, and again in 1894.

The acknowledged value of the law student examinations led in 1889 to a similar requirement for medical students. This law was amended in 1893, 1895 and 1896. The statute that took effect March 21, 1896, fixes as the minimum preliminary education for medical degrees a registered four year high school course following a completed eight year elementary course.

After January 1, 1897, all matriculants for medical degrees must either be graduates of at least a registered four year high school course, or pass equivalent regents' examinations.

The registry list in the regents' office is constantly revised to meet changes in courses of study, and is the source of information in response to inquiries from all parts of the globe. An idea of the extent of this work is shown by the fact that credentials in 20 different languages were received last year.

July 1, 1895, the new veterinary law took effect and August 1, 1895, the new dental law, fixing the same preliminary education standard as that for medicine. Students may be matriculated conditionally provided the conditions do not exceed more than one year's work, but all conditions must be made up before the beginning of the second annual course counted toward the degree.

We see therefore that graduation from a registered high school is now the accepted New York standard for admission to professional study. In medicine, dentistry and veterinary medicine there is no exception. Pending another revision of the rules of the court of appeals, however, a law student unable to offer a three year high school course or its equivalent, may meet the preliminary requirement for admission to the bar by passing examinations in specified studies representing only two years of academic work.

In 1895 16,612 answer papers were written by can-

⁴ The New York standard has just been adopted by the Pennsylvania board of medical examiners.

⁵ Including Indian Territory, though the Cherokee Nation requires a licensing examination.

didates seeking admission to professional study, a growth of 106 per cent. in two years. 68.9 per cent. of these papers were accepted as compared with 59 per cent. of those written at the schools.

Between 50 and 90 per cent. of these professional certificates are granted without regents' examinations on evidence of the requisite preliminary education. This proportion will doubtless increase under the new laws till it becomes at least 82.5 per cent. as in 1893.

Graduation from a registered four year high school course after the completion of eight years in an elementary school approximates the highest standard adopted by any country in the world for admission to the study of law or medicine, and is fully equal to the requirement of any other government for dental or veterinary students.

In Germany the matriculant must have passed the Abiturientenexamen after completing the course of nine years in a Gymnasium. This examination presupposes as much work as is usually covered at the close of the freshman year in a registered American college. Dentists and veterinary surgeons must have passed the examination at the close of seven years in a Gymnasium or Realschule (*Zeugnis der Reife für die 1 eines Gymn. oder einer Realschule*).

In Austro-Hungary, Russia and Switzerland the requirements for matriculation to medical study are on about the same plane. In France the degree of Bachelier ès lettres (equivalent to graduation from a full high school classical course) and additional examinations in physics, chemistry and the natural sciences are required. A similar standard is maintained in Italy (*Licenza liceale*), Spain and Cuba (*Bachillerato* and a supplementary examination). In England the minimum test, fixed by the program of the British medical council is comparatively low, though many English students have either passed a matriculation examination in arts or hold the B.A. degree. In the Canadian provinces also the varying requirements do not represent in any case more than the completion of a registered three year high school course. The minimum test prescribed by the Association of American Medical Colleges is still lower and only includes a little more than one year of academic work.

We now turn to the consideration of professional training and practice in New York.

Of her twelve medical schools, four adopted a four year graded course in 1894 and five in 1895 and 1896. For matriculants after January 1, 1898, four years' study of at least nine months each, including four satisfactory courses of at least six months each in four different calendar years must be required for degrees by all medical schools in New York State. This minimum standard for the degree of M.D. is equal to that prescribed in Austro-Hungary, France and Germany.

There are more medical schools in the United States alone than in countries whose total population is six times as great, and yet less than one dozen of these medical schools in the United States have endowments corresponding to those so lavishly made to other educational institutions or in any way proportioned to their needs.

Under these conditions we must expect to find often low requirements both for matriculation and for graduation where the public is not protected by statutes which establish minimum standards.

To Montana belong the honor of first requiring for

admission to the State licensing examination a diploma granted after four courses of at least six months each to take effect for all applicants graduating after July 1, 1896. As previously stated Minnesota will require four courses but not a diploma after Jan. 1, 1899. The Association of American Medical Colleges including sixty-three medical schools in the United States will push on this movement by its constitutional provision for a similar requirement for M.D. degrees in 1899 or thereafter, though contrary to the New York law, students of dentistry, veterinary medicine and pharmacy may be admitted to advanced standing. It seems safe to predict that within a few years the minimum standard, now prescribed by the laws of Montana and New York will be adopted by all reputable medical schools in the United States.

The New York dental and veterinary laws require for degrees three satisfactory courses in three different years. The three dental schools and the two veterinary schools meet this requirement.

Though three years' study of law is exacted for admission to the bar except of graduates of registered colleges, who may be admitted in two years, yet five of the seven New York law schools still confer the degree of bachelor of laws after two years' work.

It is rather singular that both in preliminary education and in term of professional study, dentistry, and veterinary medicine stand higher than law. Some action will probably be taken in 1896 to correct this anomaly.

It may be easily shown that high standards have proved beneficial to New York professional schools. Let us take medicine as an illustration. Since 1891 when the licensing law took effect the number of medical students in New York schools have increased from 3,321 to 3,756, the number of foreign students from 1,556 to 1,706. The property of New York medical schools shows an increase during this period of five years from \$2,764,530.22 to \$4,061,293.59, the annual receipts from \$397,969.72 to \$460,043.97.

The report of the examination department for 1894 contained a review of medical education in the United States and in foreign countries. In this report it was stated on the authority of Dr. Pepper that the University of Erlangen in Germany grants an M.D. degree after a three-year medical course. We were specially gratified to receive in October 1895 a strong denial of the statement from the dean of the faculty of medicine at Erlangen, showing conclusively how carefully American medical reports are now scanned abroad. Perhaps the Germans anticipate retaliation for the terms "American doctor" and "Philadelphia doctor."

In medicine, dentistry and veterinary medicine licensing examinations are now required by law. All applicants must meet the prescribed preliminary education standard and must hold either a diploma from some registered school or a license from some foreign country.

The New York law forbids the registration by the regents of any school outside the State whose minimum graduation standard is less than that fixed by law for New York schools.

The University is responsible only for the preliminary general education of law students. Examinations for admission to the bar were not uniform till the creation by the 1894 legislature of a State board of law examiners, consisting of three members to be appointed by the court of appeals.

Another important advance in 1894 was the ruling of the court of appeals and of the regents that only those were to be considered college or university graduates who had successfully completed a satisfactory course of not less than seven years in advance of grammar school studies. This ruling is in direct accord with the following provision in the University law:

"No individual, association or corporation not holding university or college degree-conferring powers by special charter from the legislature of this State or from the regents, shall confer any degrees, nor after Jan. 1, 1893, shall transact business under, or in any way assume the name university or college, till it shall have received from the regents under their seal written permission to use such name, and no such permission shall be granted by the regents, except on favorable report after personal inspection of the institution by an officer of the University."

As the veterinary and dental laws did not take effect until July and August, 1895, respectively, we can not yet report the results of the first year's work. These laws are modeled closely on the medical law, and practically the same rules and regulations have been adopted for their administration by the University.

During the four years in which the medical licensing examinations have been given 56, 267, 390 and 606 allopathic candidates have been examined 8, 21, 51 and 60 homeopathic, and 4, 7, 4 and 11 eclectic, making a total of 1,485, of which number 291, or nearly 20 per cent., were rejected.

In this summary each candidate who fails is counted as often as examined. Thirteen hundred different candidates have appeared before the three State medical boards during the four years ending Aug. 1, 1895, of which number 106, or more than 10 per cent., have failed to secure a license.

This result is remarkable when we consider that admission to the licensing examinations presupposes the preliminary education required by statute and graduation with the degree of bachelor or doctor of medicine from a registered medical school.

The work of men long out of school compares favorably with that of recent graduates:

	Per cent. licensed.		
	1893	1894	1895
Examined on graduation	91.8	91	90
Examined after 1 year's practice.	93.8	90	82
Examined after 2 years' practice.	83.4	87	85
Examined after from 3 to 33 years' practice	89.2	77	87

In 1895, failures were as follows in the several topics: Physiology and hygiene 19, surgery 36, anatomy 48; therapeutics, practice and materia medica 59, chemistry 62, pathology and diagnosis 65, obstetrics 67.

It is remarkable that old practitioners do better in physiology and hygiene, anatomy and chemistry than in obstetrics, or pathology and diagnosis. The statistics at all events show that in the only subjects for which some have demanded two standards, the old practitioners do not need a special dispensation.

We have now reviewed briefly the present status of preliminary education, professional training and practice in New York. To what has been said may be added a reference to the new law, by which no one may hereafter serve as a certified public accountant who does not hold a certificate of qualification from the University.

The attitude of New York toward professional

training and practice is of special importance. In her law schools are about 1,500 students, or one quarter of the number in attendance on all law schools in the United States. In her medical schools are nearly 4,000 students, or one-fifth the total for the entire country. In other professions she is equally prominent.

From this brief statement of facts I hope you have gained clearer ideas of the progress New York has made in preliminary education, professional training and practice, especially since 1889, the date of the first law requiring a preliminary education for medical degrees.

ORIGINAL ARTICLES.

TREATMENT OF CANCER OF THE RECTUM.

Read by Title in the Section on Surgery and Anatomy at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY LEWIS H. ADLER, M.D.

Professor of diseases of the Rectum, Philadelphia Polyclinic and Post-Graduate College; Surgeon to the Charity Hospital and to the out-patient Department of the Episcopal Hospital. PHILADELPHIA, PA.

The question of what surgical procedure is justifiable in any given case of cancer of the rectum is frequently hard to decide, especially from the standpoint of relieving the patient the most with the incurrence of the minimum risk.

The recognized operations are four in number: Extirpation, colotomy, posterior linear proctotomy and curettage.

Extirpation.—The ideal method of treating cancer of the rectum would be by extirpation, as is done in cases of the same disease when the mammary gland is the seat of trouble; but unfortunately it is not often that the rectal neoplasm is discovered in time to permit the entire removal of the growth and of all glandular involvement; consequently, it is my belief, that the cases in which this operation is indicated will always be confined to a relatively small number.

Colotomy.—On the other hand, colotomy is quite practicable in a large number of instances and the benefits derived from its performance are thus minutely described by Dr. Chas. B. Kelsey (*New York Medical Journal* for November, 1892): "It relieves pain; does away with the constant tenesmus and discharges from the rectum, which by their exhausting effects are the immediate cause of death; delays the development of the disease by preventing the straining and congestion of defecation; prevents absolutely the complication of intestinal obstruction, which is another cause of death; enables the patient to sleep, eat and gain flesh, and often makes him think himself cured in spite of the plainest prognosis to the contrary. Instead of passing his days and nights upon the commode, wearing out his life in his effort to free the bowel from its irritation, he has one or perhaps two solid fecal evacuations from the groin in twenty-four hours." The foregoing description of the benefits derived from a colotomy is no exaggeration. It is the operation to which I would cheerfully submit were I a sufferer from cancer of the rectum which had reached the stage of operative interference. In this connection I would cite the following case, which I consider a typical one for the operation of inguinal colotomy: T. J. P., male, American, aged 52, clerk by occupation, first consulted me in 1893. At that time his history was as follows: Parents dead,

one at the age of 60 of pneumonia, the other of rheumatism at 80. Oldest brother died at 40, of gastric cancer. Patient the youngest of seven children. Was healthy as a child. Married at 40. With the exception of lumbago and several attacks of presumed malaria he has enjoyed good health up to present illness. Has been a moderate user of alcohol but an inveterate smoker. No venereal trouble. For many years has been constipated. His present trouble began about four years before his visit to me. The pain in his back which he attributed to lumbago became worse. His bowels became loose. In the morning he would have apparently a normal fecal stool and later in the day one or more watery passages. The movements were attended by considerable straining and a sensation as though the bowel had not been entirely emptied. The urine was voided frequently during the day and he was obliged to empty his bladder several times during the night. Later on, he noticed that his passages, when formed, were not as thick as they had been—but what caused him anxiety was the fact that he passed about a tablespoonful of an offensive bloody fluid several times daily and the movements were accompanied by severe pain over the sacrum. These symptoms becoming aggravated and the patient being unable to rest comfortably in any position, night or day, together with the fact that he was steadily losing flesh and had no appetite, led him to consult me. At this time examination revealed the following condition: Varicose veins of both legs, but much worse on the left side. Cachexia not marked. External and internal hemorrhoids noted. A growth was detected about four inches from the anus, which was quite hard and nodular. Its upper limits could not be ascertained. Consent was given to perform an inguinal colotomy. Under ether anesthesia, the usual incision was made into the abdominal cavity and the peritoneum was drawn up and attached to the skin by sutures. The colon readily presented and, at the site selected for the artificial anus, a loop of it was brought out into the wound and a glass rod, four inches long, was passed at a right angle to the line of incision under the colon, through a puncture made in the mesentery; this was done so as to fix the bowel in the desired position. The intestine was then sutured around the wound to the skin and parietal peritoneum; seven or eight fine silk sutures being used on either side and the last suture at each angle being placed across from one side to the other. The suturing of the bowel in this manner prevented the protrusion of the small intestine and consequent danger of strangulation. (Fatal results from this accident are on record.) The dressing consisted of gauze placed between the glass rod and skin, so as to prevent undue pressure, and the lower stratum of gauze overlying the intestine was soaked in carbolic olive oil, to obviate any subsequent adhesion to the bowel, from the lymph filling the meshes of the gauze, which is apt to ensue unless this precaution is taken.

The patient did well after the operation and convalescence was all that could be desired. The intestine was opened on the third day. In two weeks he was allowed to get out of bed and in another week to walk about generally. By means of a home-made abdominal band and the application of pledgets of old linen and cotton over the artificial anus, he had and still has no difficulty in controlling the passage of wind and fecal matter. A truss was obtained for him but

was not so comfortable as the abdominal support mentioned.

He gained flesh, was able to eat and sleep well and attend to his business. The pain and inconvenience previously suffered were greatly relieved. During this time opiates were occasionally required. At present writing (three years since the operation), and for a year past, he has suffered considerable distress from pain over the sacrum and has not been able to work. Opium has to be used daily. The growth has increased and causes considerable vesical disturbance. It is probable that the patient may live for six months or a year longer.

In an article read before the ASSOCIATION last year (Transactions, Surgical Section of the AMERICAN MEDICAL ASSOCIATION, 1895, p. 101-104), I went into a more extended discussion of the relative merits of extirpation and colotomy in the treatment of cancer of the rectum.

Posterior Linear Proctotomy.—I have never attempted to relieve malignant trouble affecting the rectum by means of a linear proctotomy. In benign stricture I have found it an excellent plan of treatment when combined with the subsequent use of bougies. Those surgeons who adopt this method for relief of rectal cancer speak highly of its efficiency, some going so far as to claim that it takes the place of both colotomy and excision. (Mr. Chas. B. Ball, F.R.C.S.I., Diseases of the Rectum and Anus, p. 336.)

Curettage.—In the present paper I desire to call attention to, and to emphasize, the value of curettage in those cases of cancer in which the disease is within the lower three inches of the rectum and its character of such a nature as to permit of its more or less complete removal by the curette. In selected cases the operation is followed by a diminution of pain, bearing-down sensations and discharge and the lumen of the bowel is enlarged.

Some patients object to having an artificial anus and refuse to have a colotomy performed; others consider the curettage of the growth a less dangerous operation and prefer a procedure which to them is less abhorrent than the idea of an artificial opening, in an abnormal position, for the passage of feces. In some of these cases curettage can be done with decided benefit.

In certain cases the combined operations of colotomy and curettage will afford the patient much more relief than where one or the other procedure is individually adopted. It is true that only temporary relief is afforded by either curettage or colotomy, but in the majority of cases this is all we can offer the patient under any plan of treatment in vogue at the present time.

During the past two years I have curetted the rectum for the relief of malignant trouble in seven different cases. In only one case was the operation deemed unsatisfactory. This was in a patient of Dr. D. F. Greenwald, of Philadelphia, with whom I saw the patient in consultation. I am indebted to the Doctor for the following history: "Mrs. R. was treated by me (Dr. Greenwald) for a recto-vaginal fistula about five years ago. At that time there was no evidence of contraction of the caliber of the bowel and no other symptoms pointing to the presence of cancer. For a period of three years following the operation for fistula she suffered no discomfort and was able to pursue her usual duties. Two years ago she complained of pain during defecation, which was

attended by a discharge of glairy mucus, streaked with blood. Before examination a decided decrease or narrowing of the bowel was discovered about two and one-half inches above the anus. Antiseptic douches and the use of rectal bougies daily benefited the case for more than a year. She then complained of bearing down pains and the countenance assumed characteristic carcinomatous cachexia. These symptoms continued with greater severity until you saw her. After the curetting operation she was unable to leave her bed, her appetite failed, emaciation followed and death from exhaustion ensued in two months and three days."

Even in this case, which was a most unfavorable one for any operation, the patient was much relieved of pain and the two months she lived were certainly passed with more comfort than would have been the case had no operative interference been attempted.

The results following curettage are best described by recording the history of a typical case: J. M., a colored man, age 33, by occupation an engineer, applied for treatment at our clinic, at the Polyclinic Hospital, about two years ago. Family history negative. Personal history negative except a possibility of his having had syphilis; this fact the patient denied, but the records at the Pennsylvania Hospital, Philadelphia, where he had previously been treated, indicate otherwise. Present trouble began some three years previous to his coming under my observation, with bloody discharges from the rectum and a feeling of distress about the anus. He stated that on two occasions during this time he had been admitted into the wards of the Pennsylvania Hospital and had the rectum cut, and that this was followed by the passage of bougies. He dreaded so much the passage of the bougies that on each visit to the hospital, he left as soon as he could obtain his discharge.

At the time he came under my care, he had a more or less constant bloody discharge from the rectum, considerable pain at stool and for sometime following the movement; he was very emaciated. Examination revealed a mass occupying the lower two inches of the bowel, part of the mass protruding through the anus. Abdominal palpation indicated the presence of nodular masses within that cavity, especially marked on the left side above the sigmoid flexure. At first he refused operative interference, six months later he consented to enter the hospital.

Upon admission to the wards of the Polyclinic and after the lapse of several days, the patient was prepared for operation and upon the day selected, he was etherized, the sphincters were stretched and the growth was thoroughly scraped away with a sharp spoon curette. A weak solution of permanganate of potash was employed for douching purposes. In some places scissors had to be used to remove the denser and more indurated portions of the mass. The bleeding at the time and after the completion of the operation was not alarming. The parts were fully dusted with iodoform and the rectum was plugged by means of a good-sized piece of gauze attached to a large rubber drainage tube, which latter had been closely fitted over a glass tube to keep it patulous, the rubber at the same time protecting the glass should it break by accident. Around the tube but within the folds of the gauze the packing was placed. The dressing was completed by a firm pad of gauze and cotton and a T bandage. Recovery from the operation was perfectly satisfactory, and in a month's

time the patient was given employment in the hospital as an orderly. He had not been able to work for over a year previously. The gain in flesh was marked. For a long time he was given the iodid of potash, but any increase above five grains, thrice daily, produced nausea; no good effect was noticed from its use. Four months later the patient was in such good health that he married. A short while after this event the growth in the rectum was noticed returning and the discharge reappeared. Some pain was also complained of and later defecation was accompanied by considerable distress and difficulty. Six months after the first curettage he was again subjected to a similar operation. Ten days subsequently he stated that he felt well and was free from pain. Graduated bougies were now used daily. A month later, marked tympanites suddenly appeared and the patient was unable to pass either wind or feces. Various laxatives were employed and several enemas administered before the bowels were made to move, which was not until the third day. Several similar attacks ensued which occasioned considerable trouble before relief was obtained. Finally, the patient became confined to his bed through sheer weakness, and death occurred from exhaustion about nineteen months from the time I first saw the patient. The autopsy revealed cancerous involvement of the liver and intestines.

In conclusion I would roughly summarize the indications for the operative treatment of rectal causes, thus: Extirpation, to be considered only in those cases in which the disease admits of the hope of obtaining a permanent cure; colotomy, when the rectum is involved above the lower three inches of the bowel and the disease has produced an appreciable obstruction; curettage or a posterior linear proctotomy, or the two combined, for those cases in which the disease occupies the lower three inches of the rectum.

GASTROSTOMY FOR STRICTURE OF THE ESOPHAGUS, BY THE SBANJEW-FRANK METHOD, WITH EXHIBITION OF PATIENT.

Read in the Section on Surgery and Anatomy at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY HUNTER P. COOPER, M.D.

PROFESSOR OF ANATOMY AND CLINICAL SURGERY IN THE ATLANTA MEDICAL COLLEGE, AND ATTENDING SURGEON TO GRADY HOSPITAL, ATLANTA, GA.

The patient, C. F. J., age 27, male, white, entered the Grady Hospital as a private patient in my service on Jan. 28, 1896.

The following history was obtained on admission: About one year ago he took one swallow of pure nitric acid by mistake, causing corrosion of the entire mouth, lips and esophagus. The mouth and lips healed about three weeks after the sloughs separated. Several months previous to admission the patient noticed an increasing difficulty in swallowing; in the last few weeks this has gotten considerably worse, and he feels now that small particles of solid food are stopped before reaching the stomach, evidently low down in the esophagus. Liquids can still be swallowed slowly and with difficulty; it takes him as much as half an hour to drink a glass of milk. At times during the past few weeks the contraction in the esophagus closes to such an extent that for two or three days at a time he says he is unable to swallow

anything: then relaxation occurs and fluids will pass into the stomach. His diet is entirely restricted to fluid food. On admission I find him fairly well nourished, pulse and temperature normal, tongue clean, appetite good and pulse regular. On examining the esophagus with bulbous bougies three strictures are detected seven, seven and a half, and eight inches from the edge of the incisor teeth, and no more are encountered until the instrument has passed thirteen and a half inches down the esophagus, when it meets with an obstruction which will not allow an instrument of any size to pass.

Treatment: For a number of days futile efforts were made to get the instruments into the stomach, but without success. The largest instrument that would pass the stricture seven inches from the teeth was of the size of a twenty-two French urethral bougie. Nothing would pass lower than thirteen and a half inches. It was decided, therefore, to do a gastrotomy, and the operation which was selected was the Sbanijew-Frank method. I trust I may be pardoned for briefly describing this method, as it is not familiar to everyone.

The incision is about a finger's breadth below the costal cartilages on the left side, over the stomach. The first incision, three and a half inches in length, goes down to the muscles; the muscles are then divided in the direction of their fibres by blunt dissection. The peritoneum is opened in a line parallel with the edge of the costal cartilages. The stomach having been sought for and withdrawn from the wound, is drawn strongly outward by a ligature passed through its walls. Traction is made on this ligature by an assistant until a cone of the stomach three or four inches long is drawn out of the abdominal incision. While the assistant holds this cone in position by means of the ligature, the base of the cone is sutured to the parietal peritoneum all the way around.

The next step in the operation consists in making an incision through the skin, superficial fascia and areolar tissue down to the deep fascia. This incision is placed one inch above the margin of the costal cartilages, and its direction is parallel to that of the primary incision. By blunt dissection communication is made underneath the skin and superficial tissues between this incision and the primary incision. Through this communication the apex of the cone formed by the stomach is drawn; the wall of the stomach is sutured to the skin and the stomach opened. The primary wound is closed, the muscles being sutured seriatim and the skin incision sutured last. The advantage of this plan is that it brings the stomach through the abdominal wall in an oblique direction; a part of the stomach is included between the edge of the costal cartilage and the skin, forming a valve as it were. This device prevents leakage of the contents of the stomach during digestion, and is a great advantage over the old method of making a direct communication between the stomach and the abdominal incision.

The operation was performed on February 11, Dr. Elkin being present and lending me valuable aid. The patient was put to bed in an excellent condition: and for the next four days his temperature ranged between 98.8 and 100.2 degrees. At the end of that time his temperature rose to 102 degrees and pus was discovered in the wound. This was evacuated on the 16th by Dr. Nicolson during my absence from the city, and after that the patient convalesced

without a bad symptom. The wound healed nicely. Feeding by means of the stomach proceeded every four hours, a catheter being introduced into the stomach for this purpose and only liquid food administered. I feel quite certain that suppuration was caused by the wound being infected by the escape of some of the contents of the stomach through the puncture made into its walls for the purpose of introducing the ligature. I closed this immediately on withdrawing the ligature by two or three Lembert sutures, but gas escaped quite freely before I effected a closure, and I am certain some of the secretions from the stomach got into the wound, producing infection. His fever from the suppuration lasted only five days.

The subsequent history of this case has been uneventful. He has gained in flesh and strength, and as you see, is perfectly nourished by means of the feeding through the artificial opening. A few weeks ago I began to try the passage of bougies through the stricture from above. During my absence from the city Dr. Elkin succeeded in getting a small bougie eighteen inches from the edge of the teeth. Dr. Ward, house surgeon of Grady Hospital, passed an instrument, 15 on the French urethral scale, twenty inches. On May 4 I passed No. 15 of the French scale, sixteen inches; in other words, two and a half inches below what was formerly an impermeable stricture. On the same day No. 22 French was the largest instrument which would pass through the stricture at seven and a half and eight inches respectively, from the edge of the teeth. It is my hope within the course of the next few weeks to be able to get through the strictures and divide them by Abbe's method. Of course, if this can be done the external opening into the stomach can be closed. There is so much cicatricial tissue present, however, that I fear it will be impossible to thoroughly divide it so that recontraction will not take place.

I should say in reference to this operation that the result is all that could be desired. The valve does its work very well, and there is practically no leakage at all. A little gastric juice exudes from the opening, but none of the contents of the stomach. He keeps a little pad over the opening to prevent the irritation, which the gastric juice causes when it comes in contact with the skin.

DISCUSSION.

DR. ROSENTHAL, Philadelphia - I have seen this operation performed by Dr. Thomas S. K. Morton. I would like to ask if there was any complication resulting in Dr. Cooper's case. I know Dr. Morton always fears this and gets his patients up as quickly as possible.

DR. THOMAS, of Pennsylvania - I would like to ask a question regarding the use of the Abbe ligature. If this ligature is used and the enclosure done away with, would not this stricture recontract and necessitate a repetition of the operation?

DR. FERD. C. VALENTINE - It might not be out of place to compare these strictures with urethral strictures. A French surgeon has presented 20,000 cases of stricture of the urethra treated by linear electrolysis and 200 strictures of the esophagus treated in the same manner. His instrument is that of a sound attached to a small guide in the shape of an esophageal tube with a curved tip of platinum on its inner concavity or outer convexity. When this has passed through the stricture he dilates from three to ten millimeters. This suffices to open the stricture at that one point sufficiently to begin a series of dilatations and make a useful canal.

DR. W. J. MAYO, Rochester, Minn.—I have had some experience in these cases and it seemed to me that Fenger's operation is the best for this particular class of cases. You make an attempt at retrograde dilatation. In two of my cases, I used Fenger's operation, but it is subject to great annoyance from leakage. The fact that one can make several attempts, however, is an important point. I do not understand how the Abbe string method can be used in this case. One of my cases was that of a child who swallowed some concentrated lime, causing a stricture which it was impossible to pass. I first employed esophagotomy and then made a gastrotomy wound. Although we were able to divide the upper stricture, we could not pass through the lower one and I then made Fenger's incision. The reason I refer to this is, that an oblique incision brings one in the direct line of the stomach, and through this I could nourish the child very well. External esophagotomy with a heavy sound inverted the stricture, and in that way we were able to pass the tube into the esophagus, which held the stricture firmly in place. In a short time we were able to close the external wound, but we continued the dilatation for some time. The second case follows Abbe's method more closely, and I got through the stricture at once and sawed it out. For fear that we might not have succeeded, we introduced a tube and the end of the string was carried to some extent, but we could not pass the sound afterward, as it seemed to catch in the folds. The Witzel tube enabled us to feed the child for a number of months. With regard to what Dr. Valentine says, anyone who has had experience in urethral or other forms of cicatricial stenosis knows that if you can get the probe in your work is done. I have looked this subject up very carefully, and especially in connection with LeFort's method, but found that he had not done much. He practically employed gradual dilatation with the aid of electricity, which to my mind does not mean anything. I congratulate Dr. Cooper on the result of his operation, which is very complete, and it is the operation of choice. While I do not wish to criticise the case, still I do believe that Fenger's incision and the direct wound in the stomach is better.

DR. VALENTINE, continuing—I wish to state that I know nothing about this subject as it relates to the esophagus. I have seen stricture of the urethra treated where a filiform could be passed only with great difficulty and precisely six months thereafter a No. 20 French went through the stricture without any pain or hemorrhage. This was done in Bellevue Hospital, New York, in the presence of a number of gentlemen.

DR. COOPER, closing the discussion—One good point about the wound is that if you should divide the strictures and they should recontract, you would have simply to reopen the stomach at the site of the former gastric fistula, and this could be very easily and quickly done. The other criticism in reference to getting into this wound, as you get into an ordinary gastrotomy wound, is not true. Your finger easily presses the tissues down. This method does not interfere with any technique should you wish to perform retrograde dilatation.

THE ABORTION OF GONORRHEA AND TREATMENT OF OTHER URETHRAL AND VESICAL DISEASES BY HY- DROSTATIC IRRIGATIONS.

Read in the Section on Surgery and Anatomy, at the Forty seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY FERD. C. VALENTINE, M.D.

PROFESSOR OF GENITO-URINARY DISEASES, NEW YORK SCHOOL OF CLINICAL MEDICINE; GENITO-URINARY SURGEON, WEST SIDE GERMAN DISPENSARY, ETC., NEW YORK.

In a paper¹ read before the Society for Medical Progress, January 11 and before a Wissenschaftliche Sitzung der deutschen Poliklinik on January 17 of this year, as much of the bibliography of hydrostatic irrigations as covered the requirements was touched upon.

In that paper I described an apparatus which did away with nearly all the objectionable features of these irrigations. I now propose to submit some

modifications which are the outcome of constant endeavor to so simplify and render safe the treatment of genito-urinary diseases, as to make at least the most frequent thereof available for the general practitioner.

The modifications of the apparatus I present, consist essentially in:

1. The substitution of a cast-iron ring to hold the irrigator. By this means, the irrigator can more easily be attached to any wall or bookcase.

2. A rubber tube made especially for this apparatus, doing away with the complicated connections, which formerly were necessary. The essential feature of this tube is that its lumen is a *quarter inch in diameter*, which enables the operator to easily overcome any sphincter vesicæ. The tube has expansions at both ends, the one to attach to the irrigator, the other to make the change of nozzles easy.

3. A stopcock nearly thrice as large as its predecessor. This prevents cramping of the hand, when frequent irrigations are required as must be made in the specialist's office. The lever of the stopcock's button now has three catches, by means of which three forces of stream are obtainable with no more effort than a slight motion of the thumb.

4. The shield's neck is enlarged and rough-ground within. This facilitates its being slipped over the nozzle, when attached to the hose, and also attaches it firmly to the stopcock. The apparatus as described is made as were its predecessors, by F. Alfred Reichardt & Co., of 27 Barclay St., New York.

As far as the surgeon is concerned, these alterations of the mechanism prove convenient to a degree which a comparison with my former apparatus at once reveals. As regards the patient, experience has demonstrated that the tension of the urethra, which was occasionally somewhat painful in new cases, is now more quickly overcome. This I attribute to the large caliber (one-fourth inch) of the tube.

The technique of these irrigations is not essentially modified by these improvements, except that now, in but very rare cases, is the patient required to breathe deeply and to strain, as if at urinating.

The theory upon which this treatment is based, can be outlined in a very few words. If the sole purpose of the treatment were to merely wash microbes and pus from the surface of the genito-urinary mucous membrane, such serious consideration would not be necessary. But as the microbes that we must combat deeply invade the tissues of the urethra, mere washing away of those which rest upon its mucous surface would prove useless. Manifestly we can not follow the gonococcus into the tissues, but by these very copious washings we cause the mucous membrane to take up large quantities of water. The resultant artificial edema, renders the urethra a bad culture-medium for gonococci. In practice, whatever may be our theory, the results are oftentimes more than astonishing.

The difficulty of obtaining statistics of gonorrhea, are all too well known. As I have shown in another paper ("When may gonorrheal patients marry?" *American Medico-Surgical Bulletin*, Oct. 1, 1895), gonorrhea is still too lightly viewed by the laity to make reliable data obtainable in large numbers. I may, however, cite from those cases which I could observe from the beginning of the muco-serous discharge in which gonococci were present. *Every one of these recovered entirely within thirty-six hours.* Cases in which the discharge had grown distinctly

¹The Technique of Urethral and Intravesical Irrigations, *Clinical Recorder*, February, 1896.

purulent, when not complicated, recovered within ten days. Chronic cases, which had lasted for months and years, recovered in varying lengths of time. The most marked case among these was that of a physician, who had persistently treated himself for gonorrhea (perhaps with reinfections and auto-reinfections) for twelve years. In two days the copious yellowish-green, blood-streaked discharge grew watery; in five days the gonococci disappeared; in eight days the discharge was entirely gone.

It may be well to explain here what is meant by "cured." After the discharge ceases, the patient is not treated for a week or ten days. Then, no discharge reappearing, he is ordered to drink at least twice the quantity of beer to which he is accustomed. No discharge resulting after another lapse of ten days, he is given a strong, irritating injection of nitrate of silver. If the resultant discharge, which lasts from eight to thirty-six hours, contains no gonococci all restrictions are removed, except that the patient is requested to bring the next seminal emission resulting from coitus condonatus, in the same condom. If this contains no gonococci, and anterior and posterior urethroscopy show a healthy urethra, the patient is discharged.

These experiences, not few in number, are from those cases in my private practice that were not complicated with other affections. In those, the cases were delayed by the complications, whose removal in many instances was aided materially by the irrigations.

Berthold Goldberg,² of Cologne, has most carefully compiled the literature of the subject. He finds that of the cases treated by systematic intravesical irrigation, 60 per cent. recovered in less than ten days, 30 per cent. recovered in two to three weeks, and 10 per cent. mischanced. One-half of this 10 per cent. was attributable to avoidable causes, disobedience of patients, repeated excesses, etc. The remaining 5 per cent. distinctly resisted treatment, but would still more have proved unamenable to other forms of medication.

Goldberg's experience and that of others lead him to conclude that carefully systematized irrigations with potassium permanganate: 1, are indicated when gonococci are present; 2, are contraindicated in acute inflammatory conditions; 3, permanently remove the gonococci in 95 per cent. of far more than half the cases, within one or two weeks, in any stage of the disease; 4, are reliable as a means of aborting gonorrhea; 5, the successes are due to coincident mechanical and chemic effects. This author adds that the irrigations may also exercise a genuine, specific antigonorrheal influence.

My investigations lead me to except only Goldberg's second conclusion. The contraindication in acute local inflammatory conditions would necessarily be in pain; this is easily and quickly overcome by an injection or two of cocain.

Several authors, notably among them my best of friends, Hans R. Wossidlo of Dresden,³ did not obtain such favorable results. An analysis of their writings shows that they either did not follow the treatment in that systematic manner these cases require, or were unfortunate in having intractable patients. Wossidlo, however, asserts that as means of aborting gonorrhea,

this method has the decided advantage of easy execution; that in acute and sub-acute gonorrhea it yields a large percentage of favorable results in as far as concerns stopping the purulent discharge and causing the gonococci to disappear; but that in chronic gonorrhea, it is not equal to Oberlaender's methodic dilatations.

I am glad to avail myself of this opportunity to express my obligations to Wossidlo for leading me to adopt Oberlaender's method, both of examining and treating the diseased urethra. The profession owes a deep debt to Oberlaender for his method, which does away with that odium upon physicians and long wearing source of grief to patients—chronic gonorrhea. But in its treatment, while I follow Oberlaender closely, I never neglect to add irrigations. The combination has invariably yielded most satisfactory results. These will be testified to by the many colleagues throughout the United States who have honored me by their confidence in sending me those cases, or who have so treated them at home.

But, aside of all other considerations, let us view the practical advantages of these irrigations.⁴ If the method is correctly followed: 1, the disease is cut short; 2, pain is stopped; 3, no complications ensue; 4, no hand injections are used, with their unreliability; 5, no drugs are given by the stomach; 6, the patient can not peddle prescriptions.

The last is as important as any. As in other diseases, the patient is likely to assume that the last prescription he received, even if it were a cough-mixture, is the one which cured his gonorrhea. He gives copies to his friends similarly affected; they do not improve and the physician's reputation is accordingly damaged.

These facts should cause this method to be adopted by all practitioners, especially now that its application is so easy, by the apparatus which I have the honor of demonstrating.

A discussion of all the diseases in which urethral and intravesical irrigations prove useful would carry beyond the limits of this paper. The most frequent ones need only be mentioned; to suggest many others:

Catheter-Fever.—Since I made it a rule to irrigate the bladder, by means of the apparatus herein described, after any instrumentation of the urethra or bladder, I have never seen a case of catheter-fever.

Corperitis, Folliculitis and Seminal Vesiculitis do not contraindicate irrigations.

Cystitis and Posterior Urethritis.—The posterior urethra being practically a part of the bladder, diseases of both these regions are best considered together. If the inflammation is acute it may be well to treat it in the usual manner; but as soon as the patient can bear them, careful, gentle, mild irrigations will yield most satisfactory results. In this connection it must be remembered that the mucous membrane involved is not only very sensitive to irritation, but that sudden

² Centralblatt für die Krankheiten der Harn- und Sexual-Organen, Band VII, Hefte 3 und 4.

³ Centralblatt für die Krankheiten der Harn- und Sexual-Organen, Band VII, Heft 2, 1896.

⁴ Swinburne, after averaging thirty irrigations a day for two years, concludes a paper on "Permanganate of Potassium in the Acute Stages of Gonorrhea." (American Medico-Surgical Bulletin, Feb. 1, 1896) as follows: "Yet with this method, crude as it has necessarily been, the results have been far better than with methods previously tried. While I do not claim a cure in all these cases, yet I do claim for this method: 1, marked lessening of discharge, so much so that it ceases to engage the patient's attention; 2, a shortening of the course of the disease; 3, relief from the many troublesome symptoms so often noted in the course of the disease; 4, almost never hear a patient complain of chordee; 4, far fewer chronic cases; 5, fewer cases followed by stricture; 6, fewer cases where instrumentation is required; 7, fewer cases of posterior urethritis; 8, fewer cases of epididymitis; 9, fewer cases having secondary invasions of the mucous membrane from other microbes; 10, a larger proportion of complete cures than with any previous method with which I am acquainted."

distension produces much pain. In chronic cystitis and posterior urethritis, irrigations are exceedingly well borne and yield excellent results.

Epididymitis and Orchitis.—Goldberg and others treat these cases with ointments and Zeissel-Langlebert-Casper suspensory bandages until pain has subsided, before irrigating. If the case is one-sided, I strap the testicle and irrigate at once. If both testicles are involved I use Wossidlo's method. This consists in applying the galvanic current, two to eight milliamperes, for from three to fifteen minutes daily. Then I apply a suspensory bandage and irrigate at once.

Neurasthenia.—This affection, from which no genito-urinary case is entirely free, yields as the disease is relieved; but even in pure, essential sexual neurasthenias, irrigations render the most surprising results.

Prostatitis.—Acute prostatitis may be left to subside, which it does very soon under appropriate treatment. It does not however contraindicate careful irrigations of the anterior urethra. In chronic prostatitis the gland should be emptied by daily massage through the rectum before irrigating.

Retention.—If a patient suffering with retention acquires gonorrhea, Goldberg deems irrigation contraindicated. I hold that such cases must be relieved with carefully sterilized instruments and the irrigations used.

Secondary Syphilis.—Patients affected with secondary syphilis are said to bear irrigations badly (Goldberg). This has not been my experience.

Strictures.—It would seem that the artificial edema we strive to produce in gonorrhea might offer danger of retention if the patient also has a stricture. In such cases the Oberlander method yields most brilliant results, especially when associated with irrigations.

Tuberculosis.—When tuberculous cases are not very low or in fever their gonorrhea can be treated as in other patients. Indeed, the very character of the disease should command hasty removal of the additional infection (Goldberg).

It is my hope that these roughly drawn suggestions will sufficiently interest practitioners to lead them to test this method of treating urethral and vesical diseases. If the results others obtain should promote further development of treatment by able men, suffering humanity will be benefited and I will have taken up your time to some purpose.

DISCUSSION.

DR. CHAMPION, Atlanta—Dr. Valentine demonstrated his method in my office yesterday and in a patient without a stricture, he succeeded. Only a No. 12 of the French scale could be passed. I have been using this method and see no reason why I should make any change. In fifty cases that have been recorded, only one case of epididymitis developed. I think every case of gonorrhea should be treated by irrigation.

DR. OLMSTED, Atlanta—I would like to ask about the time of irrigation, that is whether the Doctor irrigates as soon as the patient comes to his office or allows the acute symptoms to subside. Also whether he injects the bladder in all cases at once.

DR. ROSENTHAL, Philadelphia—I remained over on purpose to hear this paper and to discuss it. I have seen some very bad results from gonorrhea, and these results often lead to pus tubes, inflammation, etc., in women. Inflammations of Cowper's gland, the bladder and the ureters are serious complications and if we can remove the contagion we should certainly try to do it by trying all methods so as to see if there be any truth in the assertion made by any one. In Pennsylvania, we have passed a law which compels midwives to at once send for a physician upon the birth of children suffering with ophthalmia and we have institutions under State and Quaker supervisions for these affections. We have such authority as Dr.

Schweinitz and others who show that these cases are due to gonorrhea. In the report of 1,000 cases in the Philadelphia district, in every case it was found due to gonorrhea. I shall treat the next case of gonorrhea that I have in the same way as Dr. Valentine and hope that my result will substantiate his claim. If we can irrigate the urethra of a man successfully, for the sake of his wife and children we should use such means as we have seen to-day.

DR. THOMAS, Pennsylvania—I think from this demonstration to-day one would think it was a very easy matter to treat gonorrhea, but I would state that this is not the case. With regard to latent gonorrhea, I must confess I do not know what it is. Supposing a case comes to us with a secondary gonorrhea and there are lesions of the previous attack existing in the urethra. You can not cure that case in four or five days or even weeks, I do not believe that a cure is possible under any circumstances in two or three days. Now take gonorrheal ophthalmia, which is a condition right under your eye and finger. You can irrigate this conjunctiva several times a day and you can keep it cleansed for many months, but by this treatment, although you may control it to some degree in two or three weeks, it is not cured as a rule, even under the care of the most competent oculists in three weeks or even in six weeks. The acute disease may be over but there is some of the sequelae left that can be seen in the eyes. I believe that the method suggested is a very good one. It is one that I practice continually but not exclusively. Another excellent method is to inject the urethra, after first cleansing it, with a solution of nitrate of silver four grains to the ounce, once daily for two or three days, and then irrigate the urethra with some milder solution. I have followed this in nearly all of my treatments with considerable success, but I have not yet seen a case that was cured in two or three days. In secondary gonorrheas that come to us for treatment, you have to consider the pathologic conditions that remain from the previous attack and cure this before you can get a cessation of the discharge.

DR. WILLIAM PERRIN NICOLSON, Atlanta—I would like to ask how long the reaction is to continue, how soon it is repeated, and how long the first sitting occupies. As to the injection of the bladder without a catheter, I remember Dr. Hunter McGuire performing this with an ordinary Davison syringe more than twenty years ago.

DR. VALENTINE, in closing the discussion—I will send reprints to any of the gentlemen who may wish them in order that they may familiarize themselves with the methods. Dr. Champion said that he is not convinced that the method of irrigating without a catheter is an altogether desirable one, but I am sure he will not use a catheter again after reading the literature I shall leave with him. With regard to irrigating at once, if I did not there would be no treating of the gonorrhea and no time would be gained. Unquestionably, irrigate the moment the patient comes into your office after you have shown by microscopical examination that he has gonorrhea. Do not let the acute symptoms subside. If the disease is located in the anterior urethra, irrigate in the morning and again in the evening from one to three days. Then give one posterior irrigation which will irrigate the bladder as well. On the fifth or sixth day again irrigate the anterior urethra, morning and evening and say on the eighth day give another anterior and posterior. Dr. Rosenthal suggested that my assertions should be tested and I hope they will. There have been sufficient statistics given to prove its efficacy, a French surgeon having employed the method in about 20,000 cases, a German in 10,000 cases, Goldberg in 2,000 cases, Swinburne of New York, in an average of 30 cases daily for two years and my own experience numbers about 3,000. I thank Dr. Thomas for criticising me so severely. He is right in saying that it is not an easy matter to treat gonorrhea and we must always do with some degree of apprehension. By this method I think it is easier to treat than by any other. Dr. Thomas also said he did not know what latent gonorrhea was, and I must say I do not know what it is either except that it is a very convenient term. It really means the lurking of the gonococci without the manifestation of symptoms except under special exciting circumstances. During the sexual life, especially after marriage, the crypts, glands and follicles are more frequently washed out, and not only may they infect the urethra but in a number of cases they may carry contagion to the female. The Doctor states that gonorrheal ophthalmia is not cured in five or six weeks and this is true. You can not subject the conjunctiva to the hydrostatic pressure that you can the urethra. While the pathologic character of the conjunctiva resembles that of the urethra, it certainly is of a different character, and you would not care to induce the edema, which makes the urethra a fair culture ground for the gonococci. Again, Dr. Thomas states that he has not seen a case

that he could cure in five days, and I agree with him that they are rare. We should not call it gonorrhea unless we have first found the gonococci. The experiences of men who have worked in this matter much more than I have shows that the cases are cured. A Berlin surgeon, who does not consider my method alone, says that it was successful under circumstances like those we have discussed. Dr. Nicolson asks how long the edema lasts, and I would say from three to five days. He also asks when I irrigate again: at the next sitting; ignore the edema. I was delighted to find that I could not claim priority in irrigating the bladder. I may be permitted to mention that Dr. J. B. Crossfield did this operation in the year 1791.

PLASTIC SURGERY.

Read in the Section on Surgery and Anatomy at the Forty-seventh Annual Meeting of the American Medical Association held at Atlanta, Ga., May 5-8, 1896.

BY F. W. EPLEY, M.D.

NEW RICHMOND, WIS.

Recent developments have shown, I believe, very clearly, that in the light of modern surgical methods we have not been living up to our privilege in our operations upon the surface of the body. The wonderful field which antiseptic and aseptic methods have opened up to the operator within the cavities of the body has so occupied the attention of the aggressive surgeon, that surface surgery has to a considerable extent been neglected.

This I believe to be due, partially at least, to the unwarranted warning which came to us from high authority soon after the advent of antiseptics, that they could not be used in plastic surgery, or at least in grafting, and further, that local anesthetics, such as cocain, were inadmissible. If this were true, we might be excused for accepting it and contenting ourselves with the infinitesimal groat of skin which we have been wont to plant in its regular orthodox one-half inch from the sound skin, and one-fourth inch from its fellow invader. But fortunately it is not true. Neither is it true that we must use split leather in a saline solution, "à la Thiersch," to repair our hides which have suffered a solution of continuity. On the contrary, experience teaches us that the whole skin, clear down to the cellular tissue, is at our disposal for this work, and further that we may and should use antiseptics and local anesthetics freely in our deliberations. And last but not least, we find that *the size of a piece of skin which can be successfully transplanted is limited only by our facilities for obtaining and properly handling the same, and the size of the space to be covered which can be brought into proper condition to receive it.*

Further, we can not by taking thought add a cubit to our stature, but we can, by a little thought, save the generous donor of one of these large pieces of skin a vast amount of annoyance, discomfort and pain, by making the pieces of skin removed boat-shaped at the ends instead of square, thereby enabling us to close the ugly wound at once with a continuous suture, leaving only a straight seam which will heal by first intention instead of leaving a wide, square, open wound, with no expectation of healing whatever, apparently, and which will sometimes exhaust the patience of all parties to the transaction.

In proof of these statements, allow me to report a case: On June 27, 1894, G. H. a car-sealer, had the whole bottom and flesh on the sides up one-half to one and one-half inches torn from his foot by a car wheel passing over it. Not only the skin but all the flesh was torn from the bottom of the foot leaving the bones bare so they could be counted. The os calcis

was left as bare and white as a porcelain door-knob. In addition to this the skin upon the top of the foot was bruised in a shocking manner so that nearly all the epidermis up to and above the ankle joint turned black and eventually came off. Strange to say only two bones were injured and they were small ones and only to a limited degree. After careful examination I decided to try what modern conservative surgery could do and declined to amputate. The foot was anesthetized by injections of a 4 per cent. solution of cocain and great care taken to make it clean, to remove all the tissue injured beyond repair and keep it antiseptic. Soon granulation tissue sprang up and covered all the bare bones. This was allowed to grow until the bottom was well cushioned over, when the foot was kept in proper shape by careful bandaging. On July 30, about a month after the injury, I began skin grafting in the usual way, placing small pieces of skin about the size of one-half a kernel of corn about one-fourth inch apart and about the same distance from the healthy skin all around the edge of the same. This process was carried on successfully until the sole proper was reached, when a different method was adopted in order, if possible, to avoid contraction of the skin and as much as possible to do away with scar tissue which experience has shown will not support the weight of the body. To accomplish this desirable result I resolved to try to transplant solid skin. Accordingly, on August 26, two months after the accident, a piece of solid skin two inches wide and over three inches long was removed from the calf of a friend's leg and placed across the ball of the wounded foot. This was a perfect success. So much that at the end of a week on cutting this transplanted skin the patient's blood flowed from it freely. On September 3, a piece of skin two inches wide and five long was taken from the arm of another friend, each piece being about one and one-half inches wide by five long. These transfers were followed by the same gratifying results, every vestige of skin removed retaining its vitality and growing firmly to the injured member. On September 9, fifteen large grafts about the size of a good kernel of corn were taken from my son's arm to cover two small corners not covered by the larger pieces. All these transfers having been so successful I decided to proceed to cover all the remaining surface, not covered by skin, at the next sitting. This was done on September 16, when one piece two by five inches and another two by five and one-half inches were taken from the arms of two more friends and the whole foot was covered. Every transfer was successful and in all fifty-two square inches of skin had been transferred in six large pieces from five different donors, and is to-day part and parcel of George Hibbard's anatomy. Beside, more than 300 smaller grafts from four other donors, making in all nine different contributors to the scientific repair of a railroad injury. And every one of them would willingly contribute as much more for the same purpose should occasion require. The skinning process was entirely painless, the healing rapid and the scar insignificant. The size which I have found most practical is about two by five inches. The best place to obtain it is just below the insertion of the deltoid muscle. This is not a very sensitive locality, is easily dressed, the skin is of proper thickness and texture and well supplied with blood vessels, while the wound here gives least annoyance to the donor.

Operation.—The donor should be seated in a com-

mon chair. His arm should be made aseptic in the usual manner; then antiseptic with a 1 to 1,000 bichlorid solution. Eight punctures with an hypodermic syringe should be made just outside the line of the proposed incision and about fifteen minims of a 4 per cent. solution of cocain, freshly prepared with sterilized water, injected into each puncture. Ligate the arm just above the elbow, not too tightly. Now surround the arm with several layers of gauze wet with 1 to 1,000 bichlorid solution. Place the patient in a position which will bring the wound in good light and most accessible. It must be *perfectly clean*, then rendered antiseptic by the free use of 1 to 1,000 bichlorid solution. It is most important that all weak granulation tissue be scraped gently, or shaved off, and open mouthed vessels oozing bright blood, in every part of the space, should be covered. Now bind, not too tightly, a pad of gauze wet with 1 to 1,000 bichlorid solution closely to the whole oozing surface and the wound is ready. When this is removed the surface will be clean and free from blood, all clots having been caught in the meshes of the gauze. Now remove the gauze from the donor's arm: put the skin upon the stretch, quickly block out the piece to be removed by cutting *clear through the skin* down to the cellular tissue. Carefully dissect up the upper point of the boat shaped area, securely fasten the hooks on the skin fork into the end of the flap, and as the skin is carefully cut, not torn or scraped, away from the subcutaneous tissue, roll it upon the skin fork, care being taken to roll up nothing but the skin free from blood clots or fatty tissue. Again, bind up the donor's wound with the bichlorid soaked gauze and he can wait until you have time to attend to him. Now remove the pad from the patient, apply the free end of the roll of skin to the wound and quickly unroll it upon the raw surface. If it does not fit it matters nothing; let it extend over upon the skin of the patient. It will live so far as the surface is denuded and the surplus skin will die and can be trimmed off later. The graft should be neither stretched nor pinched, but gently unfolded and smoothed out. Over this apply strips of rubber tissue just taken from 1 to 1,000 bichlorid bath; over this sprinkle a thin coat of iodoform, and then the usual gauze dressing, care being taken not to slide the graft upon its bed or bind it too tightly—just sufficient to make it secure. Now remove the gauze from the donor's wound and carefully draw the edges of the skin together with either a continuous suture or interrupted sutures closely put, dust with iodoform, cover with protective, reinforce the sutures if necessary and dress with gauze. Skin transplanted in this manner and cut forty-eight hours later will bleed even when placed upon the sole of the foot.

I wish to lay special stress upon three things, in closing. Use antiseptics freely, if you wish, cocain fearlessly, and make the donor's wound boat-shaped. The skin fork spoken of and the knife for removing the graft which I have devised, I have with me and will gladly exhibit to any who may wish to see them.

DISCUSSION.

Dr. J. McFADDEN GASTON, Atlanta, Ga. I would like to supplement one or two points in connection with these papers but not to enter into the discussion. It strikes me forcibly that with the advanced views we have in regard to antiseptic treatment of wounds and the aseptic treatment of wounds, that we should dispense with the use of corrosive sublimate which is suggested in the first paper and referred to in the second. The gentlemen who have the most advanced ideas of aseptic

surgery do not use this substance and I would like it illustrated how far it should be relied upon to correct deformities of this kind. I once encountered a case where the entire sole of a foot was torn off. I do not remember whether the bone was denuded or not. I depended upon traction with adhesive strips to bring the edges together and ultimately a very small surface was left for granulation so that the result was good. In another case of extensive laceration of the head and neck I dissected flaps from the shoulder, drew them up and connected them with the edge of the skull and by this traction succeeded in covering the part which had been denuded. I wish to call attention to a method that has not been alluded to and in fact has been overlooked to a great extent. Dr. Wilson of Louisville, published the method about fifteen years ago. It is to use the inner membrane of the egg for a granulating surface and by its use granulations are set up and you will usually get good results. Since its publication by Dr. Wilson, there has been a reappearance of the article drawing attention to the idea as having been introduced by a German. My experience with this method is limited but it has been sufficient to satisfy me of its efficiency. I remember one case in which I materially lessened the surface for granulations by this method.

Dr. EPLEY.—With regard to the use of corrosive sublimate, it has been deprecated I know, but I have found it of vast advantage sometimes. It has been my experience that skin transplanted in the way I mention would grow notwithstanding the fact of the number and size of the pieces. This method is of great advantage where you wish to preserve the elasticity of the skin. By all other methods with which I am acquainted you lose the elasticity of the true skin.

A TRIBUTE TO THE MEMORY OF EDWARD JENNER.

FORTY YEARS OF PERSONAL EXPERIENCE IN THE USE OF
VACCINATION FOR THE PREVENTION OF
SMALLPOX.

BY CHARLES N. HEWITT, M.D., M.A., LL.D.

PROFESSOR OF PUBLIC HEALTH IN THE UNIVERSITY, AND EXECUTIVE
OFFICER OF THE STATE BOARD OF HEALTH OF MINNESOTA.

The truest homage one can pay to a discoverer is personal and successful trial of his discovery.

I have had exceptional need of help in dealing with smallpox in more than 100 outbreaks of that disease during forty years of active practice of my profession. The experience began in private practice, was considerable while a surgeon in the army during the rebellion, and has been very large in twenty-four years of service as executive officer of the Minnesota State Board of Health.

Minnesota has had a large and steady immigration, both foreign and domestic, which has brought smallpox into townships, villages and cities, as into lumber camps and among the Indians.

One of the epidemics numbered over 300 victims, two others exceeded 100 each, but the most were limited epidemics.

For the last five years the disease has been almost wholly confined to the first affected. No more epidemics can occur in Minnesota, nor other than very limited local outbreaks, under our present methods of control, of which the essentials are positive knowledge of the facts, vaccination and re-vaccination, with isolation of the sick and suspects, and disinfection of persons and things.

The authority and responsibility of the State and local Boards of Health are mutual, and are recognized and insisted upon by the people.

In most of these outbreaks the writer has personally visited the victims as he would sufferers from any other disease, taking no precaution except to avoid being the carrier of the infection to other people. His personal exposure has necessarily been frequent and prolonged, but he has, with a confidence justified by the results, relied upon the protection afforded by

a vaccination with humanized lymph, done in infancy, and not, successfully, repeated since. To my mind this frequent exposure, and entire immunity from infection, are the most positive evidence I can give of the value of vaccination and of my absolute confidence in it. No other means of protection were used, and every known means of infection, except direct inoculation, were deliberately permitted.

There is a noteworthy reason for formally recognizing the value of vaccine at this time, beside the fact that it is the centennial of its discovery.

Professional opinion has been driven, by the wonderful discoveries of modern pathology, and the dogmatic assumptions founded thereon, to the belief that every specific disease has not only a specific cause (a self-evident fact), but that such specific cause is so, because it is a *particulate, pathogenic, living* vegetable or animal, or the *product thereof*. In small-

controlling its spread at that time), they could not "take" the smallpox but were in fact protected from it. Jenner verified this fact, and then went on to demonstrate that inoculation with cowpox, by the insertion of a bit of its peculiar product, vaccine, under the skin of a human being, induced the disease itself, which ran a peculiar and harmless course, and that such a person was not only protected from the direct inoculation of smallpox (as the dairymaids had discovered), but "from catching it" in any other way, and that the protection, probably, lasted for lifetime. He distinguished cowpox from other diseases of cattle; described perfectly the progress of the disease in man, the appearance of the vesicle day by day, its gradual decline, dessication and falling off, with the typical appearance of the scar it left. The illustrations and descriptions in the first edition of his book can not be surpassed to-day.



EDWARD JENNER.

pox and cowpox the specific causes are as much mysteries to-day as in Jenner's time.

The only explanation offered by a representative bacteriologist, so far as I know, was by Pasteur in his eulogy of Jenner, when he stated that we only lacked the proper culture medium, for as the bacteria of tuberculosis, enteric fever, etc., were discovered in this way, it could only be a matter of time and improved laboratory processes when these specific microbes should be discovered also. That discovery has not yet been made for smallpox and cowpox.

The foundation fact for Jenner's work was this: For many years the dairymaids of Gloucestershire had observed that if they took the cowpox from the cows before they came to be inoculated for the smallpox (the customary way of reducing its malignancy and

Of no other discovery in medicine can it be said so truly that the statements of the discoverer *remain facts* one hundred years after, though submitted to the criticism and trial of all the nations of the earth.

The modifications which experience has suggested are in details only:

1. That at least four perfect vesicles should be secured, as increasing safety and permanence.

2. That as smallpox sometimes recurs, even after a severe attack, so (but always in a modified and comparatively mild form) it may happen after successful vaccination, and therefore vaccination should be repeated after puberty, and whenever one is directly exposed to smallpox.

Jenner's rules were very simple and may be summarized as follows:

1. Be sure of the purity and activity of your vaccine.

2. The patient to be healthy, the operation to be carefully done, and the vesicle preserved unbroken, and allowed to run the natural course till the crust fall off and leave the perfectly healed scar.

3. To take the vaccine for use not later than the eighth day and from a typical vesicle.

Under these conditions I have put vaccination to very severe tests, under diverse conditions, upon great numbers of people, of all ages, occupations and nationalities, alone or in co-operation with my professional brethren.

The result has been that it has proved a safe reliance, has never been the carrier of other disease, and has never failed to prevent the spread of smallpox, when used as directed.

Even when used within four days after exposure to smallpox, it has modified that disease, diminished its danger and the subsequent pitting. I have always produced my own humanized vaccine, or obtained it from professional friends who used the same methods. As to calf lymph, this course was impossible, and I have frequently been deceived. In a long experience I have never seen other infectious disease associated with humanized or calf lymph, *collected under proper precautions, and used as Jenner directed.*

Up to five years ago I used humanized vaccine almost exclusively, but had sometimes to resort to calf vaccine, the best I could find, till I could establish a supply from infants, which I never fail to do when dealing with a smallpox outbreak.

Humanized vaccine by "arm to arm" transfer is still the favorite method. I think, among the public vaccinators of Great Britain, and when I was in Dublin in 1889 I saw typical vesicles upon the arms of children, produced by vaccine which had come in that way from the first supplied by Jenner himself a century ago. I make this statement on the authority of the Local Government Board of Ireland by its secretary. As for myself I have no evidence that humanized vaccine loses power by transmission through healthy children, and I believe that it does not.

While abroad, at the time referred to, I visited and studied the processes of cultivating vaccine, of both varieties, in all the leading stations in Europe and brought back with me calf lymph with which I began its cultivation, for our own use, in Minnesota.

I have been reasonably successful, having produced many thousands of points, and tested the vaccine upon nearly 2,000 children with no other than typical results. It has been supplied to many Boards of Health, and physicians who have reported to me over 50,000 results, which were normal with few exceptions, in which they were associated with broken vesicles or crusts torn off before the scars had formed. My experience with calf lymph has been favorable, while its manageable production, facility of preservation, and the professional preference for it, have made its cultivation a necessity.

For all that, I freely declare my own preference for vaccine from healthy infants, as in my experience, more generally active, prompt, and operating with less severity than calf lymph. As noted before, I always use it in the presence of smallpox, being able to get it directly from the infant within nine days.

It is very unfortunate that medical men permitted themselves to be drawn into the controversy inaugurated when the commercial production of "heifer vac-

cine" began in this country. Its motive was not so much truth as to displace humanized vaccine. The profession has the right to assume as much honesty on the part of producers of humanized lymph, as of animal, and that neither product will be put on the market except as it has proved to be typical by every test which practical experience has suggested. That, honestly done, both varieties of lymph will be found reliable.

I know, from ample experience, the truth of the above statement, and that there is no difficulty to one familiar with either form of culture in judging the quality of the product by an examination of the vesicle at the proper time for collecting the virus.

It must never be forgotten that cowpox is as real a disease as smallpox—Jenner thought them identical—and that vaccine is the product of disease, which inoculated into the human body reproduces cowpox. There is no dodging this statement, and yet some producers and physicians imply that it is not true by the carelessness with which they handle vaccine, perform vaccination, and deal with its normal results or the "accidents" which, in careless hands, sometimes follow it.

Vaccination is a surgical operation, slight certainly, but sufficient to admit dangerous infection should it accompany the vaccine. Very rarely does "accident" happen in this way, for (a rule with few exceptions) it is only when the vesicle is broken; its normal development interrupted, and an open, irritated wound replaces it, that other infection may come in and cause serious complications. For these the vaccine is no more to be blamed than the careful surgeon's knife under similar circumstances.

To avoid these so-called "accidents" is as important as the selection of the vaccine, because they may not only cause pain and needless suffering, but destroy the virus or interrupt its operation.

I have had occasion to examine so-called vaccine scars upon persons who responded to vaccination or smallpox in a way proving that they had no vaccine protection at all. The notion that any irritation which follows the use of supposed vaccine, or any scars which concludes such irritation, is proof of vaccine protection, is as absurd as to gauge protection by the severity of the result, and the size of the scar, though this is a common opinion.

The fact is that the typical vesicle, or scar, of Jenner can not be secured by the customary method of operating.

I will state the method which I find to be the best after many experiments. Its advantages are as follows:

1. To reduce the danger of wound infection to zero.
2. To produce typical vesicles and only as many as are necessary for the greatest protection and durability of result.
3. That the scar may be typical.
4. Preferred location front of left arm, or crown of shoulder.
5. The vaccine should be fluid when used and the wound thoroughly dry before clothing is replaced.

To secure these self-evident advantages use a new cambric needle as the instrument. In the clean skin make five little pricks just deep enough to start the blood, and about an inch apart. Then with the point of the same needle, charged with the virus, gently prick it into each wound, carefully. The pain need not "wake the baby," and the wounds will be closed

in a few minutes, and healed in six hours. In this way infection by wound is practically impossible. In thirty-six hours all traces of the operation should be gone. In about thirty-six hours more, if the vaccine is to "work," a "mosquito bite" appears over the site of each wound; that gradually increases into a little vesicle, which in turn is surrounded by a zone of redness, and if typical, on the eighth day the two resemble a "pearl on a rose leaf," as Jenner described the vesicle of this time at court. On the ninth day supuration occurs, constitutional symptoms begin to appear, with increased local redness and swelling; by the twelfth day these diminish, the areola begins to fade, the soreness decreases, and the vesicle discolors and dries up. When the wound is entirely healed the crust falls off, leaving the characteristic scar. Of course the operator has *clean hands* and takes the same precautions as in other important surgery.

Using the simple method above described, I have never had any serious "accident" and never saw an instance in which there was any evidence of other infectious disease having entered the body *with the vaccine*. I have seen a few cases in which a broken vesicle had opened the way for septic poison and bad results had followed, but none in which such results was not the direct consequence of injury. Any instance in which septicemia in any form occurred, has been, in my experience, of this character.

These facts are so because, with us, the same care and precautions have been taken *in using* as in *collecting* vaccine. Until medical men will insist upon the same rules and use them in their own practice, the present professional and popular distrust of vaccination will not only continue, but increase, as it ought to do.

It is proper that I should state the method by which I have repeatedly been able to overcome opposition to vaccination in the presence of smallpox. Argument in the ordinary sense is useless, nor does it seem to be worth while to spend breath and patience in that way. I state my personal confidence in the necessity of the operation, and prove my faith in the vaccine by offering to be the first to submit to its use. Such evidence has never failed to persuade even the most ignorant and obstinate, and has inspired a confidence which has amply repaid the slight trouble involved.

It is well not to forget that the secret of Jenner's discovery was really found in the experience of the laboring class, who most need its beneficent modification to-day.

There are many physicians and health officers who, appreciating existing difficulties, are urging compulsory legislation and a fine of parents for neglect of vaccination of children. I trust they have studied the history of such legislation and watched the effect in England where the compulsory law is openly violated to-day because of the opposition created by itself and by blundering attempts at its enforcement.

My experience has been large enough to enable me to have an opinion founded upon it, and I unhesitatingly declare for no other legislation than the power to isolate as for any other infectious disease. That is all we have in Minnesota, though the legislature has more than once been willing to go further if requested. The results of our present methods appear in our published experience of their use, in a steady reduction of smallpox prevalence from the beginning to date, though the disease has been epidemic more than once in adjoining States since it assumed the form of lim-

ited endemics, and often what may be called "family outbreaks" in Minnesota.

If we can overcome prejudice fostered by controversies as to forms of vaccine, and the notorious accidents which have followed the use of commercial calf lymph at various times, there will be no difficulty in reestablishing infant vaccination as a habitual custom again, and making a certificate of successful vaccination a necessary prerequisite to admission to all schools, *on the demand of the people themselves*.

It is fortunate that the claims of vaccine rest upon a long experience, both popular and medical, of their usefulness in actual service. It is not a laboratory product, and not comparable with antitoxin for diphtheria, for example, as it does not involve intricate artificial processes of production or use. It is a result of common experience in the dairy and the stable, carried to positive demonstration by Jenner in common experience too. Its value has been tested as no other agent for prevention of disease ever can be.

Its value is simply this, that its proper use has stayed the progress of a great plague. That use is one hundred years old to-day. Smallpox, a *terror* one hundred years ago, is to-day, *because of vaccine*, the most easily controlled of all infectious diseases.

In a dark and secluded place near the great west doors of Gloucester cathedral stands a statue of Jenner. When I saw it in 1889 it was covered with dust and had every appearance of neglect. In the city of Gloucester, near where Jenner lived and made his discovery, and where I think he at one time practiced his profession, the anti-vaccination party have, within a few years, won what they call a victory, and deprived hundreds of children of the protection against smallpox, which, *in that city*, was peculiarly their birthright. Medical men and health officers warned the authorities that it was only a question of time when the plague would be upon them. It is there to-day, in the centennial year of the discovery of vaccine, and too late to prevent, but not too late to crush out the disease; vaccination is again in urgent demand and imperative use.

When the fight is over, the dead buried, the disabled and deformed provided for, the least that the people of Gloucester can do will be to punish those who have so grievously misled them, clean and beautify that statue of Jenner, add another grateful inscription to its base, sing a Te Deum, and publish their reconversion by terrible and needless experience to the belief that vaccination for the prevention and control of smallpox is the most clearly demonstrated fact in the history of the management of disease.

THE DISCOVERY OF VACCINATION.

Address delivered at the Centennial Celebration held at Atlanta, May, 1896.

BY JEROME COCHRAN, M.D.

MONTGOMERY, ALA.

Great is the name of Jenner. It marks an important historical epoch. Before Jenner, smallpox was king—king in the palace and in the hovel—king all the time and everywhere. In civilized Europe it claimed annually many hecatombs of human lives. After Jenner vaccination was king, and under the protection of its invulnerable armor men and women were enabled to walk in the midst of pestilence with impunity. Such and so great was this man's discovery. No wonder that his fame comes to us resound-

ing down the corridors of time. No wonder that in the catalogue of great doctors he stands out in bold relief as one of the greatest. He has, perhaps, done more for the salvation of human lives than any other man that ever lived.

But a truce to panegyrics, and now to our problems.

Smallpox is the type of specific infectious diseases. It runs a definite course, can not be cut short by treatment, and one attack, in the immense majority of cases, protects the entire system against subsequent invasion. Nevertheless, second attacks are not unknown. I have myself seen one case of a patient who recovered from a first attack of confluent smallpox and afterwards died of a second attack a few years later.

Of the physical character of the smallpox poison very little is known, and I touch upon this point very briefly, because I believe it is to be treated of specially during this discussion by a distinguished bacteriologist. But we do know something about it. We know, to begin with, that it is organic and living, because it is endowed with the faculties of growth and reproduction; and we know that it is composed of semi-solid, colloidal particles, because living functions can not be manifested by gases and liquids.

The poison of smallpox being thus animate and particulate is generated exclusively in the bodies of men and women. It is probably thrown off from all the eliminating surfaces of the smallpox patients. It can be carried from place to place and from person to person, on the point of a lancet, in bedding and clothing, by cats and dogs, and perhaps by flies. It is doubtless carried through the air for short distances; but it is important to remember that it will not ordinarily cross a street unless it is carried by some human or animal agency. If it invades the premises of your next door neighbor you can close the windows on that side of the house and sleep in peace.

How the smallpox poison finds its way into the bodies of its victims is a question of curious interest. It is usually assumed that it is taken in the act of respiration, although we know that the vibrissæ of the nose strain out nearly all the bacteria of inspired air; and that the mucous membrane of the nose is highly antiseptic. I do not know that it has even been supposed to gain entrance by way of the mouth. I should be strongly tempted to believe that it is always introduced through some abrasion by some indirect process of inoculation, but for the fact that the symptoms of inoculated smallpox differ so widely from the symptoms of smallpox contracted in the usual way. At the point of inoculation in inoculated smallpox the papule can be discovered on the third day; the vesicle at the point of inoculation is fully developed on the fifth day, and the eruption over the body is in full bloom on the eighth day. In ordinary smallpox the usual period of incubation is twelve to fourteen days. So the theory of accidental inoculation will not hold good.

The smallpox poison is very easily destroyed. It is killed at a temperature below that of boiling water. It is killed by the fumes of sulphur. It soon disappears by exposure to sunshine and fresh air. In spite of all the books say to the contrary, it shows far less disposition to spread in warm weather than in cold weather. In our long southern summers on the Gulf coast it almost dies out, even when no effort is made to prevent its spread. It affects the negroes much more severely than it does the white people.

In passing through the body of the cow the virulence of smallpox is greatly modified, so that cowpox is a very much milder disease than smallpox. Vaccinia, the product in the human subject of inoculation by the virus of cowpox, is a mild disease, and affords protection against ordinary smallpox. This is the discovery of Jenner which we celebrate to-day, and furnishes us with an easy transition from problems in smallpox to problems in vaccination.

As of the virus of smallpox so of the virus of vaccinia: we know but little of its physical and vital composition. For the same reasons as those mentioned in the discussion of the virus of smallpox we know that the active agent in the virus of vaccinia is a living colloidal, particulate organism. Ernst and Martin, of Boston, are reported to have found in vaccine lymph a micrococcus which can be separately obtained, and which when inoculated in calves and children will produce the characteristic vesical. I know nothing of the details of their research. The almost forgotten researches of Chauveau in 1865 to determine the infectious principle of vaccine lymph, are perhaps still of some value. He found vaccine lymph to be composed of a fluid part, in which were white blood corpuscles, and a number of granules many times smaller than the leucocytes. These constituents were separated by a process of diffusion and it was shown that on inoculation it was the granules and the granules alone that communicated vaccinia. Chauveau's conclusions seem to have received confirmation from similar experiments made by Ferdinand Cohn and Burdon-Sanderson. Cohn even asserted that those micrococci could be cultivated outside human and animal bodies.

Smallpox may be prevented from spreading by the intelligent interposition of isolation and disinfection. But of all the prophylactic measures which have ever been made use of against smallpox vaccination is by common consent the most important. When Jenner had succeeded in demonstrating his discovery, it was confidently predicted that the reign of smallpox would be speedily ended, and the world permanently freed from the immeasurable evils which during many centuries it had inflicted on the human family. Very vigorous efforts were employed by the medical profession to extend the practice of vaccination amongst the people generally; and in many, perhaps in most, European countries it has been made obligatory by express provision of law. The results have not been altogether in harmony with the anticipations of its advocates. It is true that the prevalence of smallpox has been greatly diminished; and it is true that the percentage of smallpox mortality to population has exhibited much lower averages since the introduction of vaccination than before; so that there can be no question that it has been the means of saving the lives of many thousands, I might perhaps safely say, of many millions of human beings. Saving so many lives I have said; I should have been more accurate if I had said, prolonged so many lives; for of course finally all of them have to die.

But notwithstanding all this, the dreadful malady which had been so confidently consigned to extermination, has still managed to maintain a tolerably vigorous existence among the nations. Now that the conditions of the problem are better understood we are obliged to conclude that the final extinction of smallpox will not be accomplished until our civilization obtains a much higher grade of development than any

which it now presents, or which it is likely to reach for some centuries to come. The reason for this conclusion is easily found. It is not that our medical ancestors were greatly mistaken in their estimate of the protective value of vaccination; but that the experience of a century has shown that under existing circumstances it is practically impossible to secure the thorough vaccination of the whole population of cities and states.

And yet the prophylactic efficacy of vaccination has been and is now to some extent over-estimated, because a great many physicians do not sufficiently appreciate that in very many cases the temporary protection afforded by vaccination is not permanent, does not last for the remainder of life; and because so many vaccinations are inadequately done. A single small vaccine vesicle will protect for a time. But several vesicles or a cluster of vesicles will protect for a much longer time.

Then there are a considerable number of our fellow-citizens, who are very earnestly opposed to vaccination. It is true that in this opposition they are most unwise, but even in their folly they are entitled to considerate treatment. Only two or three weeks ago I read in the *ASSOCIATION JOURNAL* that there was then prevalent in Gloucester in England a sweeping epidemic of smallpox due to the resolute refusal of vaccination by an anti-vaccination league. And this in the very county in which Jenner pursued his investigations. Compulsory vaccination laws inevitably lead to anti-vaccination leagues.

I am myself opposed to compulsory vaccination laws. I think they trench too much on the liberty of the citizen, and beget a very troublesome opposition from many who would otherwise in case of danger submit to vaccination as a matter of course. I know the argument is that these anti-vaccination cranks imperil the health of communities. Sometimes they do; but communities can protect themselves by isolation and disinfection—in a word, by quarantine against the few dangerous persons who would hold out against vaccination in emergencies; and if any of my fellow-citizens insist on running the chances of dying from smallpox I would be the last man to deprive them of that privilege.

Much has been written as to the comparative merits of humanized and bovine vaccine. It is the fashion just now to prefer the bovine virus, and I in practice follow the fashion. We do not have much smallpox in Alabama and consequently we do not need much vaccine. When we do need it it is convenient to order the bovine article, and we do so. But I am profoundly satisfied from a very large experience that the humanized virus, in the form of lymph or of crust, has equal prophylactic power, is equally safe from unfavorable complications, and is followed by a smaller percentage of bad arms. The enthusiasm for the bovine virus has been largely manufactured to order by the managers of vaccine farms. Jenner used the humanized virus, and Jenner's successors for two generations used the humanized virus. The common use of the bovine virus has grown up during the last thirty years.

The communication of syphilis along with the vaccine is the complication that has been specially dreaded. I know the famous cases related by Mr. Jonathan Hutchinson, and by Mr. Thomas Smith. I know nothing about Mr. Smith, but I do know that Mr. Hutchinson was always seeing a lot of things

that were not obvious to anybody else; and I remain very incredulous about vaccinal syphilis. In Mobile in 1874, some twelve thousand vaccinations were done with the humanized lymph, and I never heard of a case of vaccinal syphilis.

The vaccine vesicle is a living thing—a growth as much as cancer or tubercle is a growth, and the presumption is that in the process of growth it converts everything which it appropriates into its own nature, and this without regard to the soil in which it grows. Just as, for illustration, the poisonous night-shade, the delicious strawberry, and the medicinal poppy, may all grow side by side, out of the same soil, and be fed with the same food, and yet each remaining true to its own special nature, will produce its own characteristic fruit.

The location of the vesicle is among the epithelial elements of the derma. The epithelial cells take part in the growth of the vesicle, and it is through their agency that it becomes many chambered. The chambers are filled with transparent lymph. It never passes through a pustular stage. In about eight days it attains its full development, after which the lymph gradually concretes into a crust which is firm and tough and translucent like horn. The color is sometimes a light amber, sometimes a deep amber, sometimes a dark mahogany, and sometimes almost an ebony black, depending always on the color of the skin on which it grew. The darker the skin the darker the crust. The color is due to the pigment cells which remain entangled in the crust when it dries.

I hope I may be excused for speaking at so much length. Gentlemen, I thank you for your kind attention.

CLINICAL MEMORANDA.

Read before the Chicago Pathological Society, April 13, 1896.

BY ARTHUR R. EDWARDS, M.D.

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I. CASE OF CIRRHOSIS OF LIVER WITH PRE-ASCITIC EDEMA OF LOWER EXTREMITIES.

J. A. N., a laborer, married, 43 years old, American; under observation from Jan. 25 to Feb. 6, 1895. By occupation he was an engineer. His affection began two weeks before entrance, with an initial chill, with pains over the entire body, in every joint and in the head. He had during this period suffered from hourly vomiting, and frequent diarrhea. The bowels had been usually constipated. Hiccough had troubled him excessively. His wife stated that the patient's illness began suddenly with involuntary evacuations from the bladder and rectum, accompanied by an enormous appetite and thirst. His left arm had been limp and painful for some time past. The lower extremities, together with the other parts, have grown emaciated till some six days since, when considerable anasarca about the legs and ankles developed. He had always lived in this State. He married a year ago. His wife noticed large veins in the legs, but had never seen any upon the abdomen.

Examination: Involuntary urinary and fecal evacuations existed with retention of urine, 4,100 c.cm. of urine being withdrawn at one time. The urine contained no albumin nor sugar, was neutral, sp. gr. 1.013, 2.3 per cent. urea, no pus nor casts in the sediment. Respirations varied from 18 to 20, the pulse

from 80 to 90, and the temperature from 98 to 101 in axilla. He vomited frequently. Rectal examination was negative. Upon the trunk and lower extremities appeared an eruption of erythema nodosum, upon which basis bullæ later developed. His legs and feet were much swollen. Upon both legs and over both inguinal and hypochondriac regions were observed very large, extremely tortuous veins. The eyes and discs were negative. The blood examination showed no changes in stained specimens. Sordes existed upon teeth and lips. The lymphatic system, the bones and muscles were negative. The heart was not enlarged in any direction, the first tone over the apex being weak, and the second aortic tone was considerably accentuated and transmitted into the cervical vessels. No murmurs were obtained. The radials were not hard and the pulse was 90, regular and compressible. Marked pulsation existed in the jugulum and supra- and infra-clavicular regions. The second pulmonic tone was questionably accentuated. The lungs were tympanitic laterally and anteriorly, no râles were heard in front, respiratory excursion was demonstrated on both sides, although it was hard to get the patient to breathe deeply. Over the lower lobes behind, hypostasis was diagnosed from the presence of inspiratory râles and relative dullness. The liver on percussion lay within the usual limits, except that tympany existed over the location of the entire left lobe. The spleen was indeterminate on palpation. No free fluid was found in the peritoneal cavity. Rectal examination was negative. The umbilicus presented no changes. There was no icterus. Marked delirium, slight cyanosis toward the end, emaciation, and a subnormal and even collapse temperature were noted. The genitalia were hyperemic and slightly eroded by the ammoniacal urine.

The prognosis from the first was absolutely unfavorable, and the therapy of free stimulation, alcohol and supporting measures were wholly unavailing. The case is, therefore, presented wholly for its diagnostic and pathologic phases.

Diagnosis: An arterio-sclerosis with secondary cardiac hypertrophy having been diagnosed, there was still an underlying disease which threatened life. The findings were few and the chief interest centered in the greatly dilated veins in the abdomen and legs, which obviously indicated obstruction. The argument, diagnostic and pathologic, was to my mind most interesting. Was the obstruction intra-thoracic? The venous ectasia was rather too low to favor this construction. Was then the return venous flow impeded in the vena cava or in the portal vein district? No cause could be invoked for the theory that the cava was compressed; there was no tumor, no inflammatory focus, etc., hence attention was directed to the liver. There was no real jaundice, no ascites and no splenic tumor; yet knowing that a free collateral circulation may prevent or succeed in time a hepatic cirrhosis, and that the passive congestion of cirrhosis may in exceptional instances antedate the ascites, the antemortem diagnosis of hepatic cirrhosis was made (in the presence of the late Dr. D. D. Bishop, Dr. Stout, Dr. Skinner and Dr. Hardie).

The necropsy findings were in brief: Kidneys, 10 x 6 x 3.5 cm., 10 x 6 x 3 cm., 300 gm.; surface slightly roughened; capsule freely separable; showing no marked naked-eye changes; microscopically, some slight arterial alterations and inconsiderable islets of connective tissue change were observed. The heart

weighed 420 gm.; the left ventricle was 20 mm. thick and the aorta was somewhat atheromatous. Lungs: Some few adhesions in the right pleura; moderate marginal emphysema; mechanical hypostasis. Spleen: 170 gm.; very marked perisplenic changes, explaining the inconsiderable size of the organ compared with liver. Liver changes: 28 x 18 x 18; 5 x 8 x 6 cm., 2,000 gms.; surface smooth, no adhesions; porta free; the organ was universally red; the lobules were centrally fatty and in their periphery exhibited delicate strands of connective tissue. Microscopic examination revealed a typical fatty alcoholic cirrhosis without any striking anomalies. The gastro-intestinal tract was negative. The peripheral veins conformed to the clinical signs. The vena cava was not compressed, not involved in any cicatrix, not the seat of any thrombosis, etc. The subperitoneal veins, especially in the right inguinal region, were varicose even to bursting. The clinical diagnosis of a latent hepatic cirrhosis, with collateral circulation sufficient to obviate ascites and splenic tumor, was confirmed.

Labadie-Lagrave states that pre-ascitic edema of the lower extremities may appear as an initial or as an almost isolated symptom of cirrhosis. It was first described by MacSweeney in 1876, then by Giovanni, by A. Gilbert and H. Presle (*Thèse de Paris*, 1892). While edema as a rule accompanies or follows the ascites, it may antedate the appearance of ascites by months, even 1½ years. When it accompanies the first cirrhotic symptoms, it is a sign of diagnostic importance.

It may occur not from portal vein stasis alone but from cicatrices around the cava, cachexia, heart or renal complications.

Thierfelder believes the occasionally earlier appearance of anasarca before ascites is often more apparent than real, since edema is better seen by patient and physician alike. Such edema may be due to meteorism or fluid pressing upon the cava or iliac veins. Bamberger explained edema of the lower extremities in isolated cases by the fact that the pars hepatica of the cava inferior suffered contraction by shrinking of the cirrhotic liver.

However, I am convinced that none of the enumerated causes operated in this concrete instance. The great collateral circulation opened channels of communication between the vena porta and venæ epigastriæ, by means of which the blood flows from the latter to the venæ crurales and produces an edema of the lower extremities before a great degree of ascites is present. Monneret has described an instance in which, by the mechanism suggested, the overfilled epigastric veins produced edema of the abdominal walls.

II. CASE OF ASCITES CHYLOSUS.

The following case entered the service of my friend Dr. Worthington, by whose courtesy and that of Dr. F. A. Besley, I was enabled to study the case clinically and report it. I performed the postmortem in the presence of Drs. Worthington, Besley, Olney, Wood and Richter.

The case presented no remarkable clinical features but details are in place because of the rarity of the complicating chylous ascites.¹ The patient aged 32, married, of American descent, barber by trade. Under observation two months. The family history was negative beyond the death of a sister from gastric

¹ Edwards, *Ascites chylous s. adiposus*, "Medicine," August 1895.

tumor. The patient had a diarrhea for past seven or eight years which recurred several times a year, each time lasting three or four weeks, amenable to careful dieting. Three weeks before entrance, he had a severe chill with fever and suffered severe pain in the left side. He coughed and expectorated freely. No hemoptysis.

Physical Examination: Mind clear; eyes negative; tongue coated but moist; pharynx, ears, scalp, calvarium negative. Lungs: On both sides there was flatness below, reaching as high up in axilla as level of nipples; there was also absent or greatly diminished breath sounds, greatly decreased vocal fremitus, distant crepitant and subcrepitant râles; at level of flatness was bronchophony and above it were an increased percussion note, exaggerated breathing and a few râles. No respiratory excursion existed on either side. Cardiac percussion gave a triangular shaped area of dullness, with its apex directed upward, its sides, which diverged downward, passing wide of the sternal margins and fusing with the dull areas on either side. Over the basis was heard a to-and-fro murmur which was simplified into a systolic murmur at the apex. The murmur was a typical friction rub. The cardiac action was visible only in the second and third left intercostal spaces. While the pulse was full yet the heart tones were very distant. The liver dullness merged with that of the lungs, indefinable above but reaching three inches below the normal lower limit of hepatic dullness. Spleen not palpable. Great abdominal meteorism, but fluid could not be positively affirmed, although considerable effort was made to find it, since the abdomen was prominent. One week prior to death, free fluid was demonstrated in the peritoneal cavity. The pleural cavities were each tapped three times, and clear yellow serous fluid of sp. gr. 1013 was obtained. The pericardial sac was also tapped in the fourth left intercostal space, and a sero-sanguineous fluid withdrawn with a sp. gr. of 1021. The temperature curve was irregular, remittent in type, with apyretic intervals of variable duration. The pulse was uniformly high, as was also the respiration rate. The patient was treated with guaiacol, malt and cod liver oil, and later, whisky, strychnia and digitalis were added. Diuretic and potas. acetate were also employed as diuretics. The urine was negative. The clinical diagnosis was: 1. Effusive pericarditis, probably tubercular from the hemorrhagic character of the exudate and the cachectic condition of the patient. 2. Pulmonary compression from double hydrothorax (no bacilli were found clinically). 3. Liver of passive congestion. 4. Hypostatic edema and ascites. The clinical diagnosis was confirmed in every respect except regarding the interpretation given the ascitic fluid which was chylous and not purely serous.

Postmortem five days after death: Slight post-mortem lividity; no rigor mortis; nourishment fair; pericardium contained three ounces of a bloody serous fluid; the two layers were covered with shaggy fibrinous flakes; both leaves of pericardium were rough and, where not rough, edematous; the exudate was one-fourth to one-half inch thick over the heart. The endocardium was wholly negative, both parietal and valvular. More careful examination of the deeper layers of the exudate revealed innumerable small tubercles, and upon the diaphragmatic surface of the pericardium was a large solitary tuber-

cle as large as a walnut. The myocardium was pale, firm and, nearest the pericardium, edematous.

The peritoneal cavity was full of a malodorous, milky fluid which contained some few yellow flakes. The peritoneum was smooth and glistening throughout its entire parietal and visceral expanse. Stomach and intestines negative. Diaphragm reached to the sixth rib on the right side and to the eighth on the left. Appendix free from adhesions. The liver was fully a hand's breadth below the costal arch; its edge was rounded and its markings fairly distinct. In the left pleural cavity were some few firm adhesions with an eruption of miliary tubercles on the diaphragm. The right lung was free, crepitated feebly above and the lower lobe was devoid of air. Firm adhesions over left upper lobe, lung crepitates feebly, lower lobe airless. Spleen 18 x 4 x 15, soft, flabby, friable. Kidneys, dark in color; capsule peels readily; cortical markings distinct.

Anatomic diagnosis: Chylous ascites; hydrothorax and pleuritis; pericarditis effusiva tuberculosa; parenchymatous degeneration in the liver and kidneys; splenic tumor.

I have lately misplaced the record of the chemic analysis, but fat was present in traces. There was a very slight but distinct sugar reaction, while albumin was present. Microscopically, the fluid was teeming with bacteria on account of the late date of the autopsy and leucocytes bearing granules were sparsely scattered through the sediment, together with amorphous granular masses. The case must then be included in the class of chylous ascites, the number of which is very small, since scarcely a dozen cases are recorded in which sugar was found. Cases of chylous ascites are indisputable when 1, macroscopic rupture of the chylous tracts, 2, microscopic rupture of the same are demonstrated, and 3, when sugar is found. In the genuine chylous ascites, rupture may occur anywhere in the chyle system. The return chylous flow may obstruct anywhere from the smallest to the largest vessels.

However, in the case reported no such rupture nor obstruction could be demonstrated, if we except the obvious impediment to the chyle and vascular flow, the pericarditis and the myocardial inadequacy. The presence of sugar, when diabetes is excluded, is proof positive of chylous ascites.

Our explanation of the chylous effusion is the following: The cardiac power was reduced by the infiltration of the myocardium, per contiguitatem, from the inflamed pericardium. As evidence, we note the edematous subpericardial portion of the heart's musculature. A second cause of reduction in the heart's efficiency resides in the compression of the viscus by the pericardial exudate, which explains the pallor of the myocardium on section. The cardiac obstruction was reflected peripherally into the venous system, hence the synchronous cessation of the normal centripetal chyle flow. Serious stasis in the distal chyle vessels resulted with final attenuation and rupture of their walls.

It is highly probable that the ascites was primarily serous and became only later chylous. There are some seven instances of this transition on record. The nature of the fluid was in this, as in other instances, a postmortem surprise, but never has chylous ascites been diagnosed before death or paracentesis, since there are no infallible, nor indeed even highly suggestive, diagnostic signs. Its proper recognition

would have necessitated a prognosis even graver than that of a tubercular pericarditis, but it could in no wise have had any therapeutic value.

103 State Street.

DISCUSSION.

DR. HERRICK—I should like to ask Dr. Edwards if there is not but one other case or at least very few cases in which cardiac obstruction has produced chylous ascites?

DR. EDWARDS—I think there are more than that. Dr. Busey, of Washington, wrote an article on the subject in which he thought there were a number of cases where, for instance, a tricuspid lesion or a secondary endocardial lesion, or even a lung obstruction which would affect the right heart caused chylous ascites; but they are relatively few, and I think there were only three authors, Niemeyer, Busey and one other who called attention to that point.

DR. BURGESS—I will confine myself to the description of a case of cirrhosis of the liver which I have recently seen, which also had unusual vascular disturbances of the liver itself. I never saw the patient during life, but I understand that the first that was known of him was that he had some attack of heart trouble and an examination revealed that he had a myocardial lesion and also had a systolic venous pulse; at this time there was some anasarca, and the liver dullness in the vertical direction was much increased, about six inches, and on depressing the abdominal wall the liver could be taken in the hand and pulsation felt. Care was taken to exclude all communicated pulsation, and the diagnosis was that there was a pulsation in the liver itself, in the substance of the liver. The case went on and finally a great deal of ascites developed, and that is about all I remember of the clinical history. At the autopsy the liver was found in an advanced state of cirrhosis. It was smaller than normal; the well-known ax-shaped liver was present. The condition of the heart was, that there was a competent pulmonary and aortic valve, with incompetency of the tricuspid and mitral valves; the ascending vena cava was very much widened; the veins which empty from the liver were very much widened and in passing a stream of water from the tap into the liver it could be seen distinctly to swell out, and then on squeezing out the water, which was not a great amount, and repeating the process the same thing happened over again: so in this case the pulsation of the liver was marked enough to be well felt, and of course was due to the pulse of the right ventricle going through the tricuspid, which was incompetent.

ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

WITH REPORT OF FATAL TERMINATION OF CASE AFTER RECEIVING PROPHYLACTIC DOSE.

Read before the Ohio Medical Society at the Fifty-first Annual Convention, May 28, 1896.

BY S. S. HALDERMAN, M.D.

PORTSMOUTH, OHIO.

A death occurring in about four minutes after injecting under the right scapula, in a boy five years old, a prophylactic dose of Behring's antitoxin, No. 0, furnished the excuse for this paper.

I have had an experience of eight months in the treatment of diphtheria with Behring's remedy, embracing the administration of the remedy to seventy cases of the disease, several of them bacteriologically examined, and all presenting the usual well-marked signs and symptoms of the disease, and occurring during an epidemic of a severe type of the disease, characterized by a high rate of mortality where antitoxin was not employed in the treatment, without losing a case so treated. After having used it for prophylactic purposes in twenty-seven cases that had been directly exposed, and in many of these the exposure was continued, with the desired result in preventing the disease in all but three cases, these three cases manifesting evidence of the disease within less than seventy hours, showing that it was already in their systems and incubating. I felt justified in the use of the pre-

ventive remedy in this case. Seven children were in the family, the oldest less than 11 years, the two youngest five months old; they had commingled freely with the affected children, and that those not affected, five in number, would have diphtheria seemed to all concerned very evident.

After having treated the two oldest children, aged respectively 8 and 10 years, to the satisfaction of the parents, who had previous unpleasant experience in the deaths of two relatives, children, both occurring in one day, I did not feel justified in withholding their importunities to use the remedy to prevent, if possible, the dread disease in the other children.

I had given the prophylactic dose, Behring's No. 0, to Seva, aged 2½ years. Willie, aged 5 years, was awakened from a sound sleep, and the dose, No. 0, operation No. 161, was injected just below the right scapula in the tissues underlying the skin; he made but slight outcry, lay down and was noticed to try to scratch the seat of the injection. I walked across the room to a table and washed my syringe, which consisted of an ordinary barrel and piston made for the purpose, and capable of holding about 30 c.cm. After having washed it in hot water I took the cork from another bottle, No. 0, which, as you are all doubtless aware, consists in quantity of about 2 c.cm. of the serum, took this up into the syringe, and proceeded to administer it to George, aged 6 years. While I was making this injection the mother's attention was attracted to Willie by some struggle on his part, and she immediately called to me that something was wrong. I looked and observed a striking cyanotic appearance of skin of face, puffing, swollen appearance of lips; with the finger I could detect no radial pulse; ear to region of heart revealed the absence of the faintest sound from that organ. A resort was immediately had to artificial respiration, while the parents were directed to procure a syringe and inject some whisky per rectum. Twenty-five minutes' effort at restoration was of no avail. It is my opinion the heart never pulsated after somewhat less than four minutes from the time he got the injection.

As to the cause of the fatal result, it is not clear to my mind. The suggestion of a fellow practitioner seems reasonable, and I can do no better than give his words. "It was one of those peculiar idiosyncrasies that sometimes we meet with, obnoxious to agencies and influences that do not affect the general class, and that we can not guard against because of their infrequency and negative indication." We meet with such now and then when exhibiting anesthetics and other agents, and even in the cases of the disagreements of some kinds of food (not ptomaines) which seem to act as poisons, such as oysters and shellfish of any kind, likewise eggs and milk. You have all met with these peculiarities.

The wide adoption of antitoxin as a remedy in diphtheria enables one to draw some useful conclusions as to its value. Yet I speak with some caution and reserve with my limited experience of the remedy, and the results in my own practice have led me to wonder if it were really the treatment with antitoxin or the non-employment of remedies, such as chlorate of potassium, internally, and local irritants to the diseased parts, that had something to do with the uniform and rapid recovery of my cases. Drs. Hare, Smith and others have advised against the internal administration of chlorate of potassium in the disease, because of its possible damaging effects

on the kidneys; yet it is not an uncommon thing to see prescriptions containing a saturated solution with an excess of the salt; the patient directed to take a teaspoonful of this mixture every one, two or three hours. The question very naturally arises, how many cases of fatal kidney disease might not have occurred had chlorate of potassium not been employed. I have not given a grain of the salt in diphtheria for many years, and since the adoption of antitoxin have given but few drugs. Usually in conjunction with the injection of antitoxin I would give calomel pretty freely for its cathartic effect, advise the free administration of beef tea, sterilized milk, coffee, and if the patient desired any carefully prepared food, and give a prescription combining a few drops of tr. ferri chlorid. in glycerin and syrup, to be given hourly, more to occupy the mind of the nurse than for any other purpose. If there was great restlessness, small doses of chloral and morphia to procure the desired sleep, as you are aware nearly all cases of diphtheria are attended with considerable restlessness. After exfoliation of membrane and subsidence of fever, I would give small doses of quinia and strychnia; quinia sulph. gr. xv; liq. strychnia acetat. (Hall's) 3i; yerbazin (Lilly) 3iii. M. Sig.: Half teaspoonful every four hours to child one year old, and order its continuance for not less than three or four weeks. Of the various local applications administered I think most of that of Loeffler, and in young children I have diluted the solution with alcohol and water, and directed that the mouth be swabbed out occasionally with this preparation. In the case of older children and adults, would advise the use of the solution in full strength. The preparation consists of menthol, 2½ drams dissolved in 9 drams of toluol, 1 dram liq. ferri chlorid., and alcohol, 2 ounces.

Of the seventy cases of diphtheria treated by the writer, abscess did not occur in any, of cutaneous manifestations one, a slight urticaria occurring fourteen days after injecting a girl, aged 8 years, with Behring's antitoxin No. 2. This patient had also some slight manifestation of articular trouble in left hip, but the mother, a very intelligent lady, said the child had previous to her illness from diphtheria frequently complained of joint pains, and she thought her rheumatic. Diphtheritic paralysis was noted in one case, was of short duration; in this child there was irregular heart action occurring at the same time of paralysis, about twelve days after receiving the antitoxin. Albuminuria was noted in five cases; one of these was a case of diphtheria supervening upon measles; a boy five years old had a severe case of measles, and on the eighth day of that disease was attacked with croup, which was proven diphtheritic bacteriologically.

There was abundant evidence that the formation of the false membrane was checked; that its exfoliation was hastened, that the throat was free from membrane earlier than in cases not treated with antitoxin. It was clearly apparent from all the manifestations that the toxemia was relieved and lessened. The health officer's record shows that cases treated with antitoxin were discharged convalescent in average of less than seven days while those treated with other methods had an average of ten days. Of five cases having the appearance of being mild, treated by the writer without antitoxin, two died. Of the three recoveries, one was unable to walk from September 20 to November 11, another was feeble for some weeks in spite of

careful nursing and continued administration of tonic remedies. One of these cases was so mild in appearance that the mother protested against the use of antitoxin, said she would not believe the child was sick if she did not see the swollen glands and exudation in throat. This child died ten days after the invasion of the disease from laryngeal stenosis, expired within half hour after symptoms of croup.

Experience and statistics all show the importance of early treatment by serum, mortality increasing with the days of the disease before treatment. Under the influence of early serum treatment the disease loses its progressive character and this is true in regard to laryngo-stenosis. Of the seventy cases there was but one instance in which laryngo-stenosis symptoms developed. In many cases of very active glandular inflammation with abundant formation of membrane, the effects of the treatment were very striking. Within thirty-six hours in some of the most severe cases there was marked improvement in the general condition, improvement of pulse, fall of temperature and considerable, if not complete, exfoliation of membrane.

The limitation of time makes it impossible to discuss the position of antitoxin treatment of diphtheria fully, and I will not consume the time of this Convention with statistics, but will conclude by saying that in my opinion all patients are benefited by the treatment when administered in time to accomplish any results with a reasonable hope of recovery. The administration of antitoxin does away with the necessity for any other but the use of local disinfectants to prevent or limit the growth of bacteria in the throat and supporting treatment.

DISEASES OF THE LACHRYMAL GLANDS.

Read before the Nebraska State Medical Society at Lincoln, May, 1896.

BY H. S. BELL, M.D.

KEARNEY, NEB.

Diseases of the lachrymal passages are frequently brought to the attention of the general practitioner, and I am inclined to believe that our substantial knowledge of the causation, course and treatment of these diseases is not as full and practical as it should be.

The reason for this scant information can not be explained by the relative infrequency of this class of cases, but mostly from the comparatively little attention writers and teachers have heretofore given this subject. Believing this, I have thought I could best serve this society by a discussion of this very common, but too much neglected class of diseases.

The diseases which most frequently affect the lachrymal passages, are those involving the ducts leading from the eye. Near the inner canthus of each eye there may be found two small openings, one in the upper and one in the lower lid, called puncta. These are the orifices of the canaliculi, two very small canals leading into the lachrymal sac, which is the upper dilated end of the nasal duct. In this expanded pouch, or lachrymal sac, is the most common seat of disease, and from this vulnerable point the trouble is liable to involve either the nasal duct or the canaliculi or both.

The nature of the diseases affecting these passages is mucous and purulent inflammation. The most common form is a catarrhal inflammation of the lachrymal sac and its ducts, the most prominent symptom of which is an overflow of tears, and it is for the relief of this symptom the patient first seeks advice.

The tears accumulate in the lachrymal sac and distend it in such a manner that it stands out from the side of the nose as a distinct prominence, and for the relief of this fullness the patient is obliged to empty it several times a day by pressing it with the finger in an upward and inward direction. This pressure will often cause the watery secretion to be discharged in a continuous stream as if from a hypodermic needle. If the conditions upon which this catarrhal form of the disease depend are not relieved, it will finally result in what is termed "blennorrhea" or mucocoele, which is characterized by a mucous or gelatinous discharge, which the patient presses out with the finger. Dacryocystitis is an acute purulent inflammation of the lachrymal sac, and the skin and cellular tissue just below the inner canthus of the eye becomes swollen, red and tender to pressure; in fact, the symptoms of a localized cellulitis with abscess. This acute form of the disease is not so common as the catarrhal variety, and requires prompt treatment to prevent a fistulous opening in the lachrymal sac. It is refreshing to find such a unanimity of opinion as to the causation of these lachrymo-nasal affections. It is fully agreed that they have their starting place in subacute or chronic coryza. In fact, chronic rhinitis is said to be not only the cause of all the affections of the lachrymal ducts, but to be the prolific source of most all the inflammations of the ocular and palpebral conjunctiva. Dr. Ziegler, of Philadelphia, in the *New York Medical Journal* of Nov. 3, 1894, says: "I think we may safely say that fully 90 per cent. of corneal lesions take their origin directly from preëxistent pathologic processes affecting the intranasal tissues and secretions."

Dr. Woodruff, of Auburn, N. Y., in the *Medical Record* of April 25, 1896, in a résumé of a recent work by Dr. Finck, of Hamburg, Germany, says: "Not a few affections of children can be traced back to a chronic coryza." "Zieme even asserts that two-thirds of all eye diseases are due to nasal affections." "Von Hasner found that among fifty-nine cases of diseases of the lachrymal duct, fifty-one showed a pathologic condition of the nasal cavities." J. Michel and Seifert observed among thirty-eight cases of dacryoblennorrhea, thirty-seven with affections of the nose. Farravelli and Kruch found among cases of diseases of the lachrymal sac, thirty showing nasal catarrh. The consensus of opinion is overwhelming that lachrymal and ophthalmic diseases have their origin in the catarrhal inflammations of the nasal turbinates. From what has been said of the causation of diseases of lachrymal apparatus, it would seem the treatment would be exceedingly simplified, and should be directed to the existing coryza. This is the logical conclusion and the natural key to the successful and intelligent treatment of this class of affections. Expediency, however, will sometimes control in the decision upon a given line of attack. Little children, in whom these diseases mostly abound, are naturally timid and impulsively shrink from the attentions of those with whom they are unfamiliar. They will not even permit their parents to use the simple means of treating these nasal inflammations. After having fully posted myself on the etiology and pathology of these lachrymo-nasal diseases, and lamenting the difficulties with which I was handicapped in conducting their logical treatment, I read a paper by Dr. P. Richard Taylor, Louisville, Ky., in the issue of Jan. 1, 1896, of the *JOURNAL*, where he advocated the use of a tube

which he designed for the treatment of these lachrymal duct diseases. I had previously read in the *Medical Record* of June 1, 1895, of "A Simple and Effective Method of Keeping the Obstructed Lachrymal Duct Open," and which was said to be a "trick" worth knowing. This method by Dr. Walter N. Vilas, of El Paso, Texas, consisted in passing a small-sized probe armed with a canula through the nasal duct, then the probe is withdrawn and through the canula is passed a silkworm gut suture, the lower end of which is brought out through the nose and a split shot is clamped upon it. The canula is now withdrawn, and the silkworm gut ligature is drawn up until its further progress is arrested by the shot within the nose, when another shot of lead or aluminum is clamped upon the strand of gut as it emerges from the inner canthus of the eye. It was said in the article referred to that this method had been tried in a number of cases of lachrymal obstruction and abscess of the lachrymal sac with unfailing success and commends itself for its simplicity, practicability and radical effectiveness, as well as the important consideration of abridging the treatment of these cases to one sitting.

Dr. Taylor's "tube is seven-eighths of an inch long and three-eighths inch angle, and can be made of any size and of any metal. It has a lateral slit on both sides of the short end, leaving a duckbill snout with upper and lower blades, both of which are to be beneath the surface of the lids or entirely in the passage and hidden from view. The slit prevents the soft tissues from closing the opening of the tube or hindering the passage of the tears through the tube." Each of these methods is designed to effect a cure by drainage. I had about made up my mind to try the plan, but in the meantime the method of Dr. Taylor engaged my attention and appealed to my judgment as being the best. Having three patients with obstruction of the nasal duct with the prominent symptom of weeping eye, I ordered three of Dr. Taylor's tubes. Two of my patients were children under 5 years of age. One of these, a little girl, had had frequent attacks of dacryocystitis, which had resulted in openings from the lachrymal sac through the skin just below the inner canthus. From these fistulous tracts pus and tears were constantly escaping, producing an ugly eczematous eruption over that portion of the cheek. This child was given chloroform, the lower puncta entered by a Weber probe-pointed canaliculus knife, the canal was slit into the lachrymal sac, when, with Bowman's set of probes, the nasal duct was rapidly dilated and this tube, which was introduced in January last, was inserted. I removed it a few days ago for the purpose of exhibiting it to this society to-day. I shall, upon my return home, reintroduce it. The fistulous openings have closed, the eczema disappeared and nothing remains but a faint cicatricial scar. The conjunctivitis with its purulent exudation has also disappeared.

The second case was a child presenting only the catarrhal form of the lachrymal sac with obstruction to the passage of tears through the nasal duct. This child also had chronic conjunctivitis. Prout, of Brooklyn, has described this condition as conjunctivitis lachrymalis, and adds that it can not be cured except by relieving the obstruction to the nasal duct. This child was anesthetized, the lower canaliculus slit into the lachrymal sac, and with the same probe-pointed knife the nasal duct invaded and the stricture cut, after which Bowman's probes were rapidly intro-

duced and a medium-sized tube inserted. After some weeks I decided that the angle of the tube was too long, as it rubbed the eyeball and increased the conjunctivitis. The child was again given an anesthetic, the tube removed and about one-half the short arm of the tube was cut off, and again introduced. This was two months ago. The eye symptoms rapidly disappeared, as well as the overflow of tears.

My third case was a young man 23 years old with mucocoele of the sac of twelve years' standing. In February of this year, with local cocain anesthesia, I did the same operation with the best result.

EMPHYEMA OF ANTRUM SIMULATING CARIES OF TEETH; AND A SIMPLE METHOD OF TRANSILLU- MINATION.

BY HENRY G. OHLS, M.D.

CHICAGO.

About one year ago I had occasion to examine an antrum, in a case where severe pains in the distribution of the right facial nerve, with tenderness over the malar prominence indicated the probability of empyema. The classical symptom of pus escaping from the hiatus semilunaris and visible on the outer surface and lower edge of the middle turbinated was lacking. A competent dentist had diagnosed an inflammation of the dental nerves of the first and second right upper molars and had made several applications through the root canals to destroy the nerves. Failing at last to relieve the pain in that way, the first molar was extracted and after a few days more of treatment and terrific pain, the second molar also was extracted with a large root abscess. Passing a strong curved probe into the antrum through the socket of the tooth, gave vent to about two drachms of thick pus and was soon followed by relief from pain that had been agonizing most of the time for three weeks.

On the evening before the last extraction, I suspected the presence of pus in the antrum on account of the great swelling of the middle and lower tubinated, which might be sufficient to prevent any pus escaping into the middle meatus. I thereupon attempted to transilluminate with Ingals' incandescent lamp, but found that the battery was too far exhausted to give the necessary current. Sufficient current remained, however, to heat the ordinary cautery electrodes and I used a coil of platinum wire, guarding it by a test-tube with a cork cut in two and the halves hollowed out to receive the wires of the electrode. Since then I have used the electrode guarded by a plain two-dram homeopathic vial with entire satisfaction. The vial can be held by the neck between the patient's lips so that the cork prevents any light escaping to confuse the operator. The only mishap I have experienced in a number of trials is the minor one of melting my coil, which can easily be avoided by interrupting the current every few seconds just before the melting point is reached. If the electrode is made of tubing with a coil of platinum wire that slips into the end of the tubes, the coil can be very readily replaced at the expense of a few cents. The current should be slightly greater than that used for cauterization, but can readily be obtained from any cautery battery by cutting out a little more resistance. By covering the vial with opaque paper except at the

end and applying the end to the orbital surface of the frontal ridge some illumination of the normal frontal sinus can be obtained in subjects with prominent ridges. I think some assistance in the diagnosis of frontal empyema may be expected from this procedure, though I have not obtained very satisfactory results. As to the danger of breaking the vial in the mouth, I must confess to feeling some timidity at first, but a large number of trials dispelled this fear. A metal guard would certainly prevent any danger of that kind. Possibly a reflector might be placed beneath the electrode to increase the light, but I have found no case in which the electrode did not furnish ample light. A striking example of the danger in depending on the regular transillumination lamps was read by Jonathan Wright, M.D., before the Laryngologic Section of the Academy of Medicine and reported in the *Brooklyn Medical Journal* of July, 1895. That case presented the classical history and symptoms of empyema of the antrum. Dr. Wright said: "Unfortunately, my transillumination lamp was out



of order, so that I could not apply that test." Upon extracting a diseased tooth and drilling through the floor of antrum no pus was found. "The only conjecture that I could then make was that there was pus in the frontal sinus, but he declined with emphasis the suggestion that he have his frontal sinus opened by external incision. I did not see the patient again, but since then I have not made a diagnosis of antrum trouble without using the transillumination lamp."

Although I have not read of this method being used before I shall be surprised if such a simple procedure has escaped the myriad workers with all the essentials actually in their hands daily. Any suggestion which will give increased usefulness to instruments already in common use for other purposes should be appreciated by physicians, who are so often solicited to buy expensive instruments associated with the names of our inventive confrères, to their advertisement and the financial profit of the instrument maker.

34 Washington Street.

SUBCUTANEOUS INJECTIONS OF SUB- LIMATE AS A CURE FOR CERE- BRO-SPINAL MENINGITIS.

BY J. D. SMITH, M.D.

PADUCAH, KY.

In the *JOURNAL* of Feb. 15, 1896, page 345, quoting from *Sem. Méd.*, Jan. 15, 1896, I find that, "An Italian, Dr. Dazio, suggested the above-named treatment, and with it, Dr. Consalvi, of Casoli, has recently treated successfully nine cases."

I desire to say that I inaugurated a similar treatment at Dyersburg, Tenn., in the spring of 1885.

Having seen as consulting physician, a Mr. McC., of Fowlk's Station, four miles from Dyersburg, in the midst of vigorous manhood, die in great agony with cerebro-spinal meningitis, and two days later a youth of 14 years named Martin, in the town of Dyersburg, sicken and in twenty-four hours die as quietly as one going to sleep; and having practiced through two former epidemics of the disease with little or no

success, I determined on an original heroic course of my own in the event of an epidemic. I had not long to wait. Called next day to see Mrs. H., niece of United States Senator H. from Tennessee, and found her with her head drawn back and in a state of wild delirium. Injected just below the scapula $\frac{1}{4}$ gr. of sublimate and put her on 1-15 gr., with 2 gr. chlorate potass. every hour until the specific effects began to be manifested in alimentary canal. Then I gave same dose at longer intervals. This and some bromid constituted the entire treatment and recovery was perfect.

W. G. B., lawyer, returned from ten miles in the country, where his father had died with the disease, and had a severe attack. He was treated in the same way and had a good recovery.

Lucien S., Deputy United States Marshal, had a severe attack; was treated in same way and made a good recovery.

Thomas T., farmer, six miles in country, took pain in right foot while plowing; pain went to head and he was delirious in two hours; was seen by another physician and given calomel, sulphate magnesia and morphia. He grew constantly worse and when I saw him at the end of eighteen hours from beginning of attack was a raving maniac, with head drawn back almost between the shoulders. Injected sublimate, $\frac{1}{4}$ gr., and repeated in six hours with effect of greatly quieting delirium. He had other small injections and took minute doses by the mouth. This patient remained unconscious fifteen days, but finally recovered with right side partially paralyzed, and after having several abscesses, one of which involved the right testicle.

These were six typical cases of that epidemic, the attacks of the two that died being no more severe than were those of the four who recovered. Together with others they have been reported to the South-western Kentucky Medical Association.

In the winter and spring of 1893, while a severe and widespread epidemic was prevailing in one of the Kentucky counties near Paducah, I treated Mrs. P. and her 10-year-old daughter of Paducah successfully in the same way.

Another typical case that I treated successfully in Paducah at the same time was A. B. A., a young telegraph operator. His case was a severe one which resulted in partial paralysis of the left side, from which he has never fully recovered. Yet he was snatched, as it were, from the very jaws of death by the repeated hypodermic injections of the bichlorid.

A few other cases might be named, but the above are sufficient. Since the adoption of this treatment I have never lost a case of cerebro-spinal meningitis. Before its adoption I lost all. Strange to say, physicians with whom I have conversed about it seem to fear its boldness, and yet they have generally lost all their cases. I try to get the specific effects of the sublimate on the alimentary canal within thirty-six hours and then lighten up my treatment, so as to avoid excessive irritation of the canal. I do this that I may know that my patient has all the sublimate in him that his canal will bear with safety. I sometimes give castor oil and turpentine to clear the canal, bromids to quiet brain action and even give small hypodermics of morphia with the bromid, or bromid and chloral after I get the specific effects of the sublimate. I believe the sublimate destroys the bacteria peculiar

to the disease, just as quinia destroys malaria, and leaves organs already injured by the bacteria in a state of simple inflammation of more or less severity.

SOCIETY PROCEEDINGS

Medical Society of the State of Pennsylvania.

Forty-sixth annual Session of the Medical Society of the State of Pennsylvania, held at Harrisburg, May 19 to 21, 1896.

DR. W. S. FOSTER, of Pittsburg, President. Addresses of welcome were made by Gov. D. H. Hastings and others. The reports of the Secretary showed an increase in membership in many county societies and the addition of four new ones. The reports of the Treasurer and of the Committee on Publication announced an issue of nearly three thousand copies of the Transactions and a balance in the treasury of \$2,500. The Committee on Scientific Business had prepared a program with seventy papers for the meeting. The Committee on Pharmacy urge the need of a closer adherence to the Pharmacopeia and the National Formulary in preference to the prescribing of proprietary preparations. A copy of this report was ordered to be sent to the Pennsylvania Pharmaceutical Association for its next annual session. The report of the Committee on Increase of Membership told of the success of the efforts in that direction, and arrangement for lectures before the county societies to stimulate the attendance at their meetings. The Allegheny County Medical Society invited the State Society to hold its next annual session at Pittsburg. Several amendments to the Constitution of value in order to make the society more effective in its work were offered and laid over for a year.

DR. G. M. BRUMBAUGH, of Washington, D. C., a guest of the society, asked the consideration of certain action now before Congress affecting the work of the Government laboratory at Washington, and a committee was appointed to prepare resolutions on the subject. On motion of Dr. F. LeMoyné, Pittsburg, the following was adopted:

WHEREAS, Contagious and infectious diseases cause a large proportion of the suffering, disability and death of the human race, and

WHEREAS, Such diseases are to a great extent preventable by proper precautions, and

WHEREAS, Tuberculosis, both bovine and human, is known to be contagious,

Resolved, That the Legislature of Pennsylvania is urgently recommended to enact laws by which all centers of population containing 25,000 inhabitants or more be required to provide isolation hospitals with separate wards or buildings for small-pox, diphtheria, scarlatina and erysipelas, and provision should be made for extending the facilities in such hospitals to the surrounding populations geographically and commercially dependant upon them.

Resolved, That laws should be enacted requiring that all cows producing milk should be tested by the most approved methods for tuberculosis at least once in six months, and that all cows found to be tuberculous shall be condemned.

Resolved, That provision should be made for the positive diagnosis of all cases of suspected pulmonary tuberculosis, and that boards of health should be required to enforce adequate precautions against its dissemination.

Resolved, That in consideration of the pernicious character of the water delivered to a large proportion of the people of this country that legislation for the protection of streams from pollution is urgently demanded.

At the afternoon session Dr. C. M. FRANKLIN, Lancaster, delivered the address on "Mental Disorders." It gave a résumé of the improved methods of the care and treatment of the insane, with the causes that have brought about these conditions; the advances and experiments made in pathology and their hopeful tendency; the influence of inebriety, immigration and crime in relation to insanity, with the suggestion that there may be some new legislation giving power to in some way control the extent and increase of the first two and that sociology will teach us to adopt a new condition of things by which the methods of modern life will relieve the undue tension that is at present placed upon the mental faculties.

DR. BUCHANAN, of the special committee on the act before Congress, reported:

WHEREAS, Senate Bill No. 1,552, entitled "A bill for the further prevention of cruelty to animals in the District of Columbia" is pending in the Congress of the United States; and

WHEREAS, We, the Medical Society of the State of Pennsylvania, are fully convinced that this restrictive legislation, should it become a law, would seriously cripple the efforts of the earnest scientific investigators of the District of Columbia (and indirectly of the United States) and would retard the progress of medical science in its beneficent efforts to alleviate suffering and diminish the ravages of disease; and

WHEREAS, Cruelty to animals is not practiced in the District of Columbia by those scientists who unselfishly and with great personal risk strive to increase our knowledge of disease and of the methods of its prevention and cure; therefore, be it

Resolved, That the Medical Society of the State of Pennsylvania hereby urge the Pennsylvania delegation in the Congress of the United States to use all honorable means to defeat the said bill or any similar restrictive measure.

Resolved, That copies of these resolutions, attested by the Secretary of the Medical Society of the State of Pennsylvania, and signed by the President, be sent to each member of the Pennsylvania delegation in Congress, and to the Chairman of the Committees on the District of Columbia, of the Senate of the United States and of the House of Representatives.

The preambles and resolutions were unanimously adopted. Copies were at once forwarded as directed and several replies were received from members of Congress favorable to the action asked.

DR. E. B. BORLAND, of Pittsburg, read a paper on the "Prevention of Tuberculosis." His conclusions were the three essential factors of infection, debility, abrasions and bacilli. There are two principal routes of infection, two sources of infection. He then spoke of the transmission of infection, of the vitality of the tubercle bacilli, of measures to prevent infection in milk and in sputum, ways and means to stop expectorating on floors and sidewalks, of destroying sputum in cuspidores, of ventilation, legislation, education, house disinfection, isolation and care of patients in the ulcerative stage.

DR. J. C. LANGE, of Pittsburg, read a paper on "The Antiseptic Factor of the Treatment of Typhoid Fever." He proposed external antiseptics of the whole body, of the orifices of the body and of the intestinal canal.

DR. H. S. MCCONNELL, of Brighton, read a paper on "Elimination, Starvation and Antiseptics in Typhoid." The accepted pathology shows that this disease is due to a microorganism. He denied that typhoid fever is a self-limited disease. Its duration and gravity depend upon our ability to prevent and destroy the bacilli and restrict and eliminate the toxin. Eberth's bacillus being the cause, the point of attack the alimentary canal, three indications are to be met: 1, to prevent the introduction of any bacilli; 2, to destroy and expel all bacilli in the digestive tract; 3, to make and keep the intestinal canal aseptic. The first is done by permitting only sterilized substances; the second by active purgation; the third by intestinal antiseptics, prohibiting all and every kind of food for three days. After this, when there is unmistakable hunger, give food well diluted, at long intervals and in small quantities; half a teacupful of hot water every hour, and an enema of salt and cold water morning and evening. Keep temperature below 102, cold sponging, over this guaiacol externally. He had thirty-four cases, with one death; duration eighteen and three-tenths days. There were four relapses, one hemorrhage. One went seventeen days without food, another fifteen days, and thirty-two from seven to twelve days. He claimed this to be the rational treatment. It shortens the disease, temperature soon falling to normal line. There is very slight delirium, no illusions, less liability to hemorrhage or perforation. The patient is comfortable and in convalescence we have a stomach that is capable of digesting food.

DR. T. P. SIMPSON, of Beaver, read a paper on "The Use of Alcoholic Stimulants in Typhoid." The gist of this paper was a protest against the apparently increasing practice of giving alcohol freely and carelessly, with an attempt to show why this may be harmful and defeat the object sought to be reached, ending with a description of the cases which require alcohol and an estimate of the amount usually needed. These were discussed quite freely by a number of the members.

DR. J. M. BATTEN, of Pittsburg, read a paper on "The Therapy of Veratrum Viride." He gave a brief history of the drug. He dwelt upon its usefulness in the treatment of diseases of an inflammatory type by keeping the pulse at or near the normal, and especially of inflammatory diseases of the chest. He next gave a brief history of two cases of acute pneumonia in which the drug was used satisfactorily.

Some discussion next ensued upon the proposition to issue the transactions in a quarterly journal, and the subject was laid upon the table. A report of the Committee on the Rush Monument Fund showed very little progress in the matter.

SECOND DAY—MAY 20.

The Secretary read a telegram from the Secretary of the State Medical Society of Illinois:

"The Illinois State Medical Society sends cordial greeting.

"JOHN B. HAMILTON, Secretary."

The following reply was directed to be sent:

"Greetings cordially reciprocated. Have passed emphatic resolutions against the proposed vivisection legislation at Washington; hope you will do the same.

"W. B. ATKINSON, Secretary."

The Nominating Committee was announced and directed to meet at once.

DR. J. J. BUCHANAN, of Pittsburg, delivered the

ADDRESS IN SURGERY.

He asked the consideration of a few of the common things in surgery, most important because so common. Perhaps the most important is appendicitis. The divergence of opinion as to treatment increases the responsibility of the attendant. The expectant treatment is fraught with anxiety. Drugs have no place here. Opium only covers up the symptoms. Purgatives may do worse. With rest, diet, nursing and abstinence from drugging, many do recover. Who is to assure safety? Perforation may convert the case into a hopeless one. It seems the course of greatest safety is to remove the appendix early. Consent early is difficult to obtain, especially if a mild case. Still if the period of primary operation has passed, and an exudate has formed with an abscess of considerable size at its center, the operation becomes a matter for grave consideration. The gravity now depends on the position of the adhesions. If the appendix can be reached without opening the peritoneal cavity it is safe. If the cavity has to be reached and drained across this serous sac, the operation is hazardous, and often fatal. Many have no hesitation in dealing with such abscesses across the peritoneal cavity, protecting it with gauze packing. However skillful, the fact remains such are often followed by septic peritonitis and death. With the present technique, it is more prudent to attack these abscesses at a point where adhesions have probably occurred. Whether the appendix should always be sought and removed after evacuation of the abscess has caused much discussion; but the conclusion of most is that if easily accessible, it should be removed, but if imbedded in the abscess wall and the removal would imperil the integrity of the latter and risk opening of the healthy peritoneum, it must be left alone. The most positive advance of the year seems to be in the tendency to operate on cases of recurrent and chronic appendicitis between attacks. He insisted that two periods are when the removal is safe, in the very beginning and in the interval between attacks, and all cases seen at either period should at once be operated on, if the diagnosis is clear and consent is obtained. In fractures, the essential factor in repair is callus. The indication is to secure a moderate amount of this; the most favorable condition for its formation is a full blood supply and keeping the parts in approximation and quietude without absolute immobility. A revival is seen in the plan of open incision and fixation in simple fracture. Since antiseptics has been brought in, attempts have been made to bring this into general use, but the results without this have been so good as to prevent its general use. But when reduction can not be satisfactorily made and the site of fracture is accessible such are treated with great success, the apposition can be perfect and fixation by pegs or suture secured. The result justifies the risk and deformity may be prevented. Two errors are to be avoided. Not to apply this on such as can be treated without, and not to remove detached fragments of bone which are valuable for consolidation. In these cases the process of repair is a little more protracted; still it is certain that it is destined to have a wider application and with proper limitations will be very valuable. The most frequent changes advocated in fractures is that allowing greater freedom to the part, the ambulatory treatment and that by massage and passive movements. The first consists in approximating the fragments, applying a fixation dressing by extension which can be kept up by its application against points of vantage as the tuberosity of the ischium for fractures above the knee and the head of the tibia for fractures below the knee; and elevation of the sole on the sound side and a prolongation of the splint to a corresponding distance below the sole on the injured side. Permit the patient to bear the weight of the body alternately on the two sides, the weight being transmitted on the injured side, from the tuberosity of the ischium or the head of the tibia, as the case may be, through the splint to the ground. Thus he escapes confinement to bed and has the benefit of out door exercises. It is said that muscular atrophy is prevented and the gentle stimulus of motion hastens union. By massage at or near the seat of fracture with passive movements of the

near joints is a method which entails great labor, but has much in its favor. The ideal treatment of simple fractures after reduction should meet the following indications. Retain the fragments as near the normal as may be. Splints or other dressings should be easily removable without disturbance of the fracture. No constriction to impede the circulation. Dressings to be removed at short intervals to permit examination, massage of the callus and neighboring muscles, gentle stimulation of the growth of callus by the slight disturbance incidental to removal of and reapplication of dressings and passive movements of adjacent joints, when these can be done without disturbing the relation of the fragments. The most important accessory is the removable splint which fits the part so accurately that the reapplication is never a matter of experiment and is so light as to be no burden. He preferred the plaster of paris splint, as easily and quickly applied, fits accurately, causes no discomfort, can be removed and reapplied as needed. The cost is trifling and it is portable. In its application, an outline of the shape desired is cut from a double layer of lintine, a firmly compressed cotton sheeting. One layer is placed on a table and two gypsum rollers are soaked in plain cold water till the air bubbles cease to rise. One of the plaster rollers is then spread on the layer of lintine as it lies on the table. The plaster roller is passed back and forth, end to end of the lintine till the figure is entirely covered from four to six thicknesses. This is laid as smoothly as may be and can be made thicker at some parts if desired. When the desired thickness is attained the other piece of lintine is applied to the upper surface, to which it will adhere. The edges are then trimmed with scissors, where the plaster overlaps and the splint is ready for application. It is as flexible as a wet dishrag. The limb is elevated and the splint applied to the surface and held by an assistant. The application of a roller adapts this moist and clinging splint exactly to every inequality. The limb can now be placed on a pillow and steadied, while a splint of the same kind is prepared for the other aspect of the limb if necessary. By the time this is ready, the first will be found hard enough to support the part. The second is applied to the other aspect over the muslin roller and the dressing is complete, and in ten minutes will be hard. When desired to remove and reapply, each should be applied in its turn and with its own roller. Thus no part of the limb can be pinched between the edges as often happens when both splints are applied directly to the skin by a single roller. No paddings should be placed next the skin, unless as a dressing as in compound fracture. All dressing must be light and be duplicated when the splint is removed. Should the splint cause discomfort by pressure this part should be cut off and pressure will be at once removed. In conclusion he called attention to the advantages of the infusion of large quantities of normal salt solution into the veins after hemorrhage from accident or operation. One or two pints are often used, even many quarts. He had reported a case with profound loss of blood from a limb crushed so as to need amputation, into whose veins during the six hours before operation, he infused six quarts of saline solution with the gratifying results of reaction and recovery. Later he had used even larger quantities with marked benefit. He was convinced that this procedure is not appreciated and the failure of the salt solution is from the want of a sufficient quantity and the abandonment of the treatment too soon.

Dr. J. W. MOORE, Easton, read the

ADDRESS IN HYGIENE.

The writer believes that there is real danger to the cause of sanitary reform from too hasty acceptance of theories which result in proposing, adopting and enforcing regulations which are a hardship to the people without accomplishing good. Every regulation founded upon theories which have failed to stand the test of scientific examination react in the minds of the voters to the detriment of the cause. Having these views he showed the weak places in the modern theory of the origin and dissemination of contagious diseases. He claimed that evidence from clinical, bacteriologic and epidemiologic sources must agree and that in particular diseases they did not and therefore the parasitic origin is not proved. Opinions can not establish contagion nor analogy nor imperfect induction from insufficient data. Science is often retarded by the expression of opinions by learned men. Newton himself is responsible for the backwardness of the science of optics. We must avoid the confusion of coincidences with similarities. The old proofs of contagion are not obsolete; truth never is. But in the case of tuberculosis, for example, they will not apply because the disease is too old, the distribution too wide and the cases too chronic. The modern theory of parasitic origin of disease is fascinating and has many points which appeal to our minds by their truthfulness. The researches of Koch, Pasteur and others

have opened a boundless field for investigation. Let us honor them always. In this department of science as in others the disciples with less knowledge claim more than their masters. Koch for example insisted upon four postulates; many of his followers accept contagion on even one; some on none proved. These postulates have become rather ancient history, but Koch was right; they are not axioms which are self evident but postulates, the truth of which may be denied. In the meantime other questions have been opened up which make the investigation still more difficult. The crucial test of the theory is the reproduction of the exact disease in man; this had not been effected. The results of a laboratory experiment can not be predicated of an experiment performed by nature in her own way; so many new conditions are introduced that to conclude from the first that the second will show the same outcome is absurd. The possibility and the probability of infection must be distinguished when the question of actual contagion is taken up for discussion. The conditions are so different that the experiment is practically not the same. The same disease is not equally contagious under the same apparent circumstances; the same disease is not equally communicable to different persons nor to the same person at different ages. Hence all contagious diseases are not to be subjected to the same regulations.

Dr. J. M. BALDY, of Philadelphia read a paper on

PELVIC PERITONITIS

from the standpoint of the general practitioner. Acute pelvic peritonitis has received little consideration of late years from this standpoint, the impetus generally being surgical. A surgeon naturally prefers surgery, but the physician is apt to adopt the methods in which he has the most confidence. Both may be right within limits. An attack may be due to a chronic disease of the Fallopian tubes which may have existed for years. Therapeutics may cure the existing peritonitis but fail to cure the woman. He desired to impress two aspects, the diagnosis and the more important non-surgical methods of treating this trouble. The diagnosis is important, as it aids materially in the conduct of the case for or against operation. It is a fact that such cases are often treated rationally without a knowledge of the exact cause. But it is not right to act thus in the dark. Still the cause can not always be detected even by the most skilled. The medical treatment is to a great extent routine; rest, depletion and relief of pain. Opium fulfills two indications—rest and relief of pain, but defeats the third, depletion. Rest in bed must be followed by functional rest. If in no other way by large soft vaginal tampons worn between treatments, frequently replaced and not so as to press upon the posterior parts of the vagina too firmly. Wool is best. Depletion is obtained in two ways. Direct scarification or leeching of the cervix gives remarkable relief. The great remedy is hydragogue cathartics, the salines. A teaspoonful of magnesium sulphate each hour till the bowels operate. Secure half a dozen or more movements in a few hours, the last being purely serous. Often the attack will subside with the purgation: the abdominal distension subsides, pain and tenderness are relieved, pulse is normal and convalescence ensues. Hence it is not believed to be peritonitis. Abdominal section frequently shows an abdominal and pelvic peritoneum free from trace of inflammation. Such are the cases which are relieved by a purge. In true inflammatory attacks, the purge is only a step in the treatment. If magnesia is rejected by the stomach, calomel in grain doses half a dozen times, followed if possible by one or two doses of saline, and finally a large enema of hot soapsuds is an excellent substitute. The peristaltic action thus caused often increases the pain. If unbearable, opiates in form of hypodermatics of morphia (one-sixth or one-fourth) need not be feared if needed. Depletion thus obtained should be followed by the application of the vaginal douche twice daily. Its first effect is to cause congestion, and unless pushed to the extent of procuring the secondary effect of the hot water (the shrinking and blanching of the tissues) it will do harm. Counter irritation, poultices, etc., are of doubtful value. They may serve the purpose of allaying the mental condition. The attack will be of more or less duration as the underlying disease. Attacks which keep the patient in bed a month or six weeks are to be suspected of suppuration. Diet should be regulated and the excretions kept in good condition. Antipyretics are not needed. When up, she must avoid all undue exercise or sexual indulgence till pain has entirely gone. Proper regulation of clothing, etc., need not be emphasized.

Full discussion by a number ensued on this practical paper. Dr. JAS. FULTON, of Chester, read a paper on "Alcoholic Stimulation in the Treatment of Disease." He endeavored to show why such remedies are so popular with the community at large; why so generally used by physicians in typhoid fever, in consumption, in delirium tremens, shock, etc.

DR. G. HUDSON MAKUEN, Philadelphia, read a paper on

THE DIAGNOSIS AND TREATMENT OF SPEECH DEFECTS.

He exhibited a little boy who read quite well and clearly as the result of his efforts. After discussing the importance of speech as a factor in mental and physical development, the possibilities of its improvement and the complexity of its mechanism, he said that with our present limited knowledge, any classification of the defects of speech is difficult to make, but they may be divided with reference to their causes, into two general classes, namely, those of cerebral and those of peripheral origin. He then cited from his note book three cases to illustrate how difficult it is oftentimes to determine the exact cause. One case, a boy 19 years of age, with arrested development of speech, and the other two stammerers. It was supposed that the first case was of cerebral origin, but both the first and second cases were cured completely by simple operations, the first by the division of the anterior fibers of the genio-hyo-glossus muscle and the second by the removal of an adenoid growth. This patient was exhibited to the society. The third case is still under treatment directed toward the reduction in the size of the epiglottis. He said he would operate for defects of speech only when there are structural peculiarities or pathologic conditions interfering with the normal action of the organs. He thought even slight obstructions sometimes cause trouble and should be removed, especially when they are found in children. They interfere either mechanically or reflexly through the nervous system, but more often in both ways. After these irregularities have been corrected and obstructions removed the faulty habits of speech must be broken up by appropriate exercises. Only those having made a special study of speech can do this successfully. He said no definite rule can be laid down as to the special kind of training. The exercises must fit the case. They must develop undeveloped muscles. He closed by saying that many cases have been supposed to be of cerebral origin and incurable which were in reality due to some slight abnormality in the peripheral organs which if detected would easily be remedied, and he urged the necessity of greater care on the part of the profession in the study of these cases.

DR. J. W. ROOP, of Harrisburg, read a paper,

GELSEMIUM AS A REMEDIAL AGENT.

The root is used, though the flowers and leaves contain the medical properties in large quantities. The effects depend on the presence of an alkaloid soluble in ether and chloroform, less in alcohol or water. It is more particularly valuable in controlling nervous irritability in periodic fevers of a malarial type. Lately it has attracted attention for neuralgic attacks. The earliest symptoms in large doses are dim vision, drooping eyelids, inability to open the eyes, etc. Antidotes are nitrite of amyl by inhalation or hypodermically. This acts instantaneously as a nerve and arterial stimulant. Also, carbonate of ammonia, brandy, morphia, electricity, till the poison is eliminated. In twenty-six years' experience he had used this drug thousands of times without toxic effects, in tincture or fluid extract, and was convinced that it is a most valuable remedy, beginning to act in half an hour and ceasing in one or two hours. He preferred the tincture as safest. Dose, five drops to adults; to children, in proportion till the physiologic effect is obtained, that is, dim vision, etc. Then omit till these pass off and resume. In facial neuralgia and nervous headaches it has no rival. It may be combined with muriate of ammonia, or with quinia; it corrects ringing of the ears and the headache often produced by quinin. It promotes the action of this drug and in diminished doses. In chronic malaria, gelsemium with liquor potassae arsenitis is valuable, preventing relapses. The cough of bronchitis is relieved by it. Acute muscular rheumatism is also amenable to it, the patient being put under blankets and three to five drops given every hour till free sweating results. With nuxvomica it has a remarkable influence on the spinal nerves. Many nervous affections are cured by it in this combination. Added to the bromids, it often cures neuralgias of nervous women and relieves the pain and tormina of the bladder, and in diseases of the rectum. With belladonna or morphia it increases their anodyne powers. In infantile inflammations in quarter or half drop doses it is of great value. In rigid os uteri, etc., in puerperal convulsions and nausea and vomiting of pregnancy, he has found it of value. Where opium is contraindicated, it comes in with good results. As a guide for its use, he laid down the rule that where we find a flushed face, bright eyes and contracted pupils it is the remedy, either alone or combined as indicated.

DR. E. E. MONTGOMERY, of Philadelphia, read a paper on

THE TREATMENT OF PELVIC INFLAMMATORY CONDITIONS THROUGH VAGINAL INCISIONS.

He advocated the practice of vaginal incisions for pus collections in the broad ligament, in the tubes, when large purulent or serous collections in the pelvis, for exploration and for the evacuation of hematocele. He preferred abdominal incision for the removal of one ovary or tube and for fixation. Cases of retrodisplacement with adhesions may be treated as suggested by Pryor, by opening the posterior fornix of the vagina, breaking up adhesions, replacing the uterus and maintaining it in position by gauze packing. In cases where the functions of both ovaries and tubes are destroyed, so as to render their removal necessary, the vaginal route affords, in the majority of cases, the most favorable way for the removal of the diseased structures, and the uterus should be removed with the appendages.

At the afternoon session the Committee on Nominations reported the following: President, E. E. Montgomery, Philadelphia; vice-presidents, C. S. Shaw, of Pittsburg, F. P. Ball, of Lock Haven, T. M. Livingston, of Columbia, and A. C. Wenz, of Hanover; secretary, William B. Atkinson, Philadelphia; assistant, Adolph Koenig, Pittsburg; treasurer, Geo. B. Dunmire, Philadelphia; and censors and delegates to sister societies and the AMERICAN MEDICAL ASSOCIATION and the Pan American Congress.

Pittsburg was selected as the place of meeting for 1897, with Dr. T. D. Davis, of Pittsburg, as Chairman of the Committee of Arrangements.

DR. ISRAEL CLEAVER, Reading, read the "Address in Obstetrics." He alluded to the work under this head for the period since 1873.

DR. F. S. PEARCE, of Philadelphia, read a paper on

A CLINICAL REPORT ON THE USE OF TESTICULAR FLUID INJECTIONS.

Males, 30; females, 10. The diseases were locomotor ataxia and the sclerotic cord diseases, paralysis agitans, neurasthenias, especially of the sexual type. Injections were given under strict antiseptic precautions in the buttocks or thighs or arms. Passive massage of the parts was practiced to encourage diffusion, and thereby prevent irritation. In the 500 injections given by Dr. J. K. Mitchell and the writer, there had been but two abscesses produced. Average amount of injection that seemed to act most advantageously was between twenty and thirty minims, diluted with distilled water. Every other day seemed most desirable time for injections in order to prevent irritation, which frequently occurs. If pushed to the point of endurance, the B. S. Fluid produces nausea, vomiting or diarrhea.

In the nineteen cases of locomotor ataxia treated, sixteen were in males, of which eleven seemed to be stimulated to at least temporary improvement by the remedy. In five cases no result was obtained. In one, injections of water acted the same as B. S. (psychic). A large proportion of these ataxias were in the advanced stage of the disease. Sexual power was much reduced or, indeed, impotence existed. Of the eleven male ataxic cases improved, the effect was of a general stimulation of the nerve tonus; described by the patients as a sense of "well-being." There was an ease of breathing and increase of pulse force, as though the respiratory and cardiac centers were buoyed up to more active work. In some ataxics increasing muscular strength and co-ordination was attained; the patients being able to endure more exertion. This was especially noted in number 22, who persisted that he could feel stimulation creep over him as early as twenty minutes after the injection. He finally had nausea and diarrhea, due to the effects of too large dosage.

Pain was somewhat lessened in three cases. Along with the general stimulation and bettered coördination in the eleven males quoted, there was in addition, in four of them, as seen above, very marked increase of sexual power and a general sense of comfort. The above series of ataxic cases present positive results. The remaining cases did not carry out the treatment, or else it proved inefficacious, in both of which instances they are classed together as failures. From the above cases it can not be concluded that the effect of testicular extract is to produce sexual increase mainly, but rather that the sexual increase falls in line with the general stimulation, but not always so. What is most clear in any of the cases in which we have used the drug, is that a general stimulation is the most frequent method of its action for good. To the above cases Dr. S. Weir Mitchell can add two occurring in old men in which B. S. injections caused this general stimulation and great increase of sexual power, the latter so much so as to be annoying in one case. The Brown-Séguard treatment has proven of stimulat-

ing and rejuvenating power in disease of chronic nature where nerve energy at a low ebb, whether in organic or so-called functional neuroses; and these aside from psychic influence. The effect may be to increase oxidation or to supply something the body needs, as in other organo-therapy, and thus to supply a temporary tonic to the system which acts by general stimulation; it at times relieves pain and crises in organic cord disease; it may greatly stimulate the sexual function. There can be no claim made for this agent to act as a cure per se in any malady, certainly not in any sclerosis. It may prove one of the aids toward recovery from the vicious circle of disease. There seems to be no criterion to judge the cases in which good or failure may be expected. Sometimes an unexpected happy impetus to waning vital powers may be rekindled by the drug, which does good for the time being, and paves the way for other therapeutics to take hold of the system. It may too open the blood paths more widely about a sclerosed area and thus add to nutrition of the part transiently. It is not intended to laud the remedy, but to present the clinical evidence of its limited usefulness in disease.

DR. JAMES M. ANDERS, of Philadelphia, read a paper on

SOME THERAPEUTIC USES OF GUAIACOL.

That guaiacol is a valuable medicinal agent is allowed by all who have employed it in suitable cases. The complaints in which it is serviceable are divisible into three groups, which are considered separately.

Group 1. Febrile Affections. These are acute and chronic. Of the acute febrile diseases in which it has been used, typhoid fever, the pneumonias, lobar and lobular, stand foremost. It is an antipyretic when applied to the skin in the proper amount, and according to the experience of some of the physicians who have thus used it most extensively, it is practically free from unfavorable effects. Dr. H. G. McCormick has applied guaiacol more than eight hundred times in typhoid fever with uniformly good results. He has occasionally observed chills, but these were noted when the temperature as the result of a topical application of guaiacol, dropped below 100 F., and they were not followed by increased fever nor increased weakness. The occurrence of rigors is a certain indication that the dose has been too large and hence should be lessened immediately. On the other hand, while he has used guaiacol in but two cases of typhoid fever, in one of these its use was attended by rigors both on the thirteenth and sixteenth days of the affection, followed by a rapid rise of temperature to a higher level than the previous maximum temperature. Rosenthal, of Philadelphia, observed a similar effect in a case of typhoid fever. Thayer has also reported marked chills from its use. Still other observers have noted a decided weakening effect when guaiacol was employed as an antithermic agent. But though guaiacol does not possess the obvious and numerous advantages for the patient that the Brandt method does, it may very properly be employed in cases in which the cold baths can not be instituted on account of the existence of an insurmountable prejudice, or of contraindications to the latter, such as intestinal hemorrhage, acute nephritis, otitis media, etc. Its internal administration in the form of the carbonate of guaiacol in typhoid fever is to be highly recommended since it reaches the intestinal canal before it is disassociated or absorbed. Under these circumstances there is opportunity for the remedy to make a direct attack upon the typhoid bacillus. I have had no personal experience with guaiacol in the treatment of typhoid fever, but have used it in acute and chronic forms of intestinal catarrh, accompanied by fermentative processes with truly excellent results. In a paper previously published may be found the report of a case of broncho-pneumonia in which this antipyretic was employed (in half dram doses), the patient making a good recovery. The applications of the remedy were not followed by so marked a reduction of temperature as in typhoid. More recently, I have used guaiacol in two additional cases of broncho-pneumonia with like results. It would appear from my own observations that fever dependent upon local inflammations is to a less extent reduced by guaiacol than when due to general causes. Pulmonary tuberculosis is the one chronic febrile disease in which guaiacol has been frequently employed. J. S. Cohen has noted a striking reduction of temperature following its external use in this disease. I have employed it in a few instances of chronic phthisis quite recently, and while it has reduced the temperature decidedly, the profuse sweatings and occasional debilitating effects induced by the remedy, have led me to abandon its employment in this affection.

Group 2. The second division of cases are the non-febrile. These embrace chiefly myalgic and neuralgic pains. The local physiologic action of guaiacol is that of a decided sedative. Thus, when administered internally it allays the irritability of

the nerves terminating in the gastric mucosa. In the paper referred to there are reported cases of gastralgia successfully treated by guaiacol, given in doses of two or three minims, combined with glycerin. Later observations have confirmed the favorable opinion previously expressed as to the value of this agent in gastric hyperesthesia or irritation of the sensory nerves of the stomach, when cautiously used. Ferrard first employed this drug in sciatic and other forms of neuralgia (painting it over the course of the nerve, mixed with an equal part of glycerin). Eight cases of neuralgia in which guaiacol was the chief reliance I have reported previously. In three of these, the drug was exhibited hypodermically, the dose being one or two minims combined with ten minims of spirits of chloroform. I can now add the results obtained in four additional cases of neuralgia treated in this manner. To be brief, among them, two affected the supraorbital branch of the fifth pair, one the intercostal nerves and one the left sciatic nerve. In one of the cases of supraorbital neuralgia there was a distinct history of antecedent malaria, hence quinin (20 gr. daily) were exhibited *per os*. Additionally, two minims of guaiacol and ten minims of chloroform were administered subcutaneously at the point at which the nerve emerges from the deeper structures. This was repeated at the end of twenty-four hours, after which the pain ceased permanently. In the other case of this form of neuralgia no special causal factors, except, perhaps, exposure to cold and wet, could be ascertained. Here it was necessary to inject the guaiacol twice daily for two days before permanent relief was obtained. One of the cases of intercostal neuralgia in which this agent was employed arose in an anemic and neurasthenic female. Beside the means, internal and sanitary, usually resorted to in such cases guaiacol was applied externally during the first week, with the result of affording only temporary relief. Subsequently the guaiacol was exhibited hypodermically. After the fourth puncture the pain yielded and has not since returned. In the case of sciatic neuralgia injections of guaiacol failed to cure, but greatly relieved the pain when administered at intervals of eight or ten hours. Thus eleven out of twelve cases of neuralgia were successfully treated by the use of guaiacol. In one-half or six of the instances the drug was used hypodermically, with five cures. In some of the latter the pain showed great obstinacy, and was not relieved by the external use of the drug, but yielded when it was injected subcutaneously. Muscle pains due to cold, old sprains or rheumatism are also promptly relieved by the local use of guaiacol.

Group 3. Inflammatory Processes. Guaiacol has been used by myself and others in acute forms of inflammation, especially the rheumatic. As I said elsewhere it serves admirably to relieve pain of rheumatic origin, "but it does not appear to cause any reduction of rheumatic inflammatory processes." In no form of acute inflammation have I been able to observe any antiphlogistic effects from the employment of this agent. A few inferences which are based upon personal experience, may here be stated and emphasized with a view to facilitating a discussion of the subject of the therapy of guaiacol: 1. Guaiacol effectually reduces the temperature in febrile affections, but it may produce objectionable effects such as profuse sweatings and rigors, followed by high temperature. 2. In afebrile diseases it is free from unpleasant effects. 3. It is an effectual local anodyne, both when administered internally and to the skin surface over the seat of pain, but it is especially potent to relieve neuralgic and myalgic pains when administered hypodermically. 4. It is "powerless to control inflammatory processes, particularly when they are acute in character."

(To be continued.)

Illinois State Medical Society.

Abstract of the Proceedings of the Forty-Sixth Annual Meeting, held at Ottawa, May 19, 20 and 21, 1896.

(Concluded from page 1130.)

DR. NORVAL H. PIERCE, Chicago, made some remarks on the "Modern Pathology and Treatment of Acute Middle Ear Inflammations."

METATARSALGIA, WITH A REPORT OF THREE CASES OF WHAT IS TERMED MORTON'S PAINFUL AFFECTION OF THE FEET

was read by DR. A. E. HALSTEAD, Chicago. After dealing with this subject in an exhaustive manner, the author drew the following conclusions:

1. That what is known as metatarsalgia is not in the beginning a distinct pathologic entity, but rather an early symptom of static flat foot. In cases of long standing, irritation of the plantar nerves by pressure of the transverse metatarsal arch

may cause an inflammation of the nerve, or even in some cases the development of a neuro-fibroma.

2. That most of these cases can be permanently cured by following the treatment usually employed in beginning flat foot—*e.g.*, systematic massage, gymnastics, and the use of properly fitted shoes, and in some cases the application of a metallic brace to the sole of the foot.

3. In cases of long standing, where there is well-marked pathologic change in one or more of the branches of the plantar nerves, resection of the nerve should be performed. The more radical operations, such as resection of the metatarsophalangeal joint or amputation of the toe, are not indicated.

Dr. E. MAMMER, Bloomington, read a paper entitled

CHOLELITHIASIS; A PLEA FOR OPERATIVE TREATMENT.

All cases which are not promptly relieved by the passage of small stones, or by therapeutic measures effectively and judiciously employed, at once furnish true indications for resort to cholecystenterostomy. The operation can be safely done and will be successful when calculi are in the gall bladder only, when they are in the gall bladder and in the cystic duct, and when they are in the ductus communis choledochus, and can be removed, or when, even if left there, the bile will find a free passage by the new channel; in febrile cases, where the stone or stones are impacted behind the duodenum, and where the new channel will allow passage for both bile and pancreatic fluid into the bowel, provided no purulent inflammation has preceded. So long as such cases have not gone too far, cholecystoduodenostomy, preferably by means of a No. 2 Murphy button, will furnish a safe and easy remedy.

Indications for operation in such cases as the above may be obtained by carefully weighing all symptoms and a thorough study of them in all their relations. The author reported two cases upon which he had operated successfully. He made an eloquent plea for early operation in gallstone cases, and closed by saying that to wait until all internal remedies failed was not rational, for no remedies existed against large calculi. By the timely advice of the physician and the surgeon's technical skill, patients with hepatic calculi should be early and readily relieved, and thereby the percentage of recoveries would be materially increased.

VAGINAL SECTION FOR THE CURE OF RETROVERSION OF THE UTERUS

was the title of a paper read by Dr. HENRY T. BYFORD, Chicago, in which the author described the technic of the method which he had employed, as follows: The vulva and vagina are thoroughly scrubbed with soft soap, then with strong alcohol and with a 1 to 2,000 solution of bichlorid of mercury. The uterus is dilated and curetted and disinfected with mild or strong solutions according to the requirements of the case, or the notions of the operator. This preparation is necessary to prevent the infection of the connective tissue and buried ligatures.

A transverse incision, a trifle over an inch long, is made in the vaginal wall just in front of the cervix, and the bladder separated from the uterus by the finger as far up as the peritoneal reflection. Then a longitudinal vaginal incision about two inches long is made in the median line from the neck of the bladder to the middle of the transverse incision. The bladder is separated from the vagina for a short distance on either side of the incision to give room for manipulation. The peritoneum is then torn across between the uterus and bladder, an intraperitoneal pelvic examination is made, adhesions are separated, and such parts are treated or removed as may require it. The bladder peritoneum is then seized by forceps and drawn down by successive grips until that which belongs behind the pubes can be seen. Two chromicized catgut threads are introduced about one inch apart through this portion of the peritoneum and subperitoneal tissue as high as possible. Then the anterior surface of the uterus is grasped with tenaculum forceps, and the fundus pulled into the vaginal wound and attached to the bladder by means of the above mentioned catgut threads. The finger is now hooked over the left round ligament, which lies beside the vaginal wound, a loop of the ligament drawn into sight, grasped by forceps and pulled down until the inguinal end is taut. A catgut suture is put through it as far from the uterine end as possible and is made to attach to the uterus just above the normal uterine insertion, which is easily exposed to view by the vaginal retractors. The same is done to the right ligament. The entire vaginal wound is closed with transverse sutures that reunite the bladder to the vagina, and also draw the ends of the transverse incision together, leaving one row of sutures in the median line. This lengthens somewhat the anterior vaginal wall and draws the connective tissue together in front of the cervix. A few inches of a narrow strip of gauze

is placed in the connective tissue in front of the cervix, to be removed in twenty-four hours by pulling on the end which projects between the sutures into the vagina.

Dr. Byford has operated upon ten cases in this manner, beside one case in which he merely sutured the fundus over the bladder, and in each one the uterus has remained in a normal position without the aid of a pessary at any time. The comfort is greater and the complaint much less than after Alexander's operation, and the patient is not conscious of a wound or sore place. In addition to these advantages the gynecologist obtains, while operating, a definite knowledge of the conditions of the pelvic organs and the possibility of correcting them.

The uterus has no abnormal attachments except the two points of peritoneal adhesion to the bladder, and there can be nothing to fear from subsequent pregnancy.

Dr. A. H. FERGUSON, Chicago, read a paper entitled

IODOFORM INJECTION TREATMENT OF HIP-JOINT DISEASE.

The intra-articular medication of tubercular joints, he said, was of recent date and was not yet very widely employed. It was with the hope of stimulating the profession to use it more and more that he presented his views on and experience with this treatment. The hip-joint had been selected on account of the frequency with which it is diseased, and because, in the speaker's hands, it had been more amenable to the iodoform emulsion injection than any other joint.

The objections to the hitherto recognized methods of the treatment of hip-joint disease were: 1, the high rate of mortality; 2, the long time that the patient was under treatment; 3, the great deformity that so commonly ensues; 4, the complications that are liable to set in and carry off the patient. The author then outlined the manner of using intra-articular injections of iodoform emulsion.

As to the time of treatment, the longest period that he deemed it necessary to pursue the injection method before a cure was effected, was nine months, and it was a case well advanced in the second stage. He had treated upward of twenty-five cases with the most satisfactory results, and which so far appear to have been cured with the exception of two cases, one who refused to receive the subsequent injections, and the other had marked tuberculosis of the apices of both lungs, but he gained over twenty-five pounds during the five months he was under treatment.

ANNUAL DINNER.

The second annual dinner of the Society was held in Armory C. Dr. John B. Hamilton, Chicago, acted as toastmaster. The toasts were responded to as follows:

"The Clergy," by Father H. A. O'Kelly, Streator.

"The Bar," Hon. Duncan McDougall, Ottawa.

"The State Medical Society," President Dr. David W. Graham, Chicago.

"The Ex-Presidents," Dr. John H. Hollister, Chicago.

"The AMERICAN MEDICAL ASSOCIATION," Dr. E. P. Cook, Mendota.

"The Pharmacists," Mr. Rogers, Chicago.

"Our Guests," Dr. James T. Whittaker, Cincinnati, Ohio.

"The Young Physician," Dr. E. J. Brown, Decatur.

"Our Medical Journals," Dr. O. B. Will, Peoria.

"The Ladies," Dr. Fenton B. Turk, Chicago.

Dr. Norval H. Pierce, Chicago, rendered two musical selections which greatly pleased the audience.

THIRD DAY—MORNING SESSION.

Section One—Third Session.

Dr. F. C. ROBINSON, of Wyandot, read a paper on the "Treatment of Tuberculosis by Aseptolin." The author reported one case treated by this remedy and declares it an absolute failure, and says it is unworthy the confidence of the profession.

Dr. E. W. ZOOK, Peoria, followed with a paper on WHAT MEASURES BEST RESTRICT THE SPREAD OF TUBERCULOSIS.

The restriction of the spread of tuberculosis, while not a new subject, was one that had not been given the attention it deserves. The author believes that the time is not far distant when a specific cure for tuberculosis will be discovered, but until that time comes, we will have to rely upon preventive measures, and if these can be uniformly enforced, he thinks we will without doubt be able to check the spread of this disease, but in order to do it we will have to put forth our best efforts.

Dr. H. W. GENTLES, Chicago, read a paper on "The Pathology and Treatment of Chronic Alcoholism."

Dr. ALEX. C. WIENER, Chicago, read a paper entitled

PERMANENT AMBULATORY EXTENSION IN SURGERY.

He said that in fractures of the shaft of the tibia or femur absolute immobilization of the bones in the normal position either by compression bandages or weight extension is indis-

pensable, but is it absolutely necessary to have the patient rest in bed all the long weeks until consolidation is perfect? The speaker replied in the negative. The surgeon gives his patient a dressing tightly fitting to the outlines of the extremities so as to keep the fractured bone in a correct position and to regulate the impaired circulation so that the injured can put his legs on the floor without pain. In order to allow the patient free mobility the patient is supplied with an apparatus which Dr. Wiener described and which seemed to be very practical and useful in the treatment of the cases under consideration.

Section One—Third Session.

DR. J. M. G. CARTER, Waukegan, in a paper entitled

FUNCTIONAL INDIGESTION, ITS CAUSES AND TREATMENT,

stated that the term indigestion referred to a condition, not a disease. This disturbance then was always functional. The following indications may be regarded as pointing out the course of correct treatment in the class of cases considered in the paper, to be varied to meet the necessities of individual patients; 1, remove the cause; 2, check or prevent the growth of bacteria; 3, assist digestion, and 4, repair damages done. These indications were then dwelt upon at length.

In conclusion, he said that the causes of functional indigestion were some indiscretion in diet; some irregularity in the time or manner of taking food or drink; the presence of certain species of bacteria; some neurosis or reflex disturbance; some sudden mental or emotional excitement.

DR. FENTON B. TURCK, Chicago, made some remarks upon the pathology of gastritis and demonstrated his method of treating this affection on a patient. He went over substantially the same ground as that covered in his previous and numerous contributions to medical literature on this subject, and with which most readers of the JOURNAL are more or less familiar.

DR. E. S. PETTYJOHN, Alma, Mich., read a paper entitled
THE DIFFERENTIAL DIAGNOSIS OF NEURASTHENIA AND ITS
TREATMENT,

in which he said that ever since Beard used the term neurasthenia; and Van Dusen directed attention to a group of symptoms so named, the profession had been struggling to map out a definite set of symptoms to be thus classified, and in his opinion we had as yet but poorly succeeded. Althaus, of London, protests against the term and Gowers says that nervousness covers the conditions. Different writers give different illy defined symptoms and subdivide them into cerebral and spinal symptoms, some observers even finding varied local conditions which they characterize as neurasthenia. There is one thing upon which authors are agreed, namely, that this group of symptoms indicates disease of some part or every part of the nervous system; that there is a marked defect in the nutrition of the cerebro-spinal axis, giving an almost endless variety of symptoms difficult to classify. The changes noted in the patient come on gradually. These changes were described and which occur in cases of neurasthenia. The author believes that neurasthenia as a distinct disease does not exist. It was simply a popular term among the laity, and many a young woman had become useless in the world of action because she thought she had neurasthenia. Physicians were to some extent to blame for encouraging this popular delusion.

Under the head of treatment the author expatiated upon elimination, food and environment. A systematic course of hydrotherapeutic treatment in addition to medication was essential to the best results, particularly with reference to elimination through the skin. Recumbent rest and active exercise he prescribes in frequent alternations for every day with methodical regularity. For stimulation of the nerve centers a hot fomentation of the entire spine, or the alternation of the fomentation and ice to this entire region produces admirable results. The patient's environment should be pleasant, agreeable and often unhomelike.

DR. JAMES T. WHITTAKER, Cincinnati, Ohio, delivered the Address of Section One. He selected for his subject

CRYPTOGENETIC SEPSIS.

The author said that the terms pyemia, septicemia, sepsis, septic pyemia, are variously employed by different authors. There is no longer support for the different terms. Pyemia was the term first employed. It was a useful term because it expressed a poisoning of the blood by pus and connected this poisoning with a pus center. So distinct was this connection that the people understood it in the common term "blood poisoning." But the mere presence of pus in the blood does not necessarily produce blood poisoning. In one sense there is always pus in the blood, that is, there are white blood corpuscles, leucocytes, and these corpuscles accumulate in leucocyto-

sis to constitute a protective process. Pyemia is now generally understood to mean infection of the blood as indicated by multiple metastases, in the absence of any central depot of suppuration: whereas, septicemia is used to express the infection of the blood in which there is a decided depot in the absence of demonstrable metastases. But it is plain to see that these are distinctions without much difference. The term pyemia having served its purpose should in the opinion of the author be retired altogether. Lines may be drawn between septic intoxication and septic infection, understanding by intoxication poisoning from the absorption of chemic matters, ptomains, toxins, and by infection poisoning by the direct penetration of bacteria. But in practice these various poisonings are so commingled as to be inseparable in most cases. Modern medicine, which is based upon etiology, prescribes that parentage alone should give the name to a disease. All the symptoms which have been grouped under the terms pyemia, sepsis, septicemia, etc., are produced by the same cause, namely, by the pyogenic microorganisms. The speaker believes it would much simplify matters to retain the term septicemia to express the whole train of symptoms caused by the infection of the blood with pyogenic microorganisms, whether bodily as by bacteria, or chemically, as by toxins.

It is believed at the present day that rheumatism is caused by microorganisms closely allied to, if not identical with, the microorganisms of pus. Goldscheider demonstrated bacteria in the serous exudation of pleurisy, which he believed to be due to rheumatism. Upon cultivation these microorganisms turned out to be staphylococci. Sahli developed cultures of a microorganism from the exudation of endocarditis, which turned out to be the staphylococcus citreus.

DR. WHITTAKER made the point that many of the lighter forms of disease, which have been vaguely described as rheumatism, as malaria, as incipient tuberculosis, as la grippe, as a bad cold, are cases of light infection with septic matter in which the microorganisms of sepsis may be found in the blood, and that individuals, the frequent subjects of these diseases, are carrying about in them manifest or more especially concealed depots or colonies of septic microorganisms.

The term cryptogenetic sepsis is really reserved for the cases in which the source eludes detection during life. Sometimes it may be disclosed upon the postmortem table, and such cases have found explanation in suppurating bronchial glands, mediastinal depots, prostatic abscesses, latent endocarditic processes. The avenue of entrance is found in any possible injury of the skin and mucosa, wounds of operations, etc.

The outside origin of sepsis is clearly indicated in the septicemia of the newborn. According to Epstein, septic infection of the newborn occurs, 1, at the umbilicus; 2, from the mucous membrane of the mouth, and 3, from the mucous membrane of the female genitals.

The prognosis of cryptogenetic sepsis is always serious, but depends upon the virulence of the poison, the height of the fever, the weakness of the heart, the gravity of the nervous system and the character of the complications.

The treatment may be dismissed in a few words. The prophylaxis depends upon an increase in the general habits of cleanliness, the greater frequency of ablutions and more care for higher sanitation. People should be informed of the possibility of infection from the most minute injuries and should be warned against handling decomposed substances or from ingesting decomposing foods. The author said nothing concerning the specific treatment of septicemia, for the reason that the entire subject was still too new to formulate definite conclusions. Finally, he hoped some young bacteriologist in our country would find in this subject an incentive for further study.

DR. J. O. DECOURCEY, St. Libory, briefly outlined the medico-surgical treatment of anthrax.

DR. J. E. SUTTON, Canton, read a paper on "Tedious Labor." The object of this contribution was to assist in bringing about a better understanding among general practitioners of the symptoms and difficulties attending occipito-posterior presentations.

DR. HENRY P. NEWMAN, Chicago, followed with a contribution entitled

FACTS, FADS AND FALLACIES IN GYNECOLOGY.

Less than a century ago the name gynecology was unknown, and the principles governing the treatment of the diseases of women were shrouded in darkness. The author briefly traced the steps in medical progress—anesthesia, anatomic and pathologic discoveries, and greater clinical advantages, which he said were all causes which had made possible the high state of advancement attained in the treatment of diseases of women.

Our predecessors in practice had their hobbies and their prejudices and fought for them, not as in the fraternal discussions of

our day, but with bitter pen and bloody sword. Perhaps the amenities of modern professional life were to blame for the rapid spread of some prevalent fads. The well-nigh perfect methods of gynecologic and obstetric work had enabled physicians to snatch thousands of women from premature graves, or relieve them of the numberless ills to which female flesh is heir, but have we thereby made womankind the gainer? The question seemed like a paradox, but we must not forget that the true and ultimate aim of medical science was not to cure the individual or individual ills, but to raise the standard of health for all and make life the rich and gracious thing nature intended it to be. The evil conditions which call for the exercise of so much skill in gynecologic and obstetric practice are the outcome and the expression of nature's resentment against the perverters of her wise and beneficent laws.

DR. E. W. LEE, Chicago, read a paper entitled "Vaginal Atresia."

The following officers were elected for the ensuing year:

President, Dr. A. C. Corr, Carlinville.

First Vice-President, Dr. J. M. G. Carter, Waukegan.

Second Vice-President, Dr. T. J. Pitner, Jacksonville.

Permanent Secretary, Dr. John B. Hamilton, Chicago.

Treasurer, Dr. G. N. Kreider, Springfield.

Judicial Council, Dr. J. L. White, Bloomington; Dr. E. P. Cook, Mendota, Dr. D. W. Graham, Chicago.

Chairman, Section One, Dr. Jas. B. Herrick, Chicago; secretary, Dr. J. O. De Courcy, St. Libory.

Chairman, Section Two, Dr. H. P. Newman, Chicago; Secretary, Dr. E. W. Weiss, Ottawa.

Chairman, Section Three, Dr. O. B. Will, Peoria; Secretary, Dr. R. C. Matheny, Springfield.

Committee of Arrangements, Dr. Charles F. Wilhelmj, East St. Louis; Dr. H. C. Fairbrother, East St. Louis; Dr. J. W. S. Dyer, East St. Louis; Dr. W. H. McLean, East St. Louis; Assistant Secretary, Dr. J. L. Wiggins, East St. Louis.

Committee on Medical Legislation, Dr. J. W. Pettit, Ottawa; Dr. D. W. Graham, Chicago; Dr. J. B. Maxwell, Mt. Carmel.

Necrology and Biography, Dr. J. H. Hollister, Chicago, Chairman; Dr. O. B. Will, Peoria; Dr. E. J. Brown, Decatur.

Medical Societies, Dr. C. W. Hall, Chairman, Kewanee; Dr. J. A. Baughman, Neoga; Dr. W. R. McKenzie, Chester.

Committee on Medical History consists of all members of forty years' standing.

Committee to act jointly with Missouri Medical Society, Dr. E. P. Cook, Mendota; Dr. Geo. N. Kreider, Springfield; Dr. L. C. Taylor, Springfield.

The next meeting will be held at East St. Louis, third Tuesday in May, 1897.

American Laryngological Association.

Annual Meeting held at Pittsburg, Pa., May 14, 15 and 16, 1896.

(Concluded from page 1132.)

THE CONTROL OF HEMORRHAGE IN SOME OPERATIONS IN THE NOSE AND THROAT.

DR. A. COOLIDGE, JR., Boston, states that the first consideration in undertaking an operation under an anesthetic is the position in which to place the patient. The horizontal position with the patient on the table is often contraindicated by the danger of blood finding its way into the pharynx and larynx. For operations confined to the nasal cavity this may often be prevented by plugging the posterior nares as a first step in the operation. The Rose position with the head hung perpendicularly over the end of the table, although preventing blood from entering the lower pharynx is, to most operators, awkward and unsatisfactory. The Trendelenburg position protects the trachea from blood in thyrotomy and operations deep in the pharynx. The most generally useful position for operating in the upper respiratory tract is with the patient held sitting in a chair opposite the operator. By inclining the body well forward blood from the naso-pharynx and mouth flows outward, but it is absolutely necessary in using this position that there should be sufficient assistance to control the patient. It is therefore much easier in the case of children than with adults.

For the local control of bleeding where the bleeding vessel can not be found, compression offers the best means: styptics are to be avoided if possible, as being unreliable, a loss of time and irritating.

Hemorrhage from the nasal cavity can usually be stopped by plugging through the anterior nares, and ability to do this easily and quickly will give the surgeon confidence in attacking this part of the body. Hemorrhage in the naso-pharynx is controlled by filling the cavity with gauze from below, by the same method as is employed for plugging the posterior nares.

The amount of bleeding to be expected in the removal of a new growth or hypertrophied tissue depends both upon the size and number of the vessels entering the tumor, and the amount of contraction allowed by the structure of the intravascular tissue, as is shown by sections cut at right angles to their attachments. Adenoid vegetations, tonsils and myxomata seldom give rise to troublesome bleeding, whereas sarcomata and fibromata attached to the basilar process sometimes bleed copiously and persistently. The readiest method of controlling the latter is by immediate plugging of the posterior nares after removal and packing at the same time through the anterior nares. In the removal of adenoid vegetations the Gottstein curette, although attended with more bleeding at first, causes less loss of blood than the longer operation with the forceps.

In removing the tonsils with the tonsillotome there is a brisk flow of blood at first which generally subsides quickly, although in adults it may cause serious loss of blood. This can in most cases be prevented by the use of cold wire, if the patient is under an anesthetic, or by the use of the hot wire with the help of cocaine.

DR. F. I. KNIGHT gave a short résumé of the subject of

DYSPHONIA SPATICA,

and reported a case of an intermittent form of the affection, a condition which he had never met before. The patient, a clergyman, would speak in a normal voice for half of his sermon and then, presumably being tired, lapse into the characteristic high-pitched, jerky voice of dysphonia spatia. At his interview with Dr. Knight he spoke throughout it in a normal voice. Dr. Knight said it was the first patient of the kind he had ever seen, who did not betray his affection during the interview.

A CASE OF UNUSUAL LARYNGEAL GROWTH.

DR. J. W. GLEITSMANN, New York, mentioned the case of a patient, a Russian Jew, a street merchant, aged 38, who had been hoarse for one year, but had had no emaciation, pain, cough or dyspnea. Examination of the throat showed nothing externally. No enlarged cervical glands could be detected. Internally the pharynx appeared healthy. There was in the larynx on the right side a large almost snow-white mass, extending horizontally the entire diameter of the larynx from the anterior commissure to the arytenoid cartilage. It appeared to be located between the true and false cord and looked exactly as if a bunch of cotton had been inserted all along the ventricle of Morgagni. The surface was slightly corrugated and its free border a little irregular. The rest of the larynx presented no anomaly worth mentioning. The movements of the right side of the larynx were practically unimpaired and adduction of the cords was perfect.

With Landgraf's double curette a piece of the growth was removed, with only slight bleeding and no unpleasant reaction. Unfortunately the fragment removed was not cut deeply enough to reveal the microscopic structure and in about two weeks a larger piece was excised. The report thereon was as follows: "Papilloma durum laryngis," probably malignant and perhaps carcinomatous. It is composed of proliferated papillary mucosa covered with a thickened epithelial layer. The surface layer of epithelia presents itself as a bony covering; the underlying epithelial cells show marked proliferation with a splitting up of the nuclei. The submucosa shows a small-celled infiltration in consequence of connective tissue proliferation. The epithelial layer shows a tendency to invasion of the subepithelial tissue as in carcinoma.

The glands at the margin of the growth appear very much changed. The individual tubules or ducts should appear distinctly separate one from another, instead of which the cylindrical epithelium appears at certain points to merge from one duct to another. After the second operation the patient refused further treatment and the case was lost sight of.

Dr. Gleitsmann observed that allusions to whitish-looking tumors of the larynx are very scarce in literature. Fraenkel ("On Cancer of the Larynx," 1889) states that it is erroneous to suppose that in its earlier stages cancer of the cords produces hyperemia or inflammation. On the contrary, the carcinoma often presents a surprisingly white appearance. Semon also has suggested that an unusually snow-white color or grass-like appearance in tumors points strongly to malignancy.

A remarkable case of fibro-chondroma of branchial origin or so-called supernumerary ear, removed from the throat of an infant at six weeks old by Dr. A. W. De Roaldes. The case reported by the author is the most unique, and only one of a similar nature is on record in this country.

THE SEQUELÆ OF SYPHILIS OF THE NOSE.

DR. CHAS. H. KNIGHT said that the diagnosis of late syphilis of the nose is often obscure. The notes of a case of intranasal

tumor, pronounced a sarcoma for which excision of the jaw was advised, were given as an example. The patient developed a tibial node which, together with the nasal tumor, disappeared under constitutional treatment. Reference was made to the characteristic symptoms of syphilis when limited to the soft parts and to its much more serious consequences when invading the cartilage or the bone. The fact that syphilis is responsible for a certain proportion but by no means for all perforations of the septal cartilage met with was mentioned. When the bone has been attacked, two problems have to be met: 1, When and how to remove diseased bone, and 2, how to remedy resulting deformity. The author advocates conservatism in dealing with sequestra, unless they are quite detached and accessible. In case dead bone is firmly attached or embedded, or its limitations can not be clearly defined, or if it be located high in the nasal cavity in the ethmoid region, it must be approached with great caution. Loose sequestra of large dimensions may be conveniently removed through a large incision. The external deformity resulting from loss of the cartilage is often not noticeable, that from destruction of the skeleton of the nose is frequently hideous. The discussion of the treatment of this condition was limited to a description of what is known as the Martin platinum bridge and its modification and of the methods of its insertion. Several cases were referred to more or less in detail. The method is believed to be an excellent one with certain precautions. It is especially important that the active stage of syphilis should have been long passed and that the patient should have had radical treatment. Great care should be taken in the construction and shaping of the platinum bridge to avoid friction and pressure, and finally the dissection of the soft parts must be so wide as to obviate tension after the bridge has been put in place. The paper concludes with a reference to the use of a simple plate of platinum slipped under the skin of the dorsum of the nose, the dissection in preparing a bed for the metal having been carried on through the nostril, a much simpler method and one which may prove to be equally effective in conditions of moderate deformity.

ACUTE DISEASES OF THE LINGUAL TONSIL.

Dr. H. L. SWAIN, New Haven, Conn., said that if one was to judge by the amount written on this subject, it neither attracted or deserved much attention. If he has to judge by his own experience, which in the last three years had developed the fact that he must have overlooked many cases of acute trouble in this locality, the subject has been and was still being sadly neglected. In any case he had become convinced that acute lingual tonsillitis was often the cause of symptoms which were referred to other parts of the throat, simply because the latter were more frequently inflamed and more easily seen.

After some remarks on the anatomy of the parts, by which it was made evident that from the nature of the tissue and its surroundings acute inflammation would rarely assume the peritonsillar type, he went on to describe the symptoms of the various forms of acute lingual tonsillitis. He distinguished three varieties: the simple, the follicular, and the peritonsillar or phlegmonous. The symptoms were the same as in other acute diseases of the throat, modified by the difference in the locality affected. Especial stress was laid upon the cough, which is so often present in these troubles and persists long after the other symptoms subside. Very often one was led to blame the larynx in such cases when the lingual tonsil was at fault.

When the deeper tissues were affected, much severer symptoms arose, principal among which was the involvement of the epiglottis and glottis. In such cases life might become endangered and prompt and radical measures were necessary. Tracheotomy had to be sometimes performed.

In discussing the treatment he remarked, that in no acute throat trouble was there so evident and prompt effects produced by proper local treatment as in this. Repetition was necessary, but one uniformly had some reward for his labors. Anything that would reduce the swelling and inflammation was to the point. Glycerite of boro-glycerid applied to the parts and followed by a powder containing tannin and a small amount of morphia sulphate seemed to give as much relief as anything, to be assisted by frequent hot demulcent gargles. Systemic remedies were indicated in the same way as in other forms of tonsillitis. He closed the paper with a short history of a case of abscess of the lingual tonsil, which had slowly developed upon an attack of faucial tonsillitis. It had been ushered in by a short attack of edema of the glottis. The abscess had formed close to the ary-epiglottic fold and broke well back toward the arytenoid cartilage.

TREATMENT OF ACUTE LARYNGITIS AND BRONCHITIS.

Dr. THOMAS HUBBARD, Toledo, called attention to the essen-

tial features of acute inflammation of the middle respiratory tract. Hyperemia of the bronchial membrane, with more or less swelling, produces a condensation of the cellular elements, since the same number of epithelial cells occupy smaller area in proportion as the caliber of the tube is lessened. This is one reason why it is so difficult to re-establish mucous flow, the outlets from the glands being closed. Retained mucous ferments become acrid and irritating whether within the substance of the membrane or in the tubes.

Inflammation of throat and glands is often gradually progressive. The larynx may be in stage of resolution and bronchi in first acute stage, and vice versa, the acute stage in the larynx being prolonged by constant reinfection from diseased throat foci. Treatment must be directed more in accordance with the condition.

The primary indication is to establish a free flow of mucous. Apomorphia in 1-30 gr. doses repeated every two to four hours is the best relaxing expectorant. Except in very severe cases and in debilitated subjects it is rarely necessary to follow with stimulating expectorants. Where relaxing expectorants are judiciously administered there is much less indication for opiates. All forms of abortive treatment are deprecated.

REPORT OF A CASE OF SQUAMOUS EPITHELIOMA OF VELUM PALATI CURED BY INJECTION OF CAUSTIC POTASH.

Dr. THOMAS HUBBARD, Toledo, stated that for more than a year, the tumor, of flat tubular type, situated partly in velum and partly in anterior pillar of fauces on the right side, had resisted internal and local treatments at the hands of several practitioners and specialists. Cocain habit was established. In August, 1894, he was on the verge of collapse from malnutrition, his sole diet being milk and ice cream in limited quantity. Cocain habit was first cured and he improved somewhat, but nothing relieved the pain incident to deglutition. Injections of caustic potash by curved platinum needle, destroyed a conical shaped tumor mass. Lesser injections were repeated wherever proliferating epithelial growths were seen around the edges. Cicatrization was rapid and so was the improvement in general health. He gained forty pounds in two months. There are no signs of return now, nearly two years after first injection.

A CASE OF PERICHONDritis OF THE LEFT CRICO-ARYTENOID JOINT, FROM AN UNUSUAL CAUSE.

Dr. H. S. BIRKETT, Montreal, referred to a young man who contracted gonorrhea and was attacked by inflammatory rheumatism during the course of this trouble affecting the left knee, ankle and left shoulder joints, and with the onset of this he developed a soreness and difficulty in swallowing, situated altogether at the left side of the throat. Upon examination the mucous membrane over the left crico-arytenoid joint was swollen and edematous. The ary-epiglottic fold on that side was not swollen. The vocal cords were white in color, and the movements of the left one, that of adduction and abduction, were decidedly slower than those of the right. Pressure over the affected joint outside was very painful. The voice was hoarse. The treatment consisted in constant applications of Leiter's ice coil which afforded the patient a great deal of relief. The condition was regarded as one of acute rheumatic affection occurring in the course of an ordinary gonorrheal rheumatism.

A paper on "Catarrhal Laryngitis," was read by Dr. C. C. Rice, of New York.

SELECTIONS.

A Method of Preventing Thirst after Celiotomy, with a Study of the Urine.—An abstract of a paper read before the Ohio State Medical Society during the late meeting at Columbus, by Dr. W. H. Humiston, of Cleveland. The patient is given the usual preparation for celiotomy, *i. e.*, diet, baths, cathartics, etc. For three days prior to the operation, the patient is required to drink a quantity of hot water not exceeding one pint an hour before each meal and on retiring, thus drinking about two quarts of water during each twenty-four hours, the last pint being taken three hours before the time appointed for operation. Particularly during the day previous to the operation while the patient is restricted to a limited amount of liquid nourishment, and the bowels are being unloaded, should the water be given. Thus is restored to the system the large loss of fluid occasioned by the free catharsis, with the satisfaction of having the patient pass the ordeal of the first thirty-six

hours succeeding the operation in comparative comfort, with no thirst, a moist tongue, an active renal function and a full, strong pulse. Also catheterization is rarely required. A tabulation of twenty-four successive cases in which a careful daily record of the urine was taken, gives the following results: The average total quantity of urine voided during the first twenty-four hours after admission to the hospital, was 29 fluid ounces, the average total solids amounting to 477 grains. During the twenty-four hours preceding the operation 30 ounces were passed containing 491 grains of total solids. The average quantity of urine voided during the first twenty-four hours succeeding the operation was 31.5 ounces, containing an average of 972 grains of total solids, and during the second twenty-four hours 25 ounces were passed with 680 grains. The doctor believes that the average total quantity of urine voided during the first twenty-four hours after admission is above that of the ordinary gynecologic case, but is explained by the fact at the first consultation he advises the use of at least an ordinary amount of water together with the administration of the ordinary diuretics, especially the potash salts and digitalis. Attention was called to the enormous increase in the amount of total solids eliminated during the first twenty-four hours after the operation over that of any preceding day.

Sanitary Burial.—The *British Medical Journal* reports the proceedings of a recent meeting of the Burial and Funeral Reform Association of London, at which papers were read by Sir Seymour Haden and Dr. Poore. "The former stated that for the last ten years he had been burying animals, large and small, in the park attached to his house. By digging them up and examining them at intervals varying from one to five years, he found that, buried at the depth of $4\frac{1}{2}$ feet, the depth required by the Government for the burial of human bodies, an interval of from three to four years was necessary for complete resolution; buried at the depth of 1 foot, a year and a half had proved sufficient for the larger, and a year or less for the smaller animals. On the other hand, a body not buried at all, but simply laid upon the ground with a covering of earth a foot thick over it, had completely disappeared (the bones excepted) in a year, the mound of covering earth, which had been sufficient to prevent all smell, retaining its shape, but when it was pressed with the foot, proving to be hollow. The body had thus returned to the atmosphere in the shape of oxygen, hydrogen, carbon, and other perfectly harmless products necessary for the nourishment and growth of plants. He (Sir Seymour Haden) was amazed at the folly, not to say impiety, of any attempt to beat this provision of nature. Dr. Poore, in his paper, contended that if a body was buried in such a manner as to further in every way its complete dissolution, the land would be ready after due interval of time to receive a second body, and that if the cemetery were systematically and sufficiently planted, the earth would be purified and the air around freshened by the green leaves of a flourishing vegetation. The power which scientific burial gave of using the same ground repeatedly after due intervals of about ten years, abolished the fear which had been expressed with regard to the amount of ground allotted for burial purposes. An acre of land would prove an ample area for a burial ground in perpetuity for a population of 10,000 persons. Such a burial ground would prove a decided benefit to the living as supplying in the midst of human habitations a breathing place which is so essential to the general well-being."

Tic de Salaam.—Dr. Joseph Collins writing editorially for *Pediatrics*, says that he finds no reference to this form of epilepsy in any of the English text-books, either under the name at the head of this paragraph or under any other. The synonyms, chorea nutans, salaam convulsions and chorée salutatoire are almost solely to be found in continental books or

journals. In respect of its occurrence in the field of American neurology, Dr. Collins says: "In the forms usually observed the disease is made up of a series of rapid, oscillating movements of the head and superior part of the body (spasmus salutans), which occur with a rapidity varying from ten to thirty times per minute. In some instances, during the height of the attack, the upper extremities are shot into the air, and for the moment remained fixed, while the eyeballs are rolled up, and the face has a fixed, non-expressive appearance. Whether or not consciousness is entirely lost during this period can not be said with certainty, first of all, because of the tender age of the patient, and secondly, because the rapid, fluctuating movements prevent the patient from answering or communicating. In marked contrast to the ordinary epileptic convulsions, whether they be of the 'petit mal' or 'grand mal' form, is the absence of any warning, and the rapidity with which the little sufferer regains his composure after an attack, that is, there seems to be none of the customary drowsiness, stupidity and desire to be left alone, as after an attack of epilepsy. Apparently there is no tendency to failure of mental development, or loss of what psychic faculties the child may have already obtained. The number of attacks with the patient may have in twenty-four hours varies from a dozen up to fifty or sixty, each attack lasting from one to three or four minutes. The phenomena have all the characteristics of a motor explosion or liberation of energy. Their occurrence is brusque, a rapid cessation between each twitch and an abrupt departure. The consensus of opinion of those who have seen most of this condition is, that the disease is a modification of the 'haut mal,' and the treatment which seems most serviceable is the treatment applicable to that form, namely, the persistent administration of bromid of potassium, with the occasional administration for a few weeks of minute doses of opium, while at the same time persistent attention is directed to the regulation of the alimentary and emunctory functions."

The Ultimate Effects of High Temperatures Upon the Blood and Tissues.—The *British Medical Journal* quotes from Werhowsky experiments upon rabbits. He used a large, well-ventilated thermostat of Lautenschlager, the body temperature of the animals being raised by increasing the temperature of the surrounding air, the experiments lasting from two to twenty-nine days. He found that when the temperature of the air reaches 37 C., the animals become at first restless, but later lie flat on their belly, respiration being quickened. After a few hours their temperature rises 2 or 3 C., but sinks again on the following day, and remains afterward at 39 to 40.5. If the temperature of the air is raised to 38.5 or 40, the body temperature rises to 41 or 42. After the second day the animals are quiet, and behave normally in all respects. The amount of urine is lessened, and albumin appears only toward the end of a long experiment. Of six animals, four died and two were killed on the fourteenth and twenty-seventh day of the experiment. Constant changes: 1, emaciation; 2, progressive diminution of amount of hemoglobin in the blood, by as much as 30 per cent. in a long experiment; 3, diminution of the total number of red corpuscles, but often not in the same proportion as the hemoglobin; 4, the only change in the red corpuscles is an increase of the small forms; 5, the white blood cells; there is an increase of the large single nucleated cells, and of the polynuclear pseudoeosinophile cells, and a diminution of the small single nucleated leucocytes; 6, corresponding to the decrease of hemoglobin, there is an enormous increase of hemosiderin in the medulla of bones and in the spleen; 7, no hemosiderin is found in the liver, unless death occurs early through great overheating; 8, the kidneys contain at most only a trace of iron; 9, the glands: (a) The liver cells are granular, sometimes vacuolated, and full of fat globules. It is questionable if this fatty degeneration can be produced by a short exposure to heat,

as, although present in an animal which died on the second day, whose temperature had been raised to 42 C., it appeared to be of older standing than this. (b) The kidneys remain unchanged for a long time by moderate temperature, but at last suffer from fatty degeneration mostly affecting the cells of the convoluted tubes. High temperatures cause a loss of the nucleochromatin and complete destruction of the nucleus. 10, the muscular cells of the heart undergo fatty degeneration later; 11, voluntary muscles and those of the intestine are always unaffected; 12, hemorrhages into the alveoli of the lungs were found in the animals which died, but the lungs of those killed were normal.

The Plague of Mice in Russia. Bacterial Experiments for Their Extermination. The *Consular Reports* for April contain a long contribution on the above subject, collated from a number of Russian governmental sources. Southern Russia and Siberia have during the last three years been the scene of the rise and fall of a pest of mice. In some places the destruction of property by the rodents was a serious item in the sum total of the general misery of the peasant class. Regarding the bacteriologic work undertaken for the extermination of the animals, the reports from the laboratories are indicative of success but not conclusive: at all events the closing up of the plague seems to have been chiefly due to the spread of infectious disease among the mice, but whether this was caused by the bacillus typhi murium or in some other way, no positive statement is made. The Governor of Cherson includes the following in his report:

1. It was particularly noticed that field mice had multiplied and that the number of house mice had largely increased.

2. The warm winter had without doubt favored their propagation, but probably the main cause consisted in the large quantity of cereals which had remained all over the province, in the shape of thrashed grain as well as in stacks.

3. It is also certain that the mice increased on the spot, but, according to the observations of some landowners, the mice were noticed to move from east to west. This gives reason to believe that they immigrated from neighboring provinces and occupied the territory of the entire province.

4. The reports regarding the extraordinary increase of the mice date from the spring of 1894, but its commencement dates back to the autumn of 1893: of late, the mice perish from some disease which is not as yet defined, but to determine its nature certain measures have been taken by the Department of Agriculture. It is not possible to estimate the extent of damage caused by mice; all the more so, because they are accompanied by rats which not only devour grain and other produce, but even destroy village buildings.

5. Up to the present, the population have used various domestic remedies for the extermination of the mice, beside which, with the assistance of the rural administration, it was determined to poison the mice with Professor Loeffler's cultivations of typhi murium, as prepared by the Odessa bacteriologic station and the Cherson bacteriologic laboratory. This cultivation of typhi murium shows its effect upon the numbers of mice not sooner than three to four weeks after its use. In June, 1894, the Department of Agriculture sent to the Province of Cherson, Dr. Merezhkovski, the assistant of the manager of the bacteriologic laboratory of the department, to carry out experiments of exterminating the mice by means of the cultivation of the bacillus discovered by him. The experiments carried out by him in the agricultural school of the Cherson rural administration gave good results, and in October they were extended to the estate of G. L. Skadovski, a landowner, where they were superintended by a special committee: on the sixth day, the mice began to perish of the cultivation of Dr. Merezhkovski, and on the ninth day this attained considerable dimensions and the mice were reduced

to their normal number. In April, 1895, the department sent out bouillon with the cultivation of Dr. Merezhkovski, but there are no reports as yet to hand concerning the results. The United States Consul at Odessa adds that when the army of mice swarmed over houses and huts through the country, the dogs and cats refused to molest them, and says "An incident which came under my own personal observation is not without interest. While I was waiting for a train at a small station on a branch line of the Southwestern Railway, a clergyman, with very long hair and beard, who was walking up and down the platform, stopped for a moment and raised the end of a canvas which served as a cover for a large quantity of wheat which was awaiting shipment. In an instant a mass of mice sprang at him and his beard, hair and cloak were literally alive with them. To brush them off was a matter of some time, and when my fellow traveler at length thought himself free, he was dismayed to find a mouse in each of his trouser pockets." Doubtless, all bacteriologists are familiar with the experiments of Loeffler, Lazare and Merezhkovski; but it may not be amiss to mention that, besides certain morphologic distinctions the differences between the bacillus typhi murium of Loeffler and the bacillus derived from mice by Merezhkovski consist mainly in this, that the mice die sooner when infected with Merezhkovski's bacillus than with that of Loeffler. Experiments with the infection of mice by means of Merezhkovski's bacillus were carried out by himself in his laboratory. As regards the bacillus typhi murium of Loeffler, besides the experiments of exterminating mice in the fields carried out by Loeffler himself in Greece, similar experiments were made by several Russian laboratories, among others, by that of the Odessa bacteriologic station in the provinces of Cherson and Podolia. These experiments were made in the fields and in the places where there was grain in stacks, and gave satisfactory results. These cultures of Loeffler's bacteria are customarily sent out in tubes of agar-agar, where they can retain their vitality during the course of several months. The contagium of typhi murium presents itself in the shape of a gray film on the slanting surface of the jelly in the testing tubes. For the purpose of using it, the film must be mixed with water in which pieces of white bread are soaked; the transparent remainder of the contents of the tube must be distributed, together with the pieces of bread, in the localities where the mice prevail. The details of this manipulation are as follows:

1. A 0.5 per cent. solution of table salt in water (one teaspoonful of salt is taken for five glasses of water) is prepared by boiling it for twenty minutes and subsequent cooling.

2. The testing tubes are filled with this water to one-half, the film is carefully scraped off by means of a little stick, and the liquid contents of the tube are poured out into the prepared solution; to five glasses of water, three testing tubes are taken.

3. In the liquid thus obtained, pieces of bread are soaked and distributed over the places indicated. The mixed contagion must be used immediately. Before using the cultures, it is indispensable to test their virulence on mice.

Mexican Criticism of Pullman Cars.—Forcible indeed are the denunciations of sleeping cars in the *Gaceta Médica de México* for May. The suffocating heat, the lack of ventilation and illumination, the unsanitary closets, are mentioned as if our Pullman sleepers, of which we Americans have been so proud, were utterly and entirely behind the times. It says that at least the improvements in new modern hotels should be introduced into them, air supplied incessantly and gradually, electric lights and strict sanitary arrangements in the closets, drinking water, &c. The precautions to be taken to prevent infection from disease are discussed also, and a radical reformation urged in many directions under the advice of experts.

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SATURDAY, JUNE 13, 1896.

CARDIAC SURGERY.

The recent remarkable case of CAPPELEN seems sufficient excuse for directing attention to some details of cardiac surgery. In the first place it may be noted that wounds of the heart or pericardium are by no means inevitably fatal. Thus STEUDENER relates a case of a man who was shot through the heart and the bullet ranged backward through the spinal cord, causing paraplegia. Death occurred in fifteen weeks, evidently more from the latter cause than from the heart wound. In WEST's case a man received a stab from a shoemaker's knife. After remaining in the hospital for a month he was discharged, and died from tuberculosis four years afterward. PROF. CONNER of Cincinnati, relates a case¹ of a boy, aged 15 years, who was shot from behind. Pneumonia, endocarditis and pericarditis developed, and after thirty-one days the patient was able to walk. A valvular lesion remained as a result of the endocarditis, and death occurred three years and two months afterward. These cases were confirmed at the necropsies.

Even more remarkable are the cases reported by MM. VELPEAU and BRUGNOLI. In the former's case a man of 50 came to the necropsy table with a history of having received a stab in the left breast from a table knife some nine years previous. At the examination scars were discovered both in the pericardium

and in the right auricle, with adhesions between. BRUGNOLI records the case of a man who, after receiving a stab from a knife, was able to resume work in seventy-eight days, and lived for nineteen years. The necropsy disclosed an enlarged heart, an adherent and calcareous pericardium, and old scars in the right ventricle and septum, with a split mitral valve.

The heart is an organ that sometimes tolerates foreign bodies very well, and again a slight injury gives rise to a fatal issue. Among foreign bodies found in this organ besides bullets and needles, which are the most common, are splinters of wood, fish bones, etc. Even the ubiquitous hat pin has been discovered (LANGIER). Bullets have been found encapsulated in the heart for many years; in the right ventricle six years (LATOUR); in the wall of the ventricle for twenty years (BALCH); and for no less than fifty years in the pericardial sac. It must be observed in passing, however, that these cases refer to the old fashioned round balls; few conical balls will be stopped by the heart, and still fewer, if any, of the most recent projectiles of small caliber and extreme penetration.

The extent of the wound does not seem to bear any decided relation to the duration of life, for while STEINER's experiments seem to prove that simple puncture by a needle is not very dangerous, yet several cases are on record of immediate death resulting from needle wounds, either accidental, homicidal or otherwise. Again, in the cases where recovery took place, as previously mentioned, the damage was much greater than any that could be inflicted by a needle. In BRUGNOLI's case the mitral valve was implicated; in CONNER's, one cusp of the aortic valve; yet the patients survived for years.

The causes of immediate death after heart injuries are two in number, nervous and mechanical. First, by interference with the ganglia presiding over the movements of the organ, and second, by the effusion of blood into the pericardial sac, thus compressing the organ and hindering its action. For the former complication surgery is of no avail. In the latter, however, it would seem that evacuation of the fluid or clotted blood might be followed in many cases by favorable results.

Although paracentesis of the pericardium was first proposed by RIOLAN over two centuries ago (1649), it was not until late in the present century that it was actually put into practice. ROBERTS reports over 40 per cent. of recoveries after paracentesis or incision, and bearing in mind the usually fatal ending of the affections requiring this operation, the figures are highly encouraging. Possibly these favorable results have encouraged surgeons to advocate suturing bullet and stab wounds of the pericardium and heart. PARK, of Buffalo, we believe, is the latest of these.

It has remained for CAPPELEN to put this sugges-

¹ Cincinnati Clinic X, p. 253.

tion into practice. The patient was a man of 24, who had received a stab from a knife some hours before admission. On entrance he was unconscious, no pulse could be felt, the heart sounds could be heard, but no impulse was perceptible. The wound was punctured, not bleeding, one centimeter long, and situated in the left fourth space, parallel with the rib. After an injection of camphor the patient began to breathe and the pulse could be felt. The left side of the chest did not move. Under chloroform the wound was enlarged, and the fourth rib was resected. The left lung was compressed by an accumulation of blood in the pleural cavity, partly fluid, partly clotted. After this was evacuated the lung expanded and was found to be not wounded. The third rib was now resected and a wound which was bleeding freely, was found in the pericardium, one centimeter long. The pericardial sac was found to be filled with coagulated blood, and after enlarging the wound in the pericardium, another one measuring one centimeter in length was found in the left ventricle, which caused the hemorrhage. This wound was sutured and an artery tied, when the bleeding ceased. The account of the operation states that the suturing was rendered extremely difficult by the rhythmic movements of the lung, which covered the field of operating and obscured it, and by the contractions of the heart, which however were quiet and regular. The suturing was accomplished by bringing the needle half way through during a contraction, then dropping it, and after a second contraction bringing it completely through. After the operation the patient's pulse was very rapid and feeble, but improved after saline injection. The patient sank gradually and died two and one-half days later. The necropsy showed a wound of one of the large branches of the coronary artery; the wound had healed partially, but there was a beginning pericarditis and various bacteria in the exudate. While death ensued, yet the fact that the patient lived for over two days, and that no operative measures could be instituted for some hours, shows that in more favorable cases recovery will follow.

FISCHER's statistics² prove that the most important parts of the heart functionally, the ventricles, are much more liable to wounds than the auricles, 257 wounds of the ventricles against only 31 of the auricles, a result which might be expected from the smaller size and less exposed position of the latter. Again, the great urgency of similar operations may preclude as thorough aseptic precautions as those in other measures of less expediency. However, in view of the foregoing facts the opinion seems warranted, that "the citadel of life" itself will no longer be exempt from the incursions of the surgeons.

² Ueber die Wunden des Herzens und des Herzbeutels, Langenbeck's Archiv, IX, p. 571.

³ Norsk Magazin for Lægevidenskaben, March, 1896, British Medical Journal, May 23, 1896.

HOSPITAL PRACTICE REQUIREMENT FOR ARMY MEDICAL SERVICE.

The progress of medical education keeps pace with that of modern medicine and surgery. As the fields of knowledge become extended, the necessity for a change in educational methods from the lectures and text books of the past to the laboratory work and practical teachings of the present, was recognized by our leading colleges. One after another of these institutions are extending their courses, increasing their years of study, and providing educational facilities that their graduates may be equipped satisfactorily at the outset of their professional career.

The Medical Department of the Army since its organization during the War of the Revolution has filled its ranks by selection of the fittest. A board of medical officers selects its approved candidates from those who come forward for examination. The members of this board, jealous of the good repute of their corps, allow admission to none whose professional attainments are not such as to promise a satisfactory future record. This has given the army medical officer in the past an unquestioned professional standing; and it is the evident intention of the present administration of the Medical Department that this status shall be preserved. Immediately after his appointment as Chief of his Corps, SURGEON GENERAL STERNBERG established an Army Medical School in which those who had just entered the service received special instruction in military medicine, surgery and hygiene, and particularly in practical laboratory work. The facilities of this school were available also for such officers of older date as were able to take advantage of them. At the same time he provided opportunities for professional improvement to those officers who had been isolated at frontier or interior posts far from medical centers. He gave them in rotation, as they neared the period of their examination for promotion, temporary assignments to duty as attending surgeons in cities where they could attend society meetings and lectures, observe the practice in large hospitals and study specialities in which they were interested. Lastly, in a new edition of a circular of information to candidates who desire to enter the service he has taken a step which will raise the standard of medical qualifications considerably. Former issues of this circular stated that hospital practice in medicine, surgery and obstetrics was important; but the present issue announces this hospital practice as essential. The candidate must submit the evidence to the board that he has had a year's hospital practice. Hospital clinics and dispensary practice embraced in the college curriculum do not satisfy the new requirements. The candidate must have been a resident or interne of a hospital for one year.

It follows that the practical result of the new re-

quirement will be to impose upon candidates a year of hospital experience or of practice equivalent to this, in fact a year of special preparation for the ordeal of the examination. This will bring forward a higher grade of candidate than formerly. The number of candidates and the percentage of unsuccessful candidates may be lessened, but the spirit of competition will be intensified and the Department will get the best men. That no intending candidate may be excluded from examination on account of age in consequence of the extra year of preparation the maximum limit of age at entrance has been raised from twenty-eight to twenty-nine years.

THE RELATIONS OF THE SEXUAL ORGANS TO THE DEVELOPMENT.

The apparent connection between the conditions of the sexual organs and growth in certain directions, are facts of common observation, but certain of them are taken up and treated rather suggestively by M. HENRY MEIGE in a recent issue of the *Journal des Connaissances Médicales*. He had already studied certain phases of these phenomena in a previous memoir on "Infantilisme et Féminisme," in which he pointed out that a certain degree of skeletal malformation was of frequent occurrence with the characteristic corporeal habit associated with congenital atrophy of the genital organs. Here, however, he calls attention to the more pronounced abnormalities that are sometimes observed, the frequent immature stature and the occasional giantism. Even in those who have been purposely or accidentally emasculated these are observed, as in the case of the Egyptian eunuchs observed by LORTET, in whom the excessive stature was due to the length of the legs, the thorax and trunk generally not exceeding the usual normal size. This corresponds with what is seen in the ox as compared with the normal bull, and M. MEIGE suggests as an explanation that the loss or atrophy of the sexual organs entrains the atrophy of the corresponding spinal cells, and the vascular supply of the cord being undiminished, the other nerve centers in the same region controlling the nutrition of the extremities are unduly benefited, with the result of the excessive development observed. For the changes occurring elsewhere in the body, somewhat similar but more general explanations are supposable, if one wishes to go farther into the domain of hypothesis.

The diseases of the sexual organs may also act in these directions, as well as the defects of development or the mutilations. M. MEIGE quotes in this connection a recent observation of SACCHI (*Rivista Sperimentale*, 1895) of an excessively developed boy of nine and a half years, with beard, male voice, precocious intelligence and disposition, pronounced sexual appetite, etc. The left testicle was enormously developed, 10 centimeters in diameter, and the right testi-

cle atrophied. Orchidectomy was performed on the left side and an epithelial parasitic growth discovered. Within a month a change began to be observed; the hairy growth of the face and elsewhere began to disappear, the voice became childish, the abnormal sexual precocity was lost, the intelligence and muscular strength diminished, the right testicle increased in size and the individual became in all respects more like a normal boy of his age.

According to SACCHI, this infantile giantism is to be accounted for by an abnormal influence of the parasitically excited testicle (probably through an increased secretion) on the general growth of the organism. However this may be, the observation is a very remarkable one and shows almost like an experimental demonstration the relations of the sexual organs to the general and special development. M. MEIGE further refers to the notable but irregular changes that are often observed to occur at puberty, causing what might sometimes be called a transitory acromegaly of the pubescent epoch. Development, which is as a rule excessive at this period, may be of certain portions more than others in a most surprising way and proceed, as it were, by jerks in different organs in succession. These phenomena are unnoticed because they are so common, but they have an important physiologic suggestiveness and significance, and are therefore more worthy of careful study than seems to be generally appreciated. The possibilities of experimental investigation in this direction are, moreover, not exhausted; there is an extensive field still open for research.

The pathologic side of the subject is also worthy of careful study. The various conditions of imperfect sexual development probably have a serious reaction on the vitality of the system as a whole, and make it the easier victim of noxious germs. A relation between infantilism and tuberculosis has already been suggested and supported by considerable clinical evidence.

Nowadays, when so much blind work is done in the way of extirpating important sexual organs on theoretic and probably often insufficient grounds, the necessity of a careful and thorough study of their relations to growth and general vitality is or should be apparent.

THE CHEMIST A PROFESSIONAL MAN.

Although the study of chemistry is the study of a science, yet the supreme court of the United States holds that a chemist who occupies himself in the practical use of chemistry, as his services may be demanded, may certainly, at this time, be fairly regarded as in the practice of a profession. He is none the less a chemist, and none the less occupied in the practice of his profession because he limits himself to a particular branch of chemistry, as, for

example, that which is to be applied in the course of the scientific manufacture of sugar, any more than a lawyer would cease to practice his profession by limiting himself to any particular branch thereof, or a doctor by confining his practice to some specialty which he particularly favored and was eminent in. Neither does the fact that he has agreed to sell his time, labor and skill to one employer and in one prescribed branch of the science, in the least militate against his being a professional chemist, nor does it operate as a bar to the claim that while so employed he is nevertheless practicing a recognized profession. It is not necessary that he should offer his services to the public at large, nor that he should hold himself ready to apply his scientific knowledge and skill to the business of all persons who applied for them before he would be entitled to claim that he belonged to and was actually practicing such profession. He may confine his services to one employer so long as the services which he performs are of a professional nature. Such are the views expressed by the above court in the case of *United States v. Laws*, May 18, 1896, where it specifically decides that a contract made with an alien in a foreign country to come to this country as a chemist on a sugar plantation in Louisiana, in pursuance of which contract such alien does come to this country, and is employed on a sugar plantation in Louisiana, and his expenses paid by the party with whom he made such contract, is not a contract to perform labor or service as prohibited by the contract labor law, which excepts persons who practice a recognized profession.

CORRESPONDENCE.

Treatment of Typhoid Fever.

MONTCLAIR, N. J., June 2, 1896.

To the Editor: I have just read with great interest two able addresses in your issue of May 23, one from the pen of Professor Osler, and the other from that of Professor Quine, both delivered at the recent meeting of the AMERICAN MEDICAL ASSOCIATION. Both of these gentlemen pay their respects to the Woodbridge treatment of typhoid fever, and both seem inclined to sneer at the so-called pretensions of the advocates of this treatment. Dr. Woodbridge has fought out his own battle with great pluck and pertinacity, and if there be any virtue in his plan of treatment, every practitioner in America who reads the journals or attends the meetings of a live medical society, is sure to hear of it. He does not, therefore, need any defense nor even aid from me. But if one can read between the lines, both the eminent writers and teachers spoken of above are preparing to let themselves down easy, and adopt an antiseptic treatment of typhoid in selected cases. It may not be necessary to give the Woodbridge tablets in the prescribed Nos. 1, 2 and 3 order, nor may it be wise to allow solid food on the tenth day, nor to encourage the patient to resume his ordinary avocation as soon as that. But I believe that the antiseptic treatment of typhoid is superior to all others, including the Brandt treatment, and I believe, further, that so honest a gentleman and so thorough a student as Professor Osler will acknowledge that typhoid fever can be aborted just as soon as he begins

to use calomel or other mercurial in small frequently repeated, or large occasional doses in the beginning of the fever, and follows it up by some of the antiseptics that Dr. Woodbridge recommends, or by the chlorin water so strenuously advocated by Burney Yeo.

In all the discussions which I have recently seen of typhoid and its treatment, it has seemed very odd to me that I have never noticed any allusion to the classic paper on the subject by Dr. John Harley in Reynolds' System of Medicine. If any one will read that paper with an open mind, I am inclined to think that he will at least be persuaded to try mercurials in typhoid. It is not that the one-tenth of a grain of calomel every fifteen minutes will so saturate the economy that it will poison all the microbes which may be lodged anywhere inside the integument, but such a course of medication will assuredly set in motion the flow of bile, nature's intestinal antiseptic. And right here I would like to ask those who say that calomel is not a cholagogue, why it is that a five or ten grain dose of this powder, which is so bland locally, will cause alvine dejections which are so hot and acrid that they will excoriate the perineal integument? I know from long personal professional experience that the above phenomena will follow the exhibition of calomel, and the hot and acrid substance I have always called bile. Whether it is really bile or not, it would seem to be injurious to microbes. However, I believe that the physiologists now assure us that it is bile.

And this leads me to observe that a person who speaks of minute doses of calomel given every quarter or every half hour as harmless (as some one has done in one or both of the papers which have called forth these remarks), shows a deplorable lack of knowledge of the action of this drug. Two grains of calomel divided into twenty doses and one of these doses given every half hour, has "touched" the gums of a well developed man more than once in my practice. In Dr. Woodbridge's reports repeated instances are given in which sore mouth was produced by his No. 1 tablets. And a mild degree of stomatitis is just what Dr. John Harley recommends in the early treatment of typhoid. He also says (pp. 4, 8, Vol. I, Reynolds' Syst.): "If at an early period we succeed in producing a flow of healthy bile, with moderate action of the bowels, we may arrest further progress of the disease and restore the appetite." It is true that Dr. Harley objects to calomel, preferring some other mercurial per os or inunctions of blue ointment. But it is not probable that any one in those days thought of giving calomel in the minute doses which we now use with such good effect. Had the discovery of the typhoid bacillus by Eberth been known when Dr. Harley's paper was written, his pathology of the disease would have been different, but his history and treatment might have stood just as they are now.

Now, Mr. Editor, I have not written these lines from any reason except that I am just as anxious that the truth about the treatment of typhoid should be known to the entire world, as Professor Osler, Dr. Quine and Dr. Woodbridge are. And I believe that Dr. Woodbridge has the right theory of treatment. The details may be altered, as Dr. Quine suggests, and quite likely will be.

So far as the cold bath treatment goes, it has too many and too distinguished advocates, including particularly Professor Osler, for any one to sneer at it or pass it lightly by. Still, my conviction and I maintain that having studied the disease sufficiently to have settled convictions in reference to it entitles me to be heard—agrees with Professor Yeo, who says (*Amer. Jour. Med. Sci.*, June, 1894, p. 651): "With regard to the routine cold bath treatment of typhoid, for my own part, I am disposed to leave it, almost without comment, to those who like it. . . . The method that I advocate has yielded in my own practice and in that of others better results, and I therefore prefer it."

Very respectfully yours,

RICHARD C. NEWTON, M.D.

Our Mexican Confreres.

NEW YORK, June 2, 1896.

To the Editor:—In common with every reputable medical man in this country, I can only regret that Dr. David Cerna has felt it incumbent upon him, in your issue of May 30, to reply to certain unfounded reflections upon the medical profession of Mexico. Statements, such as those he seeks to confute, might better have been left unnoticed, the very refutation giving them an undeserved publicity. The creditable appearance of the Mexican members of the First Pan-American Medical Congress, convened at Washington in September, 1893, their dignified demeanor, the admirable papers they contributed to the transactions, their intelligent participation in the discussions in the several sections, and their interested and zealous attention to their duties as committeemen, etc., were matters of commendatory comment by their colleagues in the Congress from other American nationalities, who were appointed with them for the first time. To the members of the American Public Health Association, which is proud of displaying the triple escutcheons of the United States, the Dominion of Canada and La Republica de México, they have long been known as among the ablest and most progressive of their associates. Their names appear on every one of its important committees. Each State in Mexico and the Federal District have their representatives on the Advisory Council, with the States of our own Union and the Provinces of Canada. More significant than all, Dr. Eduardo Licéaga, President of the Superior Council of Health of the Mexican Republic, has been unanimously elected President of the American Public Health Association for the year 1896 and will conduct its proceedings at the approaching annual meeting at Buffalo, N. Y., September 15 to 18.

I have, however, no intention of entering upon the defense of a country which is known in international medical assemblies the world over through the professional achievements of Carmona y Valle, Rafael Lavista and Eduardo Licéaga, and which has swelled the ranks of the noble brotherhood of medicine with such men as Domingo Orvananos, Francisco Marin, the Arellano brothers, J. E. Moujâras, Luis Ruiz, Angel Gavino, Martinez del Campo, Gomes, Garcia, Macouzet, the eloquent Gregorio Mendizabel, and hosts of others who exemplified the typical physician. When the United States of America shall be able to boast of a National Board of Health as ably administered as the *Consejo Superior de Salubridad* of the Republic of Mexico, it will realize what Mexico has done for medicine, and what medicine is doing for Mexico.

ALBERT S. GIBON,

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8 West 127th Street.

PUBLIC HEALTH.

Population of Paris.—*Le Journal Officiel* announces that the census of March 29 records a total population of 2,511,955, a gain of 87,250 inhabitants since the last census of 1891, five years ago, an annual increase of 17,450.

Financial Distress Through Neglect of Vaccination.—The prevalence of smallpox at Gloucester has caused great financial distress, all outside trade having been brought to a standstill. Nevertheless the antivaccinist minority continue to hold public meetings and attribute the outbreak to one cause after another, to everything except the right cause—the neglect of vaccination.

Alcoholism in Belgium.—The Academie de Médecine de Belgique announces that it considers alcohol the most formidable pathogenic agent of modern civilization, while the facilities for procuring it are greater in Belgium than in any other country. It has recently passed resolutions urging the legislature to

wage a merciless war against this mortal enemy of society, as a measure was under discussion that would have increased the number of distilleries.

A Use for Patent Medicine Literature.—It is a favorite axiom of the optimists that everything has its uses. But it has remained for the New Mexico Territorial Board of Health to find a use for the patent medicine almanac. In a recently issued circular on the prevention of consumption, among other things, it is advised that "every person so affected should spit into some receptacle and should see that the sputum is soon destroyed by fire. About the house there is no better way than to spit between the leaves of patent medicine almanacs—to be had freely at all drug stores—and after a half dozen or more spittings burn the book."

The Horse Sickness of South Africa.—Another hindrance to British land-pillage has been the "horse sickness" of South Africa, concerning which the following information is given in the current issue of the *Press and Circular*: "This disease, which is one of the chief obstacles to the development (seizure) of large tracts of South Central Africa has been the subject of close bacteriologic investigation by Dr. Erdington, the Director of the Bacteriological Institute at Cape Town. He has had no difficulty in identifying the mycelium which causes the disease, but great difficulty in growing it, as it failed to develop in any of the usual media for bacillus cultivation. He has, however, found, strange to say, that the natural gum which exudes from the wild mimosa, growing in the district, is laden with the mycelia, which seem to thrive and propagate on it, and his conclusion at present is that the only effectual remedy for the disease is to destroy the mimosæ. There is an analogy for this in a sort of 'rust' that has been found to have its *habitat* on the leaf of the barberry tree, which affects corn, and which has been got rid of by destroying those trees wherever the 'rust' has appeared."

Scarlet Fever at the Paris Hospital des Enfants Malades.—Out of 239 cases received during 1895, there were fourteen deaths, half of which occurred almost immediately after arrival. The age averaged from 3 to 9, and the cases were less severe as the age increased. The disease was most prevalent in spring and summer; the complications were most frequent in autumn, with most fatalities in the winter. Forty-three per cent. were followed by complications: Otitis, suppurating glands, albuminuria, bronchopneumonia, secondary angina, etc., ascribed in large measure to the defectiveness of the hospital. The treatment was limited to a strictly milk diet, the daily administration of one to two grams of acetate of ammonium during the eruption, washing out the mouth with aromatic boiled water and injecting mentholized oil into the nasal cavities. Thirty-two cases were treated with 20 c.c. of Roux's serum, from suspicion of diphtheria in their angina with streptococcus albus. An eruption resembling measles followed two weeks later, confirming Sevestre's statement that this transient eruption is liable to follow the use of the serum in angina with streptococci.—*Gazette Médicale de Paris*, May 16.

Disinfection of Apartments.—There is apparently room for great improvement in the processes and agents for the disinfection of rooms after contagious diseases. In some recent experiments by the health department of one of the largest American cities, where it might be supposed disinfection had been reduced to a science, it was found that cultures of the potato bacillus, *B. mesenterica*, exposed in apartments undergoing sulphur dioxid fumigation, were growing vigorously when returned to the laboratory. Dr. Miguel has made a series of experiments on this subject, the reports of which are published in *L'Annales de Micrographie*, and from which it appears that the commonly used disinfectants, such as phenol, thymol, sulphurous acid and naphthalene, are either ineffectual or very expensive. Carbolic acid, for instance, is about as active as alcohol

or brandy, and less so than vinegar. The vapors of acetic acid are very active, but too expensive for ordinary use. Essential oils appear to be about as active as phenol. Concentrated aldehyde, in 1 to 2 per cent. solutions, should be used, exposed in shallow dishes and allowed to disengage their vapor slowly for several days. Another plan recommended is to burn methyl alcohol slowly in lamps surrounded with platinum gauze. Very penetrating vapors of aldehyde are disengaged, which do not alter metals or the colors of textile fabrics, while acting efficiently as a disinfectant.

To Prevent Adulteration of Food and Drugs in California.—A law was passed in California in 1895 that no person shall, within that State, manufacture for sale, offer for sale or sell any drug or article of food which is adulterated. The term "drug" is to include all medicines for internal or external use, antiseptics, disinfectants and cosmetics. The term "food," as used, is to include all articles used for food or drink by man, whether simple, mixed or compound. Any article shall be deemed to be adulterated, in the case of drugs: 1, if, when sold under or by a name recognized in the United States Pharmacopeia, it differs from the standard of strength, quality or purity laid down therein; 2, if, when sold under or by a name not recognized in the United States Pharmacopeia, but which is found in some other pharmacopeia or other standard work on materia medica, it differs materially from the standard of strength, quality or purity laid down in such work; 3, if its strength, quality or purity falls below the professed standard under which it is sold. Every person manufacturing, exposing or offering for sale, or delivering to a purchaser, any drug or article of food included in the provisions of this act, shall furnish to any person interested or demanding the same, who shall apply to him for the purpose, and shall tender him the value of the same, a sample sufficient for the analysis of any such drug or article of food which is in his possession. Whoever refuses to comply, upon demand, with this last requirement, or whoever violates any of the other provisions of this act, shall be fined not exceeding \$100, nor less than \$25, or imprisoned not exceeding 100 days nor less than 30 days, or both: and, in addition, any person found guilty of manufacturing, selling or offering for sale such adulterated food or drugs, shall be adjudged to pay all the necessary costs and expenses incurred in inspecting and analyzing such adulterated articles.

Poisoning by Plumbo-solvent Water-supplies.—A special report to the Local Government Board of Great Britain, made by Inspector W. H. Power, gives the results of an important original investigation concerning the effects of "moorland waters," in respect of their plumbo-solvent ability. The *Glasgow Sanitary Journal* for March gives an analysis of the report, holding it up as a brilliant example of modern scientific research, comprehensive, detailed, patient. The results, so far as the scrupulous accuracy of science will allow them to be stated, go on the whole to confirm the microbe theory of lead solution. The investigation is not yet ended; but the chief propositions are these: 1. The lead-dissolving property of moorland waters is associated with acidity. "Moorland waters that are acid invariably possess ability to dissolve lead. At the same time they may, or may not, erode this metal. Many moorland waters which dissolve lead to a considerable extent possess, in regard of this metal, no conspicuous erosive power. Other moorland waters both dissolve and erode lead in a very decided fashion. Moorland peat waters are all, it would seem, not far removed from possession of one or the other property, or of both properties." 2. "There was indication also of close relation between amount of acidity and vigor of solvent action on lead." But the correlation does not amount to complete parallelism. "Different waters of equal acidity did not necessarily possess equal power of dissolving lead." 3. In certain

circumstances moorland waters are found to increase in acidity, and therefore in lead-dissolving potency. This is true of waters on peat soil. 4. Peat soil, from various gathering grounds, was "found to be, when moist, invariably acid." 5. When divorced from the peat, the moorland waters did not increase in acidity. 6. When "sterile (neutral) peat-essence" was added to "freshly-collected samples of acid moorland water," the result was bacterial growth and, in most cases, acid reaction in the peat-essence. 7. When the acid water was added to the peat-essence (sterile and neutral), the result was bacterial growth and, in most cases, acid reaction in the peat-essence. 8. Thus the water must have contained bacteria that, by acting on some substance in the peat, were capable of increasing the acidity of the mixture. 9. These bacteria are derived from the peat. 10. "To separate samples of distilled water that was neutral in its reaction and which did not dissolve lead there were added small amounts in each instance of moist peat soil from different selected gathering grounds. As a result every sample of distilled water developed in a short while acid reaction and was found to have acquired ability to dissolve lead." 11. To separate samples of sterile peat decoction which did not dissolve lead there were added minute amounts in each instance of moist peat soil from different gathering grounds. As a result the samples of peat decoction always developed bacterial growth, and at the same time were usually found to possess acid reaction and ability to dissolve lead." 12. Of the microbes discovered in the above peat decoctions only two, named provisionally "O" and "Q," were found to make sterile peat decoction acid, and to confer on it the ability to dissolve lead. 13. Lastly, "moist peat soil from a variety of gathering grounds" yielded "two microbes identical with 'O' and 'Q' which, when inoculated into sterile peat decoction, multiplied therein with considerable vigor, produced in the medium acid reaction, and conferred on it ability to dissolve lead." These brilliant results will now be applied to the vast areas selected. The distribution of lead poisoning will be checked and verified. Doubtless many peculiarities, otherwise unexplained, will now fall into their place as natural deductions from the life history of these microbes. And thus, surely a sufficiently startling conclusion, lead poisoning by moorland waters almost leaps into the circle of infectious diseases!

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General, U. S. Marine-Hospital Service:

SMALLPOX (UNITED STATES).

Louisiana: New Orleans, May 23 to 30, 17 cases, 5 deaths.
Ohio: Dayton, May 28 to June 4, 1 case, 1 death.
Washington: Seattle, April 23, 1 case.

SMALLPOX (FOREIGN).

Alexandria, April 30 to May 6, 4 deaths.
Barcelona, April 1 to 31, 57 deaths.
Birmingham, May 16 to 23, 1 case.
Bristol, May 16 to 23, 1 death.
Buda Pesth, May 13 to 20, 3 cases.
Cairo, April 30 to May 6, 4 deaths.
Calcutta, April 18 to 25, 4 deaths.
Cardiff, May 16 to 23, 1 case.
Dublin, May 16 to 23, 1 death.
Gibraltar, May 10 to 24, 1 case.
Lecata, May 9 to 16, 2 deaths.
Madras, April 25 to May 1, 2 deaths.
Madrid, May 12 to 19, 18 deaths.
Montevideo, April 25 to May 2, 2 cases.
Naples, May 16 to 23, 3 cases, 1 death.
Odessa, May 9 to 16, 11 cases, 3 deaths.
Prague, May 9 to 16, 5 cases.
Riga, March 1 to 31, 1 death.
Rio de Janeiro, May 2 to 9, 1 death.
Singapore, March 1 to 31, 1 death.
Southampton, May 16 to 23, 1 case.
St. Petersburg, May 2 to 16, 46 cases, 7 deaths.
Swansea, May 9 to 16, 1 case, 1 death.
Tuxpan, May 9 to 16, 5 deaths.

CHOLERA.

Egypt: Alexandria, April 30 to May 6, 20 deaths.

India: Calcutta, April 18 to 25, 274 deaths; Singapore, March 1 to 31, 4 deaths.

YELLOW FEVER.

Cuba: Havana, May 21 to 28, 13 cases, 7 deaths; Santiago, May 16 to 23, 2 deaths; Sagua la Grande, May 16 to 23, yellow fever on increase among the troops but number of cases not given.

Brazil: Rio de Janeiro, May 2 to 9, 38 deaths.

Mexico: Vera Cruz, May 21 to 28, 5 cases.

SOCIETY NEWS.

Michigan State Medical Society.—The thirty-first annual meeting was held at Mt. Clemens, June 4 and 5. It disposed of eighty-four papers, though its sections held two business sessions and "broke bread together" at a banquet.

This simple statement makes it evident that no time or energy was left for useless or demoralizing contests. The Society began its work at eight o'clock, and pursued it continuously during the entire period of two days and one night, except from three till eight of the second morning which was yielded to sleep, and the time consumed in regular meals.

In brief the program was as follows: General session from eight till lunch; section work from lunch till dinner; session for annual addresses from dinner till nine; exhibition of X rays in their medical aspects from nine till ten; banquet from ten till three; sleep from three till breakfast; section work from breakfast till eleven; general session from eleven till lunch; closing section work from two till five.

The general sessions received and acted upon the reports of officers and committees, elected officers, discussed questions of general interest, and transacted all other business.

The Society received into membership a graduate of an eclectic medical college who had renounced his exclusive dogma and followed the practice of physicians. The Society last year took into its membership a graduate of a homeopathic medical college who had likewise renounced his exclusive dogma, and practiced as a physician. Thus the Michigan State Medical Society is on record as receiving into its fellowship physicians who have received all their medical college training at sectarian colleges. Hence, all graduates of homeopathic and eclectic medical colleges are eligible to membership in the Michigan State Medical Society, if only it is shown that they are legally qualified to practice medicine within the State, and are regarded by the physicians who know them best as being competent for their professional work, and honorable in their relations to the laity and the profession.

It is to be noted that this action of the Society was taken after a committee appointed for this purpose reported that its present constitution, by-laws and the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION, fully supported this view of membership qualifications.

DR. C. HENRI LEONARD, of Detroit, was chairman of that committee, and his extended report may interest such as have held other views respecting the qualifications for membership in regular medical societies. It is another practical indication of "drifting" of the medical profession away from tenets held in the past.

Another point of general interest, was the result of an effort to abolish the sections of the Society, and have all the scientific work done in general session. Not a vote was recorded in favor of such a retrograde movement. Having found a better way than the old "convention" medical society, the profession of Michigan unanimously refused to depart from it. The matter was fully discussed, both at this meeting and on former occasions. In fact the transformation of this Society under the pacific influences of sectional scientific meetings has been little less than marvelous. Its transactions have developed from a little pamphlet which few noticed, to a large and handsome volume which no student of scientific medicine can afford to pass unstudied. The members have their differences, as of

old; there are still cliques, politicians, pure and simple: there are "points of order" men, the vain glorious just as of old, but under the new system by which scientific work, rather than the arts of the medical politician and demagogue, bring honor and glory and profit, these are really being transformed and contribute much to the common profit. No longer is it possible to array one faction against another, and by hard words and harder deeds bring discomfort and distress to the non-participants.

The multiplication of sections multiplies officers, so that the office-holding ambition of the members has many times the opportunity for gratification. Then among the officers of the several sections there is a friendly rivalry in the securing of the best papers and discussions, and the accomplishment of the largest amount of section work. Members finding their papers discussed by the peers prepare them more thoroughly, so they can withstand the finest criticisms. No physician can attend these meetings and not feel adequately repaid in the accumulation of knowledge which will make him better able to do his work, and so earn more and better fees. All this is simple practical sense, and unquestionably increases the business of the members, and enhances the esteem in which the laity hold the profession.

A committee was appointed to consider the scheme of establishing a club house for the profession of Michigan in Detroit, of which matter more will be said later. The matter of a medical journal for the Society in lieu of its volume of transactions was presented for consideration.

The general addresses were especially happy in their selection of subjects, and treatment of the same. These addresses are designed to form a connecting link between the Society and the people of the town in which the meetings are held, in short, to be semi-popular. This year DR. H. M. KING, of Grand Rapids, discussed "Physical Diagnosis and Modern Therapeutics"; DR. VICTOR C. VAUGHAN "William Beaumont and his Work"; DR. C. H. BAKER, of Bay City, "The Doctor and his Hobby Horse"; DR. REUBEN PETERSON, of Grand Rapids, "The Prevention of Pelvic Disease." All of these were brief, to the point and very interesting.

Of the work in the several sections, it is enough to say that the papers were of varying degrees of scholarship and practical worth, but the average was quite equal to the Society's standard. The discussions were numerous and valuable. In some of the sections business would have been advantaged by the inflexible enforcement of a twenty minutes rule for papers, and five minutes for discussions.

DR. HUGH McCOLL, of Lapeer, was elected President; DR. C. T. SOUTHWORTH, of Monroe, Vice-President; DR. COLLINS H. JOHNSON, of Grand Rapids, Secretary; and DR. W. G. HENRY, of St. Clair, Treasurer.

The attendance of members was good, the accommodations excellent, so that nothing marred the entire session.

The next meeting will be held in Grand Rapids, May, 1897.

New Hampshire Medical Society.—This Society held its 105th anniversary meeting in the city of Concord June 1 and 2, the President, Dr. Eugene F. McQuesten, of Nashua, in the chair. The meeting was well attended, there being 105 members present. The usual routine business incident to the opening of society meetings was transacted, when the rest of the day was taken up in the reading and discussion of papers, which were of a high order and were received and discussed with animation and with much benefit to all present. The second day the society met at 8:30 A.M., when for an hour or more the time was consumed by the reading and adoption of reports of committees and election of officers. The membership of the society was increased by the admission of twenty-four physicians and surgeons. An essay on "Altitude: Its Effects upon Different Individuals, with Report of Two Cases," by Dr. George F. Gove, of Whitefield, was discussed by Drs. Conn and Hiland, of Concord. A report of how to manage an epidemic of "Variola" in small towns and cities was made by Dr. Cook, of Concord, and discussed by many members of the association, after which the President gave his annual address, which was a strong paper reviewing the progress of medicine, and introducing new features and work for the society in the future.

The following officers were elected: President, Dr. Abel P. Richardson, Walpole; Vice-President, Dr. M. C. Lathrop, Dover; Treasurer, Dr. M. H. Felt, Hillsborough Bridge; Sec-

retary, Dr. Granville P. Conn, Concord. The Executive Committee consists of Drs. Charles R. Walker, Concord; W. T. Smith, Hanover; George D. F. Towne, Manchester; F. E. Kittredge, Nashua; F. A. Stillings, Concord; A. C. Heflinger, Portsmouth; Ira J. Prouty, Keene. Necrologist, Dr. J. J. Berry, Portsmouth; Anniversary Chairman, Dr. James T. Greeley, Nashua. There was also elected a board of censors of ten members and a council consisting of twenty members. The exercises of the meeting closed with the anniversary dinner, at which about one hundred sat down to the table.

American Pediatric Society and the Odious Antivivisection Bill.

We, the undersigned members of the American Pediatric Society in session May 27, 1896, in Montreal, Canada, indorse the following memorial to the Congress of the United States, J. C. Wilson, Vice President, Philadelphia; Samuel S. Adams, Secretary, Washington, D. C.; Rowland G. Freeman, New York; Frederick A. Packard, Philadelphia; Wm. Osler, Baltimore; A. H. Wentworth, Boston; W. P. Northrup, New York; J. P. Crozer Griffith, Philadelphia; L. Emmett Holt, New York; Charles W. Townsend, Boston; J. Henry Fruit-night, New York; Geo. N. Acker, Washington, D. C.; C. G. Jennings, Detroit; Augustus Caillé, New York; A. C. Blackader, Montreal; J. Seibert, New York; Charles P. Putnam, Boston; Floyd M. Crandall, New York; T. M. Rotch, Boston; W. S. Christopher, Chicago; W. D. Booker, Baltimore; Dillon Brown, New York; John Dornig, New York:

WHEREAS, A bill is at present pending before the Congress of the United States entitled "An act to prevent cruelty to animals in the District of Columbia," which curtails experimentation upon animals, and would put a stop to medical research; and

WHEREAS, It is very probable that such legislation would influence greatly similar legislation in the various States which would prevent the advancement of medical science and of medical education; and

WHEREAS, Such legislation would be very prejudicial and is not called for by any existing facts of cruel experiment, as the advocates of the bill themselves concede so far as the District of Columbia is concerned; be it

Resolved, That the American Pediatric Society, now in session at Montreal, presents these resolutions as a memorial to Congress and enters a protest against the enactment of such legislation, declaring it to be needless and injurious; and be it further

Resolved, That a copy of these resolutions be sent to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and to the other weekly journals. Carried.

SAMUEL S. ADAMS, M.D., Secretary.

The Wisconsin State Medical Society held its semi-centennial session in Madison, June 3-5, with about 150 physicians in attendance. The entire session was devoted to preventive measures and hygiene, the discussions including the sewerage and water supply, sanitation of public conveyances, elimination of contagious diseases, measures to prevent spread of diphtheria, hygiene of public schools, etc. Mayor A. A. Dye welcomed the visitors to the city, President Epley making response. The papers included: "The Rights of the Individual and of the Public in the Matter of Quarantine," by Dr. W. H. Washburn, Milwaukee; "Hygiene of Public Conveyances," by Dr. J. F. Pritchard, Manitowoc; "The Vital Statistics Problem in Wisconsin: a Remedy," by Dr. U. O. B. Wingate, Milwaukee, secretary of the State Board of Health. Officers elected for the ensuing year: President, B. O. Reynolds, Lake Geneva; vice-presidents, William Mackie, Milwaukee, and Margaret Caldwell, Waukesha; secretary, Charles S. Sheldon, Madison; treasurer, S. S. Hall, Ripon; censor, W. T. Sarles, Sparta.

American Association of Genito-urinary Surgeons. At the tenth annual session of this association, held at Atlantic City, N. J., June 1, the following officers were elected: President, Claudius H. Mastin, M.D., Mobile; vice-president, Francis S. Watson, M.D., Boston; secretary, W. K. Ottis, M.D., New York; members of council, L. Bolton Bangs, M.D., New York, and John A. Fordyce, M.D., New York; delegate to national convention, R. W. Taylor, M.D., New York; alternate, E. L. Keys,

New York. The next convention will be held in Washington, D. C.

Pan-American Medical Congress. Prof. Dr. Don Francisco Bastillos, Calle de Tacuba, No. 7, Ciudad de Mexico D. F. Republica Mexicana, has been elected Treasurer of the second Pan-American Medical Congress, to be held in the City of Mexico, beginning the 16th of November. All members residing in the United States and Canada, and others who contemplate attending, should forward the registration \$5, gold, to him at once and notify Dr. C. A. L. Reed, Cincinnati.

NECROLOGY.

WILLIAM LOCKHART, M.D., at his home near London, aged 80. He took his degree just sixty-three years ago and in 1838 volunteered for missionary work in China. He attempted to commence medical work in Macao, but in consequence of the hostility of the Portuguese he was compelled to desist and withdraw. He next visited Chusan, in the hope of being able to commence work there, but ultimately in 1843, he went to the newly opened port of Shanghai, where he labored with great success until 1857, when he returned to England on a visit. In 1861 he returned to China and commenced the first Protestant mission in Pekin, obtaining the privilege of settlement in the Imperial city in consequence of his official position as physician to the British Embassy, which was established there in that year. His volume, "A Medical Missionary in China," published in 1860, was full of interesting details of his work, especially during the war with that country, throughout which he heroically stuck to his post. Though his active work as a missionary ceased in 1864, he retained a vivid interest in missionary enterprise, and did all he could to help it on, acting as a director of the London Missionary Society and President of the Medical Missionary Society.

SIR J. RUSSELL REYNOLDS, President of the British Medical Association. The London papers state that Sir J. Russell Reynolds, Bart., M.D., the celebrated English physician, author and lecturer, Physician in Ordinary to Her Majesty's household, died May 22, aged 68 years. Sir J. Russell Reynolds was a grandson of Henry Revell Reynolds, M.D., who was Physician in Ordinary to George III. He was appointed Physician in Ordinary to Her Majesty's household in 1878, and was made a baronet in 1895. The following minute was made by Mr. Malcolm Morris, editor of the *Practitioner*, at the time the last named honor was bestowed by the Queen: "Sir Russell Reynolds as President of the Royal College of Physicians has been in every way a worthy successor of Clark and Jenner. As a physician he achieved the highest distinction almost without an effort. Success came to him without any of the weariness of hope deferred that makes so many a stout heart sick. Of Sir Russell Reynolds as a teacher it is enough to say that his light was not dimmed even by that of Sir William Jenner teaching in the same hospital. He had an extraordinary power of intellectual stimulation, and his lectures were so graceful in style and so rich in apt illustration that they held the attention of the idlest and aroused the interest of the dullest. It is not, perhaps, generally known in the profession that in addition to his medical writings Sir Russell Reynolds has made at least one excursion into the field of pure literature in the form of a novel written in conjunction with his brother, the Rev. Dr. Henry R. Reynolds, Principal of Cheshunt College, and published anonymously. I have not had an opportunity of reading the book; but Sir Russell's Introductory Address of thirty years ago, republished recently by the *Lancet*, shows that he has at least one of the qualities that go to the making of a successful novelist, viz., skill in characterization."

EDWARD JACOB FORSTER, M.D., Surgeon-General of Massachusetts, in New York, May 15, of cerebral hemorrhage. He was returning from Philadelphia, where he had attended the annual meeting of the Association of Military Surgeons of the United States, of which society he was Vice-President. At a meeting of the Boston Society for Medical Improvement held May 18, the following resolution were presented and unanimously adopted:

Resolved, That by the death of Dr. Edward Jacob Forster, the Boston Society for Medical Improvement has met with an irreparable loss. His prompt, fearless and incisive energy; his quick and ready intelligence; the thoroughness with which he performed many self-imposed labors for the good of his professional brothers, are recognized by all of us, and will never be forgotten.

Dr. Forster was born in Charlestown, of early colonial stock, on July 9, 1846. He received his degree in medicine from Harvard University in 1868, and then continued his studies in Paris and Dublin before establishing himself in practice in his native city. As his professional life unfolded, and wider interest of official and civil character enlarged his opportunities for usefulness, he ceased to be a local practitioner merely, and became identified with the larger affairs of Boston and the Commonwealth. Four years ago he removed his home to Boston. The Boston Medical Library is indebted to Dr. Forster for many years of faithful service as treasurer. The future of the library, and the plans for a new building engaged much of his thoughtful attention. The Obstetrical Society of Boston will long cherish the remembrance of his generous nature and of his service in various offices. Under his will his valuable medical library will be donated to the Boston Medical Library.

W. C. PEPINO, M.D., at Des Moines, Iowa, June 3. His death was the result of fracture of the skull by the kick of a horse from which he was thrown while riding. Dr. Pepino was a graduate of the University of Maryland School of Medicine, Baltimore, Md., 1873. He was Professor of Rhinology and Laryngology, Iowa College of Physicians and Surgeons; Member AMERICAN MEDICAL ASSOCIATION, Iowa State Medical Society, etc.

JOHN J. BRINKERHOFF, M.D. (Bellevue Hospital Medical College, New York, 1867), of Auburn, N.Y., of apoplexy, May 27. He was a veteran of the civil war.—Wilbur C. Curry, M.D. (University of Maryland School of Medicine, Baltimore), Baltimore, Md., May 28.

PIETRO GAMBERINI, M.D., died at Bologna. He was the oldest and one of the most esteemed dermatologists in Italy. He founded the *Giornale Italiano delle malattie veneree e della pelle*, among the first medical magazines devoted to a special branch.

GEORGE TRAILL, M.D. The Policlinique at Lille, France, and its publication are mourning the loss of their young founder, Prof. Traill. His numerous articles on his specialty, diseases of the uro-genital organs, were based on personal observation and experience, and have been widely copied.

MISCELLANY.

Presumption of Accidental Death.—Where the evidence as to a death being accidental or suicidal is so nearly balanced as to leave the question in doubt, the supreme court of Kansas holds, *Mutual Insurance Co. v. Wiswell*, May 9, 1896, the presumption is in favor of the theory of accidental death.

Payment not Prerequisite of Proof.—Proof of expenses incurred by a person injured for necessary medicine, medical attendance, and nursing, the supreme court of Utah holds, *Wilson v. Southern Pacific Co.*, April 15, 1896, may be made when properly alleged in the complaint, though they have not been actually paid.

Bellevue Hospital Medical College.—The following are among the recent changes in the faculty of that College: William P. Northrup was elected to the chair of pediatrics, and George D. Stewart to that of anatomy (adjunct). J. Lewis Smith, in consideration of his long connection with the college, was appointed Emeritus Professor of Diseases of Children.

Tetanus Cured with Calmette's Anti-tetanus Serum.—The *Bulletin Médical* of May 3, describes the case of a lad of 13, who cut his knee while wading in a filthy ditch, and developed a typical and distressing case of tetanus. Treated with chloral, morphin and three injections of 10 c.c. of serum in the course of three days, the lad had entirely recovered in a week.

Emotional Insanity.—The supreme court of New Jersey holds, *Genz v. State*, May 2, 1896, that it was not error for a trial judge to instruct the jury that emotional insanity is an insanity which depends upon the mere emotions of the time, arising from some defective or perverted moral sense, which begins on the eve of a criminal act and ends when it is finished.

Can Not Grant Temporary Certificates.—The attorney-general of Ohio, having been asked his opinion as to the right of the State Board of Dental Examiners to grant a temporary certificate of admission to practice, to students in dental colleges who have not finished their course, holds that the board can not do this, but must either refuse the certificate or else grant one admitting the applicant to full practice.

Polluted Jordan River Water Causes Death.—A recent cablegram from Berlin brings to light the fact that the illness which caused the death of Archduke Karl Ludwig, brother of Emperor Francis Joseph, who died in Vienna a few days ago, was ascribed by his physician to his drinking of the waters of the River Jordan, which he did as a matter of religious devotion upon the occasion of his recent pilgrimage to Palestine. The water of the Jordan is by no means pure, and in the case of the Archduke it had a tendency to bring on intestinal weakness, which could not be overcome.

Minnesota Inebriate Law Unconstitutional.—Chapter 156 of the General Laws of Minnesota of 1895, which is entitled "An act to provide for the treatment of inebriates by counties," etc., the supreme court of Minnesota holds invalid, for the reason that it assigns to the probate judge powers and duties beyond the jurisdiction authorized by the constitution. *Foreman v. Board of Commissioners of Hennepin County*, May 11, 1896. The proceedings authorized by the act, the court further says, do not amount to a commitment of an inebriate to the guardianship of anyone, and hence do not come within the general jurisdiction of "persons under guardianship" conferred by the constitution on the probate court, although the framer of the bill evidently intended to give it the appearance of a proceeding for the appointment of a guardian for the inebriate.

Serum Treatment of Diphtheria in Three Cities.—In the statistics of the Belvidere Hospital, Glasgow, for 1895 we note that while the annual mortality in cases of diphtheria during the previous five years averaged 38.3, in 1895, with the use of serum reached 14 per cent. Dr. Henry W. Berg, one of the attending physicians at the Willard Parker Hospital for Contagious Diseases, New York, reports that since the introduction of the antitoxin treatment of diphtheria in that institution not only had the proportion of deaths from the disease been greatly diminished, but the number of cases of post-diphtheritic paralysis in those who recovered had been far fewer than formerly. The St. Louis Board of Health has made public the conclusion of an official inquiry into the results of the treatment of diphtheria with antitoxin. The report covers 326 cases, of which 15 were fatal.

Gastropathy of Syphilitics.—Gastou and Babon have been studying this complication of syphilis, due to the medicine, or

to some predisposing alcoholism or chlorotic dyspepsia, or to some uterine affection or a floating kidney. They state that the chemie formula is hypopepsia, with retarded secretion of gastric juice, and abnormal fermentations. It commences either abruptly with burning sensations, pains and acid regurgitations, or proceeds more slowly with irresistible drowsiness, followed by pains and gases, but no vomiting. It often follows abuse of KI pills, and Hayem has found that Gibert's syrup is apt to produce it. With this tendency patients should avoid medication by the stomach, and be treated with mercurial injections and iodine externally. — *Annales de Derm. et de Syph.* April.

A Recruit for Achilles Rose.—A new style of prescription writing is recommended by Dr. Loeffler in the *Aerzt. Korrespondenzblatt*. The author calls attention to the fact that in prescribing the newer remedies, the names of most of which are familiar to the general public, the customary writing of prescriptions in the Latin language does not protect the physician from inconvenient criticisms of laymen, so that it often would seem advisable to adopt a style less intelligible to most persons. To this end Dr. Loeffler has used for some time the Greek alphabet though still retaining the Latin nomenclature, and in all the apothecary shops of Dresden his prescriptions are readily understood. E. g., he prescribes antipyrin as follows:

R ἀντιπυρίν 1.0
 Δ. ταν. Δωσ. Νω. Χ.
 Σ. Daily, etc.

Civil Rights.—The civil rights law of Illinois provides "that all persons within the jurisdiction of said State shall be entitled to the full and equal enjoyment of the accommodations, advantages, facilities, and privileges of inns, restaurants, eating houses, barber shops, public conveyances on land or water, theaters and all other places of accommodation and amusement, subject only to the conditions and limitations established by law, and applicable alike to all citizens." May 12, 1896, the supreme court of the State decided, in the case of Cecil v. Green, which was brought by a colored man because a drug-gist refused to sell soda water to him, that a drug store in which a soda fountain is kept, from which is dispensed the character of liquids usually sold therefrom, can not be considered a place of accommodation or amusement to any greater extent than a place where dry goods or clothing, boots and shoes, hats and caps, or groceries are dispensed, and is not within the purview of the statute. Nothing in this provision, the court says, requires a physician to attend a patient, a lawyer to accept a retainer, a merchant to sell goods, a farmer to employ labor, unless of his own volition, regardless of any reason, whether expressed or not.

The Cleveland College of Physicians and Surgeons. The school formerly known as the Medical Department of the University of Wooster, located at Cleveland, has become the Medical Department of the Ohio Wesleyan University, and will hereafter be known as the Cleveland College of Physicians and Surgeons. All steps in the transfer have now been completed. A very desirable lot, 80 by 120 feet in size, has been donated to the trustees of the University, upon which a building for medical college laboratory purposes is to be erected at a cost of not less than \$50,000. The funds for the erection of the building have already been pledged, and the structure will be ready for teaching purposes in 1897. This laboratory building together with the new Cleveland General Hospital which is entirely under the control of the college for clinical teaching purposes, will place the school in an excellent educational position. At the annual faculty meeting Dr. Charles B. Parker was elected dean of the new school, and Dr. H. W. Rogers re-elected secretary. The union of the medical school with the university is an intimate one, and it will doubtless prove advantageous to both institutions.

Iodized Vasogen in the Treatment of Syphilis.—Leistikow describes his experience with iodized vasogen, containing 6 per cent. of iodine, in the *Annales de Derm. et de Syph.* for April. In one case of recent secondary syphilis a course of frictioning caused the morbid symptoms to disappear, but they were followed by violent cephalgia, resisting every remedy, even iodine taken internally. Daily frictions of the scalp with five grams of iodized vasogen were accompanied by marked improvement in three days and a complete cure in three weeks. A case of extensive periostitis which had been only slightly improved by frictioning and the application of phenic mercurial plaster and iodine taken internally, yielded at once to a few massages a day with iodized vasogen, with a complete cure in fourteen days. Similar success was attained in a case of sciatic neuralgia, also in six cases of ano-genital patches, and a case of syphilitic pigmentation of the neck. In some of these cases all other treatment had been ineffectual; but in three cases of lupus vulgaris the results were absolutely negative. In one case of gummy tumors the cicatrization took place more rapidly than with any other treatment. Leistikow ascribes the superiority of iodized vasogen over the usual remedies for syphilis to the fact that the absorption of iodine with it is very rapid.

Indications for Irrigation of the Stomach.—Martius states as follows the indications for lavage of the stomach: 1. Acute poisoning: the introduction of the water dilutes the poison and renders it less harmful and it can be withdrawn with the fluid. 2. Stagnation in the stomach from stenosis of the pylorus, whether due to a benign or malignant growth. 3. All cases of occlusion of the intestines from whatever cause. Irrigation always relieves and may possibly cure without further treatment. Guerin commends it in the current *Archives de Bordeaux* for its action in arresting the painful vomiting of fecal liquids, while it allows medicines to produce their proper effect. It is also generally indicated in carcinoma ventriculi, acute and chronic catarrh and all functional diseases of the stomach. Also in tympanites such as occurs in severe abdominal typhus and in nervous dyspepsia and spasm of the esophagus. Others have found it very beneficial in infantile gastric and bowel troubles, acute and chronic. Some consider it ineffective in neurasthenia gastrica, but it often produces a cure in nervous dyspepsia when the patient can be made to see for herself that her stomach is digesting normally. Minkowski has found it very valuable in arresting hemorrhages. He suggests that the time of using it is very important; if the patient is allowed to eat again soon, the benefits are often lost. He advises it the last thing at night. Quincke uses the irrigator for removing the liquid also. — *Memorabilien* for April.

The Yuma Indians of New Mexico.—The Bureau of American Ethnology of the Smithsonian Institute has, according to the *New York Sun*, in preparation a preliminary report regarding this interesting tribe of aborigines. The treatment of the sick is one branch of the subject touched upon in that report, which shows that there is about the same grade of intelligence in this tribe and in its medicine-man that is exhibited by other and less interesting natives. The report, in part, says that the sick, no matter how exhausted or in what agony, are compelled to submit to the roughest handling from the medicine-man, who excitedly rolls his patient to and fro in frantic endeavors to discover the point of disease. The relatives, sitting upon their heels around the hut, are ordered to maintain silence, as noise would break the spell. Severe pain is attributed to sticks, as, for example, when the physician supposes that the heart is affected, he loudly ascribes it as two sticks pushing upward from the stomach to the heart. Sucking with the lips upon the stomach is resorted to in order to soften the hard stick-like substance, for only when this is accomplished will the patient recover. Rapid touches upon

the breast draw out the pain in case of pneumonia, and deafness by blowing in the ear. Touching, slapping, expectorating, blowing and massage, associated at times with monotonous chanting, unearthly howling, and an occasional swaying dance, complete the usual course of treatment. Recovery under such circumstances is very doubtful. The debt in the event of recovery is liquidated with blankets, horses, money and other possessions, but nothing is forthcoming should the patient die.

Innervation of the Intestines.—Pal states that not only the stomach, the small intestine and the upper third of the colon, are innervated by the vagus, as hitherto accepted, but also the whole of the colon and rectum. He experimented on curarized dogs, endeavoring to determine whether there were any controlling motor centers for the intestines below the splanchnic centers in the spinal cord. Simple section of the dorsal portion of the spinal cord (from the sixth to the tenth dorsal vertebrae), causes more violent movements when stimulus is applied to the vagus. If the lower dorsal or lumbar vertebrae are removed, the intestines assume a different appearance. (Animals from $\frac{1}{2}$ to $1\frac{1}{2}$ years are best for these experiments.) The vessels become fuller, the intestinal walls thicker and the intestine itself begins to move with a peculiar motion resembling the pendulum swing of a rabbit's intestines. Stimulus applied then to the vagus produces a much stronger action than before, with a noticeable shortening of the time between the stimulation and the response. If, however, the lower part of the spinal cord is removed and the nervi splanchnici severed, the intestines also assume the above conditions. When then the vagus is irritated, violent peristaltis ensues, but this movement is controlled by applying stimulus to the stump of the splanchnicus, which proves the existence of other centers in the spinal cord below the splanchnicus, controlling the peristaltic action of the intestines.—*Centralblatt f. Physiologie*, April 4.

Explorations of an American Physician.—Dr. Donaldson Smith, of Philadelphia, recently addressed the Drexel Institute regarding his adventures in Somaliland, parts of which had never been seen by a white man. He had been gone from his home less than two years. In July, 1895, after many hardships and privations, the explorer reached the eastern shore of Lake Rudolf, near the northern end, and he had passed through a country that no white man had ever set foot in before. On July 19, leaving the caravan at the lake, Dr. Smith turned north to explore the Nianann river, which empties into Lake Rudolf. He was taken with fever and turned back, but set out a few weeks later and explored the country one hundred miles north. On his return to the lake the party journeyed to the southern end, incidentally discovering that the River Bass, which a former explorer is said to have discovered emptying into Lake Rudolf, does not exist. A peculiar source of discomfort to the party was the frequent invasion of rhinoceroses, these animals taking particular umbrage at an exploration of their native haunts, and venting their spite by driving the human beings into the thorn bushes for refuge. Four carriers were injured and two camels killed by these beasts. One of the carriers had an arm bitten off by a crocodile, and Dr. Smith amputated the rest of the injured member. The explorer discovered a mammoth cave formed on the River Webi by the erosion of the rocks. The roof was supported by great pillars, shaped like double cones, and so regularly arranged that they seemed to have been carved by the hand of man. He also visited a small town beyond the borders of Somaliland, built by the Arabs many years ago, though geographers say that the Arabs never penetrated so far. It was built and ruled originally by Sheikh Huslin, a Mahomedan saint, who came there two hundred years ago. It was here that some of his followers became discontented and an outbreak occurred, which, however, was soon quelled.

The Champion Quack of Modern Times.—The *London Lancet*

announces the death of Count Mattei, of Florence, speaking of him as "the most successful irregular practitioner of the nineteenth century. He was a fat spider who sat at the center of a web whose ramifications extended all the world over and enmeshed patients of high and low degree, especially the former." Statesmen and diplomats, men to whose judgment and *finesse* the most momentous as well as the most delicate missions were confided, had no hesitation in entrusting their health, mental and bodily, to a man who studied medicine by himself—note the order—after having discovered his great secret. And they were quite ready to show cause for the faith that was in them and one and all to assure their hearers that, having found orthodox medicine useless or worse, they had got rid of their ailment (whatever it was), and regained their powers of work and enjoyment of life by Count Mattei's "granellini di zucchero saturi di elettricità bianca, bleu, rossa o verde" (sugar granules charged with white, blue, red or green electricity), which were equally good for tuberculosis or chilblains, anemia or plethora, cancer or wry-neck, acute melancholia or inhibitory paresis. Under the shelter of social prestige and aristocratic testimony, Count Mattei added daily to his "miraculous cures," and steadily amassed a fortune which, in the language of a panegyrist, "made him several times over a millionaire." Vainly did foreign custom houses interpose their barrier to the import of his "granellini." Vainly was the law invoked against the sale of patent medicines, the composition of which was undeclared even to the licensing authority. "Agents" were found not only to introduce the granules into every Christian country, but to effect their sales in quarters the most conspicuous and exposed, and the army of such functionaries, subsidized by Count Mattei at considerable cost, still left the gains from the "business" enormous. Dying the other day at Bologna, he has bequeathed two million lire (\$400,000) to charities, while the bulk of his fortune descends to his adopted son and heir, Mario Venturoli Mattei, to whom he has also left his "segreto miracoloso."

The Tsetse Fly Disease of South Africa.—It has been said of that terrible horse and ox destroyer, the tsetse fly, that it is "an ill wind that blows nobody any good;" and that this ravaging insect has been a very considerable drawback to the land-piracy and territorial greed of the European, in that part of the world. But now science bids fair to come to the relief of land thieves of Europe, by discoveries that have been made regarding the true cause of the elective fatal operations of the fly. In the *British Medical Journal*, for May 16, it is made known that Surgeon Captain David Bruce has discovered that the true cause of the tsetse fly disease is not any secretion or property of the fly itself, but that the fly is merely the passive agent for conveying a living virus from infected to uninfected animals. This virus he has clearly shown to be a protozoon, closely resembling, if not identical with, the trypanosome evansi, the acknowledged cause of the surra disease of India, and possibly, identical with the similar flagellated organism found in the blood of rats and hamsters in England and on the continent of Europe. Bruce has also shown that when the tsetse fly, after feeding on the blood of an affected animal, proceeds to feed upon an unaffected animal, it introduces the trypanosome with its bite; and that after a short incubation period the trypanosome appears in the blood of the latter concurrently with the outbreak of fever, and that sooner or later death is almost inevitable, a high degree of anemia, accompanied by wasting and dropsical swelling, preceding the fatal issue. Surgeon Captain Bruce's discovery will draw attention once more to the part played by insects, particularly bloodsuckers, as factors in pathology. The role of the mosquito is beginning to be recognized; that of the tsetse is now established and possibly, ere long, other bloodsuckers will be found to possess similar properties, either as active agents in the biologic cycle of disease germs,

as in the case of the mosquito, or as media for their conveyance from one human being or from one animal to another, as the case of the tsetse fly. Diseases with peculiarly localized geographic distributions—distributions apparently not directly dependent on climate, but on some strictly local and limited circumstance—may be conveyed in the same way as this tsetse fly disease, and owe their peculiar geographic distribution to something of the same sort. The name by which the tsetse fly is known to entomologists is "glossina morsitans;" it is a dipterous insect, somewhat larger than the common house-fly.

The Medico-Legal Value of Ecchymoses Questioned.—The *Medical Press and Circular* is led to caution the profession against a too ready acceptance of the *prima facie* evidence of ecchymoses. The editor of that journal treats the subject in a leading article, in the feeling of a witness who "had been there." He writes, in part, as follows:

"It is now a well-recognized fact that more or less considerable extravasations of blood may take place beneath the skin or of the mucosæ or on to the surface of the internal viscera from purely physiologic causes, giving rise, however, to appearances which might easily be mistaken for the results of violence in some form or another. The possibly natural origin of such ecchymoses seems only to have been recognized within the last decade or two, and this fact suggests some uncomfortable thoughts concerning probable injustice to accused persons in the past. When a certain French medico-legal authority first called attention to petechial ecchymosis on the surfaces of the lungs it was for the purpose of promulgating the view that they afforded evidence of death from suffocation in one or other of its forms. This has since been proved not to be the case, for they have been met with in connection with action of particular poisons, particularly those belonging to the benzine series, as well as after death from burns, etc. Although these extravasations thus lose the diagnostic value which had been attributed to them, the subject is one well worthy of attention in order that full light may be thrown upon the mechanism of their production. For instance, they are not unlikely to occur in the insane, and in this event their presence on the skin would not unnaturally give rise to unfounded suspicions of violence at the hands of the attendants. In a paper dealing with this subject at a recent meeting of the Royal Medical and Chirurgical Society, Dr. Lediard laid particular stress upon the possibility of such ecchymoses on the mucous membrane of the vulva and vagina leading to the presumption of rape. Their position in the body, their delicacy of structure, and their vascularity render this portion of the female anatomy peculiarly liable to exhibit punctiform ecchymoses in virtue of the same causes that determine their appearance elsewhere. Mr. Hutchinson quoted a striking instance of the production of extensive ecchymoses in an elderly gentleman as the result of an attack of whooping cough contracted from his grandchild. As any medical man is liable to be called upon to discharge the delicate and responsible function of medical assessor in criminal cases, it is highly desirable that a knowledge of this curious phenomenon should be widely disseminated, for it is not difficult to imagine various circumstances in which these ecchymoses would probably be ascribed to violence or asphyxia, instead of to their real cause whatever that might be in the particular case."

Compensation in Case of Malpractice. The supreme court of Iowa affirmed, in the case of *Whitesell v. Hill*, April 11, 1896, a judgment for one dollar against a physician who was charged with malpractice in reducing a fracture of the plaintiff's arm. While it might be that the verdict of the jury was the result of a compromise, yet the court thinks it was not so discordant as to justify it in interfering in behalf of the plaintiff, who took the appeal. It says that the jury might well have found that the condition of the plaintiff's arm, as it appeared at the time of the trial, was in a large measure contributed to by an injury he received after the defendant had ceased his treatment. The court holds that a physician is only required to exercise the average degree of skill, learning, and ability possessed by members of the medical profession in the locality where he practices, the word "average," as used meaning the same as "reasonable" and "ordinary." It also holds that it was proper for the trial judge to instruct the jury to consider the condition of the plaintiff's arm as it appeared upon the trial, but

that they were not justified, from this alone, in finding for him that they must also find such result was due to defendant's negligence in the treatment of the injury. And it holds that the trial judge properly told the jury that the burden was upon the plaintiff to show his freedom from negligence contributing to the injury. Then, it was argued that the two claims, for service and for malpractice, could not coexist, and that a recovery by either was a bar to an action by the other. Admitting that there are some authorities in support of this contention, the court says that it does not think these cases announce the correct doctrine. The rule in Iowa, long ago established, is that a party who has failed to perform his contract in full may recover compensation for the part performed, less the damages caused by his failure to perform the whole contract. It does not necessarily follow, continues the court, that, because a physician or surgeon may be guilty of negligence, which causes some inconsequential or inconsiderable injury, he is to be deprived of all compensation for his services on account thereof. Whether he shall lose the value of his services depends upon the amount of damages suffered by reason of his neglect to perform his duty. No penalty beyond the amount of the actual damages sustained is to be visited upon him because of his negligence or want of skill.

Inhalations of Iodin and Carbon Disulphid in Phthisis.—Drs. Stovall and Twitty, of Columbia, Ala., write to the *New York Medical Journal* regarding the use by inhalation of the above named and other substances, in pulmonary tuberculosis. They have found the disulphid to be volatile at ordinary temperatures and an ideal vehicle for carrying iodine to all parts of the laryngeal and lung areas.

"We are quite positive that by deep inspiration the remotest recesses and apical caseations are reached. The good effects are manifest during the first day's trial, and the night cough which is so troublesome and exhausting is much improved, and this is among the first benefits derived. Expectoration is lessened in quantity and the quality is made decidedly better in a short time. The sulpho-carbon compound is put down as poisonous, and we have watched very closely for any untoward symptoms attributable to its inhalation, but so far have failed to note any objection to its use under proper precautions and directions from the physician. About a 12 per cent. solution, or, more accurately, one of a drachm of iodine to the ounce of disulphid, is what we have used in practice. Owing to the solubility of rubber and kindred matter in the disulphide, it is rendered inadmissible as material for an inhaler, which should be made of glass preferably.

"A cheap, convenient instrument may be improvised by using a small test tube with a sponge in the bottom saturated with the liquid: it will be necessary to replace the sponge frequently, because of the corrosive action of the medicine. For lung and laryngeal treatment, the inhalation is to be made through the mouth with the instrument pushed far back, approximating the opening of the larynx. The frequency with which it may be used is variable according to the individual condition and effects; we may say, on an average, once every two hours during the day. The bisulphid has a bad odor which is objectionable to some patients. We have experimented with a view to rendering it more agreeable and have made various additions and modifications, resulting with no advantage considerable enough to justify the use of anything additional, inasmuch as such a change might possibly lessen the practical value of the original formula. Menthol is perhaps the most harmless addition that we have attempted. We should be very glad if the profession would prove the efficacy of the treatment and report the results."

Gastrostomy. The following is an account of a successful gastrostomy in the practice of Mr. William Battle, of St. Thomas Hospital, as reported in the *Medical Press and Circular*. The patient was a male, aged 60 years, with a malignant stricture of the lower part of the esophagus from which he had been suffering for some six months. He was unable to swallow solid food of any kind, but could still swallow fluids: he did not suffer any pain, but was emaciating rapidly and losing strength. No bougie could be passed through the stricture. One had been passed on a former

visit about a fortnight before. There was no sign of disease elsewhere, and the patient agreed to submit to operation after the nature of it had been explained to him. It was decided to perform the operation in two stages, and by a method which permitted of quick operation. The oblique incision was made in the usual situation parallel to the left lower ribs and deepened down to the rectus muscle, the fibers of which were separated, and the remainder of the incision continued in the longitudinal direction. The abdominal wall was unusually thick for a case of gastrostomy, as there had been comparatively little loss of the subcutaneous tissue. The stomach was easily found and drawn into the wound. The portion selected for the opening was carried to the extreme right of the oblique incision and then two stitches passed through the peritoneum and walls of the stomach, one above and the other below, so as to shut off the peritoneal cavity. The highest point selected for the opening was drawn through a Senn's bone plate and transfixed with two hare-lip pins, which did not, however, enter the interior of the stomach. A trocar and canula were then passed between the pins into the stomach, and on withdrawal of the trocar a No. 1 catheter was introduced through the canula into the stomach, and the canula withdrawn over it. A stitch was then passed through part of the stomach wall, and the ends tied around the catheter. The external wound was closed with interrupted sutures, the bone plate being left across the upper part and at right angles to it. Cyanid gauze was applied to the wound, a many-tailed bandage put on. The end of the catheter was plugged and brought into the cotton wool of the dressing. Two points, Mr. Battle said, were of importance in performing the operation: first of all, by going between the fibers of the rectus muscle, he hoped to obtain a kind of sphincter action: secondly, by carrying the opening as high up as possible, he hoped that further obstacles to the escape of gastric contents would be prevented as the mouth into the stomach would be considerably higher than was usually the case after gastrostomy. The patient's great complaint after this operation is of the irritation caused by the escape of the gastric juice, which produces troublesome eczema and much soreness for some distance round the opening.

The New Japanese Dressing for Wounds, Straw Charcoal.—The physician attached to the French Embassy at Pekin, "Aide Major de l'armée" and physician to the Russian Embassy writes to the *March Archives de Bordeaux*, describing the superior advantages of this new dressing, suggested by Kikuzi in 1891, and used with great success after the earthquakes and during the last campaign. He writes from personal observation on the field and in the hospitals in Japan, where it is exclusively used, and states that the results obtained with it after the battles of Port Arthur and Wei Hai Wei were admirable, while among the Chinese wounded tended by English medical missionaries, the results of treatment were deplorable. The Japanese use rice straw, but any straw is equally as good, and the process of preparation disinfests it thoroughly. It forms a brownish, almost black, powder, composed of the charcoal, fragments of unconsumed straw, dust and ashes. The analysis shows the following ingredients in a hundred parts: Silicate of soda, 54.207; chlorid of sodium, 11.185; carbonate of potassium, 8.679; phosphate of soda, 7.673; carbonate of soda, 7.421; sulphate of potassium, 1.132; sulphate of soda, 1.132; magnesium, aluminum, organic matters, 8.561. The charcoal powder is exceedingly fine, porous and elastic, fitting smoothly and evenly over the wound, especially if applied in a soft bag as the Japanese use it. They employ fine linen for the bags, left open at one end, and used again and again, after washing and disinfecting. Like all charcoal it requires slow combustion without air. Small quantities are prepared as required by filling a boiler with straw and after

lighting it replacing the cover. Large amounts are charred in a closed room or kiln. The charcoal is then spread out to cool and the ashes sifted out as much as possible. To measure its absorbent power, Kikuzi dipped equal volumes of cotton, gauze and charcoal into water and then weighed them. Other similar portions he dipped into water and then placed them on a sloping board, under heavy equal weights, to determine which retained its moisture longest. He also experimented to determine the amount of evaporation in six tests. The following table shows the results of these experiments: Cotton 5 grams, maximum absorption 80, remaining after pressure 43, evaporation 4, 8, 13, 19, 26, 33; gauze 8 grams, maximum absorption 66, remaining after pressure 44, evaporation 4, 10, 17, 25, 33, 44; charcoal 15 grams, maximum absorption 65, remaining after pressure 58, evaporation 5, 10, 16, 24, 30, 43. The bags are kept on hand in three sizes, 10, 13 or 20 centimeters long by 7, 10 and 13 centimeters wide, with a uniform thickness of 2 centimeters. A freshly filled pad is best, but they can be filled and kept for weeks in a metal box. The cheapness of this dressing and its abundance everywhere recommend it especially for military use, as numbers of the bags can be always kept on hand ready for use, much less bulky and expensive than the gauze required in a campaign. To sum up its advantages: 1. its absorbent power is greater than gauze; 2, it is to be procured everywhere at a trifling expense; 3, it can be used without further disinfection, and its elasticity is equal to that of gauze. Simple, practical, quickly prepared and inexpensive, Dr. Matignon considers that it seems to realize all the conditions of an ideal dressing.

A Forgotten Medical Pathfinder.—Sir Richard Quain has lately addressed one of the London Medical Societies on the subject of Asiatic cholera. In the course of his address he expressed great regret that the profession had hitherto erected no memorial to the late Dr. John Snow, of London, the discoverer of the theory that cholera is a water-borne disease. It was in 1854, or forty-two years ago that Dr. Snow announced his views, "the result of a rigid scientific investigation which has done much toward the clearing up of the mystery of disease causation, and which has rendered an immense service to mankind that has not been recognized so fully as it should be." This is the language of Dr. Quain in his Dictionary of Medicine, and expresses the feeling which he has emphasized in the address referred to. As Sir Richard Quain is the President of the General Medical Council of Great Britain, we may confidently expect that his neglected hero will be properly honored. Dr. Snow was born in 1813 and died in 1858, having been at the time of his decease not more than twenty-five years in the profession; and he survived his epoch-making publication on the propagation of cholera only four years. The following is a portion of Sir Richard Quain's remarks upon the meritorious work of Dr. Snow, as reported in the *British Medical Journal*.

"Why is it that we are protected, and that cholera is prevented from invading us? It is very much owing to the researches of a man, probably hardly known to any of you—Dr. Snow. He is was who pointed out that cholera was propagated by polluted water. This conclusion was the result of close research, Snow's investigation being opposed by such eminent men as Dr. Baly and Dr. Gull. They did not believe that cholera was thus propagated. At last there occurred a very bad attack in the neighborhood of Golden Square, and the Broad Street pump became historical. Snow found that the people who drank water from that pump suffered from cholera, but those who did not, and took other water, escaped. An old lady and her niece migrated to Hampstead from this district, and died of cholera. There was not a case of cholera at Hampstead, but Snow showed that these good people had the water sent to them daily from their favorite pump at Hampstead. Nothing could be more confirmatory of the fact that cholera was propagated by poisoned water. These researches were extended by Sir John Simon and his able lieutenants, Drs. Parkes and Netten Radcliffe. Yet to-day possibly nine-tenths of the people now living do not know of Dr. Snow. There is no memorial; no monument. His name is unknown: but I hope, before I

leave this earth, I shall secure something in the shape of a memorial to him. Probably the best of all would be, on the Thames Embankment, a granite fountain with the inscription that Dr. Snow had saved millions of lives. He was a graduate of the University of London, a member of the College of Physicians, and lived in Savile Row. He died at 45 years of age. He was a most unobtrusive man, and is best known as having written on chloroform and anesthetics. We found memorials to all classes of people, and he is forgotten. He has been instrumental in saving the lives of millions. Had he been a successful general, responsible for the death of thousands, he would have received a peerage and a pension."

In commenting on these observations of Sir Richard Quain, the *Hospital* charges that the neglect of Dr. Snow's memory is the fault of the medical profession rather than of the general public, by saying that Dr. Quain sums up his indictment against his fellow countrymen in this sentence:

"Dr. Snow made us masters of the deadly plague of cholera." Dr. Snow thereby saved millions of lives. The sole reward which England has conferred upon Dr. Snow is midnight oblivion. If Snow had been a soldier the nation would have honored his memory with monuments more enduring than brass. No doubt that is so: and yet we can not blame the nation. The soldier is a very indispensable person, and though he slays rather than saves, he slays that his country may be saved, not only in its life, but in its freedom and its greatness. If we were to probe the facts to the bottom we should probably find that professional jealousy had much to do with obscuring Dr. Snow's great work. The unscientific community could not take the true measure of his researches and conclusions. We have seen how Gull and Baly opposed. If they were skeptical, how could the majority of the profession believe? Above all, if medicine as a whole withheld its faith, how could the unscientific public be more appreciative than its medical guides? Medicine has often before made the *amende honorable*, especially after the prophet's death. It is better that we shall honor a great name now, at any rate for the sake of our own honor and mental peace, than that we should not do it at all. "Before I leave this earth," said Sir Richard Quain, "I hope I shall secure something in the shape of a memorial to Snow." A drinking fountain on the Thames Embankment is the form of memorial proposed. The particular form is of little moment. What is wanted is that a memorial, a national memorial, or better still, a memorial by the whole civilization, shall be raised to the man who has made all civilization his debtor for life and well-being. What the medical profession can do, is to make a beginning. If that beginning be generously made, we shall not have many years to wait for an adequate memorial to a great medical name. What the American profession can do is to show that the work of Dr. Snow is not unrecognized on this side of the water, after the beginning by Sir Richard Quain has been made. We estimate that there are not less than two hundred of our physicians who are no strangers to Dr. Snow's claim for recognition and would gladly "lend a hand." Let us have a National Board of Health.

We are personally indebted to Mr. Ernest Hart, of the *British Medical Journal* for much of the quoted matter in this article.

New Law Regulating Practice of Medicine in Ohio. Feb. 27, 1896, a new law was passed in Ohio relating to the practice of medicine in that State. It provides for the appointment, by the governor, by and with the consent of the Senate, of a State board of medical registration and examination, consisting of seven members, the full term of service to be seven years. They shall be physicians in good standing in their profession. Representation is to be given on the board to schools of practice in the State as nearly as possible in proportion to their numerical strength in the State, but no one school shall have a majority of the whole board. The president and treasurer shall be members of the board; the secretary a physician in good standing in his profession, each to serve for one year.

The board shall meet in Columbus on the first Tuesday of January, April, July and October of each year, and at such other times as the board may appoint. Five members shall constitute a quorum. The books and register of the board shall be prima facie evidence of all matters recorded therein. No person, it is further enacted, shall practice medicine, surgery, or midwifery, in any of its branches, without first complying with the prescribed requirements. If a graduate in medicine or surgery, he shall, either personally, or by letter or proxy, present his diploma to the board for verification. Accompanying the diploma, he shall file his affidavit that the applicant is the person named in the diploma and is the lawful possessor of same, giving his age and the time spent in the study of medicine. If the board shall find the diploma to be genuine, and from a legally chartered medical institution in good standing, as determined by the board, and the person named therein the person holding and presenting the same, the board shall issue its certificate to that effect, which, when left with the probate judge of the county of his residence for record, shall be conclusive evidence that its owner is entitled to practice medicine or surgery in the State. If a legal practitioner of medicine under the laws in force at the time of the passage of this act, but not a graduate of medicine and surgery, as above defined, he shall furnish the board an affidavit stating the period during which and the places at which he has practiced medicine or surgery, and if the board shall be satisfied from the affidavit and other information received that he was a legal practitioner of medicine in Ohio at the time of the passage of the act, it shall issue its certificate to that effect, which when left for record, shall be evidence, the same as stated in the previous case. If engaged in the practice of medicine in Ohio at the time of the passage of this act, but not a legal practitioner under the laws then in force, nor a graduate in medicine or surgery as above defined, he shall present himself before the board and submit to such examination as to his qualifications as the board may require. The board's certificate to him, on passing a satisfactory examination, will only entitle him to practice for one year from date thereof. The board may refuse to grant a certificate to any person guilty of felony or gross immoral conduct, or addicted to the liquor or drug habit to such a degree as to render him unfit to practice medicine or surgery; and may, after notice and hearing, revoke a certificate for like cause; appeal being allowed, in either case, to the governor and attorney general, whose decision is final. Ninety days after this law takes effect is allowed all persons engaged in practice to comply with its requirements. An affirmative vote of not less than five members of the board is necessary for the issuance or revocation of a certificate. The fee for a certificate in either of the first two cases is \$5; on examination, \$25, a re-examination within a year being allowed the unsuccessful. Upon application, the probate judge shall make out a certified copy of any certificate and the indorsements thereon, which shall be prima facie evidence of all matters and facts therein contained. In case of a change of residence, the owner of a certificate must have the same recorded anew by the probate judge of the county into which he removes. Every person practicing midwifery in the State at the time of the passage of this act, shall within ninety days file with the probate judge of the county in which she resides, an affidavit giving her name, age, residence, the length of time during which and the place or places at which she has been engaged in said practice, and the special education, if any, which she has received to fit her for such practice. Thereupon, upon the payment of a fee of \$5, the probate judge shall issue a certificate which shall entitle her to practice midwifery. All persons desiring after the passage of this act to enter upon the practice of midwifery in the State, shall appear before the State board and submit to such an examination in midwifery as it shall require. Its fee for a certificate is \$10. A certificate to practice midwifery may be refused or revoked for the same

causes and in the same manner as a physician's certificate. It must also be recorded the same as the other. But a certificate granted to practice midwifery shall not give the holder the right to perform version, or treat breech or face presentation, or do any obstetric operation requiring instruments, or to treat any other abnormal condition, except in emergencies. Any person shall be regarded as practicing medicine or surgery within the meaning of this act who shall append the letter M.D. or M.B. to his name, or for a fee prescribe, direct or recommend for the use of any person, any drug or medicine or other agency for the treatment, cure or relief of any wound, fracture or bodily injury, infirmity or disease: provided, however, that nothing shall be construed to prohibit service in case of emergency, or the domestic administration of family remedies; and this act shall not apply to any commissioned medical officer of the United States army, navy or marine hospital service in the discharge of his professional duties nor to any legally qualified dentist when engaged exclusively in the practice of dentistry, nor to any physician or surgeon from another State or territory, who is a legal practitioner of Ohio, nor to any physician or surgeon residing on the border of a neighboring State, and duly authorized under the laws thereof to practice medicine or surgery therein whose practice extends into the limits of Ohio; providing that such practitioner shall not open an office or appoint a place to meet patients or receive calls in Ohio. The penalty for practicing medicine or surgery in violation of this act is a fine of from \$20 to \$500, or imprisonment of from thirty days to one year, or both, and for practicing midwifery without having complied with it, a fine of from \$25 to \$100. Any person who shall file, or attempt to file as his own, the medical diploma or certificate to practice of another, or shall file or attempt to file, a false forged affidavit of his identity, or shall wilfully swear falsely to any question which may be propounded to him on his medical examination, or to any affidavit required to be made or filed by him shall be imprisoned in the penitentiary not more than five years nor less than one year. Such fines when collected shall be paid, one-third to the person, corporation or medical society making the complaint or furnishing the information, one-third to the poor fund of the county, and one-third to the State board. The secretary of the board is charged with the duty of enforcing this act. If he have knowledge or notice that it has been or is being violated, he shall investigate the matter, and upon probable cause appearing, file a complaint and prosecute the offender. It shall be the duty of the prosecuting attorney, when requested by such secretary, to take charge of and conduct such prosecutions. Original sections 4403 and 6992 of the Revised Statutes of Ohio are repealed.

Practical Notes.

Electric Depilation.—After treatment of this kind there are always a number of hairs that grow out again, and Dubreuilh states that these are new hairs, supplanting a hair that was dead at the time of treatment. To save the useless trouble of electrolyzing dead hairs, he first has the surface cut close a week or so beforehand, and then electrolyzes only those hairs which have evidently grown since they were cut, merely pulling out with the tweezers those that have not grown. A few weeks later he electrolyzes the young hairs that have grown in the places of the latter.—*Annales de Derm. et de Syph.*, April.

Discussion of Treatment of Adenoid Vegetations.—At the Congress of the French Société de Laryngologie, Otologie et Rhinologie held at Paris recently, the old idea that persons subject to adenoid growths are deficient in intelligence, was disproved and the fact cited that Canova and Charles V were "adenoidans." Medication alone is absolutely ineffective. Digital palpation must accompany the use of the mirror, and the only contraindications to an operation are hemophilia, arterial anomalies and activity of adenoid growth. Washes were strongly con-

demned by the majority, and the use of an anesthetic by a few. Others urged its necessity as a matter of course and use hydrobromic ether. Texier stated that ten to fifteen grams are sufficient and no accidents follow the use of this small amount. Polo gives a few drops of ferric chlorid for a few days previously to prevent hemorrhage. Sea air is generally considered to have an unfavorable effect, and some cases were reported of otitis of the middle ear, following a stay at the sea shore.—*Bulletin Médical*, May 10.

Calomel in Heart Disease.—Maldarescu writes to the *Therap. Woch.* of May 10, describing the successful results he has obtained with calomel in heart troubles accompanied by distress in breathing, severe disturbances in the circulation, ascites, edema, albuminuria and hypertrophied heart and liver. He gives it in six powders with sugar, 0.10 gram every two hours during the day, for two or three days, following this with 0.10 to 0.20 gram a day for a few days, after when he then commences potassium iodid. Enormous ascites and edemas vanish with this treatment, and even patients in complete cyanosis are restored to comparative health. He ascribes the wonderful action of the calomel to its effect on the liver. It relieves the congestion, and thus restores the circulation in the important portal and liver veins, which exert a favorable influence on the entire circulation and cures some of the complications, while it relieves all. The gums are frequently affected by the calomel, and he orders a mouth wash from the first, consisting of potassium chlorate 10.0, tannin 0.25, aq. dist. 350. He limits his patients to a milk diet during the treatment, and warns them afterward to refrain from alcohol and excessive exertion, and restrict themselves to a light diet, and persist in the use of potassium iodid. He has treated 107 cases, with five deaths of those that were *in ultimis*, and nine other deaths, all of elderly persons in advanced stages. He notes that the calomel has also the advantage that after it other remedies produce their best effect. He scouts the idea that calomel can form sublimate in the alimentary canal, as a very elevated temperature is required for this.

Cincinnati.

THE COMMITTEE SELECTED by the State Board of Medical Examiners to investigate the American Eclectic Medical College, Hygeia Medical University of Ohio, and the Vitapathic College began their investigations June 11. Ex-Attorney-General John K. Richards and County Prosecuting Attorney Schwartz are conducting the examinations. It is stated that the American Eclectic Medical College has been blacklisted by the Boards of Alabama, California, Colorado, Illinois, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Missouri and New Jersey.

DR. CHARLES H. CASTLE has resigned as resident physician of the Cincinnati Hospital to assume charge of the surgical clinic of the Miami Medical College, and has also been elected secretary of the faculty.

DR. CHARLES A. L. REED has been elected gynecologist and abdominal surgeon on the staff of the Cincinnati Hospital, vice Dr. T. A. Reamy, resigned.

THE FIGHT against the alleged abortionists is being carried on with commendable vigor.

THE OHIO STATE PEDIATRIC SOCIETY elected the following officers at its annual meeting held at Columbus May 27: President, Dr. S. W. Kelly, of Cleveland; Vice-President, Dr. J. P. West, of Bellaire; Secretary, Dr. George M. Clouse, of Columbus; Treasurer, Dr. J. M. Dunham, of Columbus. The next meeting will be held in connection with the Ohio State Medical Society.

THE MORTALITY REPORT for the week ended May 29 shows 107 deaths.

THE STATE BOARD OF MEDICAL EXAMINERS of Ohio have

passed the following resolutions in relation to the standing of medical colleges:

Resolved, That all medical colleges of the United States requiring a minimum of three years' study of medicine and two courses of lectures for graduation, prior to 1886, and possessing proper facilities for teaching and a faculty embracing the chairs of anatomy, physiology, chemistry, materia medica, therapeutics, medicine, surgery and obstetrics shall be recognized as in good standing, and diplomas issued by the same and properly verified shall entitle the holders thereof to register as graduates in medicine under the laws of Ohio, providing that no certificate shall be issued to any applicant upon proof that his or her diploma has been obtained fraudulently, or in violation of the published rules of the college issuing same.

Resolved, That for the ten years ending Feb. 27, 1896, all medical colleges exacting the foregoing requirements and possessing facilities and a faculty as specified in foregoing resolution shall by virtue of such facts be recognized as in good standing to and including the year 1892, but that no medical college shall be recognized in good standing which has not since 1892 possessed the foregoing facilities and faculty, and which had not in addition exacted an entrance qualification and attendance upon three regular courses of lectures as a condition of graduation.

Resolved, That on and after July 1, 1899, no medical college shall be recognized as in good standing which does not require the entrance qualification prescribed by the Association of American Medical Colleges as a prerequisite for matriculation: which does not possess an adequate equipment for teaching medicine: which has not clinical and hospital facilities, based upon a minimum municipal population of 50,000, and which does not have an active faculty embracing the departments of anatomy, physiology, chemistry, therapeutics, materia medica, medicine, obstetrics, histology, pathology, bacteriology, gynecology, laryngology, hygiene, state medicine, surgery, ophthalmology, and which does not enjoin attendance upon 30 per cent. of four regular courses of instruction, of not less than twenty-six weeks each in four different years, and which does not exact an average grade of 75 per cent. on examination as conditions of graduation; providing that the rule relative to population as a basis for clinical and hospital facilities shall apply to institutions under State control, receiving gratuitously patients from all parts of the State in which the colleges are located.

Washington.

WEEKLY REPORT OF HEALTH OFFICE.—The report of the Health Officer for the week ending May 23 is as follows: Number of deaths (stillbirths not included), 83; death rate per 1,000 per annum, 15.7; death rate per 1,000 per annum for the corresponding week last year, 15.2. A fall of over 16 per cent. in the mortality of the city occurred last week as compared with the week before. The improvement was mainly in a decrease in the diseases of the respiratory organs and of the mortality among children under 5 years of age.

LAW REGULATING TESTIMONY OF PHYSICIANS.—"That in the courts of the District of Columbia no physician or surgeon shall be permitted without the consent of the person afflicted, or of his legal representative to disclose any information, confidential in its nature, which he shall have acquired in attending a patient in a professional capacity and which was necessary to enable him to act in that capacity, whether such information shall have been obtained from the patient or from his family or from the person or persons in charge of him: *Provided,* That this act shall not apply to evidence in criminal cases where the accused is charged with causing the death of, or inflicting injuries upon, a human being, and the disclosure shall be required in the interests of public justice." The above became a law without the signature of the President. To obviate this law some of the life insurance companies have incorporated the following in their contract for insurance: "I also agree to waive all provisions of law forbidding any physician or surgeon from disclosing any information acquired while attending me in a professional capacity."

PHYSICIANS TO THE POOR appointed by the Health Officer: Drs. Taliaferro Clark, F. A. Mazzei, D. G. Lewis, P. O. Roman, J. A. Stoutenburg, E. M. Hashbrouck, E. E. Richardson and G. W. Wood.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 30 to June 8, 1896.

Capt. Louis A. LaGarde, Asst. Surgeon U. S. A., is granted leave of absence for one month.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending June 6, 1896.

Surgeon L. L. von Wedekind, ordered to the Naval Academy.

Surgeon C. A. Siegfried, detached from the "Columbia" and ordered to the "Massachusetts."

Surgeon E. Z. Derr, detached from the "Raleigh" and ordered to the "Columbia."

Surgeon H. G. Beyer, detached from the naval academy June 5, and ordered to the "Raleigh" June 6.

P. A. Surgeon M. S. Gnest, detached from the "Constellation" June 8, and ordered to the "Massachusetts" June 10.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the sixteen days ended May 31, 1896.

Surgeon J. B. Hamilton, granted leave of absence for ten days, May 23, 1896.

P. A. Surgeon B. W. Brown, granted leave of absence for six days, May 25, 1896.

Asst. Surgeon C. H. Gardner, ordered to examination for promotion, May 27, 1896.

BOARDS CONVENED.

Board convened to meet in Washington, D. C., June 15, 1896, for the examination of officers for promotion and candidates for appointment in Service. Surgeon G. W. Stoner, chairman; Surgeon Fairfax Irwin and P. A. Surgeon C. E. Banks, recorders, May 25, 1896.

Board convened to meet in New York city May 27, 1896, for the physical examination of candidates for appointment in revenue cutter service. Surgeon W. A. Wheeler, chairman; P. A. Surgeon J. H. White, recorder, May 25, 1896.

U. S. Indian Service Changes. Medical Department, Z. T. Daniel, M.D., Agency Physician.

Pine Ridge Agency, South Dakota, to U. S. Indian Industrial School, Carlisle, Pa.

Change of Address.

Beadles, C. H., from Lewiston, Ill., to Sadlersville, Tenn.

Berry, H. A., from Chicago to Oswego, Ill.

Davis, R. E., from Chicago to Wales, Wis.

Dick, D. B., from Mt. Pleasant to Oakville, Ill.

Dvorak, W. R., from 1811 W. 16th St. to 1620 W. 22d St., Chicago.

Fuller, Wm., from 4704 State St. to 4700 State St., Chicago.

Grote, H. W., from Chicago to Room 9, Masonic Temple, New Orleans.

Hollister, Thos. C., from Pawnee City, to Louisville, Neb.

Hall, L. T., from Fulton to 911 N. Vandeventer Av., St. Louis, Mo.

Jackson, Edward, from Denver, Colo., to 1633 Locust St., Philadelphia.

Kelly, Warren, from Carlisle to Traskwood, Ark.

Kilpatrick, O. B., from New York, N. Y., to Cherry Fork, Ohio.

King, Elliott R., from Muscatine to Wilton Junction, Iowa.

Moody, G. H., from Mexico to South Texas.

Monette, Geo. N., from 5 Prytania St., to 1620 Calliope St., New Orleans.

McGahan, C. F., from Aiken, S. C., to Bethlehem, N. H.

Rhoden, J. C., from Chicago to P. O. Box 63, Ponca, Neb.

Seagley, I. B., from 936 Polk St., to 627 Grand Av., Chicago.

Sigle, Emma, from Chicago to Hales Corners, Wis.

Smith, Col. J. R., from Government Island, N. Y., to 2135 Spruce St., Philadelphia, Pa.

Wood, E. S., address should be 524 Michigan Av., Leavenworth, Kan., instead of Chicago.

LETTERS RECEIVED.

Anderson, Mary, Indiana, Pa.; Atkinson, W. B., Chicago.

Braunwarth, J. S., Muscatine, Iowa; Barker, E. O., Guthrie, O. T.; Beck, Carl, New York, N. Y.; Browne, John S., New York, N. Y.; Beadles, C. H., Sadlersville, Tenn.; Brockhausen, B. E., Lansing, Iowa.

Carroll, C. C., Poughkeepsie, N. Y.; Cain, J. S., Nashville, Tenn.; Craig, G. G., Rock Island, Ill.; Cleary, W. L., New York, N. Y.; Wm. A., Colford, Cincinnati, Ohio; Colvin, Darwin, Clyde, N. Y.; Carrington, J. S., Jewell City, Kans.; Cobleigh, E. A., Chattanooga, Tenn.; Chappell, Walter F., New York, N. Y.; Cerna, David, Galveston, Texas; Challis, S. E., New Orleans, La.; Cook, R., Harvey, Oxford, Ohio.

Didam, H. D., Syracuse, N. Y.; De Courcy, J. O., St. Libory, Ill.; Dios Chemical Co., St. Louis, Mo.

Estes, W. L., South Bethlehem, Pa.; Engelmann, Geo. J., Boston, Mass.; Emmert, J. M., Atlantic, Iowa; Enfield, Chas., Jefferson, Iowa; Elliott, Arthur R., Chicago.

Foot, E. E., Philadelphia, Pa.

Gates, Geo. W., St. Louis, Mo.

Hall, C. W., Kewanee, Ill.; Haldenstein, I., New York, N. Y.; Hance, T. F., Washington, D. C.; Hagelett, Edw. E., Abilene, Kans.; Hardy, H. T., Kaneville, Ill.; Hester, W. W., Chicago; Hummel, A. L., Advertising Agency (4), New York, N. Y.; Hueneckens, J. H., Milwaukee, Wis.

King, Ferdinand, New York, N. Y.

Lehn & Pink, New York, N. Y.; Larrabee, John A., Louisville, Ky.; Lyman, C. B., Denver, Colo.; Loeb, Hanau W., St. Louis, Mo.

Mulock, M. B., Joliet, Ill.; Martin, Ira M., Raymond, Wis.; Murray, D. H., Syracuse, N. Y.; Maytum, W. J., Alexandria, S. D.

Nussley, Geo. B., East Liberty, Ohio.

Oliver, J. C., Cincinnati, Ohio; Ormsby, O. B., Murphysboro, Ill.; Ohls, Henry G., Chicago.

Playter, Edward, Ottawa, Canada; Porter, Miles F., Ft. Wayne, Ind.; Pantagraph Ptg. and Sta. Co., Bloomington, Ill.

Reed, H. W., Murfreesboro, Tenn.; Reed, R. Harvey (2), Columbus, Ohio; Riddell, W. C., Helena, Mont.; Randall, B. Alex., Philadelphia.

Smith, J. T., Baltimore, Md.; Smith, C. J., Pendleton, Ore.; Souchon, Edmond, New Orleans, La.; Small, E. H., Pittsburg, Pa.; Stephens, L. C., Blackville, S. C.; Schaeffer, C. R., Indianapolis, Ind.

Thayer, Chas. F., Boston, Mass.; Taylor, C. F., Philadelphia, Pa.; Trowbridge, L. S., Detroit, Mich.; Tyree, J. S., Washington, D. C.

Wyeth, John A., New York, N. Y.; Wheaton, C. A., St. Paul, Minn.; West, H. A., Galveston, Texas; Woodbridge, John Eliot, Cleveland, Ohio; Wagley, Thos. J., New York, N. Y.; Wallon, A. J., & Son, Syracuse, N. Y.; Walker, Edwin, Evansville, Ind.; Walker, W. E., Pass Christian, Miss.

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No. 25.

ORIGINAL ARTICLES.

CHOLELITHIASIS AND CHOLELITHOTOMY.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY CHAS. H. DUNN, M.D.

MINNEAPOLIS, MINN.

My paper, of which I beg to present a partial summary, is based upon a study of some forty cases of gallstone disease and a review of the chief literature of the subject. The personal observations concern eleven cases upon which I operated, comprising: One cholecystectomy; one choledochotomy; two cholecystenterostomies; six cholecystotomies with temporary fistulae; one cholecystotomy by long drainage button; four autopsies in deaths from cholelithiasis without surgical interference; eight cases which for various reasons were not subjected to operation, in which the diagnosis was confirmed by passage of gallstones, and sixteen cases in which a diagnosis of gallstone was more or less positively made, but not confirmed by recovery of the calculi either by operation or in the stools.

In the course of this brief experience I have been strikingly impressed by several facts, among which may be noted: The highly overdrawn notion of biliary colic and a misinterpreted view of the symptomatology of cholelithiasis prevalent in the general professional mind; the mistaken prominence given to jaundice as a symptom, and the tenacity with which a childlike pathology explaining its presence or absence in the purely mechanical action of the stone is held; the readiness with which a phenomenal (and it might seemingly be thought an astonishingly unexpected) latency of gallstones is on all hands admitted without dissent, though this dogma when scrutinized rests upon evidence little better than bad logic, viz., so many people are found after death to have had gallstones who made no complaint about them during life.

The mechanics of the profession appears to have been thrown completely into our pathology: for the average practitioner often pursues persistently for months and years his very unmechanical as well as irrational treatment. If indications and contraindications for interference are in some diseases more numerous than usefully set forth, our brochures on this topic are often singularly silent or those given appear strangely farcical, *e.g.*, as given by one German authority, the size of the concretions.

When surgery is at last reached it has seemed to me that the mind is too often occupied with this or that set method, rather than with a determination to seek actual conditions and best meet them. In proof of this I need but say that when Murphy brought out his wonderful button too many of us went to making cholecystenterostomies in cases neither demanding nor

justifying cholecystenterostomy, thus putting a grand good thing to base uses.

It is becoming better understood that jaundice is a comparatively infrequent symptom, at least in the earlier course of the average cholelithiasis, and that cases frequently run their whole course even to a lethal ending without icterus. Riedel has long since shown us that the jaundice is very often due to catarrh of the bile tracts, the result of infection rather than to the impaction of stones. Yet I believe we still give too much credence to mechanical impaction as a cause of jaundice. I herewith report the autopsy of a young and otherwise healthy woman who died as a result of a six weeks attack of biliary colic, with nearly constant pain, tenderness and vomiting. She had had but one previous attack and that of short duration nearly one year before. Aside from these two attacks her health was perfect. There was a trace of bile present in the urine, but at no time had there been a trace of icterus observable by friends, trained nurses, or physicians. The stools were not clay colored.

The patient first came under my observation a week before death. A diagnosis of cholelithiasis was made and operation advised despite the terribly exhausted condition of the patient. Surgical interference however was refused by her friends. At the autopsy five gallstones—each about three-eighths inch in diameter were found, these being located in the gall bladder and two impacted in the common duct at the ampulla of Vater. The stone nearest the intestine appeared to be immovably fixed, the duct dilated to the size of my little finger. Yet this astonishing state of affairs did not prevent the bile from passing between the dilated duct walls and the stone. There can be no doubt but a moderate swelling of the mucosa of the tract would have closed the small calibred opening through the duodenal walls, or have closed the dilated walls about the stone and rapidly obstructed the biliary flow. I believe that the icterus which often accompanies cholelithiasis is due even in larger measure than any of us have yet conceived to inflammatory changes in the bile tracts and but in very small measure to the simple lodgement of calculi in the common or hepatic ducts. At any rate the presence or absence of icterus must not too strongly influence us as to the location of the stone.

It seems to me that we are in need of some relatively fixed notions as to the indications pro and con for surgical interference in this affection. Perhaps very few of us would regularly advise cholelithotomy as soon as a diagnosis is made. Though such a course is, in my opinion, open to many objections, it would be doubtless preferable to the one so often chosen, *i.e.*, floating along by guess and by chance until the patient requests operation as a relief from unbearable suffering, or because he is clearly in imminent danger of death. Though I believe the percentage of per-

sons who have suffered severe attack of biliary colic without surgical means, is not very large, yet spontaneous or medical cures must be admitted. The discomforts and dangers of individual cases vary greatly. It would therefore seem that our indications for cholelithiasis ought to be divided into relative and inoperative. In operating upon relative indications, good sense ought to be used and circumstances well considered.

If the attacks be frequent, the calculi not present and the symptoms be unrelieved by a reasonable hygienic and medical course of, at most, a few weeks' duration, so safe an operation as cholecystotomy at this stage, under proper hospital and modern operative advantages, is doubly preferable to further delay, even though no very threatening symptoms have developed. First, as the easiest escape from present suffering; second, as a preventive measure against the ever possible dangers of cholangitis, duct impactions, etc., which may entail a much more dangerous and trying operation upon a patient hardly able to bear any surgical interference.

I am firmly convinced that we shall in time come to see that the proper treatment of active cholelithiasis, with few exceptions, is early surgical interference. Nevertheless, so long as the patient is in no evident danger, a rational management may be tried through one or several attacks, as good judgment may dictate. For biliary or renal colic may be severe or repeated without indicating that natural cure is impossible, provided the engagements be short and decisive, uncomplicated by infection, and the peace, however short, fairly complete. But when, after several days' duration, only partial peace is declared, the general health begins to fail, local tenderness persists, lesser paroxysms recur and jaundice threatens, operative interference may, for practical purposes, be said to be imperative. The practical distinction between relative and imperative indications in surgery is of the greatest importance, and unfortunately too often overlooked. Imperative indications justify operation under conditions which might be almost criminal in the presence of only relative indications.

It seems to me a very pertinent question whether or not operation should be advised in the midst of a recent attack of colic. Kehr, having, as he believes, learned to distinguish between gall bladder colic and gall duct colic, advises waiting when the latter exists, lest the stone be left in the choledochus or a difficult choledochotomy need to be performed. But most of us will be often quite unable to make this differentiation with any certainty, while to delay long with a calculus in this most dangerous locality will often jeopardize the patient. Presumably he means to advise against immediate interference in the midst of an acute biliary attack, while a stone may be supposed to have advanced deeply into the choledochus without having time to be expelled. In this form the advice is clearly wise. Had the case referred to been operated upon hastily the night before the stones passed, it is not improbable that one might have been left in the duct, if not removed at the expense of a more serious operation than ordinary cholecystectomy. But, as already stated, it is chiefly disagreeable repeated minor attacks of gall bladder colic or the failing health due to incompletely relieved attacks which call for surgical decision. Effectual expulsive attacks are mostly decisive in a few days at most, for when a stone remains longer impacted, the ducts are soon

dilated, expulsive power is lessened, as evidenced in less severe and decided paroxysms, and the stone is usually left in undisputed or feebly contested possession of the field. The diagnosis once positively made, it would appear less difficult for a surgeon of sense to approximate reasonably the burdens and dangers of the disease in a given case, to distinguish when to advise waiting, when to recommend operation and when to insist upon it, than to formulate rules for others. In such matters hard and fast rules are absolutely irrational. Infinite certainty can not be achieved. Probabilities are the rule of life, and remain here the only and safest guide. If in certain cases delays are advisable, in others, like Case No. 7 of ulceration of the gall tracts, the first attack may call for prompt action. One prominent authority seems to regard the size of the concretions as having an important bearing upon operative indications. To my mind this is an evidence of the tenacity with which we unconsciously cling to the mechanical interpretation of calculous disorders, even after we ought to know the pitfalls of this childlike pathology. In the first place, we can foretell absolutely nothing as to the size of the stones before they are removed or passed. In the second place, however much the theory that a small stone ought and that a large stone can not be passed may appeal to rational simplicity, my last case proved to me that facts fail to follow mathematical fancy. This young woman had suffered for one and a half years, until almost tired of existence, from severe and frequent colics, yet the stones on removal were astonishingly small, the great majority being the size of apple seeds, and none larger than a pea.

Even a limited experience in cholelithiasis leads one to appreciate the variety of the conditions liable to be encountered, and to recognize that a variety of operative technique is required to meet the demands of different cases. Yet there must be procedures of preference. All modern observation goes to show that nine times out of ten, the gallstones occupy the gall bladder alone. Ninety-five times out of one hundred they occupy the gall bladder alone or it and the cystic duct alone. Such a bladder is frequently deeply and generally more or less diseased. In the vast majority of cases, therefore, the indication appears to be, to open the gall bladder, remove the stones and debris, and temporarily drain the diseased organ. After the most careful evacuation stones, sand or fragments are sometimes left, and thus the temporary drainage insures against recurrence.

I therefore believe that cholecystotomy with temporary fistulae is the operation of election in the average cholelithiasis, the one to be chosen probably eight or nine times out of ten. In the remaining minority a variety of less usual circumstances, whether inherent in the anatomy or condition of the patient, in local changes in the gall tracts or location of the stones, etc., demands a modification in the operation. Thus, when the gall bladder, as in my Case No. 3, is atrophied to a mere rudiment, or sloughing, cholecystectomy is rational, otherwise I can see no reason for removing this organ. On the other hand, when ducts are impacted with stones, it is perfectly clear that complete removal of the stones is the great and ideal desideratum, choledochotomy added to the operation already advised. Under such circumstances, if manipulation and crushing fail to empty the impacted ducts, the next choice is choledochotomy.

Happily, impaction in the common and hepatic ducts is much rarer than many suppose. The highest estimates place the proportion of common duct impactions at less than 4 per cent., and of the hepatic in less than 1.5 per cent. of cholelithic cases. But choledochotomy is always difficult, frequently dangerous and sometimes impossible of practical execution.

DISCUSSION.

DR. DONALD MACLEAN—What I have heard has impressed me with the belief that has been gradually growing in my mind for a good while and that is that there is a great and magnificent field for surgery in connection with the gall bladder and the gall ducts. I believe that that department of surgery is in its infancy, and there is this to say for that department, in contrast with ovariectomy, hysterectomy and other operations of that kind, that it is altogether conservative. If you save your patient you do not save a mutilated and more or less unhappy human being. If you secure a success in an operation of that kind the patients get well and has the satisfaction of feeling that they are relieved from a painful, dangerous and distressing disease and that they are just as good as they were when they first started in life. There is a great difference between this department and those of a mutilating and injurious nature. I do not mean to say anything against the removal of ovaries, uterus and testicles where it is necessary to do so. There will always be this hopeful and inspiring feeling about operations on the gall bladder, that is, if you save your patient from great pain and great danger, and the patient gets well, there is everything to be gratified about and nothing to regret. I believe that there is a vast field for surgery in this very direction, and it is my opinion that, as far as the surgery of the gall bladder and gall ducts is concerned, it is, as I have said before, only in its infancy. As the time goes on and experience accumulates the surgery of these organs will ultimately show grander and more satisfactory results than the surgery of any other organ.

DR. ALEX. HUGH FERGUSON, Chicago—Cholelithiasis is not a medical subject but a surgical one. These cases are rarely affected by the efforts of nature and usually resist medication. That being the case the question is when shall we operate? Let us picture a few of the clinical phases. First the patient may be seized with colic with or without jaundice. Having this colic and jaundice you examine the gall bladder and you will find it enlarged and the cystic duct obstructed. Mucus flows in and the gall bladder becomes enlarged so that apparently there is a tumor there. This is the time to operate as you have seen the case early and you can select your own operation. The operation of election is to communicate with the gall bladder externally. The cases often commence with colic and you then have this enlargement over the gall bladder. After this the stone falls back into the gall bladder, the attack is over and shortly thereafter the patient will have another attack. Jaundice then develops and this is a graver symptom than colic. The stone is now impinged upon the common duct and you have obstruction. If the stone be a small one it may pass through, but if not, it may force its way into the common duct, where it becomes stuck and dilates this duct. Subsequent attacks will occur and then the gall bladder contracts. When the stone is in the common duct the gall bladder becomes obliterated, and I know of one case in which I could find no gall bladder. The cases of one stone are more difficult than those where there is a large array of stones. The size of the gall bladder is no indication, and you can not tell whether the stones were passed through or not. You may find a gall bladder filled with stones that have not passed down. They may have become attached to each other. Then again you may find a number of stones of various sizes. How can you tell whether or not the stones are going to pass through? If the patient has colic and jaundice it is imperative to open the gall bladder, otherwise the next symptom will be pyrexia. If you wait until this what does it mean? That we have another complication. The stones have entered the lining mucous membrane and the germs have found an entrance into the denudation. These are difficult cases and no case should be left until pyrexia takes place. Long continued jaundice may occur in cholelithiasis. It is these cases that exist for months or years that are characteristic of a stone in the common duct as compared with the jaundice which takes place in malignancy. The stone in jaundice floats backward and forward and occasionally some bile gets down which keeps the patient alive.

The surgery of the gall bladder is pretty well settled, and the operation is to open it and communicate with it externally. How will you do it? By attaching the gall bladder to the peritoneum and skin and suturing them together has been mentioned, but it must be remembered that 33 per cent. of these operations have resulted in permanent fistulae. That was the objection of Murphy when he invented his wonderful button. If we perform cholecystotomy properly why not attach the gall bladder to the peritoneum? It should be united to the upper and not to the middle and lower portion. It will naturally form slight peritoneal adhesions. If the formal opening has been done away with and it has been drained, for the time being there is no further use for it. Stones may be situated in the enlarged gall bladder, and if there are a number of them they may get by the gall bladder, the cystic duct and the hepatic duct. Now as to the jaundice. Jaundice cases are difficult to operate on as they stand the operation and the chloroform very badly. Beside this, hemorrhage may occur and our duty in these cases is plain, do as little operating as possible. Try to tide the patient over from being killed with the jaundice. As soon as we unite the gall bladder to the peritoneum and clear out the gall bladder and hepatic duct, and if we can with proper curets clear out a little further our object is done. As soon as we see bile our work is over. We know that after we do that stones will follow and the common duct and hepatic duct will clear up. All that is necessary is for us to unite the gall bladder to the external wound. The most difficult surgery of the gall ducts is obstruction of the common duct, the operation for which is the opening of the duct or choledochotomy. In all of these cases when the stone is situated in the upper two-thirds of the common duct it is clear that an external operation must be done. There are two ways of getting at the common duct, one external and the other internal to the duodenum, of which the former is the better. If you have jaundice the incision should be either oblique or transverse and I think the oblique gives more room. As we pass our fingers in we find we are able to get two fingers into the foramen of Winslow. The common duct is nearest to us and this is the best way of opening it. You then separate the duodenum and you may have to dislodge it. Remove the stone if you can, and very frequently you can feel it *in situ*. The greatest difficulty is when the stone is impacted just at the opening of the duodenum. What we should do then is not quite clear. You might open the duodenum but how shall you know whether the common duct is patulous or not? This is very difficult to tell. A good way is to take a glass tube that is bulbous at the end with a rubber bulb attached to it. This will become impinged in the duct. You fill the bulb with water and you ascertain whether this water will flow through or not. If it will, I stop operating.

DR. J. C. OLIVER—Dr. Dunn reports a case of a healthy young woman who had attacks of biliary colic without jaundice. I would like to ask what was found to be the cause of death at the autopsy.

DR. HUNTER MCGUIRE, Richmond, Va.—I was very much interested in Dr. MacLean's remarks on this subject. It has been worth the trip down here to listen to the address delivered by Dr. Osler this morning, in which he criticised the medical treatment of years ago. I sometimes wonder what surgeons will say of us a hundred years from now. With regard to Dr. Dunn's operation, I feel a little anxiety about it. I believe that after awhile some one will stumble upon a way of dissolving gallstones so that operation will not be necessary. By this time the gentleman who suggested castration for prostatic enlargement will not wish to see the operation performed.

DR. DUNN (in closing the discussion)—I have not much more to say. With regard to the young lady referred to by Dr. Oliver, she died of exhaustion. She was unable to keep anything on the stomach for six weeks and she simply died. I was sorry to hear Dr. Ferguson speak of the tumor symptom of gall bladder disease. I took much pains to find fault with the ideas that have been so prevalent in the profession as to the diagnosis of gallstone disease but I did not refer to it in my paper. A good many country fellows, like myself, when we read in ordinary books, get an idea that there should be jaundice or tumors or colic resembling the pains of childbirth. My paper was not intended to tell anything wonderful about gallstone operations. We already have plenty of technique and what we need is a little diagnosis. I have not found the tumefaction in any cases. If enlargement of the liver dullness is meant by tumefaction it is very frequently present, but I think we already have in our minds too much of an idea of the enlargement of the gall bladder as a symptom of cholelithiasis. Sometimes this not only is not enlarged, but one of my patients dies without this enlargement. If a tumor was present it was independent of the distended gall bladder.

THE TECHNIQUE OF REMOVING THE APPENDIX VERMIFORMIS CECI: REPORT OF ONE HUNDRED CASES.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY M. M. JOHNSON, M.D.

HARTFORD, CONN.

Intestinal surgery has, within the last few years, received a long-needed attention. The correct diagnosis of the diseased condition of the appendix, and its operative treatment, has demonstrated the great possibilities of intestinal surgery. As a result we are now saving a class of patients which we have been unnecessarily burying all these many years. As there is a great diversity of opinion as to operative technique it affords a fertile field for our careful consideration.

Preparation for the Operation.—The patient should receive a general bath in which he is thoroughly washed with a flesh brush and green soap and water, as hot as can be comfortably borne. The abdomen and pubes are shaved, and a green soap poultice applied from two to six hours, followed by a washing with sterilized water, to remove the epidermis which has been acted on by the soap. A towel, wet with 1 to 1,000 solution of bichlorid, is applied until the time of the operation. When upon the table the skin is bathed with ether and alcohol, and covered with a sterilized towel. Patient is now ready for the operation.

The nails of the operator and the assistant should be short and smooth, their hands and forearms should be washed with soap and water, and with a brush for five minutes. After rinsing with sterilized water, they are immersed in 1 to 1,000 bichlorid solution for ten minutes. This method of hand disinfection has stood the test of bacteriologic examinations. When a more hasty preparation is required, permanganate of potash and oxalic acid are used, according to Holsted.

All dust in the operating room should be removed with a cloth wet with bichlorid solution. As operations frequently have to be performed in an uncleanly house, all dust and dirt in the room, on the furniture, etc., should not be disturbed before the operation. Place a washtub in the middle of the room, and pour boiling water into it. The steam will soon moisten the dust so it will fall to the floor, and the germs with it. You have then a pure atmosphere in which to operate.

Instruments should be sterilized by boiling. Instrument trays should be placed in boiling water, or filled with 5 per cent. solution of carbolic acid. Sponges should be discarded. Sterilized gauze is much safer. All dressings should be wrapped in sterilized towels ready for use when wanted. Care in these minor details is all important.

The Incision.—Surgical opinion as to the length of the incision varies from one and one-half inch to seven or more inches. When we take into consideration the future welfare of the patient, a condition which can not be overlooked by the surgeon, whether the patient be a manual laborer or a brain worker, in either case he is entitled to as firm and sound abdominal wall as can be secured. The shorter the incision, the shorter will be the time the patient must remain in bed, and the more secure will the abdominal walls be. The much criticised statement of Dr. Morris, "An inch and a half a week and a week and a half," contains a sound surgical principle.

While we know that a seven inch incision will unite as soon as an inch and a half, we also know that, with a short incision, the patient will be in a safer condition to leave his bed in from ten to fourteen days, than the one with a seven inch incision will be in six weeks. In fact, with a long incision, it is a question if the patient will ever be secure from a ventral hernia.

Another very important point is, that the intestines should be manipulated as little as possible.

The shock to the patient and the severity of the colicky stage following the operation, is in proportion to the degree of manipulation to which the intestines are subjected. With a long incision, the escaping intestines protected with a towel are exposed to the air, oftentimes becoming more or less chilled. Much manipulation is required to return and retain them within the abdominal walls. The chance for sepsis and the looping or twisting of the intestines is also great.

In chronic recurrent cases, the writer makes an incision one and one-half inches long directly over the appendix, which has been previously located by palpation, and sufficiently oblique to follow the fibers of the external oblique aponeurosis. When the peritoneum is reached, a catgut suture is passed through it at the upper angle of the incision, before it is cut through. This prevents its retracting and is of material aid in stitching the edges of the peritoneum. This is what Dr. Morris calls his "guy line" device. In complicated cases, the length of the incision must be determined by the room required. I find it best to commence with a short incision and then enlarge as it is necessary.

Method and Complications in Finding the Appendix.—The incision made, the problem of finding the appendix presents itself. Passing the thumb and index finger through the small incision, one quite readily seizes the colon, which is distinguished by a longitudinal muscular ribbon, which is drawn through the incision and returned to prevent exposure, until the appendix is brought into view. The meso-appendix is ligated and incised. When the appendix is thus readily found, the problem is solved.

The position of the appendix is difficult to define. It may be attached to an old hernia sack, to the right ovary or the under surface of the liver. This latter condition the writer found in his 25th case. The work was much simplified by producing peristalsis by Morris's method of applying a minute quantity of sodium chlorid to the colon, which causes the peristaltic wave to run toward the appendix. Following this guide, the appendix was found adherent to the under surface of the liver. The adhesions were separated with the index finger, and the appendix removed.

When the cecum is surrounded with a pus sack, we usually find a perforated and sloughing appendix, which should be removed.

In another case the writer found the appendix detached and loose in the pus sack, the stump of which was later the source of a fecal fistula, which was successfully closed by a double row of Lembert sutures.

In still another class of cases, we find a large, hard mass of infectious exudate surrounding the appendix. It is all important to break through this mass, and remove the appendix. There is little danger from hemorrhage, it seldom occurs. This done, your patient is safe. It should be a fixed rule never to close up the incision without finding and removing the appendix,

otherwise your patient is in just as much danger as though the operation had not been performed.

Treatment of the Stump.—When the appendix is incised, the treatment of the stump resolves itself into the treatment of an intestinal perforation, which it in reality is. The surgical rules for the treatment of this condition should not be violated in treatment of the stump, viz.: Two infectious mucous surfaces should be turned in and not brought together, the object being to close the fistulous opening and prevent abdominal sepsis. Following these rules, one would suppose that all surgeons would adopt about the same method. On the contrary, Dr. Robt. H. M. Dawbarn of New York, says (May number of *International Journal of Surgery*, p. 139) that eleven different methods are in use by leading surgeons, all violating these rules to a greater or less degree.

The methods which have been most generally used, may be stated as follows: 1. Incising the muscular coat, and removing it. 2. Sterilizing the stump either by Paquelin cautery, or else chemically by fuming nitric acid, or rubbing with a bichlorid of mercury tablet, or applying a drop of carbolic acid. Whichever of the foregoing processes of disinfecting may have been adopted, they have been followed by the burial of the stump beneath the peritoneum of the cecum.

While these methods are popular, they are at variance with correct surgical principles, as they leave a point of infection in the peritoneal cavity, which will sooner or later prove a serious complication. As Dawbarn wisely says: "What would be thought of a surgeon who would treat a small penetrating wound of the gut by tying a string around it, leaving two foul and infected mucous surfaces tied together?"

The various chemicals used to disinfect the stump before burying it, cause a destruction of tissue. Hence, no healing can take place between two surfaces of dead tissue.

Dr. Dawbarn's method is surgically correct, and fulfills all the conditions with the greatest safety, and is the only method which should be used, the details of which are familiar, as they have been published in the journal referred to, and in others.

Closing the Incision.—In doing this important part of the work, we are justified in assuming that the various layers of tissue are arranged in the best possible order. We will respect the work of nature by leaving them as nearly as possible as we found them. We will return and pick up the "guy line" which we passed through the peritoneum when making the incision. By making gentle traction, the retracted peritoneum is brought into view in the upper angle of the incision. With a Martin needle loaded with No. 2 catgut, a stitch is easily passed through the free borders of the peritoneum and the edges drawn together. Remove the "guy line" and with a gentle traction on the last stitch enough of the peritoneum is drawn into the incision to easily take another stitch. This is continued until the peritoneal incision is closed by a continuous catgut suture. The transversalis fascia and transversalis and internal oblique aponeurosis is secured by a continuous suture, separately. The skin is put hard on the stretch by a tenaculum placed in the angle of the incision. The edges are united with No. 0 catgut in a fine needle, care being taken not to include any of the subcutaneous cellular tissues. This method restores the abdominal walls to their original firmness. I have not had

a case of hernia following this method of closing the incision. The writer uses catgut throughout the entire operation. It is the ideal suture and ligature, if it is properly sterilized. This latter condition can only be secured by buying the raw catgut and doing your own sterilizing.

As an illustration of the advantage of the short incision, the writer gives the following case: Sept. 18, 1895, Mrs. C. M. C. consulted me relative to a severe pain in the right iliac region. She was three and a half months pregnant, aged 25, primipara. She gave the history of having had two distinct attacks before her marriage and pregnancy. Examination revealed great tenderness and pain over the appendix which could be distinctly felt as it was much enlarged. I advised an operation which was performed at Water-nook Sanitarium, Sept. 24, 1895. The appendix was found to be much inflamed and was bound down by strong adhesions. The adhesions were broken up and the appendix removed. The stump was treated by Dawbarn's method. The incision was one and a half inches long. Patient made an excellent recovery and returned home in two weeks. I attended her at full time. She was delivered of an eight-pound daughter. The cicatrix did not yield perceptibly to the strain of pregnancy and parturition.

After-Treatment.—The patient is placed in bed, wrapped in a warm flannel blanket, with a hot water-bag at the feet. An enema of strong black coffee is administered in cases of much exhaustion. Small portions of hot water are given for the first twenty-four hours.

As we previously mentioned, we usually have an arrest of peristalsis following the operation. As a result, the bowels are greatly distended with gas, causing distressing colicky pains. Hypodermic injections of from 1-50 to 1-30 grain of strychnin are given once in four hours. This acts on the motor centers and hastens the return of peristalsis, with the result of throwing off the gas. Meanwhile, salol is administered to arrest fermentation.

When the bowel is distended for a long time the muscular coats become exhausted and the pain greatly increased. To guard against this condition, large injections of warm water are given per rectum; the gas escapes freely with the water, greatly to the relief of the patient, giving rest and relaxation to the muscular coats of the bowel. This flushing is repeated as often as it is necessary. By this treatment the colic period is shortened.

It is evident that the administration of an opiate is not a rational treatment for this condition. Opiates arrest peristalsis, the very condition we wish to overcome. Many deaths are no doubt due to the free use of opiates. A cathartic of magnesia sulphate is administered the following morning. When the bowels have moved freely, our patient goes on to a rapid convalescence.

In strongly septic cases due to pus, perforation, gangrene, etc., the wound is left wholly or partially open. A wick drainage of sterilized gauze wrapped around by gutta-percha, is inserted to the bottom of the wound. The gutta-percha covering prevents the granulations forming in the meshes of the gauze, rendering it so painful and difficult to remove. This drainage has a great advantage over the method of packing the wound with a large quantity of iodoform gauze.

The gauze, moistened with the saline solution, is

placed over the wound. The capillary attraction sucks up the serum, pus and other secretions through the wick drainage, sometimes in a large quantity. A layer of cotton is placed over all, and strapped down. The gauze should be removed in about twenty-four hours. A sterilized glass tube should be carefully inserted to the bottom of the wound, through which it is freely irrigated with the physiologic saline solution. This may be repeated three or four times daily. Hydrogen dioxid should be used once or twice a day to disinfect the wound. Following this treatment, at the end of a week, we usually have an aseptic condition. The patient goes on to good recovery.

When perforation is present, the bowel is frequently in such a softened and diseased condition that union will not take place if the perforation is closed. Many times by waiting a few months the coats of the intestine will have regained a healthy condition, so a successful operation can be performed. In other cases, a section of the bowel is in a gangrenous condition. Only one thing remains to be done: Remove the diseased section and unite the ends with the Murphy button.

Multiple Pus Sacks and other Complications.—We occasionally meet a class of cases characterized by a high grade of infection, multiple pus sacks rapidly forming with a gangrenous perforated appendix as the center of infection. It is this class of cases which tries the skill and courage of the operator. When the abdomen is opened, a most offensive pus flows freely. The appendix is firmly bound down in the pelvic cavity by strong adhesions. Around it is built the wall of the pus sack. The infection has spread beyond this, and other pus sacks are found. It is in this class of cases that we find a great diversity of opinion as to what should be done. We will quote what Gilbert Barling, M.B., F.R.C.S., Professor of Surgery in Mason's College, says (*British Medical Journal*, p. 1254): "When the pus is evacuated, the finger enters and searches for the appendix. It is often not recognizable, and if it is, it will almost certainly be firmly tied down by adhesions and no attempt should be made to remove it. Stripping out the appendix from the wall of the abscess is likely to break through the latter into the belly cavity, and lead to disaster. If the vermiform appendix is left, little anxiety need be felt as to future attack of appendicitis. They rarely occur."

Barling's opinion means, that little anxiety need be felt when we leave dead, decomposing, highly infectious animal tissue in the abdominal cavity. A more dangerous opinion could not be expressed.

I will relate a case which will illustrate the phase of the subject. It is one in which Dr. F. W. Chapin of Springfield, Mass., and myself were associated. At my request, Dr. Chapin operated, and I assisted him. The technique of the operation was the result of a mutual discussion of the case, and the writer assumes an equal responsibility. The lesson to be drawn from this case is too important to be omitted, as it embodied so many serious complications, viz.: pus; perforation, gangrene adhesions and secondary operation.

I first saw the patient, R. M. (a returned missionary), May 6, at my office. He had great pain and tenderness over the appendix. I advised an immediate operation, but the patient had a volume of reasons why it should not be done. Two days later there was a well-defined tumor at the McBurney point. I urged an operation, but without avail. May 10th the pain

was severe, the tumor much increased in size. I then told him emphatically that I could only save his life by an operation. I was then moving my private hospital, and had no place to take him. Dr. Chapin kindly took him to a private hospital in Springfield. May 12 the operation was performed by Dr. Chapin. The incision was made over the tumor, a large abscess was opened and thoroughly irrigated with physiologic saline solution followed by the hydrogen dioxid. A fecal concretion was found in the pus cavity. We neither broke up the adhesions nor removed the appendix. A gauze drainage was introduced and dressings applied. The patient recovered and was out and attended to his work. The abdominal wound closed with granulations with a small fistulous opening remaining. A few days after the operation was performed, fecal matter escaped from the wound, showing that there was a perforation.

August 5, Mr. M., the patient, came to me in Hartford, with fecal matter and pus escaping from the fistulous opening in the abdomen. I sent him at once to Watnook Sanitarium where he was properly prepared. I operated on him the next morning. I made an elliptical incision around the cicatricial tissue resulting from the first healing. I found the portion of the abdominal wall thus removed, adherent to the cecum. These adhesions were broken up revealing a perforation in the cecum. This was closed by a double row of Lembert sutures. I then broke up many strong bands of adhesions in search of the appendix, which I finally found and removed. It was in a gangrenous condition, highly infectious. I then closed up the incision, leaving the wick drainage in the lower angle of the incision, which was removed on the second day and the wound closed. Everything went well until the tenth day, when the patient became feverish, with pain near the incision. A small abscess formed external to the superficial fascia, probably from the pus germs which had burrowed in the tissues near the fistulous opening. This discharged and readily healed. At the end of four weeks, patient was up and dressed.

In reviewing this case in the light of all that happened and my experience with many similar cases since, I would say that at the time of the primary operation I should have thoroughly broken up all adhesions, opened and disinfected the multiple pus sacks, which existed, searched and found the appendix and removed it, as no permanent cure could be looked for with this diseased and infectious animal tissue remaining in the abdominal cavity. When at the secondary operation I had found and removed the appendix, broken up the adhesions and thoroughly disinfected the abdominal cavity, I was sure of a permanent recovery. This is what I would advise in all similar cases, although eminent authorities advise to the contrary. There is a theory that the breaking up of the adhesions in pus cases, allows the pus to extravasate and infect the general peritoneal cavity. The fact is, the pus will pass out at the point of the least resistance, which is through the abdominal incision. Frequent irrigation with the use of hydrogen dioxid will render the septic condition aseptic, and a good recovery may be expected.

When the Operation Should be Performed.—In the discussion of this question, the writer will consider it from the standpoint of the best interest and safety of the patient, regardless of whims and sentimental notions.

W. Thornby Stokes, President of the Royal College

of Surgeons in Ireland, says (*British Medical Journal*, July 1, 1895): "As far as I am able to state my opinion on the matter, it is that, if an abscess has formed or perforation taken place, laparotomy should at once be resorted to, but that, short of these misfortunes, operations should be delayed until the last possible moment."

I find in the table of statistics of operations in St. George's Hospital, in London, by T. Holmes (*British Medical Journal*, July 6): Perforation of the Appendix, etc., 10 cases; recoveries 0, deaths 10.

This sums up President Stokes' opinion to mean: That the operation should not be performed at the time when there is a chance of saving the patient's life, but when death is inevitable, with or without operation, then "operate." The worthy president's opinion will insure a large death rate.

Now let us consider a case of a patient with the first attack of infectious appendicitis. He suffers considerable pain for three or four days, and will generally recover from this attack. If you operate, a short incision can be made. You will have no adhesions or complications. The appendix will be found to be slightly swollen and inflamed, but can be readily removed and the stump treated by Dawbarn's method, followed by little if any colic. In nine days he can sit up and in fourteen days go about his work. Now, if you slit open the appendix, you will find an inflamed spot, with probably a few drops of pus and considerable lymph thrown out. Here is the beginning of an interesting and probably an eventful history.

Now, to illustrate, suppose you did not operate. In a few weeks or months he has another attack, severer and longer, resulting in some adhesions. He may go on for two years with repeated attacks, more adhesions form, an invalid condition is well established, gangrene, pus and perforation may have taken place. You then operate under the most unfavorable conditions, with a long convalescence or death. Should not operative measures be an early consideration, rather than the last result?

My statistics covering one hundred cases, are as follows:

Cases without extensive adhesions, infected exudate masses or pus, 27, recoveries 27; cases with extensive adhesions, without infected exudate masses or pus, 25, recoveries 25; cases with infected exudate masses or pus, 23, recoveries 23; cases with infected exudate masses and pus, with perforation and gangrene, 25, recoveries 23, deaths 2; total number of cases, 100, recoveries 98, deaths 2. Males 64, females 36.

In conclusion, the lesson drawn from the proper appreciation of these statistics, contains an important point. We see that in classes first, second and third, no deaths occurred, but in the fourth class are two deaths. As has been stated, this class includes cases with *infected exudate masses and pus, with perforation and gangrene*. Now, with the results of an operation in this class lies the responsibility of the physician and surgeon who knowingly allows the patient to go on to the condition of this class, before an operation was performed.

DISCUSSION.

DR. PARKER, New Orleans—I have listened with much interest to the paper and congratulate the author on his brilliant results. It has been my fortune for the last seven years to be connected with the Charity Hospital of New Orleans where we have about ten thousand admissions annually and about twenty-four thousand at the out-door clinic. I have often wondered why it is that our friends in the North see so many cases of appendicitis and we so few. I do not believe we

have seen half a dozen cases a year. Another peculiarity, they treat a great many negroes, but I have never seen a case of appendicitis in a negro. Dr. Johnson speaks of the catgut suture, but I believe the best suture is an absorbable one. I would like to know how he prepared this catgut. The author mentioned cases of abscess around the appendix and said he did not agree with the opinion expressed that the appendix should not be removed in these cases. In several of my cases, there were abscesses around the appendix and in some cases, the appendix was in the abscess wall. I believe that if we had started in to remove those appendices we would have opened the general peritoneal cavity. Instead of this we opened the abscesses and washed out the region with peroxid, all of the cases getting well and in not one of them has there been a recurrent attack. As to the use of opiates and salines, I believe in the way of preparatory treatment that it is a good plan to open the bowel with an enema and saline. We are all pretty well agreed as to the method of operating, but I do not believe in the use of opium. With regard to fecal fistulae, I have seen several cases. Some of them will heal up by themselves if you let them alone.

THE SECRETARY—The results secured by the author of the paper are almost unparalleled, and such statements coming from a man of such experience and with such good fortune or rather good technique must have a strong impression. Statements read from such a paper would probably be carried away from this section as the authoritative statements of this section and I feel they should be discussed. Another point, that of searching for the appendix in cases of abscess in every instance. I think this matter has been gone into by some of the best authorities. Having been a pupil of old Dr. Henry Parker, who was the pioneer in the advocacy of opening appendiceal abscesses, I saw many abscesses which were undoubtedly what we would have called at that time perityphlitic, and I watched some of these cases for years. I do not remember of a single recurrence of appendicitis after the abscesses were opened and drained. It is a dangerous doctrine to set down any definite technique for any operation, and every case must be judged on its own merits. You might as well say treat all cases of pneumonia with the same drug. The external incision in some cases may be one inch, in others, two inches and sometimes from seven to eight inches, and this must be decided in every individual case according to the requirements of that case. Dr. Dawbarn's recommendation is an excellent one, but there are cases in which it is impracticable to use it. I recently had a case of recurrent appendicitis and I operated during the third attack. I found the appendix as large and hard as my little finger and it was perfectly indurated. The whole lumen of the appendix was destroyed and seemed to be replaced by an enormously indurated wall which was like a hard piece of rigid tube. It was thoroughly impracticable to have cut off that appendix and in such cases we must be guided by the case and not by any definite technique.

DR. CARPENTER, Kentucky—Each case is a law unto itself and must be treated in that way. As to suppurative appendicitis, we can not afford to tear up adhesions and run the risk of opening the peritoneal cavity and poisoning it. If we excise, irrigate and drain; we will save the case as a rule and I think many a patient is lost by meddling surgery. I recently operated on a patient in which the appendix was gangrenous and half sloughed off from the cecum. The cecum was gangrenous for about two inches and the appendix contained an appendolith. I removed this and cut off the gangrenous edges of the cecum. I employed the Lembert suture. I took the meso-appendix and brought it over, drained, irrigated and the patient recovered.

DR. McRAE, Atlanta—I have only had a few cases. One of the points raised by Dr. Parker, I can answer in the affirmative, and that is that I have operated on two cases of appendicitis in the negro, one male and one female. It is true they had a little white blood in them, but they were negroes all the same. They both recovered. I believe that it would be one of the worst theories or practices to state that every appendix should be removed when it is contained in the abscess wall, and I am firmly convinced that it would be a very dangerous practice. I have read the works of many of the English surgeons and the universal experience seems to be that where there is a large abscess cavity with the appendix contained in the walls, simply draining is all that is necessary. It is the exception and not the rule for recurrence to take place. As Dr. Joseph Price has said, when you have a condition of that kind, the time for ideal surgery is not present and you simply wish to conserve the life of the patient. If it becomes necessary to remove the appendix later, I am satisfied that it could be done with less danger than by doing it at one sitting. A large proportion of those cases will die from septic peritonitis. I have had two cases of fecal

fistulae where the abscesses were drained after removal of appendix and one case in which I drained the abscess. If we let them alone, they will get well.

DR. ALEX. HUGH FERGUSON, of Chicago—I can not refrain from commenting on the surgical manner in which Dr. Parker made his remarks. I should like to be excused from discussing the paper as presented to us, but there are a number of points presented which to my mind are not the best procedures and I would like therefore to give a brief outline of how I manage cases myself. I have only had an experience of about 150 cases. I am surprised at the few cases that occur in the South and I think it must be due to the climate. The medical pictures that present themselves to us are, you might say, acute cases, and demand immediate operation. There are some cases which are not so severe, which recover and then have secondary attacks, and then there are others which return after operation when they have simply been drained. I have only had two cases of this myself. They were facsimiles of Dr. McRae's case where the appendix proper was obliterated, but there was a chronic abscess which would become full and cause an attack simulating appendicitis. The most favorable time to operate is between the attacks, and that old surgical rule is good. It is dangerous to operate during the acme of inflammation but sometimes we have to operate at this time, particularly when there is a tumor, otherwise we do not know whether it may or may not burst. The second most favorable time to operate is early, as soon as we have a clear clinical picture of a case of appendicitis, where it is evident that the inflammation is around the appendix. Early operation, say within twenty-four hours, is much more easily done, and the patient is much safer than if you leave it until the fourth or fifth day. The technique of operation varies. An inch and a half and a week and a half is wrong in 99 per cent. of the cases. You may do such an operation between the attacks where the inflammatory process is limited to the inside of the appendix. I once saw a surgeon who was fond of using that old expression, "an inch and a half and a week and a half," who went into the general peritoneal cavity by mistake. The technique of an operation between the attacks is clear. Select your incision and separate the fibers of the muscles. You then expose the appendix that has been inflamed in its quiescent state, and make a circular incision, tying off the mucous membrane, or as I prefer, inverting it by a figure of 8. A simple ligature over the muscular walls is the proper method to my mind. You can not always get your stump in good condition for this treatment but you should drain anyway. If you have to search for the appendix and break down adhesions, it is not necessary to drain. When there is no way of removing the appendix, as in appendicitis fibrosa or where we have much traumatism, capillary drainage is all that is needed. This will drain blood serum but not pus and that point should be looked after. We never aspirate unless the appendix is situated in a region which can be quite easily gotten at. There is no advantage in removing the appendix through the peritoneal cavity, and it is a very difficult way, but it should not be allowed to slough off. When it is in the pelvis, it should not be hunted for. Just as soon as you strike pus, drain it or mop it out. In draining, do so with gauze and with a tube, as gauze will not alone drain pus. The best drain with the gauze is a glass drainage tube, as a rubber one may become clogged up or may be pressed upon by the gas present. I was recently called to the case of a young man who had been riding a bicycle, and a few hours after having been thrown off, he complained of pain in the right iliac region. A physician had been called who diagnosed the case one of appendicitis. I was called about twenty-eight hours later, when the patient had a temperature of 103 and pulse 120. The abdomen was not very much distended but the muscles were rigid. An operation was agreed to and I cut down and removed the appendix, afterward packing with gauze and draining with a glass tube.

DR. HAINES, Omaha I would like to congratulate the author upon his good paper. The first case I had was my most difficult one, and I found extensive adhesions in the right iliac fossa. After a long search I discovered quite a mass, and I felt the appendix within it. My case went the way of all flesh, but I believe if I had had the experience I now have, he would still be in the land of the living. I do not mean to say that it is always necessary to remove the appendix. It has been suggested to treat it as an abscess, which may be a good method. I live in an atmosphere that is impregnated with appendicitis, and we hear of dozens of cases in our local society every time we meet. It occurs in both races. I merely wish to condemn the routine practice of always searching for the appendix.

DR. JOHNSON (in closing the discussion) I expected a discussion and am pleased to have gotten it. Perhaps I hold a

unique position in this operation, as I have been both operator and patient. There is one thing about searching for the appendix. I have done this in the presence of as good surgeons as are here to-day and they have often warned me to discontinue my search. Where you have one large pus sac, you may drain, but almost invariably you will have multiple pus sacs. I find by breaking up the adhesions that you will find you will break into a pus sac just as you may open a wound. I have found as many as five pus sacs in one case, and if you leave these sacs I think they will do harm. Perhaps if some of you will just try the method of breaking up the wall of a pus sac after you have broken up several, you will probably find others near by which will cause, upon rupture, quite a flow of pus. These sacs exist to a large extent, and have been found in the liver and in the whole abdominal cavity. Some patients have died without operation. When the appendix is situated, as it almost always is, in the wall of the pus sac, I remove the appendix. I am aware that you can mention good authority against this procedure, but my experience is that the pus will extravasate into the abdominal cavity and not come out through the incision. From my method I have never had a case of peritonitis resulting, and I think my procedure the proper one. You have a highly septic vegetable matter which it is dangerous to leave behind although I did not think so until I had passed a case where the appendix was removed in a secondary operation. Up to the present time I have had about 125 cases. I think I have seen a great many patients that would not have recovered merely by breaking up the pus sacs. I was sorry to note that Dr. Ferguson did not give any statistics. I would like to ask some of you to try my method. I have tried it although many men have told me not to do it. As to the length of the incision, I think it is often made too long, and a seven-inch incision should not be required in any case. It not only prolongs the operation, but there will certainly be an escape of the small intestines. My experience is that in most complicated cases an incision two or two and a half inches long is enough, and is sufficient to break up adhesions by the sense of touch. A surgeon once saw me operate and remove the appendix, and said he was unable to see or understand how I did it. I think the best way is to enlarge the incision if necessary and that in so doing you are considering the welfare of your patient. When you make a long incision a weakened abdominal wall is the result, and if the patient be a laboring man a strong abdominal wall is of great service to him. Experience soon enables one to perform this operation through a very small incision. If any of you will try this method, you will find that your result will justify you in doing it. The free use of boracic acid and hydrogen will save many cases, and I have been perfectly satisfied with my results. Physicians do wrong in allowing cases to go on before sending for a surgeon. The Dawbarn method can not be performed in every case, but where it can be, I think it should be as there are no infectious points left free in the abdominal cavity. When you first begin to employ this method, you will probably think you will not succeed, but it can be done in five minutes after you get used to it. With regard to fecal fistula, this will usually take care of itself. I remember one case in which the cecum was so far gone that it required a second operation. With regard to the employment of catgut, I buy it in the raw state and sterilize it myself. I first place it in ether and continue to change it until all the fat is taken out of it. I then boil it at a temperature of 173, and then put it away in sterilized glass jars. When I come to operate, I take out the size and quantity I want and again sterilize it. I have so far had no cause to regret its use.

A FEW RECENT CASES BEARING UPON THE QUESTION OF OPERATIVE INTER- FERENCE IN ABDOMINAL AILMENTS.

Read in the Section on Surgery and Anatomy at the Forty-seventh Annual Meeting of the American Medical Association held at Atlanta, Ga., May 5-8, 1896.

BY DONALD MACLEAN, M.D., LL.D.

DETROIT, MICH.

In the following brief paper my main object is of furnish the text for a discussion, by this Section, to one of the most anxious and difficult problems in practical surgery, namely the question of interference or non-interference in cases of abdominal ailment, traumatic or otherwise.

A few recent cases in my practice, together with one or two pathologic specimens, which I wish to present for your consideration, will I trust furnish a reasonable excuse for my occupying a few minutes of the time of this important and busy section of the AMERICAN MEDICAL ASSOCIATION.

So much has been said and written about laparotomy for diagnostic and curative purposes in numerous abdominal conditions that further argument on the subject may seem, to some, to be superfluous. But over and above the great crucial question of operative interference it is generally admitted that individual cases of disease or injury possess a certain amount and degree of scientific and practical interest which entitle them to a respectful hearing and an honorable place in the annals of surgical work. With this view I venture to present the following cases in the hope that at least some inspiration and practical instruction may be obtained from them for the benefit of others both in and out of the ranks of our profession.

Case 1.—Mrs. B. a very obese woman of 50, suffered from absolute obstruction of the bowels for ten days before I was called to see her; stercoraceous vomiting had existed for more than a week, and the patient was in a very advanced state of exhaustion, as may be supposed. The abdomen was tympanitic to the last degree. Temperature 104, pulse 140. The intellect was perfectly clear and by request of her husband and other friends, I explained to the patient herself, the desperate nature of her case and left the question of operation to her. She elected to take the slim chance offered by an operation and I at once proceeded to give the poor woman that chance.

As the result of a somewhat prolonged but most careful examination of the abdominal cavity, I finally succeeded in finding the large egg-shaped calculus which I here present. The intestine both above and below it was constricted so that it constituted a perfect obstruction. It could not be pushed either upward or downward more than one inch in either direction.

I made a small slit through the intestinal wall and removed it, closing up the wound most accurately by the classical suture. No douching was resorted to and the abdominal cavity was closed with all possible rapidity. The patient I regret to say, failed to rally and quietly sank and died in about twelve hours. If I had declined to operate (as I felt greatly inclined to do, owing to the lateness of my opportunity) and if an autopsy had been performed and this calculus found, I should undoubtedly have had serious difficulty with my conscience, one of the things that I greatly fear. Had I seen this patient a week, or a few days, earlier and had I proposed and been permitted an operation then, I can not help thinking, with very deep regret now, that the result would in all probability have been, instead of a melancholy failure, a most gratifying triumph.

Case 2.—C. E., aged 31, consulted me about the end of October, 1895. He gave the history of several well marked attacks of appendicitis, but was apparently quite well and engaged in active manual labor when he came to see me. He complained of a feeling of weakness in the right iliac region and said that he lived in continual dread of something "giving way" in that region. I detected a well marked swelling in the groin and taking the whole case into consideration, I advised an operation which the patient eagerly accepted.

I found the appendix distended with pus. On taking hold of it, which I did with a pair of forceps most gently, it separated from its very slim attachment to the cecum. Fortunately the parts were so thoroughly protected that not a single drop escaped into the peritoneal cavity.

On further investigation very extensive intestinal adhesions were encountered which it took a long and wearisome manipulation to disentangle and it was

found necessary to sew up several large rents in the intestinal walls, each one of which just stopped short of perforation. This patient made a complete and rapid recovery for which we feel sincerely grateful. At the same time it is impossible to evade the reflection that an earlier operation would have proved much easier for the surgeon as well as vastly safer for the patient.

This case may in all fairness be taken as a representative of a considerable number which have occurred in recent times in my practice.

Case 3.—F. J., aged 19, consulted me on February 15, in regard to repeated attacks of appendicitis, only one of which had been severe, and that was more than a year ago. He presented the appearance of a perfectly healthy and vigorous young man, six feet high and weighing 170 pounds. I advised postponement of operative interference on account of his apparently perfect health. Next day, however, he returned in a very different condition, tongue furred, pulse 120, temperature 101. I had no choice but to change absolutely my view of his case and urge an immediate operation. As he was an only child and a young man of unusual promise, the responsibility was proportionately heavy. My advice was accepted and the operation performed. The appendix was found deeply imbedded in an immense inflammatory mass which surrounded the cecum and made the operation a most difficult and anxious procedure.

The testimony of this case could not be mistaken, that longer delay would have insured ever increasing danger to the patient, while an earlier operation would have been comparatively easy for the surgeon and much safer for the patient.

The following case is recorded here partly on account of its furnishing an additional argument in favor of early operation in *suitable* cases and partly on account of the very unusual and interesting complications which resulted from postponement of operative interference.

Case 4.—V. P., aged 40, a very powerful man, a blacksmith by trade, was taken suddenly and violently ill with all the characteristic signs and symptoms of appendicitis, including well marked swelling in the usual situation. He was attended by his regular medical adviser, who lived near him in the country. On the occasion of my first visit I found the patient in very great distress from constant cough with excessive expectoration of an indescribably fetid character. He had high temperature, rapid pulse, total loss of appetite, with proportionate general weakness. The swelling had entirely disappeared from the region of the appendix and he complained of pretty severe diarrhea. With all possible expedition I had him transferred from his home in the country to Harper Hospital in Detroit.

I suspected that an appendicitic abscess had burrowed behind the peritoneum and invaded the right lung, in short that nature was making an uphill struggle to get rid of the pus through the bronchial tubes. On this theory I ventured to make an incision between the sixth and seventh ribs on the right side and had the good fortune to tap at once the depot of fetid pus. Without resecting a rib I introduced the nozzle of the douche and washed out the abscess cavity thoroughly, with the greatest relief to the patient, whose condition immediately began to improve. The douching was repeated twice daily for about two weeks when all discharge having ceased, the drain tube was removed and the opening permitted to close. Three years have elapsed since this patient passed from my care, but I have met him quite recently, the very picture of manly health and vigor.

Case 5.—J. Y. C., aged 35, riding bicycle between 5 and 6 P. M. Saturday, April 26, suddenly found himself in most dangerous proximity to an electric car. In his desperate effort to avoid the collision with the car, he unfortunately fell from his wheel and alighted on the asphalt pavement with very great force on his buttocks. He got up, however, and mounted his wheel and rode some distance. He then partook of a very liberal meal, after which he went in the company of a young lady friend to a pub-

lic entertainment, after which he accompanied her to her home. After parting with his young lady friend he started to go to his own home, but on the way was taken so ill that he stopped at a drug store and telephoned for my assistant, Dr. F. B. Tibbals, who at once responded and on hearing the history as stated above, administered an anodyne and accompanied the patient to his home and saw him comfortably to bed.

During the next day alarming symptoms very gradually developed and in the evening I was asked to see him. I found him very tympanitic, face pinched and pale, pulse 120, temperature 102. Arrangements were instantly inaugurated for a laparotomy and the operation was performed at 10 p.m. It was a serious undertaking. The bowels distended to their utmost capacity with gas, the abdominal muscles tense and unyielding, the history and symptoms absolutely vague and indefinite. The patient and his family were candidly informed as to the essential danger and uncertainty of the case, but all were anxious that an operation should be performed. I have here, the specimen which explains the whole case, which in brief was this: An ancient ulcer of the stomach had induced a firm adhesion between the pyloric end of the stomach and the duodenal mesentery. The jar of the fall had had the effect of separating this adhesion and thereby caused a rupture of the stomach at the point of the ancient ulcer and consequent adhesion. I carefully stitched this rupture and with gallons of sterilized hot water washed from the peritoneal cavity all the foreign matters which had escaped from the stomach, after which I closed the abdominal incision. The whole procedure was conducted with the utmost possible expedition and during its performance every means of stimulation were resorted to, hypodermically and otherwise.

For some hours we had reason to hope that our forlorn hope might be crowned with success, but in spite of all effort the patient gradually sank and died about twenty hours after the operation. The case is a peculiar one from every point of view, and in my opinion serves to illustrate the value of early exploration and operation in cases of abdominal traumatism. More especially does this case serve to show the importance of careful examination and the value of the most trivial and apparently unimportant symptoms following an injury which, in its essential nature, ought to excite suspicion.

It seems proper to state here that in addition to the morbid condition of the stomach already described and which the specimen fully demonstrates, we also found an uncommon congenital condition. The left kidney was situated just below the promontory of the sacrum and was very small and very imperfectly developed. That this abnormality may have had some part in the fatal issue is in my opinion reasonable to suppose. At any rate it is a fact that complete suppression of urine existed from the time of the accident to the end of the patient's life.

DISCUSSION.

DR. THOS. H. MANLEY, New York—I recently had a case that in some particulars was so much like Dr. MacLean's that I would like to mention it. I must take exception to some things generally considered important in reference to making an early incision. There are some cases I think of which an early laparotomy will throw but little if any light. The case I refer to was that of a young man who had been kicked by a horse. At the time of the accident he was pressed against the sharp edge of a feed pan. The shock was very great, and although he was able to raise himself, he only walked a short distance before collapsing. His family physician found him in a state of profound shock, perfectly rational but cold. By active measures reaction was brought about in twenty-four hours, during which time the patient did not pass a drop of urine. Shortly after the establishment of reaction vomiting commenced and an unquenchable thirst set in. I was sent for and made a careful examination of the case. As a result of auscultation of the abdomen and a very thorough examination I found evidence of internal hemorrhage. One would suppose that we should have had renal hemorrhage and not peritoneal. I ventured the diagnosis of laceration of the ileum. There was some intestinal trouble but I found evidence of intestinal peristalsis through the entire tract. I believed the peritonitis was due to the blood. Marked tympanites was present which subsided under treatment. On the fourth day, after everything seemed

very encouraging, bad symptoms set in, the most serious of which was fecal vomiting. After placing the matter thoroughly before the family and warning them of the dangers and how little good could be promised, we opened the abdomen; the first thing I did was to go for the kidney on the right side but there was no kidney there. I then pressed my finger along the groin but there was no kidney there and I then thought of the horse shoe kidney. I found it lying over the cecum, and it was very large. I lifted up the bowel and about five feet from the duodenum I found two large gangrenous patches, one of which had just perforated. I was never more satisfied with the ease of an operation than I was in this case. My patient sank and died. Now the point is this. Suppose a laparotomy had been done immediately after the accident, what good would it have done? This point suggested itself to me particularly with reference to the displacement of the kidney. I have seen only two cases in my life of this curious and unusual state. It was a very interesting case and it taught me a great lesson. In these cases we must be guided by general principles and not by established lines.

THE PRESIDENT asked if the patient died in twelve hours from hemorrhage or from shock.

DR. MACLEAN said he did not think it was from hemorrhage. The gallstone was removed from the jejunum.

THE PRESIDENT—The *British Medical Journal* recently contained a report of a case of the removal of a stone about the size of the one removed in Dr. MacLean's case and the patient died on the third day from hemorrhage. I removed a stone larger than this about four months ago, the stone weighing 300 grains, and the patient died on the third day of hemorrhage.

DR. J. T. THOMAS, Pennsylvania—I rise to bring up the question of enteroliths, which is supposed to be a very simple matter. I would like to have the experience of the gentlemen present with regard to the result of these cases. A few years ago I saw a patient suffering with an obstruction resulting in fecal vomiting. Operation was declined until he was in *extremis*. On opening the abdomen and examining this obstruction an enterolith was found about the length of the one presented here, which entirely occluded the lumen of the intestine. It would be a very simple matter to remove an enterolith by incision. In this case the patient never rallied and he died in about two hours. From the case reported by the doctor and from my own case, I suspect that these cases are more fatal than is generally supposed.

DR. WINSLOW, Baltimore—As long as the gentleman who has just spoken has put a case before the meeting and as long as the result of these cases appears to be fatal, I would like to add my contribution of an equally fatal case of a similar nature. I was called a few years ago to a lady who had presented for three days symptoms of obstruction of the bowels. She had no very great pain, but had vomiting and persistent constipation, notwithstanding the administration of various remedies. The patient was 65 years of age and very fat. The abdomen was not very tympanitic, and the symptoms were those of intestinal obstruction. I proposed operation, which after some consideration was accepted. On opening the abdomen, to my surprise, complete intestinal obstruction was revealed, due to an object within the bowel. I had anticipated that the obstruction was due to a twist in the bowel, or perhaps to some malignant trouble which I could not feel through the abdomen. On making an opening, the mass proved to be a gallstone of about the size of the one referred to by Dr. MacLean. The woman died shortly after the operation. This brings me to a point which is perhaps well known, but which nevertheless can not be emphasized too often. In the vast majority of cases of symptoms of obstruction to the bowel it is impossible to know before opening the abdomen what is the nature of the mass within. Personally I find, in a large number of cases, that the condition present upon operation is very different from what you would imagine previous to the operation. I will mention another case which occurred two or three years ago. It was only possible to get a very meager history, as the man was a foreigner and could not speak English. He seemed to have been injured by the pressure of a car, and he complained of considerable pain in the abdomen and some vomiting. There were no other symptoms. After seeing him I left town and the following day was telegraphed for to return and operate on him. I found him in a bad condition and the symptoms already suggested peritonitis. There was no time lost in opening the abdomen, when the condition found was perhaps familiar to most of you, but was very interesting to me. It was very difficult to find the trouble, but after searching his abdomen and removing a large portion of the intestinal tract, I discovered a genuine hernia in a sac which was entirely within the peritoneal cavity. On lifting the intestine the bowel appeared to point into a sac behind the pubic bone, and this portion of the bowel

was entirely gangrenous. It is needless to say that he was beyond hope and that he could only live a day or so. The point was my surprise at the condition which I found upon opening the abdomen. The man who performed the postmortem over-looked the sac and I again examined the body to verify its existence. There was a distinct pouch which could contain six ounces of fluid. Other cases have come under my notice in which the condition found was very different from what had been expected, and it is well to emphasize that we can not tell what the pathologic condition will be until we have opened the abdomen.

DR. PHILIP MARVEL, Atlantic City—I wish to report a case which will be of interest from a surgical standpoint because of what did not exist. About six months ago I was summoned to see a lady who had fallen in a store, and who for ten hours had seemed to be in hysterical convulsions, which had recurred at intervals of about half an hour. Total suppression of urine existed from the time she was brought to me. Autopsy showed but one kidney, which was on the right side in the normal position. Examination showed a movable capsule and macroscopic and microscopic examination showed it was not diseased. From the time the lady was taken, when she was in perfect health, until the time of death, she was in a semi-conscious condition.

DR. McRAE, Atlanta—I would like to mention one case in this connection which has been of great interest to me and which I have reported once before. I report it because of its extreme rarity and its medico-legal interest. The condition was due to a stab received between the sixth and seventh ribs six months prior to the time I saw the patient. When I saw him he had been suffering with intestinal obstruction for three days. The diagnosis made by the physician who was first called in attendance was that of cramp colic and he administered morphin. On the third day a consultation was held and it was thought that the patient had a hernia of the diaphragm. The physician who had attended the man when he was first injured was then called in and he confirmed the diagnosis. I was telegraphed for to operate, and when I saw the man at nine in the evening he was in an extremely bad condition. He had a rapid pulse, a pinched expression and other symptoms. I stated the case very clearly to the physicians as well as to the gentleman himself, and I think the man really desired an operation because of its medico-legal interest, as he felt that he had been the subject of an unprovoked assault. He also felt that he was entitled to the bare chance that an operation would give him, but he desired to make his will, so the operation was postponed until next morning. Considering the condition in which I found him I think the Association will consider that it was not with a great deal of assurance that I went into the abdomen. I did so with much hesitation, as I believe up to that time no cases of operation for hernia of the diaphragm had been reported. There was an opening in the diaphragm, with a band of adhesive tissue extending up to the exact point where the stab wound was. At the point of the scar there was a tumor and it was impossible to draw the intestine down. It was clear that the man would die, and I felt justified in proceeding with an investigation of the case. I enlarged the opening in the diaphragm until I could put my hand into the left thoracic cavity. I found a portion of the small intestine in the pleural cavity and the lung was compressed. I kept on until I had removed the hernia. The adhesions were very dense. The condition of the bowel was one of beginning gangrene. The patient came out of the anesthesia and died about 5 o'clock. The interesting feature was the same as that mentioned by Dr. Ferguson. I placed my hands around the heart, which would continue to beat immediately upon being released. Another interesting point was my position on the stand. The man who did the cutting was declared not guilty.

DR. MACLEAN, in closing the discussion—If the result of my paper and the discussion is summed up in a single sentence, it is that the surgeon should have the courage of his conviction and should go boldly and honestly and sincerely before his patient and the friends and advocate an early exploratory operation. My case was lost for the want of early operation, and the same is true of all the cases of which we have heard to-night. The chances are reduced to a minimum by delay. I have this to say as my belief, and I am sure it will command the approval of others, that we should not hesitate or shrink from advocating an exploratory operation in all doubtful cases of abdominal trouble. Some of these cases get well of themselves, but for every one that does, ninety-nine do not. The object of my paper, and I think the lesson taught by this discussion is, that when we are brought face to face with an abdominal injury or an acute attack of abdominal inflammation, we should lay down the law with a degree of confidence that will convince our patient that operation is the right and only thing to do. If in

my paper and in this discussion this lesson is impressed upon the members of this Section, I certainly shall feel that any little trouble to which I have been put has been repaid a thousand fold.

REPORT OF CASES ILLUSTRATING THE ADVANTAGES OF A NEW AND ORIGINAL METHOD OF OBTAINING MATERIAL FOR SKIN-GRAFTING.

Read in the Section on Surgery and Anatomy at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY Z. J. LUSK, M.D.

WARSAW, N. Y.

At the meeting of the New York State Medical Association on October 17, 1895, I read a paper describing a "new and original method of obtaining material for skin-grafting," reporting two cases in which it had been successfully employed.

The paper was subsequently published in the *Medical Record* Dec. 7, 1895, Vol. 48, page 800. It was illustrated with three cuts of Case I, showing his condition nine months after over 800 square inches of raw granulating surface had been healed. The accident which deprived this large surface of its integument occurred on Jan. 14, 1895, and was caused by patient falling into a pan of boiling brine at the salt works. His injuries were so severe and shock so profound that I did not think it possible for him to long survive. He rallied, however, and negatived my prognosis from day to day for four weeks, when I began to think the fellow had a possible chance of recovery.

I quote briefly from the paper published: "He was in a condition of extreme emaciation, with nearly one-fourth of the surface of the body in a raw granulating condition. Skin-grafting became necessary, and I was at a loss to know where material could be obtained sufficient to heal this enormous surface. No one could be found willing to contribute strips of skin required in the Thiersch method, and certainly none could be obtained from patient. Meantime, while reviewing the various methods employed in skin-grafting, an idea occurred to me, suggested by the numerous patches of exfoliated epithelium, the result of vesication; they were hard, dry and crisp, having been separated from the cutis now nearly five weeks. Believing that this material could be utilized, on February 16, in the presence of attendants and others, I did skin-grafting, using a patch of this dried epidermis adhering by one edge to dorsal surface of right foot. A piece about one inch square was softened and sterilized in a warm boric acid solution, and divided into twelve grafts which were applied to the anterior granulating surface of left thigh. The result was eminently satisfactory. Seven of the twelve grafts took nicely, developing into vigorous islands of skin. The subsequent treatment consisted in the use of this dried epithelial tissue, with which these large surfaces were covered with substantial skin by April 1. At the spring meeting of the Wyoming County Medical Association, Dr. Roswell Park, of Buffalo, New York, who was present as our guest, complimented me on my discovery, commenting particularly upon the integrity and firmness of the skin, the perfect use of joints, and the entire absence of cicatricial contraction."

At this meeting I expressed the opinion that epidermis raised by cantharides could be successfully

employed in skin-grafting. An opportunity of verifying this statement occurred three months later, when I successfully healed a large varicose ulcer of eight years' standing with grafts raised by vesication with cantharides. Since reporting my experience in October, 1895, I have done skin-grafting on the following cases:

Case 1.—M. C., Irishman, twenty-three years of age, salt-lifter at Empire Salt works, slipped into a pan of boiling brine Dec. 23, 1895, severely scalding both legs, large blisters filled with coagulated serum covered dorsal surface of both feet. The epidermis on both legs was torn, hanging in shreds, with blood oozing from calf of left leg. Sloughing took place later, leaving a raw granulating surface five inches long by three wide, two inches above internal malleolus of left leg.

December 23 I did skin-grafting, using a patch of dried skin adhering by one edge to dorsal surface of right foot. The granulations were first thoroughly irrigated with warm sublimated solution followed with normal saline solution. The patch of epithelium was softened in warm solution of boric acid, and placed conveniently for cutting grafts. With a pair of common artery forceps, the skin was caught up at one corner and a narrow strip from one to two inches in length cut off and held with the free end resting at a point where a graft is to be applied. A piece about one-twelfth inch square is clipped off and carefully pressed into granulation; then it is moved from three-fourths to one inch where another graft is applied, and so on until a suitable number have been planted. A layer of sterilized gauze, saturated with a mixture composed of balsam of Peru and castor oil, in the proportion of one dram to the ounce, is applied over grafted surface, and over this three or four layers of sterilized cotton, which are held in place with strips of adhesive plaster and finally covered with a roller bandage.

In three or four days the condition of things can be easily ascertained by separating the cotton covering, which can be done without disturbing grafts. In this case dressings were not changed until the fourteenth day. A majority of the grafts had taken nicely, and on January 24 the surface was completely healed and he was up and about. On December 26, the date skin-grafting was done, I removed several patches of the dried epithelium, placed them between thin layers of borated cotton, tucked them into an envelope and laid them away in a drawer in my office desk to be tried on my next case of skin-grafting.

Case 2. On January 7, I was called to attend F. H., German; while chopping wood, December 24, with a double bitted ax, it became set in the log, and in his efforts to liberate it, it flew out, striking the dorsal surface of right foot over tarso-metatarsal articulation, cutting a gash two and a half inches wide, paring off the skin for about two inches. Two weeks later, when I was called to see him, his foot was swollen with a surface two and a half inches wide by two inches long, covered with unhealthy granulations.

They were curetted and treated antiseptically, and on January 12, 1896, I did skin-grafting, using a patch of the dried epidermis taken from Case 1, as described. Twelve grafts were applied. Ten days later, when dressings were changed, six of the grafts had taken nicely. At the next dressing two more appeared, making eight in all. The discharges had ceased altogether, and ten days later the wound was thoroughly healed.

Case 3.—Mrs. B., 48 years of age, cancer of left breast. I operated for its removal Jan. 26, 1896, leaving wound open except in axilla. February 3, there was a healthy granulating surface five and a half inches long by three wide in the center. A patch of cuticle was raised using for the first time a blister

plaster called canthos, which is superior to anything of the kind I have tried, producing vesication in from one to three hours. In this case less than three hours sufficed to raise a blister three inches long by two wide, two inches from ant. sup. spinous process.

Care is necessary in removing the blistered cuticle, otherwise it may become wrinkled and ragged, being easily torn, making it difficult to determine the proper surface to be applied. It is easily removed after separating by carefully clipping around the edges; then covering with moist, sterilized gauze, when it is caught up by two edges, cuticle and gauze, and turned over so that its distal or outer surface rests on the gauze. The proximal surface is covered with the same material, the whole secured at each end by pins and placed in sterilized boric acid solution; after moisture is absorbed with sterilized cotton it is placed where grafts can be conveniently cut. The technique followed is the same as that employed in previous cases. About forty grafts were applied, a majority of which took nicely, and on March 6 this surface was healed with a covering of substantial skin.

Since the publication of my paper in December, 1895, clinical reports of the successful use of epidermis raised with cantharides have been published as follows: Dr. Leonard Freeman, of Denver, Col., (late Prof. of Surgery in the Woman's Medical College of Cincinnati), in a letter published in the *Medical Record* Jan. 25, 1896, claims to have done skin-grafting, using epidermis cut from a cantharides blister. His case was an aged darkey with an old crural ulcer, "probably syphilitic." He cut a plaster of appropriate size and left it on the man's thigh over night, when it was separated and transferred to the ulcer, on the surface of a pad of gauze. An attempt had been made to sterilize the ulcer with bichlorid compresses. He states that some suppuration occurred about the margins, but much to his surprise the graft "took nicely."

In a letter dated April 4, published in the same journal, page 499, Dr. Frank Overton of Patchogue, New York (late surgeon of the City Hospital, New York), describes his experience as follows: Just above the angle of the jaw of a nervous girl, 17 years of age, there was an ulcer two inches in diameter, the result of curetting a wen Jan. 3, 1896. On January 10, granulations looked perfectly healthy, when a blister was raised by cantharides and two grafts applied, each the size of a thumb nail to the anterior part of the wound. Iodoform gauze dressing was applied to the wound. "On the 16th this was removed and with it one of the grafts. Another of the same size was raised and applied. On the 24th the area of the first graft seemed to be covered with epithelium, but thin. On the same day the lower part of the wound was grafted according to the Reverdin method, with four or five pieces of skin taken from the mother. On January 29, both the areas of blistered grafts looked healthy, and had nearly covered the ulcer, but those from the mother were growing far more rapidly than those from the blister."

Dr. Robert T. Morris of New York City, in his book just published on, "Appendicitis with Notes on other Subjects," has on page 151, a note headed "Skin-grafting from Blisters," in which he says: "Skin-grafts for application according to the method of Thiersch may be obtained from blisters;" that the idea of using grafts of this sort first occurred to him while treating burns in which large blebs had

formed. After securing and cleansing the separated cuticle in physiologic saline solution, it was replaced upon the sterilized wound where it adhered well. That since that time he had obtained blister grafts with cantharides and had successfully applied them to small wounds.

Just when the idea first occurred to the author or how long he has been doing skin-grafting by this method, is not stated. In his preface he mentions a list of periodicals in which he says, that the substance of many of the notes have appeared. Among the number mentioned I can find no reference to skin-grafting with blisters, hence I conclude that the first publication of his experience is that which appears in his book just published, 1896. It will be observed that in all cases reported, grafts of large size were used. In that of Dr. Freeman, cantharides was applied of appropriate size and allowed to remain until the following morning, when it was transferred directly to a septic surface and under these conditions "took nicely."

In Dr. Overton's case grafts no less than one-half, probably three-fourths inch square, were applied. Six days later one was removed with dressings when another of same size was applied, and finally developed into a healthy covering, by February first, twenty-one days after first graft was applied and fifteen days after second.

My experience with large grafts was invariably attended with negative results. With careful attention to asepsis, little septic blebs would lift the grafts in places, so that in changing dressings, if not removed, little evidence of life could be seen. Very often they will become disintegrated and disappear in the secretions. If on the eighth or tenth day pus is not materially lessened in quantity, you may be pretty sure that your grafts are a failure. On the contrary, if the secretions are materially augmented, you may be satisfied that grafts have taken and are doing well. Grafts not larger than one-twelfth inch square when properly applied nearly always take nicely. On the tenth or twelfth day the grafted surface will be studded with numerous depressions surrounded with atrophied granulations and from this time their growth is surprisingly rapid. The epidermis raised with cantharides is less porous than that separated by the knife according to the Thiersch method. I am convinced that the method of applying dressings, permitting frequent examinations without disturbing proximal covering and the application of the aseptic mixture is followed with better results on granulating surfaces than the so-called dry dressings.

Various experiments have been made to ascertain the limit of vitality of grafts separated from the body. The longest period of which I can find any record is ninety-six hours.¹ In my first case, I successfully healed a granulating surface three and one-half inches in diameter with grafts which had been separated from the body forty-eight days. In the case reported by Dr. Freeman, the cantharides plaster was attached to the cuticle from twelve to fourteen hours, which demonstrates one important fact in connection with the cuticular epithelium and that is, that it will undergo any treatment short of total annihilation and yet, when returned to its natural environment, it will become revitalized and awakened into new life and activity.

What are the advantages of this method as compared with those generally employed? 1. By the Thiersch method the operation by which material is obtained is exceedingly painful, so much so that in cases weakened by their injuries and especially in children, the surgeon has to seek kind and obliging friends of his patients in order to obtain the necessary grafts. Such friends, as a rule, are very scarce under these circumstances. 2. The technique requires the skilled operator to properly cut or shave off the grafts. There is also the danger of transmitting syphilis or other infectious diseases. The same objection would apply to the Reverdin method, though to a less degree, being less painful.

By the method which I have described, the advantages are: 1. The material for grafting can be obtained from the patient *per se*, without causing pain or discomfort, with the danger of transmitting syphilis or other diseases eliminated. 2. The technique is simple. A surgeon or general practitioner with a knowledge of antiseptics and ordinary surgical skill can successfully operate. 3. It is quite as potent in healing wounds of large size more rapidly and with results as perfect as by any method known, the skin produced being soft and pliable with no keloidal cords and in many places so natural that it can scarcely be distinguished from normal skin.

A SAFE METHOD BY WHICH ANESTHETICS MAY BE ADMINISTERED WITH OXYGEN.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association at Atlanta, Georgia, May 5-8, 1896.

BY J. N. DEHART, M.D.

BROOKLYN, N. Y.

Since the discovery of the application of ether by Dr. Morton, of Boston, and its first use in the Massachusetts General Hospital by the late Dr. J. C. Warren as an anesthetic in 1846, there has been a great desire that some means should be devised by which all danger might be allayed, so that the patient could not be rendered cyanotic, especially when there was disease of the heart or kidneys that complicated the patient's condition. While ether has had the preference to chloroform in our country, yet in Europe the latter has been more universally used, and at the present day is also being adopted for anesthetic purposes in many private sanitariums, either alone or in the A. C. E. mixture.

Among the advantages derived from the use of chloroform are that it requires a much smaller amount to produce anesthesia, the patient becomes unconscious more rapidly and there is less bronchial irritation and excitability, there is a more prompt return to consciousness and hence less unpleasant effects afterward; all of which are worthy of consideration, and with care on the part of the person administering the anesthetic would tend to lessen the mortality in such cases where chloroform was used.

Since the early part of last year many surgeons in various cities of the United States have been devising means by which anesthetics could be given with oxygen gas during surgical operations. The most important factor in this mode of giving them was a properly constructed inhaler, by which the patient could breathe the anesthetic with oxygen gas and at the same time expire the carbonic acid gas; the latter would often cause cyanosis and also nausea when given in the usual way with a cone.

¹ Georges Martin, Encyclopedia of Surgery, Vol. I, p. 543.

Having observed the giving of anesthetics with oxygen in a few cases during an extensive tour of the Northwest and South last spring and summer, and my attention having been called to the need of a properly constructed inhaler for this purpose, in December last at the request of several surgeons to whom I had related what I had already observed, and they having expressed a desire to give oxygen gas a fair trial with anesthetics, I visited several surgical instrument establishments and after carefully examining the various inhalers in them, I saw what seemed to me would make a practical one, and began devising designs for this purpose. I think that I have had constructed such an inhaler, which has been used in over one hundred cases in the various hospitals of Brooklyn, New York city, Boston and vicinity by myself, and I can safely say that it has been used since Jan. 1, 1896, over five hundred times by the surgeons of these hospitals, and also in the private hospitals and practice of many others.

The illustration which accompanies this paper shows the inhaler adjusted for immediate use. It consists of a nickel-plated mask with a rubber face guard and valve for expired air. This valve is made of two metal discs, between which is placed a rubber disc. These are enclosed in a nickel-plated box with



a movable cover and slot for expired air. This mask is connected with a graduated bottle with metal cap and two nickel-plated tubes. The long one contains two small brass nebulizing tubes, so that the anesthetic is carried over to the patient as a fine vapor. This bottle is connected with the cylinder containing the oxygen, which supplies the pressure and should be allowed to flow slowly into the bottle. Another mask made of vulcanized rubber with nickel-plated frame and nickel-plated box, containing a metal disc, secured by a movable pin, and underneath it having a rubber disc for expired air, is also made. This mask is connected with a larger graduated bottle and two hard-rubber tubes, the long one having two platinum points for nebulizing the anesthetics. This bottle is also connected with the cylinder containing the oxygen gas. A double air bulb can be used with either of the masks and bottles, when the oxygen gas gives out during a surgical operation, or if it can not be obtained in cases of emergency.

At the suggestion of a prominent surgeon I made a small box and attached it to the rubber mask and placed a sponge in it on which ether, chloroform or A. C. E. mixture can be dropped and rapid etherization produced in minor surgical operations and obstetric cases.

The advantages derived from using anesthetics with oxygen gas are:

1. That there is seldom or never any period of excitement during the early administration of the anesthetic.

2. There is no nausea nor vomiting nor cyanosis at any time while giving the anesthetic, either in the early stage or during the operation, except in cases where brandy may have been given for a stimulant either before or during the operation.

3. The patients are more readily restored to consciousness than when anesthetics are given alone and make a more rapid recovery.

4. A much smaller amount of the anesthetic is used, usually about one-third the quantity, and seldom more than three or three and one-half ounces of ether per hour and the same proportion of chloroform or A. C. E. mixture.

Through the courtesy of several surgeons in Boston, New York, Brooklyn, Albany and other suburban cities I am enabled to report a few of the more interesting cases where my inhaler was used with anesthetics combined with oxygen gas.

Case 1.—F., aged 40, Dr. Charles McBurney, Roosevelt Hospital; carcinoma of left breast. Ether with oxygen gas (dilute). Patient came under the anesthetic very slowly and was removed to the operating room in a few minutes after etherization was commenced. A small nodule about the size of a walnut was found just below the nipple in left breast, which had been developing for some months past, and recently had become quite painful on pressure and at times sharp pains radiated from it in different directions. Have no knowledge of any hereditary taint in any members of her family, either on father's or mother's side. This was dissected out and wound dressed antiseptically in thirty-five minutes. Two and a half ounces of ether was used and about ten gallons of oxygen (dilute). There was no nausea nor cyanosis during the entire operation, and patient recovered consciousness soon after leaving the operating room.

Case 2.—F., aged 35; Dr. G. R. Fowler, Brooklyn Hospital; carcinoma of right breast. No family history was obtained at the time of the operation nor afterward. Ether with oxygen (dilute) was given to the patient and she came under its influence in seven minutes without any nausea or cyanosis or excitement, passing from first to second stage and then to complete anesthesia. The entire breast was removed, as the carcinoma involved almost the whole glandular structure and would soon have broken down. There was very slight hemorrhage and but few vessels were ligated. Afterward the pectoral major muscle was also dissected off, as it was thought best to do so, lest the carcinoma had also affected a portion of it. The axillary glands were also removed. The wounds were then dressed antiseptically and catgut sutures were used to approximate the edges of the wound, and iodoform gauze and bandages were applied to the chest.

No nausea, no vomiting nor cyanosis during entire operation, which lasted one hour. Four ounces of ether and twenty gallons of oxygen (dilute) were used. Patient became conscious before leaving operating room.

Case 3.—F., aged 32; Dr. Picher-Sengc, Memorial Hospital, Brooklyn, N. Y., section of trifacial nerve. This patient has had a persistent neuralgia for a long time past and been under the care of several surgeons, who could not afford much relief by any medical treatment short of a surgical operation, which she finally consented to have performed. Had an exploratory operation a few days since, in which an incision was made through the integument covering cheek and eyelids, about two and one-half inches in length, and closed with adhesive straps until to-day, when it was opened and continued underneath the superior maxillary bone. Chloroform with oxygen (dilute) was given and patient yielded to its anesthetic effect in three and one-half minutes. No excitability, nausea nor vomiting or cyanosis during the entire operation, which lasted one hour and fifteen minutes and consumed one ounce chloroform and fifteen gallons oxygen.

Case 4.—M., aged 68, Hebrew: Dr. G. R. Fowler, Brooklyn Hospital; supra-pubic cystotomy. Chloroform with atmospheric air was given by means of a double air bulb, the supply of oxygen (dilute) which the hospital always keeps on hand, having been exhausted by two cases of asphyxia from illuminating gas which came in during the previous night. Patient came under the anesthetic effect of the chloroform very readily

in four minutes without any excitement, nausea or vomiting, and passed rapidly to an unconscious condition. An incision two and one-half inches long was made along the median line and above the pubic region. A careful dissection through the abdominal wall exposed the bladder to view, a sound having been previously introduced into the bladder and held by an assistant, an incision was made through the parietes of the bladder and a careful exploration made of its contents. An encephaloid was found and a mass that would fill a dessert spoon removed with a curette, after introducing it several times. The bladder was then carefully washed out with antiseptics and incised wound closed with sutures. There was very little hemorrhage during the operation. Iodoform gauze and bandages were applied and patient removed from operating table to his room, when consciousness was restored. There was no cyanosis nor vomiting during the operation, which occupied forty-five minutes, and three ounces of chloroform were consumed. The pulse, temperature and respiration were normal during the entire operation, a gum elastic catheter (large size) was passed through an incision made in the perineum and upward into the bladder and secured there for drainage.

Case 5.—M., aged 48; Dr. McDonald, Albany Hospital, N. Y.; ankylosis of left knee-joint with bad union of fracture. Was kicked by a horse some time since and had acute synovitis, followed by this deformity of the limb. A. C. E. mixture was given with oxygen. Patient came under its anesthetic influence in four minutes and passed from first to second stage without any excitement or nausea. Partial resection was made of upper end of tibia. Adhesions were loosened and bone broken over again as near former fracture as possible, so that there was good motion of the joint obtained, which would enable the patient on recovery to walk with only a slight limping gait. The limb was then flexed and dressed with plaster paris bandages and an angular wooden splint secured underneath the knee-joint. Pulse and respiration good through entire operation, which occupied one hour. Esmarch bandage was first applied to aid in controlling any hemorrhage, and it was very slight, during the operation only a few ligatures being required.

Case 6.—F., aged 24; Dr. A. Vandereed, Albany Hospital; necrosis of nearly two-thirds of right femur, with ankylosis and distortion of knee-joint. Ether with oxygen (pure) was given and patient yielded to its influence in five minutes, passing rapidly to an unconscious condition. Esmarch bandage was first applied to control hemorrhage, and amputation of limb was made at upper third of femur by a flap operation. After ligating blood vessels and washing the stump antiseptically it was found necessary to remove another inch of the femur, as it was found to be necrosed farther up than the external appearance of the limb would indicate. Pulse and respiration normal during the entire operation, which lasted fifty minutes. There was no nausea, vomiting nor cyanosis at any time. Glass drainage tube was inserted.

Case 7.—F., aged 40, weight 121 pounds; Dr. Kittredge, of Nashua, N. H., was the family physician. Dr. Irish, of Lowell, performed operation for resection of ribs on right side. Patient had an attack of pleuro-pneumonia, followed by effusion in the chest. The usual remedies had been tried but failed to absorb the fluid. The failing health of the patient, with symptoms of pyemia necessitated resection of ribs on right side in order to get good drainage. A. C. E. mixture with oxygen (dilute) was given and patient yielded rather slowly to its effects. There was no nausea or cyanosis and patient passed to an unconscious state in ten minutes, showing how non-susceptible some are to the anesthetics, no matter which are used. After removing a section of rib and enlarging the opening, there was a very abundant flow of very foul-smelling and flocculent fluid to the amount of twelve or fourteen ounces. A drainage tube was inserted after the cavity had been thoroughly washed with a solution of salt and water, and afterward with a weak solution of peroxid of hydrogen. Patient has improved, for the past week in good health, and there is continued flow of fluid through drainage tube, but does not have such a bad odor as formerly.

Case 8.—F., aged 35, laparotomy; Dr. Wm. M. Conant, Boston, Mass. This patient has had pain in right side and also in lumbar region of same side for some months past. There has been some swelling and tenderness on pressure recently in same locality. Has not made the usual quantity of urine for several weeks past and there has been partial suppression at times, which necessitated catheterization. A careful diagnosis led to the belief that the kidney was involved and also the right ovary. Ether was given alone at first and on my arrival the vomiting was so persistent and the operation had been interrupted so many times that I was requested to

give oxygen, which checked the vomiting in a very few moments. The operation was then resumed and was very soon terminated, without any more vomiting. An incision about three inches long was made through the abdominal wall and over the right ovary and a careful dissection revealed a cystic ovary, which was removed and ligaments secured with catgut sutures. A further exploration was made and the right kidney was found to be encysted throughout and nothing left of it but a mere shell. This was also removed and the arteries, etc., ligated. The hemorrhage was quite free and continued for some time from some small arteries, requiring a further ligation of some that appeared at first would not require it. The abdomen was then washed out antiseptically, and wound closed with catgut sutures. Iodoform gauze, adhesive plaster and bandages were applied and patient was removed to her room. Oxygen was also used to resuscitate this patient after the operation. She made a good recovery and had no vomiting during her convalescence, nor other unfavorable symptoms.

DISCUSSION.

DR. McHATTON, Macon, Ga.—I think this question of anesthesia is a very important one and there are many different methods of administering them. Anesthesia is always dangerous and I prefer to use either chloroform or ether alone, as when we mix the two, new dangers arise which we can not ascribe to either one. I am rather afraid of the A. C. E. mixture.

DR. HAINES, Cincinnati—I think the point is well taken by the last speaker and I believe it is the general opinion, *i. e.*, that one or the other should be employed by itself. Personally I prefer chloroform. I have seen chloroform administered by midwives, nurses and husbands, and I consider this a practice to be deprecated. When we consider the few deaths as compared with the large number of cases anesthetized daily, I can not but think chloroform is the safest if you can get it pure.

The Secretary, DR. W. L. ESTES—Anything that will add to the safety and to the relief of the burden on the surgeon should be welcomed by the whole profession. The author desires to change the title of his paper, and as he now calls it a safe method it makes it very suggestive. If it is a safe method, it is a great boon. We have often heard of safe methods; for example, anesthesia by direction and the employment of various inhalers. We have begun to question the value of any one appliance or remedy for the administration of the anesthetics. It seems to me that it is the administrator that is the actual actor in the giving which is the safeguard. I think the manner employed in America generally in the giving of anesthetics is to be deprecated, as in most hospitals it is the custom for the general assistant to give it. We all know that if one act in the operation is of importance and requires skill it is the giving of the anesthetic. In England professionals are employed to do this work and nothing else; even there, almost every week we hear of deaths, and if this is true under such circumstances, there must be something in the agent we use which is dangerous. If the reader has introduced something which is absolutely safe, if it be true that oxygen renders it safe, he has, indeed, conferred a boon. One thing that increases this danger is the inhaler, and the one which admits of the greatest quantity of fresh air, I should think, would be the one to use. If the author can prove his theory, it is something which will redound to his credit and others who have suggested it. If he can give us something practicable which can be carried around to every case, it is, indeed, a step in advance. The idiosyncrasies and diseases of the patient should be considered first, and secondly the skill and experience of the operator.

DR. HALL, Milwaukee—There are indications for the use of chloroform and vice versa that are unmistakable and which manifest themselves throughout the time of the action of the anesthetic. I would suggest that a thorough examination before the anesthetic be given would indicate which anesthetic is best and when, if at all, it is advisable to change it. Ether in this country has a reputation for being a very safe anesthetic, and in other places chloroform is so generally used that in the ordinary shop and drug stores ether can not be obtained. This shows narrow-mindedness on the part of the profession. I would say that ether is far more dangerous than chloroform. In the one instance death occurs immediately, while in the other it may take place long after the patient has apparently recovered. The mixture of the natural atmosphere, of course, is a very prominent factor in the safety of the administration. I would like to raise the point that in giving chloroform it is not well to give too much oxygen. The one who has charge of this anesthetic should bring the

patient well under, until a condition between the second and third stage is reached, and hold him there. In that condition it is far less dangerous and there is much less danger of spasmodic contraction of the muscles.

DR. J. McFADDEN GASTON, Atlanta.—I have had a somewhat peculiar experience in connection with anesthesia. Recently in preparing for laparotomy, I observed in my bag a vial, presumably containing 25 per cent. solution of the A.C.E. mixture, which turned out to be carbolic acid and alcohol. The person giving the anesthetic experienced considerable difficulty until it was found where the mistake was. The hands became swollen and the lips were considerably burned. I expected my patient would suffer some inconvenience as the result of this mistake, but she did not. A preparation that I have employed for fifteen years, and which I have found free from danger, is alcohol one part, chloroform two parts, and ether three parts. My anesthetic in former years was chloroform. In speaking of oxygen, if you observe the blood when under the influence of chloroform, the arterial blood will be found of the color of the venous blood. I only know of one instance in which my mixture was fatal and this was in the case of a child who insisted on its being administered every day for a month when changing a dressing. In undertaking to operate in a case of ulceration of the bowel, in which there was marked contraction of the sphincter, I desired to dilate. How far the condition may have been aggravated I do not know, but in the midst of the dilation, there was very difficult breathing and suddenly the patient succumbed. This is the first case of fatal result that I have ever witnessed and I consider it a very serious experience. Some of you may have noticed, the other day, that one of our leading surgeons in Tennessee was arraigned before the court for malpractice for the death of a patient during the administration of an anesthetic, but the court said there was no ground for action. I am not quite sure where we should stand in giving out death certificates in these cases and I should be much puzzled.

DR. J. N. DEHART (closing the discussion).—Many cases of the use of my method have been reported and it is now being employed in over fifty hospitals. It was recently used in a case reported in New York, in which the patient recovered one hour sooner than usual. I have employed chloroform in cases of heart trouble and the patient has been under the influence two and a half hours. The pulse was 114 to 120 for six weeks and at the end of the first hour the pulse had risen to 160. I used oxygen for five minutes and the pulse came down to 145, I gave one-sixtieth of a grain of strychnia and resumed the anesthetic. At the end of one and a half hours the pulse was again 160. I gave oxygen again for ten minutes and it came down to 145. It subsequently rose again to 168. The woman lived for six days and subsequently died of peritonitis, although it was declared at the time of the operation that she could not live through it.

SOME GENERAL CONSIDERATIONS IN RELATION TO THE NATURE AND TREATMENT OF DISEASE.

Read in the Section on Practice of Medicine, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY LOUIS BALMAT BAKER, M.D.

ERIE, PA.

"Flower in the crannied wall,
I pluck you out of the crannies;
Hold you here, root and all, in my hand,
Little flower—but if I could understand
What you are, root and all, and all in all,
I should know what God and man is."

How profoundly true this is! Given one fact and you have the key to the universe, a formula that can solve all problems, a talisman that will open all the arcana of nature. Be faithful to your one fact and it becomes an unailing test for truth, for nothing that contradicts it, can be true. An isolated fact is an impossibility. Conditions that are unvarying and know no shadow of turning, relate your one fact to all the other facts in nature. And these laws and relations are constant: the same yesterday, to-day and forever. To believe that nature is fickle and capricious, doing a certain thing under definite conditions, one way to-day and another way to-morrow, is to be

left utterly without a guide. There remains nothing on which to depend. It is to be given over to "permanent intellectual confusion." Much of the false reasoning in philosophy and theology, as well as in science, has arisen from infidelity to this great principle, this sure and firm foundation of all correct deduction. The law of gravitation is no more sure and constant, than the laws that rule in the mineral and organic worlds. The crystal forms along definite lines of cleavage, always in the same way under the same conditions; the seed germinates and bursts into bloom and beauty; the bird soars and sings:—all in strict accord with the laws that rule their life and growth. That the gem sparkles, the flower blooms and the bird sings, means simply that they have obeyed the laws of their being.

Let us take the flower, "root and all, and all in all," and see if it will tell its secret. What are the conditions, in obedience to which it has reached its full perfection? First the seed, with its marvelous potentialities, is placed in the soil. It absorbs moisture, swells, bursts its tiny envelope, sends forth its delicate roots in search of food, and presently shoots the green stem above the surface; it unfolds its leaves to the sun, bathes in its warmth, drinks of the rain and the dew, fashions the tender bud and finally shows its full perfection in the beautiful flower.

The conditions that have to do with the proper development of the plant, are mainly six: Light, air, moisture, warmth, suitable soil and protection from parasites.

Light.—Witness the pale and sickly sprout in the dark cellar: the marvelous chemistry of the sunbeam is essential to life.

Air.—Place a plant under a glass receiver, exhaust the air, and it speedily dies. A vacuum would be no less fatal to animal life.

Moisture.—Instance, the Sahara.

Warmth.—The Arctics are as bare of vegetation as the desert.

Suitable Soil.—The food supply; this is of vital importance.

Protection from Parasites.—If a blight attacks the crops or work havoc among the fruit trees, the intelligent farmer no longer attributes it to a mysterious dispensation of Providence. He attacks the invading army of parasites with fire and poison and drives it from the field. Patient investigation, chemic analysis of the plant and of the soil, repeated and faithful observations and experiments, have made agriculture something of a science.

Given a sickly, stunted, imperfect plant, and we know at once that some of the conditions vital to its growth have been violated. The wise gardener seeks to know what condition has been violated; his treatment consists in the correction of the violated condition, and it is simple and rational, the logical sequence of cause and effect. In a word, the scientific method is applied to the study of the nature, structure and conditions of growth of the normal and healthy plant and the treatment of the abnormal bears a strict and definite relation to what has been learned of the normal.

A plea is made for the application of the same method in the domain of medicine. The subject is vastly more complex and difficult, but the principle is the same.

Given a weak, diseased and imperfect man. How is it with us? What is our thought of his condition,

and our idea of treatment? Who of us would be willing to admit how large a part of his treatment is purely traditional, and is based upon the conception that disease is a subtle and mysterious entity or essence, an evil spirit, a foul humor, that exists independent of the body, and is not subject to the ordinary laws of force or matter? A something that exists in such form that on a certain occasion, it was driven out of the body of a man into a drove of swine, causing them to run violently down a hill and drown themselves in the sea.

Is not this still the popular view of the matter? Do not 90 per cent. of the people we meet have some such conception of the nature of disease?

"Doctor, I have this or that disease; what is good for it?" is a daily question. The patent medicine man counts upon this belief with absolute certainty and reaps his harvest of dollars. The Indian medicine man, practicing his fearful incantations, is in accord with this theory; and as a piece of the same philosophy applied to astronomy, we have the tales of how eclipses and comets are made to flee before the dreadful din of the Chinese tom-tom.

But we no longer consult the astrologer in regard to the stars. Copernicus made his occupation an absurdity. The telescope has replaced the horoscope. The weird alchemist bending over the alembic, seeking and ever seeking to transmute the baser metals into gold, and to fabricate the mysterious elixir of life, stands in sharp contrast with a master of modern chemistry. Lavoisier placed alchemy among the mythologies. Copernicus, in establishing the heliocentric theory in the place of the geocentric, readjusted the intellectual outlook of all the philosophers. Lavoisier, in the discovery of oxygen, laid the foundation of the most exact of all the sciences, and the immortal Harvey in 1628, when he discovered the circulation of the blood, gave to our profession a like master thought.

That view of disease which regards it as something extraneous and unrelated, is the historic and philosophic equivalent of astrology and alchemy. It represents the medical aspect of the tendency, universal among all primitive peoples, to personify all the powers of the earth, sky and sea.

It is not contended that modern intelligent medical men base their conception of disease on this theory; and for that very reason a protest is entered against a therapeutics that is based upon it, and that has no possible explanation aside from such a conception. The protest is directed against that form of therapeutics which consists in the indefinite, promiscuous, internal, external and eternal administration of drugs, to the almost total neglect of sanitation and hygiene.

Drugs have their proper use and there is no disposition to underrate the benefit derived from them, but most assuredly they have their abuse. Four or five thousand remedies! What an appalling and ever increasing list! Reserve twenty-five or thirty of them and the remark of Dr. Holmes will truthfully apply to the remainder, "that if medicines were cast into the sea, it would be better for mankind and worse for the fishes."

Health means sound structure and normal function. As with the plant so with the man, the law of life is the same. Health, mental, physical and moral, depends upon obedience to law. Disease means transgression. Nature's laws operate along straight lines. The life that is ordered parallel to these lines is safe. He who

crosses them is pierced. Nature is impartial and merciless. She does not contemplate the individual, but the race, hence the awful fact of heredity, so splendid in the right direction, so terrible in the wrong.

The best physicians are those who have the keenest eye for bad surroundings and hurtful habits, and they use the fewest medicines. Doctor and doper are not necessarily synonymous terms.

Is it not true of us as a profession, that we have depended too much upon drugs? Are we not quite easily convinced that we have done our entire duty to our patient, when we have prescribed the medicine best calculated to relieve the diseased condition?

To illustrate: Miss C., student at a fashionable boarding school, a young lady broken in health by an artificial life and wrong methods of education, comes to us. We know the whole story before she has said a word. Anemia, dyspepsia, neuralgia, palpitation, dysmenorrhea, constipation, insomnia and headache are the prominent factors in the case. Shall we rely upon iron, arsenic, strychnia, cod-liver oil, pepsin, hydrochloric acid, strophanthus, nitro-glycerin, digitalis, aloes, jalap, cascara, bromid of potassium, chloral, belladonna and opium, and so on ad infinitum? And that headache!

Drugs galore, some fifty or more,
And still the head aches to distraction,
The eyes! did you say? I'll try anyway,
It yields to a proper refraction.

To dismiss such a patient with a fine Latin prescription calling for some of these drugs or a combination of them, is not to meet the indications. Is it not vastly more important than any or all medicines you may use, to insist upon it that your patient obeys the following rules, briefly:

Proper food, with all that is implied as to quality, quantity and regularity of meals.

Exercise, systematic, in the open air, plenty of it; walking, riding, rowing, the wheel, anything and everything so that the patient is kept out of doors.

Proper clothing, and so adjusted as not to obstruct the circulation, or hinder the free use of all the muscles.

Bathing; there is no tonic in the pharmacopeia equal to a cold dash and a vigorous rub.

Healthful occupation; at 87 Gladstone says: "Work, work, if you want to keep young."

These are the important and essential things, both in restoring and maintaining health.

Drugs have constituted too large a part of our equipment, and the tendency has been to rely upon them to the exclusion, or at least the neglect, of the more important measures that are included in the one word, hygiene. The effort should be continually toward the establishment of a more logical relation between our therapeutics and the morbid conditions under treatment.

The thesis then is, that disease is not to be considered as something unrelated to the orderly sequence of events, but as something related by definite and distinct conditions to the natural order of things; and it is to be investigated and explained as is any other fact in natural history.

Anatomy, physiology, chemistry, physics, biology and bacteriology; proficiency in these things gives an understanding of the normal, and it is only thus that the abnormal can be recognized and combatted.

The study of medicine is becoming intensely interesting. The voice of the bacteriologist is being heard

in the land. The chapters in etiology are being rapidly rewritten. Theories and "opathies" are being replaced by demonstrations. Splendid are the results already attained! Much remains to be done, but the time is not far distant when the expression "The Science of Medicine" can be used without a mental reservation.

NERVOUS SHOCK AND DISEASE OF THE NERVOUS SYSTEM AS A CAUSE OF PERNICIOUS ANEMIA.

Read in the Section on Practice of Medicine, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY JAMES B. HERRICK, M.D.

CHICAGO, ILL.

It is the object of this paper to direct attention to nervous shock or disease of the nervous system as a possible, or probable, exciting cause of grave or pernicious anemia. My attention was called to the relations between these conditions by the following case:

The patient, Mrs. M., white, 63 years of age, claimed to have been in good health up to November, 1893. She had rosy cheeks, was plump, weighed 137 pounds, led an active, busy life as a quasi-practitioner of medicine. She scarcely knew what it was to be confined to bed save when her children were born, five of whom she had brought into the world alive and healthy. She had never miscarried and there was no other evidence leading to the suspicion of syphilis. Her father had lived to the age of 87, to die an accidental death. Her mother succumbed to pleurisy at 63. One brother had died from some cardiac trouble and one sister from asthma. Two brothers and one sister were living.

In November, 1893, she fell on the sidewalk, hurting her back and left side. To use her own words: "The hurt extended from the back of the neck down the left side and left leg." She walked home, but from the time of this injury she found herself weaker, both physically and mentally. She was obliged to lie down the greater part of the day, and thought she was becoming paralyzed. Soon the legs began to bloat; and she would, upon sitting up for a short time, feel dizzy and perhaps faint. The patient became unable to walk for any great distance; had difficulty in picking up small objects such as a pin. The skin became paler; the appetite, notwithstanding, remained good; the bowels were constipated. She was often quite thirsty.

On admission to the Presbyterian Hospital June 30, 1894, her complaint of somewhat vague pain, of weakness of the arms and legs, and mental deterioration, for all which she assigned the injury as the efficient cause, coupled with the fact that there could be discovered no evidence of organic lesion to account for such phenomena, and also that she referred often to a \$2,000 accident insurance claim that she had placed in the hands of a lawyer for collection, all this aroused a suspicion of exaggeration of symptoms as in railway spine, if not of malingering.

The increasing pallor of the skin led later to an investigation of the blood and a more thorough examination of the patient. I condense the results of several examinations.

Physical Examination Nov. 8, 1894.—Skin and mucous membranes of a lemon-yellowish white. Conjunctivæ show light yellowish tinge. Skin is dry,

wrinkled, panniculus adiposus scanty. Patient talks rather slowly, as if taking a long time for framing answer and separate words. Speech reminds one of scanning speech of insular sclerosis. She moves hands and legs slowly and somewhat uncertainly; appears weak and unable to walk or stand unsupported; complains of great dizziness on being put in erect posture. Hair is gray, thin and falling out fast; ears and nose negative; tongue pale, flabby, not tremulous, protruded in median line; fetor *ex ore*; frequent spasmodic contraction of lower portion of orbicularis palpebrarum. Right eye beginning cataract; numerous retinal hemorrhages; left eye, retinal field practically the same; in right eye six hemorrhagic areas counted, in left twelve. The existence of retinal hemorrhages was confirmed by Dr. Alfred Hinde, who kindly examined the eyes for me. External jugular pulsates synchronously with apex-beat as does a vein (probably a perforating branch of the internal mammary) running just to the right of the sternum and parallel with it for its upper one-quarter. The chest is slightly flattened, of moderate length, intercostal spaces rather wide; respiratory movements regular, fairly deep, eighteen to the minute. Apex-beat faintly seen and felt in the fifth interspace just inside the left mamillary line; palpation otherwise negative. Percussion reveals no increased area of cardiac dullness. Pulmonary resonance on the right side in the mamillary line on expiration as low as to the sixth rib, on inspiration over seventh rib. Respiratory sounds are normal save an occasional moist râle; (in the last two days has "taken cold"). Systolic blowing is heard over entire precordia, best at apex; systolic hum also over vessels of neck. Abdomen is flabby, marked with lineæ albicantes; occasional peristaltic movements in region of umbilicus and to right of same. Edge of liver is felt very indistinctly about one inch below costal arch; inguinal glands are palpable but not perceptibly enlarged. No tumor mass or point of tenderness is found on palpation. Liver dullness is heard in median line, one-half way between ensiform cartilage and umbilicus; area of splenic dullness increased in posterior axillary line reaching as high as to the eighth rib; Stomach resonance apparently increased in area. Stomach reaches below umbilicus (gastroptosis); it appears moderately enlarged. Lesser curvature apparently made out between ensiform and umbilicus. After test breakfast (Ewald) no free HCl, no mucus, no remains of previous meal are present; pepsin uncertain; no lactic acid by Uffelmann's test. Lower extremities are moderately edematous; rectum negative, no parasites in stools; pelvic organs negative; bones negative, no tenderness. No evidence of organic or local nervous lesions can be made out. Sensation seems to be perfect, the reflexes normal. There is no paralysis. The bowels are inclined to constipation. There is no great frequency of urination, no difficulty in urinating, or irritation from urine. Movements of muscles are slow and feeble, not coördinated with certainty. Raises dynamometer to 10 with either hand. Urine is 1012, 30 to 50 ounces; no albumin, no sugar; solids, 660 grains; no formed elements. Blood is pale; marked poikilocytosis, microcytes and macrocytes; few nucleated red; megaloblasts, *i.e.*, the large nucleated reds, few; leucocytes increased relatively; many lymphocytes; number of red globules to cubic millimeter 666,666; hemoglobin (Fleischl) 25 per cent.; no parasites. I desire to acknowledge the kindly aid of the

late Dr. D. D. Bishop. Several of the numerous blood examinations were made by him.

I present temperature chart showing continuous irregular fever.

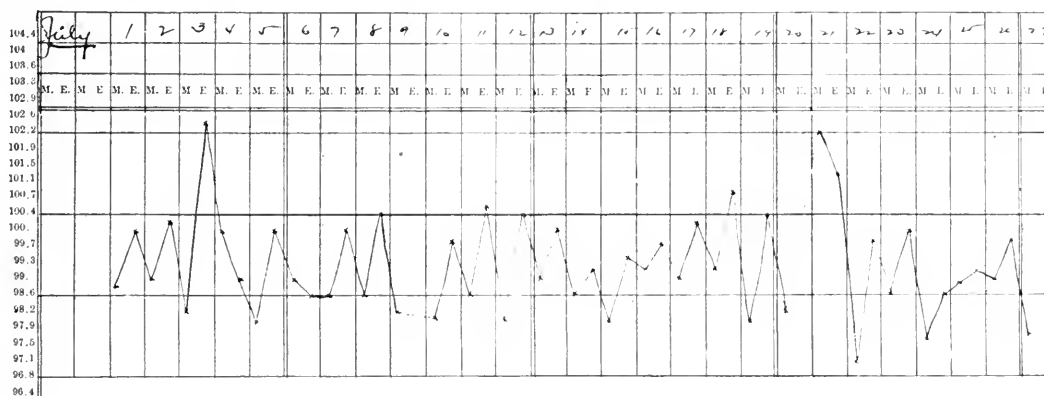
The patient remained in the hospital, though not under my immediate observation, until the middle of the summer of 1895. On increasing doses of arsenic there was a perceptible improvement, both as regards the subjective and objective symptoms. There was less dizziness, more certain movements of the hands and legs, clearer mind, greater strength. The blood count gradually changed so that on March 22, 1895, the hemoglobin was 80 per cent. and the red corpuscles 2,575,000, with no increase in the white. A severe attack of bronchitis or influenza seemed about to carry off the patient, but she rallied from this and finally left the hospital at her own request. I am unable to state facts concerning her subsequent history.

The case was seen by several physicians and all failed to locate any organic cord or brain lesion or any malignant growth.

The intense pallor of the skin, the subjective sensations of dizziness and palpitation, the great mental and bodily weakness, the retinal hemorrhages, the anemic murmurs, the enormous reduction in the number of red corpuscles with such marked varia-

regarded as progressive pernicious anemia where there is a great disproportion between cause and effect. (Bd. iv. S. 22.) A case, therefore, of atrophy of the stomach or of anchylostomum disease where the symptoms of the anemia completely overshadowed those of the primary trouble he might class as progressive pernicious anemia. It seems better, however, with most writers to regard only the cases as progressive pernicious anemia in which the affection is a primary blood disease, in which so far as our present knowledge of the etiology and pathology goes, no change is found during life or after death save in the blood or the hematopoietic organs. That this is usually fatal is well known. Recoveries, however, are occasionally recorded. The term progressive pernicious had better be discarded, and the term employed first by Addison, primary essential anemia, substituted.

Looking upon this case as one of primary essential anemia, there remains to be noted the interesting connection between the injury with its nervous shock and the anemia. The patient and her friends assert that from a condition of apparent health, she almost immediately following the injury became an invalid, weak, dizzy, easily fainting, with swollen limbs, pale skin, in a word, anemic. Just how nervous shock produces anemia I will not attempt to say. Yet, if through a shock to the nervous system the secretion



tions in their form and size, the presence, though in small numbers, of nucleated corpuscles, the increased globular richness in hemoglobin, the corpuscles being reduced to 13 per cent., while the hemoglobin was reduced to but 25 per cent., the continued irregular fever, the temperature ranging from 97 to 102 F., gave an almost typical symptom-complex of the so-called progressive pernicious anemia of Biermer, or the primary essential anemia of Addison. Enlargement of spleen and liver have been often noted in these cases as well as venous pulsation.

But many cases clinically perfect as progressive and pernicious in character and apparently due to some primary disease of the blood or of the blood-making organs, have been found postmortem to have some organic lesion overlooked during life that should be regarded as primary. Thus a hidden carcinoma, an intestinal blood-consuming or toxin-producing parasite, as the anchylostomum duodenale or the bothriocephalus latus, an atrophy of the gastric and intestinal glandular structure may explain an apparently primary anemia. Some authors incline to put these cases in the category of the essential anemias because of the predominance of blood changes and blood symptoms. Thus Eichhorst says that only those deuteropathic or secondary anemiae are to be

of the sweat glands, of the gastric glands, or of the kidneys can be checked or increased, if the heart's action can become rapid and irregular, or perhaps cease altogether, if a chorea or an exophthalmic goitre can be roused to activity, it can be assumed that the function of the blood-producing organs may become perverted, and this suddenly, through the influence of a deranged nervous system. I recall a case of cerebral hemorrhage with aphasia and hemiplegia in which there was fatal anemia; also a fatal case of anemia following upon a sunstroke.

I am inclined to rule out atrophy of the glandular tissue of the stomach, largely from the absence of any symptom indicating a previous catarrhal inflammation, though the emaciation different from the well-preserved condition of pernicious anemia, the absence of mucus and of free hydrochloric acid and the enlargement of the stomach might seem to point in that direction.¹ There was certainly not present the small contracted stomach with exuberant development of connective tissue—cirrhosis ventriculi. The dilatation, more apparent than real, because of dislocation of the organ, was probably, as not infrequently occurs, due to

¹ Some, for example Strümpell, regard the changes in the glands of the stomach as secondary to the condition of anemia. Likewise the changes in the cord and other nervous structures.

relaxation of the atonic stomach walls. I believe there was no hidden carcinoma as the cause of the anemia because of the comparatively sudden onset; the absence of subjective or objective local symptoms; the unusually severe oligocythemia, reduction of erythrocytes to 1,000,000 per cubic millimeter being unusual in the terminal anemia of carcinoma; the marked improvement under arsenic, the improvement lasting for at least six months, and being scarcely reconcilable with a carcinomatous anemia after it had reached a stage indicated by a blood count of only 666,666; the retinal hemorrhage and the absence of cachexia.

Whether or not an organic disease of the brain or cord or of the sympathetic or peripheral nerves was present no one who saw the case would say. The interesting researches of Minnich in this connection are recalled by some of the symptoms.

While nervous shock or disease of the nervous system is not recognized in many of our text-books as an important etiologic factor in pernicious anemia, a number of cases are reported in which this is the assigned cause.

Under this head are not included those cases of nervous diseases as complications or sequelæ of pernicious anemia, such as degenerations of the posterior columns or the other parts of the cord, etc., and which Minnich has recently gone into so fully. (Cf. also Lichtheim, Trechsel, Burr, etc.)

Eichhorst quotes the case of an author who, after a most severe mental strain, succumbed to a fatal anemia.

Curtin, in 1885, under the title "Nervous Shock as a Cause of Pernicious Anemia," reports the case of a woman, 38 years of age, who was unexpectedly brought face to face with the body of her suicided brother with his throat cut. From that time health began to fail, and in four years and two months she was dead of a grave anemia. No blood examination; no autopsy.

2. A young lady was suddenly and brutally informed of her brother's death. Nervous prostration followed for many months, then pernicious anemia and death.

3. Practice of Dr. Musser: A woman, aged 42, after an attempt at her own murder by her husband, became nervous, excitable, almost insane; gradual failure of health, pronounced anemia; death in three years.

Curtin quotes also the case of a woman becoming profoundly anemic following fright at the house catching on fire. He also quotes from Mackenzie, who cites the case of Sir H. Marsh, where the young lady, who accidentally poisoned her father, was overwhelmed by grief, took to bed and died of anemia. Also the case of a young man who saw a child run over in the street, was greatly shocked, began to grow anemic; no organic lesion postmortem.

Under Sir William Gull, a young man died in Guy's Hospital of extreme anemia that had developed after he had been attacked by a sheep in a field.

Musser in 1885 gave a résumé of thirty-nine cases of pernicious anemia up to that time reported in America, and quotes cases of Curtin, Osler, Pepper and himself, where anemia seemed to be due to nervous shock.

Hutchinson cites cases in which nervous influence seemed to him to be the exciting cause. 1. A case of his own where mental worry over the death of a wife was the cause. 2. Case in consultation where a man-

ufacturer who had worried about business had become anemic, apparently from no other cause than business worry. 3. Four daughters died in one week of smallpox. The father, apparently from the shock and the excessive grief, developed pernicious anemia.

Dr. Brower cites a case of pernicious anemia developing in a previously healthy young woman following a railway accident. Death in six months. He also calls attention to mental worry as an exciting cause of the milder grades of anemia and of chlorosis, and is authority for the statement that in a student worrying and apprehensive about the approaching final examination, the hemoglobin became reduced to twenty per cent.

Schüle, in three cases of pernicious anemia in the insane, seemed to see some genetic relation between the incurable cerebro-spinal lesions and the progressive anemia. He quotes the experiments of Goltz, Heubel and Von Tarchanoff as tending to prove the influence of the nervous system on blood formation, apart from the trophic influence of the spinal cord.

Macphail also describes pernicious anemia as it developed in two insane patients.

Holst believes that through neurasthenia the secretory nerves and the trophic nerves are influenced in such a way that blood deterioration results. He regards the anemia therefore, in many cases, as a result and not the cause of the neurasthenia.

Hale White refers to a patient who fell on the ice. For fourteen days no symptoms, then weakness, numbness in legs and progressive severe anemia; apparent recovery.

Among those who assign to the nervous system, chiefly through what we must, for want of a more accurate term, call nervous shock, a certain rôle in the production of anemia may be mentioned Heiberg, Fabre, Germain Sée, Trouseau.

A number of observers believe there is some causal connection between lesions of the nervous system and pernicious anemia. Thus Saaski believes the gastrointestinal form depends on nerve atrophy in Meissner's and Auerbach's plexuses. These changes he is inclined to look upon as primary and not as secondary to the anemia, though others reverse the order of pathologic change. He examined two cases and forty-eight control cases.

Brigidi examined the body of a woman, aged 53, dead after two years of anemia. The only weighty postmortem finding was an inflammatory and fatty degenerative change in the celiac ganglia. He thinks the influence on the circulation of the digestive tract might explain the poor digestion and consequent anemia.

Pokrowski, autopsy on a case of pernicious anemia, found changes in cerebellum, fourth ventricle and medulla, and was led to conclude that the finding in the central nervous system must have had an influence, if not the sole influence, in producing the anemia.

Banti refers to a group of anemias—anemia ganglionare—in which he believes the primary change is in the sympathetic nervous system.

Little also regards many cases as due to an irritation of the vaso-motor system.

I feel warranted from my study of this case and a perusal of the literature bearing upon this subject, in drawing the conclusion that in some cases of pernicious anemia there is a causal connection between shock or injury to the nervous system and the result-

ing anemia. Whether such shock acts by interference with the nervous mechanism of the digestive organs, the stomach, intestines, liver, pancreas, the ultimate result being a severe anemia, or whether through altered nervous influence, there is abnormal performance of function on the part of the hematopoietic organs, it is impossible to say. In assigning to nervous shock an influence in the production of anemia it is not necessary to regard it as the sole cause or even the prime cause. Just as in the case of pneumonia we look upon the pneumococcus as the main cause of the disease, but yet regard exposure to cold as an exciting cause that favors the localization or pathogenic action of the specific organism, so in the case of pernicious anemia, the nervous shock may in some way merely favor the action of some otherwise inert microorganism or toxin, that under these altered circumstances produces a profound or even fatal anemia.

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DISCUSSION.

DR. H. A. WEST, of Galveston, Texas—One fact in explanation of the influence of nervous shock in producing anemia perhaps was not fully brought out. I refer to the influence of nervous and mental shock upon the digestive organs; upon the appetite, causing anorexia, and such disturbances of the digestive processes as would account to a considerable extent for these anemic conditions. One can readily understand the philosophy of such a *modus operandi*. That the appetite is interfered with, assimilation and metabolism are disturbed, and anemia follows.

DR. J. H. MUSSER, of Philadelphia—Recently two cases of pernicious anemia have come under my care which were secondary to, if not due to, nervous influence, anxiety and grief followed by digestive disturbances. They would seem to indicate nervous shock bringing on gastro-intestinal disorders, with malnutrition and anemia. This view is also in accord with the studies of the pathology of pernicious anemia by Hunter and others, tending to show that it is related to, and is largely secondary to, conditions of the gastro-intestinal tract. The poisonous agent probably escapes the liver, is not destroyed as it should be, but enters and acts directly upon the blood, producing anemia. It seems to me that this is the train of processes going on, and with such a view it is proper to say that shock and other nervous influences of a functional character rather than those of organic change act in producing the anemia. I have never seen pernicious anemia occur in organic disease of the nervous system, but shock and other nervous influences said to be of functional character may be promotive of that condition.

DR. J. WELLINGTON BYERS, of North Carolina—It seems to me that a number of conditions may bring about that vicious circle, if we may so call it, of malnutrition which results in pernicious anemia. Nervous shock may be one of these.

DR. LOUIS FAUGERES BISHOP, of New York—I think this paper is very interesting as illustrating in another direction the fact that the nervous system presides over the chemistry of the body in whatever part of the body the chemistry takes place. We see that not only in anemia but also in gout. Gout is a disease which is very closely connected with a depressed condition of the nervous system, and the chemistry of the body seems to go wrong because the nervous system is not in condition to exert proper control. There is one interesting fact in connection with this control of the chemistry of the body by

the nervous system, and that is the value of strychnin in a great many varied conditions. I think this value, not only in the treatment of anemia, but in the treatment of a great many diseases is due to its power of stimulating the nervous system to perform better its work of controlling the chemistry of the body.

A NOTE ON THE ACTION OF APOLYSIN.

Read by Title before the Texas State Medical Association at Fort Worth, April, 1896.

BY DAVID CERNA, M.D., Ph.D.

Demonstrator of Physiology and Lecturer on the History of Medicine in the Medical Department of the University of Texas.

Recent literature concerning antipyretics and analgesics has brought to the notice of the profession several new drugs, among which *apolsin* seems to occupy a prominent place. Through the courtesy of a new York drug firm that kindly furnished me with a considerable amount of the new medicament, I have been enabled to conduct a series of experiments in the physiologic laboratory of the University of Texas, at Galveston, the results of which I shall endeavor to embody in this brief report.

Apolsin is a substance closely related to phenacetin. Like the latter drug apolsin contains parphenetidin. In phenacetin, however, the parphenetidin of the amide group (NH_2) one atom of hydrogen is replaced by an acetic acid radical; while in apolsin the atom of hydrogen of the parphenetidin of the amide group is substituted by a citric acid radical. It may be said in this connection, that a combination of phenetidin and citric acid under the name citrophen, or citrate of phenetidin, has been referred to by Benario as possessing medicinal virtues.¹ But according to Seifert² although one molecule of citric acid can be combined with phenetidin to form the so-called citrophen, it can also be combined with two molecules and with one molecule of phenetidin, respectively, to form different substances. Treupel³ has experimented with citrophen, and found it to be poisonous like all the salts of phenetidin. On the other hand, it is claimed that apolsin is not related to the citrate of phenetidin, or citrophen, but that it contains two complete citric acid groups, and is practically non-poisonous, being not a simple salt of phenetidin, but a phenetidin permanently combined in an anilid-like form. The innocuousness of apolsin has apparently been demonstrated by the investigations of Nencki and Jaworski.⁴ Further, it is asserted by Seifert that carbonate of sodium causes no changes in apolsin, while the addition of that same sodium carbonate to citrophen produces an immediate separation of phenetidin as a free poisonous base. Hildebrandt,⁵ who has also studied the chemical relations of both citrophen and apolsin, affirms that these two substances differ chemically from one another in this, that in the latter, apolsin, one molecule of phenetidin is associated with one molecule of citric acid with the production of water; while in the former, citrophen, three molecules of phenetidin are combined with one of citric acid but without the production of water; that the relation of citrophen to apolsin is like that of the lactate of parphenetidin to lactophenin.

Apolsin appears in the form of a white or yellowish-white crystalline powder having a faint smell and

¹ Deutsche Med. Wochenschrift, Nos. 26 and 32, 1895.

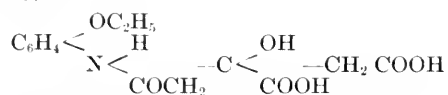
² Deutsche Med. Wochenschrift, Nos. 32 and 44, 1895.

³ Deutsche Med. Wochenschrift, No. 43, 1895.

⁴ Gazeta Lekarska, May, 1895; also Allg. Med. Cent. Zeitung, July 27, 31 and August 3, 1895.

⁵ Centralbl. für inn. Medizin, Nov. 9, 1895.

an acid taste; is readily soluble in warm water, and in cold water in the proportion of one part to fifty-one, or at most fifty-five. This new drug is also freely soluble in alcohol and cold glycerin. Apolysin melts at 72 C. (161.6 F.) Placed upon platinum shell and heated, apolysin burns up completely without leaving any residue, and further experimentation regarding its chemic behavior, with nitrate of silver, sulphuretted hydrogen, and sulphid of ammonium, shows that it contains no metallic substance. Treated with concentrated hydrochloric acid and chromic acid, it gives a ruby red color. But apolysin combines with metals to form salts; it also forms combinations with caffein, quinin, sodium, magnesium, lithium and other substances. The formula of apolysin is given as follows:



In an experimental study, previously referred to, Nencki and Jaworski⁶ found that apolysin even in considerably large doses was non-poisonous to frogs and rabbits. In the former class of animals apolysin injected hypodermatically in the proportion of from 0.0005 to 0.004 gram to 1 gram of the body-weight, produced absolutely no toxic effects. The same results were obtained in the case of rabbits. To one of these rodents, weighing 1345 grams (47 ounces), was administered 3.5 grams (54 grains) of a 10 per cent. watery solution of apolysin, that is, in the proportion of a little over 2½ grams per kilogram of the body-weight, but no bad effects were observed. Hildebrandt,⁷ like Treupel, says that citrophen, identical, as has been stated, with the ordinary citrate of phenetidin, is poisonous to rabbits; while the toxic properties of apolysin are practically *nil*, and certainly much less than those of phenacetin. He affirms, indeed, that 8 centigrams (1¼ grains) of apolysin, injected subcutaneously, caused no ill effects on white mice, while 3 centigrams (2-5 of a grain) of phenacetin, administered to the same class of animals, produced the characteristic toxic effects of phenetidin.

I have been able to corroborate some of these statements in regard to the general action of apolysin on dogs, and as illustrations I append the following experiment:

Experiment 1.—Dog weighing about eight pounds. Exposed external jugular vein and injected into it 5 grains (3 decigrams) of apolysin dissolved in water at 10 A.M., 10:15 A.M. no effect, and gave another dose of 10 grains (6 decigrams). This injection was followed a few moments later by a slight increase in the number of respiratory movements, but this effect soon disappeared and the animal continued well. At 10:45 A.M. a third dose of 15 grains (1 gram) was administered. A short time afterward the canine began to breathe a little faster than usual, and then sought a corner of the room where he remained for about an hour, very quiet; in half an hour later the dog was as lively as ever. At 3 P.M. injected 15 grains (1 gram) more, and with the exception of the respiratory disturbance alluded to, and a tendency of the animal to remain quiet, no other marked effects were noticed in the course of three hours, by which time the dog seemed as well as ever.

In the experiments that follow the animals were first anesthetized, and then, after the external jugular vein was exposed and prepared for the injections, the carotid artery was connected with the kymograph in order to better observe the effects on the circulation and the respiration. Observations were made at the same time regarding the bodily temperature, this being

taken at the rectum by a thermometer with centigrade scale. In all these experiments a five per cent. watery solution of the drug was used.

Experiment 2.—Dog, weight twenty pounds. An injection of 5 c.c. caused no alteration in pulse, blood-pressure or respiration in the course of fifteen minutes. A second injection of 10 c.c. of apolysin solution was followed by a scarcely perceptible fall of the arterial pressure accompanied with a slight increase in both the rate of the pulse and the number of respirations, these effects soon passing off, however. Three more doses of 5 c.c. each were given at about twenty minutes intervals, but with the exception of the same slight disturbances like those noticed after the second injection, no marked permanent changes were observed either in the circulation or the respiration. The blood appeared to retain its normal character. During the experiment the animal seemed quiet as if under the influence of some nerve-depressing agent. The temperature was slightly reduced. The dog was finally killed with chloroform.

Experiment 3.—Dog weighing about twenty-eight pounds was used. The first intravenous injection of 10 c.c. caused an immediate fall of the arterial pressure, a temporarily increased but soon followed by a diminished beat of the heart, and an acceleration of the respiratory movements. The blood pressure and the heart's action shortly returned to the normal condition and remained so for fully an hour. A second injection of 5 c.c. produced no circulatory changes, but the same disturbances in the respiratory function previously observed were again produced. An injection of 10 c.c. given a few moments later was followed by a rapid fall of the blood pressure and reduction of the pulse-rate, which changes, however, soon disappeared. The respiration was markedly affected, the rate of movement becoming almost twice as high as in normal circumstances. The thermometer at the rectum showed, about twenty minutes after the last injection, a fall of the bodily temperature amounting to a little over half a degree. No changes observed in the blood itself.

Experiment 4.—A small dog, weight about ten pounds. Gave repeated intravenous injections, at short intervals, up to about 3 grams (45 grains). This finally caused death by a simultaneous arrest of the respiration and the heart, the symptoms of asphyxia being particularly marked. Death was preceded by considerable hematuria and cyanosis, with a distinct discoloration of the blood.

A better idea can be obtained, perhaps, of the actions exercised by apolysin on the circulation and the respiration, from a description of some of these experiments in tabulated form, as follows:

Experiment No. 5. Dog; weight, 15 pounds.

Time. m. s.	Dose. Grams.	Pressure. mm.	Pulse. per min.	Resp. per min.	Remarks.
0:		120	90	32	Normal.
3:15	2 c.c.	120	95	32	Injection begun.
:30		120	95	32	Injection ended.
4:00		120	102	38	
5:00		120	100	40	
7:00		118	95	40	
9:00		120	90	38	
12:00	2 c.c.	120	90	36	Injection begun.
:40		118	90	38	Injection ended.
13:00		101	80	40	
15:00		100	75	42	
20:00		118	90	38	
25:00		120	90	34	
40:00		120	92	32	
45:00					Killed with chloroform.

Experiment No. 6. Dog; weight, 12 pounds.

Time. m. s.	Dose. Grams.	Pressure. mm.	Pulse. per min.	Resp. per min.	Remarks.
0:		160	120	36	Normal.
2:00	1 c.c.	160	120	36	Injection begun.
:30		160	120	36	Injection ended.
3:00		160	120	38	
5:00	3 c.c.	160	120	36	Injection begun.
:30		150	128	40	Injection ended.
6:30		120	108	42	
8:00		125	116	40	Injection begun.
8:30	2 c.c.	110	104	46	Injection ended.
9:00		101	102	48	
10:00		90	98	46	
15:00		108	112	40	
20:00		140	118	42	
40:00		160	120	38	
55:00		160	120	38	Killed with chloroform.

A close examination of the preceding experiments

⁶ Loc. citat.

⁷ Loc. citat.

shows that small or even medium-sized doses of apolysin cause no marked effects on the circulation. Large quantities, however, reduce both the pulse and the arterial pressure. The same phenomena are still produced after previous section of the pneumo-gastrics, as well as after peripheral paralysis of the vagi by atropin, as shown in the following experiment:

Experiment No. 7. Dog; weight, 22 pounds.					
Time. m. s.	Dose. Grams.	Pressure. mm.	Pulse. per min.	Resp. per min.	Remarks.
0:		140	204	24	Vagi paralyzed by a small dose of atropin.
5:00	2 c.c.	142	204	24	Injection begun.
:30		138	208	28	Injection ended.
7:00		140	206	28	
8:30	3 c.c.	140	206	26	Injection begun.
:30		170	188	30	Injection ended.
9:00		108	160	32	
10:30	3 c.c.	84	158	36	
12:00		80	150	32	
15:00		100	162	30	Injection begun.
:30		70	140	36	Injection ended.
18:00		65	130	38	
25:00		50	110	32	
30:00		75	140	28	
50:00		200	138	26	
52:00					Killed with chloroform.

Experiment No. 8. Dog; weight, 26 pounds.					
Time. m. s.	Dose. Grams.	Pressure. mm.	Pulse. per min.	Resp. per min.	Remarks.
0:		180	210	12	Vagieut.canula in trachea
5:00	5 c.c.	180	212	14	Injection begun.
:30		172	212	16	Injection ended.
6:30		160	180	22	
7:30	5 c.c.	152	160	30	
9:30		148	160	30	Injection begun.
10:30		130	168	32	Injection ended.
12:00	15 c.c.	122	140	26	
20:00		126	138	28	Injection begun.
21:00		110	120	18	Injection ended.
25:00		104	108	16	
28:00		98			Involuntary discharge of bloody urine; respiration labored; pulse very irregular; cyanosis.
35:00					Animal dies from a simultaneous arrest of its heart and respiration.

From the foregoing evidence it can be said that the reduction of the pulse rate is independent of any excitation of the cardio-inhibitory nerve centers, and is chiefly due to a cardiac influence. The changes observed on the pulse and the arterial pressure appear also to show that the latter falls owing mainly to an action on the heart directly. I do not believe the vaso-motor system is affected by apolysin, and if there be any influence exercised even in massive doses, it must be slight and subservient to that produced upon the heart itself. I could not, however, determine this point positively, since my experiments by severing the spinal cord were unsuccessful.

Respiration: As seen in the course of the above experiments, the increase in the number of respiratory movements produced by apolysin in both normal animals as well as those in which both vagi had been previously paralyzed by atropin and by section, was an usual occurrence. The action is, therefore, central.

Temperature: Apolysin appears to exercise a slight influence on the bodily temperature of normal animals, except, perhaps, in very large doses. The accompanying experiments are self-explanatory.

Febrile temperatures, on the other hand, are easily reduced by apolysin even in comparatively small doses. For these experiments I first produced artificial fever in dogs, by intravenous injection of putrid blood; and in a second series of experiments the blood and the drug were administered together and

Experiment No. 9. Dog; weight, 23 pounds.				
Time. h. m. s.	Dose. Grams.	Pressure. mm.	Rectal temp. C. scale.	Remarks.
0:		172	39.2	
5:00	10 c.c.	172	39.3	Injection begun.
:30		168	39.3	Injection ended.
13:00		172	39.1	
15:00	10 c.c.	170	39.1	Injection begun.
:30		165	39.1	Injection ended.
20:00		168	39.	
30:00	10 c.c.	162	39.	Injection begun.
:30		160	39.	Injection ended.
45:00		166	38.8	
55:00	15 c.c.	170	39.	
1 05:00		168	39.	
1 20:00		170	39.1	Injection begun.
1 20:30		158	39.1	Injection ended.
1 35:00		156	39.	
1 45:00		160	38.8	
2 00:00		162	38.6	
2 15:00		168	38.	
2 30:00		170	38.4	
3 15:00		172	39.1	Animal killed with chloroform.

Experiment No. 10. Dog; weight, 18 pounds.				
Time. h. m. s.	Dose. Grams.	Rectal temp. C. scale.	Remarks.	
0:		39.5	Injections subcutaneously.	
5:00	20 c.c.	39.5		
20:00		39.5		
35:00		39.4		
50:00	20 c.c.	39.4		
1 05:00		39.4		
30:00		39.3		
2 00:00	20 c.c.	39.2		
30:00		39.		
3 00:00		38.8		
30:00		39.8		
4 00:00		39.		
5 00:00		39.3		
30:00		39.4	Animal killed with chloroform.	

the effects observed. For purposes of illustration I detail only one experiment, as follows:

Experiment 11.—Dog weighed thirty-two pounds. First day: In the normal state; at ten A.M. the rectal temperature was 39.1 C.; 11 A.M., 39.1; 12 A.M., 39.2. In the fever state, 1 P.M., 39.2. Injected into the jugular vein three drops of putrid blood: 1.30 P.M., 39.3; 2 P.M., 39.8; 2.30 P.M., 40.3; 3 P.M., 41.3; 4 P.M., 41.8.

Second day: 9.30 A.M., 39.4. Injected five drops of putrid blood; 10.30 A.M., 41.3. Injected three drops of putrid blood and 10 c.c. of apolysin solution; 10.45 A.M., 40.8; 11 A.M., 39.6. Injected three drops of blood and 10 c.c. of apolysin solution; 12 M., 39.3; 1 P.M., 39.2; 2 P.M., 39. Animal sacrificed with chloroform.

The same results were obtained in other similar experiments. But whether this reduction of febrile temperature by apolysin be the outcome of any direct or indirect action on the heat centers I am not prepared to state. In order to determine this point calorimetric studies are necessary. It is probable, however, that the influence of apolysin in reducing febrile temperatures is similar to that of phenacetin, with which the drug under consideration is identical, the antithermic effects depending on the separated paramidophenol.

Clinical Uses of Apolysin.—Apolysin has been employed in practical medicine not only as an antipyretic but as an analgesic as well. In both instances the drug is alleged to have given satisfactory results.

I have had no opportunity to try the drug in febrile patients, but in two cases, one of lumbago and the other of muscular rheumatism, in which pain was a prominent symptom, apolysin produced a prompt and quite effective relief.

Nencki and Jaworski have used the drug somewhat extensively, it seems, in disease to test both its antipyretic and analgesic properties. Observations were made in the treatment of croupous pneumonia, scarlet fever, typhoid fever, puerperal fever, influenza, pyemia, follicular tonsillitis, erysipelas, sciatica, head-

ache and various kinds of neuralgia. The authors affirm that in the febrile affections mentioned, apolysin exercised a powerful antithermic action; that in neuralgic troubles it diminished the hyperesthesia, shortening the individual attacks, and at the same time alleviating the symptoms almost entirely. It is also stated by the same clinicians that owing to the fact that apolysin is easily decomposed by the gastric juice, the drug is contraindicated in hyperacidity of the stomach, and that it ought not to be given if the latter organ be empty. Under these circumstances, however, according to Hildebrandt, apolysin may be administered in combination with bicarbonate of sodium, in the form of tablets, which effervesce on being dissolved in water, owing to the liberation of carbon dioxide.

All the authors here quoted seem to regard apolysin as superior to phenacetin, owing to its solubility and to its non-poisonousness even when ingested in comparatively large quantities: that the depressing effects upon the heart, which are distinctly seen in phenacetin due probably to the phenetidin which the latter remedy contains, are not observed under the action of apolysin.⁸ Again, it is held that the innocuousness of apolysin is probably due to its similarity to citric acid, obeying the law expounded by M. von Nencki. According to this law the entrance of an acid group in a poisonous substance diminishes or entirely destroys its lethal properties. It is further asserted by these authors, especially by Seifert, as will be remembered, that apolysin is practically non-poisonous because it is not a simple salt of phenetidin, but a phenetidin permanently combined in an anilid-like form, and yet Nencki and Jaworski say that apolysin is easily decomposed by the gastric juice. The drug appears to be decomposed in the organism, since these latter authors, as the result of experimentation, affirm that apolysin taken in daily doses of 45 grains (3 grams) is, in part at least, eliminated in two forms, that is, as paraamidophenol and paraphenetidin.

It has been shown by Treupel⁹ that paraamidophenol, like paraacetamidophenol, when injected intravenously into dogs in the proportion of from 15 to 30 grains (1 to 2 grams) for every 2.2 pounds (1 kilo) of the body-weight, produces toxic effects, these being manifested by clonic and tonic spasms of the extremities, a rapid respiration, and paralysis of voluntary motion. In the same class of animals, these substances in the proportion of 7.5 grains (0.5 grams) per 2.2 pounds (1 kilo) of the body-weight, caused somnolence, weakness in the hind extremities, cyanosis, vomiting accompanied with an increased secretion of tears and saliva, and the production of methemoglobin in the blood. It is said, moreover, that the reduction of fever in the human subject by both paraamidophenol and paraacetamidophenol is accompanied with chilliness, vomiting and tinnitus aurium.

But be all this as it may, and although fully agreeing with the statements of the authors referred to, as to the innocuousness of apolysin even when ingested in large amounts, and notwithstanding the assertion that the drug is usually reluctant to part with the phenetidin which it contains, care, I believe, should be exercised in the administration of apolysin. It is true, no case of poisoning by this agent in man, has been reported as yet, and although Nencki and

Jaworski, Seifert and Hildebrandt have observed no lethal effects, I, myself, have seen not only bad results but death also in the lower animals following the ingestion of apolysin. The results of Experiment 4 are here recalled. In this experiment intravenous injections of the new medicament finally caused death by a simultaneous cardiac and respiratory paralysis, the fatal issue being preceded by considerable hematuria, cyanosis and marked symptoms of asphyxia, changes, be it remembered, similar to those produced by paraamidophenol and those caused by paraphenetidin. Therefore, while I do not consider apolysin a toxic agent in ordinary therapeutic and even larger doses, I must certainly caution against its injudicious administration as a routine practice in all those cases calling for antipyretic and analgesic remedies. Apolysin may be given to adults in single doses varying from 15 to 30 grains (1 to 2 grams) by the mouth; to children in proportionate amounts according to age.

SOCIETY PROCEEDINGS

Medical Society of the State of Pennsylvania.

Forty-sixth annual Session of the Medical Society of the State of Pennsylvania, held at Harrisburg, May 19 to 21, 1896.

(Continued from page 1176.)

DR. R. W. STEWART, of Pittsburg, read a paper on
THE TECHNIQUE OF SUPRAPUBIC CYSTOTOMY.

This is indicated in vesical calculus where the stone is too large or hard to crush and remove by litholapaxy or in the modified operation of crushing by means of median perineal incision. Its general adoption has been deterred by its supposed dangers, etc., which are chimerical. It is the easiest to perform if the operator will bear in mind the technique. The lower bowel to be emptied by enemata, the pubes shaved, the patient anesthetized, the bladder washed out by solution of boric acid. It is best done by a bag suspended, say three feet, above and the solution allowed to escape after the bladder is full: repeat till the escaping fluid is clear. The bladder is then filled and an assistant retains the catheter and washing apparatus so that when the fluid escapes by the suprapubic opening more enters by the catheter. Place the patient in the Trendelenburg position. Stand on the left side of the patient, incise in the middle line from a point half an inch below the upper border of the symphysis to a point two and a half inches above the pubes. Cut through the skin and fascia, exposing the muscular aponeurosis. The finger now feels in the lower part of the incision for the notch marking the upper border of the symphysis. Here boldly thrust in the knife till its point is arrested by the cartilaginous junction of the pubic bones. Expose this early; it is easy to find, and the incision may be carried down to it with a disregard of the abdominal contents. It is the principal landmark, as it marks both the lower limit but divides the muscular aponeurosis and separates the tendinous insertion of the muscles. Divide the aponeurosis the length of the wound, separate the recti with the handle of the scalpel. Use retractors to separate the margins of the wound. Right index finger should be inserted at the lower angle, hugging closely the inner surface of the pubic bones. In sixteen operations he followed this plan, not regarding the peritoneum. As the finger approaches the lower border of the symphysis it lies in contact with the anterior surface of the bladder, at this point covered with fatty tissue and a plexus of veins. The fluctuating bladder is distinctly felt. If in doubt, an assistant should pass a finger into the rectum and press forward and thus determine its position. The bladder wall is then fixed by thrusting two tenacula through its most prominent part. A narrow bladed knife is thrust cutting edge up, into the bladder between the tenacula and the incision carried down to any desired extent, to be determined by the nature of the case and requirements for intravesical manipulation. While the bladder is open it should be continually flushed with the boric acid solution to keep it and the wound clean and the field free from blood. Suturing the bladder has long been debatable. If there is a marked cystitis with putrid urine, the incision is not likely to heal save by granulation. The advantage of primary union is so great that an effort should be made to obtain it except where septic condi-

⁸ See my paper on "Phenacetin as a Toxic Agent" in Transactions of Texas State Medical Association, 1895; also in JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, May 11, 1895.

⁹ Deutsche Med. Wochenschrift, No. 14, 1895.

tions are such as to preclude its possibility, or in cases where the limited extent of the incision, aided by the retention of a catheter in the urethra, renders suture of the vesical walls unnecessary. The upper and lower angles of the wound in the abdominal wall should be sutured and a pledget of iodoform gauze loosely inserted into the prevesical space and the ordinary dressings for a laparotomy applied. Retain the catheter in the urethra and drain the bladder for several days.

DR. CARL SEILER, of Philadelphia, read a paper on "Perforation of the Nasal Septum."

DR. EVAN O. KANE, of Kane, read a paper

THE CHIEF PREDISPOSING INFLUENCE IN THE PRODUCTION OF TUBERCULOSIS.

While paying the highest respect to the tubercle bacillus as a determining factor in the production of tuberculosis, he pointed out certain contradictory and puzzling phenomena which confront the practical physician in his endeavor to apply the theory. He placed considerably greater stress upon the importance of certain vague preëxisting phenomena than scientists have lately appeared to. Next he endeavors to describe these phenomena pointing out that they are not due as has hitherto been supposed, to certain unhygienic conditions but are due to a diathesis which while strumous is actually the result of an inherited syphilitic taint much attenuated often, yet still of a grave character. He further shows how such a diathesis is specially adapted for the reception of the tubercle bacillus and for the production of tuberculosis. The article closes after having proven how important a part the inherited taint plays, by an appeal to physicians not to overlook so grave a predisposing influence in their endeavor to eradicate a germ whose position would be untenable without it.

DR. MARY MCKAY WENCK, of Sunbury, read a paper on "The Hygiene of Pregnancy."

DR. W. H. HARRISON, resident physician of the Insane Asylum at Harrisburg, gave a paper

THE PATHOLOGY OF THE BLOOD OF THE INSANE.

Insanity is a disease of the physical system. Owing to our ignorance of the minute structure of the encephalon and its physiology and pathology, the principles of psychology and psychiatry are arranged still on functional lines. The tendency of the times is to develop the principles that every function has a physical center and that every derangement of function is due to morbid change of such physical center or else to some pathologic interference with its relations to certain parts. Acute insanity is always associated with derangement of one or more parts of the physical system. Examination of the dejecta and secretions often makes this plain enough. The exterior of the body shows symptoms of widespread disease which the experienced alienist makes note of. Disturbance of the mind is only too commonly accompanied by disturbance of the digestive functions. Careful analysis of the urine of over five hundred cases of insanity reveals pathologic changes in this fluid in a large proportion of cases. In all forms of insanity there is physical waste as well as deterioration in the acute stage, and in the chronic condition as well, though such change is modified to some degree in the latter by an improvement in the physical condition at the close of the acute period. Pathologic changes in the blood are some of the physical symptoms of the mental disorder, primarily or secondarily. There is a tendency to very slow coagulation after withdrawal of the blood in many cases although in the acute insane the tendency to clot early is quite pronounced in some cases. We have noticed this tendency where there is increase of specific gravity of the blood as a whole, where there is concentration of the blood from liquid abstinence. The specific gravity as a whole is commensurate with its physical condition. In exaltation when the number of cellular elements is above normal exceptionally the specific gravity is likewise above normal. By means of the hemoglobinometer, hemocytometer, hematokrit, we learn very important symptoms, which the customary means at the hands of the physician do not reveal to us. We thus learn by more scientific means the physical state of the individual. And so we have come to take blood data of each individual on his entering the hospital and in special cases at certain intervals. We are thus guided in our dietary and medical and hygienic treatment of the insane. The blood of the insane is impaired or in a morbid state. In mania the rule is that the red cells are diminished in number, the diminution corresponding to the deterioration of physical health generally. But in many maniacs near the inception of the exaltation, especially where the period of depression has been short and the disease has not had time to cause palpable physical deterioration, such exaltation is sometimes accompanied by an increase of the red cells above the normal. The secretions and

the emunctories act powerfully and rapidly so that there is rapid drain of water from the system, which loss of fluid is seen in the blood in a very short time, and consequently there is increase of hemoglobin and of red and white cells and plaques in proportion. We exceptionally meet cases where this proportion is distinctly modified, the white cells and plaques, more rarely either alone, being in greater or less proportion to the red cells than normal. At the same time the body weight declines. Thence the propriety of supplying the maniac with abundant food and drink at frequent intervals, with tonic remedies. In an exhausted maniac who came within our notice a few months ago the number of red cells per cu. mm. was about 8,000,000. After a liberal supply of food and fluid at the end of ten hours there was a reduction of red cells to 4,000,000. As to the hemoglobin we have only very rarely found it increased above normal in mania. Although diminished below normal in mania, as the rule it is at greater degree in exaltation than in depression. As a rule, the ratio of white cells and plaques bear the same relation to the red cells as in health. However, there are many variations as to these bodies with the physical deterioration in different forms of depression. In melancholia there is notably a diminution in red cells, with exceptional cases. The profounder the depression the more pronounced such diminution. And yet at Kirkbride's Hospital we examined the blood of patients who were regularly fed by tube for long periods and in whom the reduction of red cells was only slight. As in exaltation so in mania there is often considerable variation as to the ratio of white cells and the plaques to the red. In dementia the diminution of red cells and white cells and plaques in proportion is commonly quite marked. In the case of a dement at Kirkbride's the number of red cells was as low as 918,000. In some cases of dementia, however, at the State Hospital we have found that the diminution was only slight, cases of men and women who, after the storm of mania and melancholia has passed and the body took on flesh, increased in weight and became well nourished, and the white cells and plaques were in normal proportion, and the hemoglobin though below normal was of a pretty fair figure. In dementia we frequently find a disproportion of red to white cells and the plaques more commonly than in acute insanity. In epileptics we sometimes find excess of the cellular elements beyond the normal line during and immediately following convulsions, at all events in many cases a decided increase, and the hemoglobin increased, with many corresponding physical symptoms, as the appearance of albumin in the urine, all due to great functional disturbance, and after some hours a corresponding diminution in these elements, notably below the normal line, a true reaction after the violence of the convulsions, and later on the more equable deterioration of many physical symptoms including those of the blood as in dementia. In paretics likewise during and immediately following the convulsion there is commonly an increase in the cell elements, sometimes beyond the normal line, to be followed after some hours by the reactionary diminution of the cells and hemoglobin, and then later on the steady decline in cells as to number and in the hemoglobin which decline is very rapid, keeping pace with the general physical deterioration in many other respects.

DR. ANNA M. FULLERTON, Philadelphia, read a paper "Records of Work in the Woman's Hospital of Philadelphia." She gave a summary of the work done from 1886 to 1896, demonstrated the comparative frequency with which the various forms of pelvic disorders occurred. Inflammatory complications of septic origin, puerperal or gonorrheal, were found to constitute a very large proportion of the conditions treated, which to the author's view, explained the necessity for so frequent a recourse to medical rather than palliative measures in their management. Cases were cited from the records of the author's work in the hospital illustrative of this point.

DR. W. C. HOLLOPETER, of Philadelphia, read a paper on "Milk Filtration."

On motion of Dr. John Curwen, of Warren Insane Asylum, a committee of five was appointed to memorialize the legislature in favor of the establishment of a hospital for the acute, chronic, convalescent and epileptic insane of the counties of Potter, Tioga, Clinton, Lycoming, Clearfield, Jefferson, Center, Huntingdon, Blair, Cambria, Bedford, Somerset and Indiana.

On motion of Dr. A. Koenig, of Pittsburg, it was resolved:

WHEREAS, a large number of physicians and surgeons are engaged in valuable and gratuitous service in the State of Pennsylvania; and

WHEREAS, such physicians and surgeons are conspicuously familiar with the interests and requirements of the hospitals with which they are connected;

Resolved, That it is the sentiment of this Society that every

hospital having an unsalaried staff should have in its Board of Managers a liberal representation from its medical and surgical staff.

THIRD DAY—MAY 21.

DR. GEORGE E. SHOEMAKER, of Philadelphia, read a paper,
THE FIBROID UTERUS: WHEN AND HOW TO OPERATE.

Improvements in technique in the last five years have lessened the primary mortality; have lessened complications and have increased the number of patients who should be subjected to operation. Small tumors call for extirpation when severe bleeding and pain resist minor measures and this should be done before the patient is exhausted. Awaiting the menopause often disappoints expectations of relief. All large growths, all associated with septic inflammation, all which are rapidly growing, all which are likely to obstruct labor call for removal. Where the tumor prevents recovery from severe types of functional nerve disorder or in incipient phthisis, it may be removed. The presence of heart and kidney lesions, if not too severe, call for more careful preparation and management, including frequently the early supply of liquid nourishment by the bowel after the operation. Removal of the tumor may relieve the kidneys where ureteral obstruction and interference with bladder drainage has caused nephritis. As to the method of operating the writer objects to removing the tubes and ovaries as frequently difficult and dangerous or ineffectual. He has tried several methods of hysterectomy, but considers ligation, with amputation through an abdominal incision at the internal os, followed by dropping the stump and closing the peritoneum over it, to be the method of election; yet, other plans may be followed to meet individual indications.

DR. WALTER H. PARCELS, Lewiston, read a paper,
OBSCURE TRAUMATIC LESIONS OF THE ENCEPHALON.

He called attention to the fact that in all head injuries the surgeon finds it difficult to make a prompt diagnosis of the amount of injury the encephalon had received. The prognosis should be guarded and he exemplified these statements by three cases in his practice. One from an apparent fracture at the base of the skull, recovery; another where the injury seemed slight, but death occurred in thirteen hours. Post-mortem showed no fracture, a rupture of blood vessels of pia mater, large blood clot with compression of brain. The third, a fall upon the forehead, concussion of brain, no fracture believed to exist, but unconsciousness, a chill and excessively high temperature following the third day and death three days later. No post-mortem. What was the correct diagnosis? Was there a spicula of bone that had caused a lesion of the membrane and possibly a lesion of the cortical substance and acute meningitis? Wherein as a surgeon did he fail to do his duty in this case? The recognized surgical treatment is not fully detailed for the reason that we are waiting the revolution to be inaugurated by the perfection of the X rays, when a cathodic photograph will enable us to make a correct diagnosis and the trephine and suction pump will be the instruments used for spicule of bone and intracranial blood clots.

DR. J. W. PARK, Dauphin, read a paper,

THE MEDICO-LEGAL ASPECT OF EYE AND EAR CASES.

He confined his paper to accidental injuries. The points of interest were the kind of an examination, record of the case that should be made at the time, the kind of cases which should be examined by a specialist, the requirements of the general physician and specialist in medico-legal cases and their advantage to the plaintiff and defendant in suits for damages. He cited a case. He was sent by a road to examine the eyes of Mrs. S., who one year and three months before had been in a wreck and claimed that her present defective sight was due to the injuries. A careful examination of the fundus of each eye revealed dense opacity in the vitreous humor of both eyes, and no good view could be obtained; it was evidently a case of disseminated choroiditis. Hemorrhages into the vitreous may cause this, and this she claimed to be due to the blow received as the car turned over. The attending physician had not made an ophthalmoscopic examination, hence could not say how it looked, whether any hemorrhage were present. This was fatal to the road. All accidents involving the eyeball, cornea, lens, iris, fractures of the orbit or where vision may be impaired from intra or extra ocular injuries or diseases and in all cases where there are hemorrhage from the ears or signs of fracture of the skull involving the ear, where a careful examination for any previous existing deafness should be made and a minute record kept, in all these the physician should have in consultation a specialist. This should be immediately done for the benefit of the patient and for any legal complication that may arise. Take nothing for granted. In another case I am confident the

deafness was due to a chronic catarrhal otitis media that had existed for years; but thousands of dollars were paid to settle. A third case of severe neuralgia of the superior maxillary nerve was sent to me by an attorney, claimed damages for the street crossings not being clear of ice, causing a fall, crushing in the malar bone and thus injuring the nerve and causing a chronic neuritis of the superior maxillary with pain in the ophthalmic branch. It had not in the least affected his vision. This was two years after the fall. He wanted me to discover something wrong so as to claim damages. No record was kept and no definite testimony was obtained. Let us try at least to show professional skill so that we may appear as experts and not figure heads. The requirements in a court of law are so numerous and complicated that I can refer to but a few. First, you should thoroughly understand the anatomy and physiology of the eye and ear, so as to answer questions relative to them in cases of injuries. Be familiar with the use of the ophthalmoscope; differentiate a diseased eye from a well one. Know the appearance of interstitial keratitis and that it is only syphilis, hereditary or acquired, that it will produce a peculiar condition of the cornea. You should know how to treat and save from blindness. Always state the probable results; make no promises of recoveries or length of time needed. In ear cases, be able to detect a simulating deafness from a real one. A teacher strikes a child with the flat of the hand; the parent takes it to a physician; he finds a ruptured drum. You may be asked how you know that it is not an old perforation. Traumatic perforations have traces of blood fresh or dried near the edges of the wound and in using inflation of the ear the air passes out easily into the auditory canal, while in pathologic perforations the exit is only under pressure and produces a whistling. In rupture from compressed air the rupture usually occurs at the periphery of the membrane, but in rupture from fracture of the bone as by blows, etc., it occurs in any part. This is accounted for as follows and is important in a medico-legal view. The drum membrane is generally contracted toward its center by the oto-muscular apparatus and often favored by chronic hyperplastic forms of catarrh, atrophy and cicatrices near the drum head, making this its weakest point where the rupture most always occurs. The ear must be carefully examined after injuries. An employe may claim damages for loss of hearing, claiming it from a blow on the ear, when really due to impacted cerumen. In one case I removed a lot of impacted cerumen and two dead bugs; hearing became normal and he never claimed damages after that. Precautionary measures, records, etc., apply equally to diseases as well as injuries of the ear. On the witness stand answer all questions clearly in plain terms. Illustrate by models so the jury can understand. In all cases make a thorough examination, keep a record in detail. If not capable of using the ophthalmoscope or ear speculum with reflected light, have a consultation and at once. Be well versed in the anatomy and physiology of the eye and ear; study both in health and disease; try to have much experience as without all this you had better not approach the witness stand. Always get the consent of the proper authorities before performing any operations; never promise any definite results or time.

DR. EDWIN ROSENTHAL, of Philadelphia, read a paper,

THE REDUCTION OF THE PERIOD OF INTUBATION BY SERUM TREATMENT OF LARYNGEAL DIPHTHERIA.

Dr. Rosenthal exhibited to the meeting the various strength, of antitoxic serum (the "Standard" 100 units to each c.c.; the "Potent" 250 units to each c.c.; and the "Extra Potent" 500 units to each c.c., of the H. K. Mulford Company's make) used by him at the present time in the treatment of those cases of diphtheria embodied in the present paper. Dr. Rosenthal also showed the culture tubes provided by the Board of Health, along with the cards giving the results of the bacteriologic examinations, made by the bacteriologic department of the Philadelphia Board of Health. He then in a series of admirably arranged comparative and statistic studies on the subject of intubation seeks to prove:

1. That the operation of intubation is the most desirable and more favorable than tracheotomy.
2. That with the serum treatment of diphtheria, tracheotomy will no longer be necessary.
3. That the serum treatment in diphtheria exerts a most marked and favorable reduction in the time the tube is worn in the larynx.

Pre-Serum Period, American. In a series of cases occurring in Dr. Rosenthal's practice there were 38 recoveries in 100 cases, and a mortality of 62 per cent. The tube was worn in 12 cases, 46 to 96 hours, mortality 31.40 per cent.; in 26 cases, 120 to 672 hours, mortality 68.60 per cent.; minimum duration 48 hours; maximum 672 hours; average time tube was worn

185¼ hours. Dillon Brown (June and July, 1887) places the time for final extubation at 5 days 3½ hours—that is, 123½ hours. O'Dwyer in 158 recoveries gives the average as 6 days, 2 or 3 hours (146 to 147 hours). Louis Fischer reports to the writer, 4 cases, 50 to 60 hours, 25 per cent.; 12 cases, 148 to 624 hours, 75 per cent.; minimum duration 50 hours; maximum 624 hours; average time 176½ hours.

Pre-Serum Treatment, European. Gustave Baer performed final extubation at the Zurich Children's Hospital as follows: 20 cases, 1 to 5 days, mortality 64.50 per cent.; 11 cases, 6 to 52 days, mortality 35.5 per cent. Prof. Von Ranke gives: Within 24 hours with a mortality of 8 per cent.; within 48 hours, 26 per cent.; within 72 hours, 18.50 per cent.; within 96 hours, 20 per cent.; over 96 hours, 27.50 per cent. Huebner in 25 cases of recovery has given 100 hours as an average when final extubation could be performed. Johann Bokai (Stephanie Kinder-hospital, Buda Pesth) reports 673 cases of intubation, of which 223 (33½ per cent.) were cured; of these 223 cases, 8 were tracheotomized, if we subtract these we have 215 cases. From ½ to 120 hours, 82.33 per cent.; from 120 to 240 hours, and 7 cases over 7 days, 17.67 per cent., showing a minimum of ¼ to 9 hours; maximum of 217 to 368 hours, average duration 79 hours.

Post-Serum Period, European. Huebner reports ten cases of intubation in diphtheria treated with antitoxin, with an average duration of 37 hours. In Von Ranke's cases the tube was removed within 24 hours in 18 cases, 18.5 per cent.; within 48 hours in 48 cases, 48.1 per cent.; within 72 hours in 11 cases, 11.1 per cent.; within 96 hours in 10 cases, 10 per cent.; over 96 hours in 3 cases, 3.7 per cent. Of 90 cases intubated by Bokai since the serum period, 45 recovered, 50 per cent. In this group of cases the minimum was 1 to 7 hours; the maximum 150 to 160 hours. To show the comparison between the two periods before and after serum treatment Bokai tabulates his cases. His table shows that the number in the 1st and 2nd 24 hours has conspicuously increased; the average being 61 hours against 79 hours before the serum period, therefore the serum period has lowered the duration of intubation 18 hours.

Post-Serum Period, American. O'Dwyer intubated 30 cases since the period of serum treatment of which 20 recovered, 66 per cent. The duration of 19 of these cases was from 8 to 119 hours 17 cases, 89½ per cent.; 120 hours, 2 cases 10½ per cent. Minimum, 8 hours; maximum, 120 hours; average, 83½ hours, as against 147 hours previous to antitoxin treatment. Therefore the serum treatment has lessened the time of incubation 63½ hours. Dr. O'Dwyer has informed the writer that the average duration of intubation has been 80 hours, making his reduction 67 hours. Louis Fischer reports 30 cases of recoveries after intubation: 19 cases, 16 to 116 hours, 63½ per cent.; 11 cases, 128 to 408 hours, 36⅔ per cent; minimum 16 hours; maximum 408 hours.

To show the comparison between the two periods before and after serum treatment, Dr. Rosenthal tabulates Fischer's cases similarly to those of Bokai, with the resulting summary. Before antitoxin: Percentage of cures before 120 hours, 25 per cent.; percentage of cures after 120 hours, 75 per cent. After antitoxin: Percentage of cures before 120 hours, 63½ per cent.; percentage of cures after 120 hours, 36⅔ per cent. This table shows that in the first three days the percentage of recovery has increased. The average number of hours in the pre-antitoxin period was 176½ hours. Post-antitoxin period was 108¼ hours, a reduction of 68 hours in the time the tube was worn. Dr. Rosenthal gives the result of 20 cases in his own practice: of these cases two died, 10 per cent. In those cases that recovered the duration of intubation was as follows: 12 cases, 12 to 103 hours, 66⅔ per cent; 6 cases, 146 to 291 hours, 33⅓ per cent. Average number of hours tube was worn, 114 1-6 hours. Compared with time pre-serum period, 185¼ hours, shows a reduction of 71 1-12 hours. Tabulated as in Bokai's cases: Pre-serum period, before 120 hours, 47.5 per cent.; after 120 hours, 52.5 per cent. Post-serum period, before 120 hours, 66⅔ per cent.; after 120 hours, 33⅓ per cent. In the operation of tracheotomy the writer has had no personal experience, but quotes E. Kohl, who gives the results of a study of 800 cases of recovery, and the difficulty he assumes to be when the final decanulement can not take place after three weeks. There were in 24 cases final removal in 3 days; 71 cases final removal in 4 days; 94 cases final removal in 5 days; 30 cases final removal in 6 to 10 days; 200 cases final removal in 10 to 30 days; 50 cases canula was worn 1 to 12 months. Bokai's experience in tracheotomy follows: In the majority of his cases (84 per cent.) he was enabled to withdraw the tube within 10 days, on the 6th or 7th day, 44½ per cent.; in 5 days, 23½ per cent. Kohl's and Bokai's cases placed in comparison give (tracheotomy per cent. of recoveries) Kohl, under 5 days, 23½ per

cent.; 5 to 10 days, 37½ per cent.; over 10 days, 38⅔ per cent. Bokai, under 5 days, 23½ per cent.; 5 to 10 days, 60½ per cent.; over 10 days, 16 per cent. Intubation per cent. of recoveries: Bokai, under 5 days, 83.08 per cent.; 5 to 10 days, 16.02 per cent. O'Dwyer, under 5 days, 89.51 per cent.; 5 to 10 days, 10½ per cent. Fischer's, under 5 days, 63½ per cent.; 5 to 10 days, 16⅔ per cent.; over 10 days, 20 per cent. Rosenthal, under 5 days, 66⅔ per cent.; 5 to 10 days 22 2-9 per cent.; over 10 days, 11 1-9 per cent. Bokai's cases show the average duration of intubation to be 79.6 hours, and in the majority of his cases (83.08 per cent.) final extubation was performed within 5 days (120 hours) even though a relatively large number in 217 cases, 42 cases, 16.02 per cent. were intubated over 5 days, without the longer intubation being in any way dangerous. Under the serum treatment no alarming symptoms (decubitus, etc.) were manifested: for that reason but one conclusion can be borne, that the operation of intubation is alone sufficient, and the secondary operation of tracheotomy can be avoided. O'Dwyer's cases show the average duration of intubation to be about 80 hours, and in almost all his cases final extubation was performed within five days. Dr. Rosenthal quotes from a letter received from Dr. O'Dwyer, which most forcibly demonstrates the utility of the serum treatment: "My results up to the present time in 500 cases in a series of hundreds: First hundred (largely experimental), 17 recoveries; second hundred, 27 recoveries; third hundred, 30 recoveries; fourth hundred, 26 recoveries; fifth hundred, 39 recoveries. The marked increase in the last series was due to antitoxin, in thirty cases of which there were 20 recoveries. In the 70 preceding cases in which no antitoxin was used there were only 19 recoveries, which was about the same percentage as in all the other series."

O'Dwyer's statistics therefore substantiate Dr. Rosenthal's. From a mortality ranging from 83 per cent. to 70 per cent. before the serum period, his reduction has been to 30 per cent., and the reduction in the time the tube was worn was 67 hours. Fischer's cases show the same characteristics as in O'Dwyer's cases and Dr. Rosenthal's, the average duration of intubation was 108¼ hours and in 63⅔ per cent. final extubation was performed within 120 hours. In one of Fischer's cases seen with Prof. H. J. Boldt, intubation and extubation was performed five different times during a period of 408 hours, which has somewhat raised his average. However, the reduction in the time the tube was worn is equal to O'Dwyer's and Dr. Rosenthal's, and averages 68 1-10 hours. The relatively large numbers (in 30 cases, 11 cases, 36⅔) were intubated over five days (120 hours). No dangerous symptoms arose necessitating tracheotomy. Intubation with the serum treatment has been sufficient in Fischer's hands to perform the cure. Dr. Rosenthal's own series of cases show the average duration of intubation with serum treatment to be 114 1-6 hours, and in the majority of the cases (12) final extubation was performed within 5 days. In his long cases he has never seen any indications that would call for tracheotomy, and in one of his cases, intubation and extubation were performed very frequently with favorable results. In his paper Dr. Rosenthal refrains from mentioning those cases of laryngeal diphtheria treated with antitoxin, which recovered without the aid of intubation. These cases were in a greater number than those operated upon, and the reason unquestionably has been due to the early use of antitoxin.

The writer's conclusions after using the serum treatment in the last eighteen months are as follows: "1. The duration of intubation varies. In the cases quoted extubation has been made in from ½ to 408 hours. The rule, however, in the majority of cases is that final extubation can be performed within 120 hours. 2. The average length of intubation has been reduced in a marked degree: Bokai, 18 hours; Von Ranke, 25½ hours; O'Dwyer, 67 hours; Fischer, 68 1-20 hours; Rosenthal, 71 1-6 hours. 3. The operation of tracheotomy is avoided, intubation being sufficient to cure, even in the long cases, 5 days and over, there were no symptoms necessitating such procedure. 4. The use of the serum has placed intubation on a definite basis: (a) by lowering the mortality; (b) by shortening the period of intubation; (c) by avoiding the major operation, tracheotomy."

THE PRESIDENT—The paper of Dr. Rosenthal is open for discussion.

DR. NOBLE—I would like to hear from Dr. Welsh in the discussion of this paper.

DR. WELSH, of Philadelphia—I did not intend to take part in this discussion, but I am obliged to say that my experience is not in accord with the author of the paper. He contends in the paper that the tube may be removed much earlier when antitoxin is used than when it is not. He does not know that in order to determine that fact it is necessary very frequent

experiments should be made every day in removing the tube, both in the non-antitoxin cases and in the antitoxin cases, to the earliest period of the disease when the patient can get along without the tube. Now, no such experiment has been made. Before the introduction of antitoxin, we were told that it was necessary that the tube should remain in for six, seven or eight days. O'Dwyer's instructions are that the tube may be removed on the seventh day. Now, I think that was pretty generally followed before the introduction of antitoxin. So it is not known just how long a patient can get along without a tube. That can only be ascertained by removing the tube and learning. Now, since antitoxin has come into practical use, some writers claim that the patient can get along earlier without the tube; and they have found by experiment that in some cases they get along without. So I say that this conclusion is scarcely warranted, unless experiment is made of the two cases precisely in the same way. I have tried removing the tube at an earlier period of the disease; but have found that we had to introduce the tube again repeatedly. We first thought that we could get along without the tube after having worn it four days, with the use of the antitoxin; but we found that we had often to hasten to get the tube back, and save the child's life. A patient in one of the wards of a hospital in the city of Philadelphia wore a tube three months. During the three months the tube was removed or coughed up as often as seventy times; and yet it was impossible to get along without it. The child would often run into the sleeping room of the resident physician, with its night clothes on, having coughed it out and carrying it in its hand. The physician would reintroduce the tube and the child would go back to bed. I have seen the child and I am sure it would not have lived fifteen minutes if the tube has not been reintroduced, and, as I stated, that child was required to wear that tube three months. Frequently the tube has to be used as long as three weeks, even where the antitoxin is used. Not very long ago a patient was sent to the hospital, having received antitoxin before its introduction, a number of hours later. I do not think it was as long as twenty-four hours after that intubation was necessary. It was found to give a temporary relief. The child was then sent to the hospital in that condition. It continued to use the tube; in six days we thought we would remove it and did so. Serious symptoms at once developed, and the tube was reintroduced, and the child wore the tube four days longer. We thought then we could remove the tube and did so. The resident physician told me he had to hurry with all the haste possible from some other part of the institution in order to put the tube back and save the child. One morning, about the eleventh day, at 5 o'clock, the child coughed up the tube. Its condition at once became serious and the nurse telephoned over to the other building for the resident physician. Before he got there that child was dead. It was an antitoxin case. I have very frequently met with cases where the tube is coughed up and the child gets along very well, no matter whether the child has taken the antitoxin or not. I have frequently had children do pretty well after the tube was introduced and taken out immediately. They breathed better for a time.

Dr. T. D. DAVIS, of Pittsburgh—I have had considerable experience personally in the use of antitoxin. We make it in Pittsburgh ourselves and we know it is good. We know its strength and we know the results. At the last meeting of the Allegheny County Medical Society the subject was up before the members. There was not one single remark made by any doctor present derogatory to its great efficiency. Some of the cases reported were a little short of miraculous. In my own personal practice I have seen two cases where, as it were, the child was snatched as "a brand from the burning" by its use. There are various ways of using it. Because a man says a case has been treated with antitoxin and dies it does not follow, therefore that antitoxin was of no value or that it could not have been made of greater use in that individual case. A great deal depends on how it is used, the quality and quantity used and the time of use. If you have a patient suffering with malaria and give one small dose of quinin, you treat the patient with quinin, but how? The same applies to the treatment of diphtheria with antitoxin. If you administer 500 units when it requires 5,000 units to neutralize the poisons, your patient will die: not on account of the antitoxin but because you have not given a sufficient amount. If our theory in regard to the serum is correct it is one of the few remedies that is beneficial whether it does any good to the diphtheria or not. It not only is harmless but it is beneficial. You are putting food into the body. You can not possibly cause injury by it, if it is pure and good. You absolutely benefit, in the same way as you would by injecting milk or beef tea. Therefore you are not using a dangerous remedy. In one of the cases reported

at the Allegheny County Society, 142 cubic centimeters were used in the case of a child 7 years of age, within thirty-six hours, with a recovery. Antitoxin does not propose to remove spasm of the larynx, nor reduce congestion or an inflamed condition. Antitoxin proposes to remove the diphtheria and not its results. I know when I use it, when the membranes have disappeared. I am thus free to say whether the tube can be removed or not. I know that I have never seen a case, by the use of antitoxin, that lasted over forty-eight hours. Now, if this membrane was in the larynx and the intubation was used solely on account of the membrane, then I would take it away. If there was spasm of the larynx and congestion remained, then such would have to be treated. The antitoxin would have no effect on such a case, as it only cures the diphtheria.

Dr. ROSENTHAL—The expression made by my colleague from Pittsburgh is exactly what I wished to make: While antitoxin is a specific for diphtheria, you must know how to use it. If you give one administration the child may not recover; I have seen recoveries in laryngeal diphtheria that were intubated in almost hopeless cases. Therefore I am ready to stand by the antitoxin and to go down with the antitoxin. While it is of signal importance to employ antitoxin as early as possible, I never despair, even when called late, but in such cases give larger amounts of antitoxin, 2,000 units as a commencing dose.

The antitoxin which I have exhibited here is presented in three grades of strength. Let physicians use it as I have told them, and if there are any failures let them be attributed to me. I do not know about the Philadelphia Municipal Hospital, but it stands unique in regard to its mortality list, which is the greatest in the world to-day, and is the only institution that has not reduced its mortality since the introduction of antitoxin. I have presented a number of cases where my conclusions are proven and if the opportunity were offered I could demonstrate the same at the Philadelphia Municipal Hospital. I have daily reports made with analysis of urine, etc.; in no case has albuminuria been noted, and I have not noted any joint pains, and in but few instances a slight urticaria, which soon disappeared, and which I have noted in cases treated by me before the serum period. Dr. J. S. Billings, Jr., has reported in the *Medical Record*, April 25, that the "antitoxin treatment has no deleterious effects upon the blood corpuscles. On the contrary, it seems to prevent degenerative changes which would otherwise be brought about. A knowledge of the duration of the period of intubation ought to have some value. When I inject the antitoxin in insufficient quantity, and ascertain the result, I repeat with an increased number of units, and when the symptoms are favorable I take the tube out. In one case it remained 148 hours, but it was not due to antitoxin. I do not like figures that are incorrect, and long to have them right. When you have used antitoxin and on the second day the temperature rises again it is an indication of insufficient antitoxin having been given, and indicates the further need of antitoxin, and I give it in double or treble amounts; if my first injection was 1,000 units I administer 2,000 units, and if the third injection is necessary, 3,000 units. To use antitoxin for other complications, you may as well expect to give a dose quinin, with beneficial results, when a man has abscess of the liver. But antitoxin will cure diphtheria, and I know that it decreases the mortality, and that it reduces the time for the tube to be worn. Dr. Fischer and Dr. O'Dwyer, of New York, the originator of the tubes which I have shown, will stand by the same thing.

Dr. W. B. ULRICH—Before the Doctor takes his seat I would like to have this question answered by him and Dr. Welsh: Have you ever known any harmful results from the use of antitoxin? I, myself, would not feel with my experience in its use, that I had done my duty in not using antitoxin in diphtheria, notwithstanding my skeptical views when antitoxin was first introduced. I would like to have this question answered before the society.

Dr. ROSENTHAL—I have used as high as 13,000 units in one case with curative results.

Dr. ULRICH—Have you had any harmful results?

Dr. ROSENTHAL No, sir. Neither have I found any by examination of the urine. There is a difference in the injection, depending upon the kind of antitoxin you use. If you use Gibier's antitoxin you can use enormous amounts with scarcely any effect.

Dr. W. B. ULRICH—What kind of antitoxic serum do you use?

Dr. ROSENTHAL—I use Mulford's exclusively in my practice. Of the Mulford product you can secure three different strengths. The "Standard," containing 100 units to each c.c., the "Potent," containing 250 units to each c.c., and the "Extra Potent," containing 500 units to each c.c. Each of these strengths being supplied in vials of 500, 1,000 and 2,000

units. The charts I have shown the society were treated with the "Potent" and "Extra Potent." In one case the tube was withdrawn within seventy hours, and the child was cured; in the other case within seventy-three hours, with like results. I have never seen a single unfavorable symptom where Mulford's antitoxin was used, and I now use it exclusively, as it has given me more prompt results than any antitoxin I have ever employed.

DR. WELSH—I have never seen any fatal results; but I have seen some complications arising from urticaria and joint pains.

DR. W. M. BEACH, of Pittsburg, read a paper,

SPECIAL FORMS OF RECTAL FISTULÆ.

Only within the last decade has there been any considerable enthusiasm evinced by the medical profession in the study of rectal diseases. Now every important city has one or more reputable physicians interested in this line of work, thereby adding to the list of legitimate specialties. I do not attempt any originality, but rather to arouse your interest in a field of research much neglected and relegated to quackery. It is generally conceded that next to hemorrhoids, rectal fistulæ most frequently claim the attention of the rectal specialist. Though the pathology of fistula in ano is familiar to all, and the subject trite, it is the purpose to direct attention to "special forms" and the surgical procedure toward a cure. Fistulæ with surface openings will receive no consideration, but rather the blind internal fistula with a rectal orifice and those connecting two cavities. Two reasons obtain for presenting these forms: 1, the frequent obscurity of symptoms and lesion; 2, the difficulty in obliterating the abnormal canal. Many an obscure case of pelvic disease will stand out in clear light through a skillful exploration of the rectum. The uterus and appendages, or posterior urethra, frequently bear the onus of some disease of the rectum, trifling or otherwise, and a failure to cure inevitably ensues. The internal blind, or the recto-perineal blind fistulæ are chiefly found in the anterior wall of rectum, though the submucous variety may occur in any portion, and the opening, usually small, is found in a pocket just above the internal sphincter. Periodically, induration may occur on the surface, which is an aid in locating the sinus, that can be traced downward and forward with a bent probe. This condition is not rare, but often overlooked. The recto-urethral, or recto-vaginal fistula, is the second form I wish to present, and is easy of diagnosis but difficult to cure, the former being the reverse. The subjective symptoms are certain in the latter for the most part, and leave no doubt in the mind of the physician. The science of obstetrics in its evolution plays no small part as an etiologic factor. The middle of the dying century tolerated a practice of non-interference in the conduct of confinement resulting in anterior vaginal fistulæ the result of sloughing tissues from prolonged pressure of the fetus in the parturient canal. Latterly an opposite extreme obtains; the too frequent, not to say unskillful, application of traction instruments produce extensive perineal lacerations, often obliterating the recto-vaginal body attended with paralysis of the sphincter, and the traumatism may mark the beginning of a recto-vaginal fistula. Lithotomy is not without its danger in producing rectal fistulæ, and may be mentioned as an important factor. Thrusting the knife through the membranous urethra, the rectum may be punctured, leading to a permanent tract. This accident was probably more frequent prior to the use of anesthetics, agents so conducive to calm deliberation in surgical manipulation. Abscess is by far the most frequent source of rectal fistulæ: in fact, most authors believe it to be a *sine qua non* in their production. Perirectal abscess may arise from a constitutional diathesis, or a traumatism surgical or otherwise. The point of least resistance is usually toward the rectal cavity, becoming a blind internal fistula. The following illustrative case came under my observation: L. S., aged 35, occupation merchant, family history good, applied to me for the relief of some obscure rectal trouble. He had considerable urethral irritation for which he had been treated over a year, his physician supposing it to be of gonorrheal origin, doubting the emphatic denials of his patient. Careful questioning revealed the fact that shortly before his trouble he had fallen astride some wares in the basement of his store, followed in a few days by pain, heat and swelling in the perineum, which suddenly subsided on the appearance of a rectal and urethral discharge, the latter more profuse. At this stage he consulted another physician, who faithfully treated the supposed gonorrheal discharge, which soon stopped. Pain in back and hips and a rectal discharge still persisted, but he was assured that the rectum was healthy, the symptoms being a result of the past urethral catarrh. He came to me much discouraged. By aid of a speculum and an electric lamp, a thorough search was made of the lower three

inches of the rectum. I found nothing pathologic. A third trial about two weeks afterward was also likely to prove futile, but when about to withdraw the speculum, I made a pressure on the perineum, which forced purulent fluid through a minute orifice on the anterior wall of the rectum. A bent probe entering this brought the exclamation: "You have touched the spot, Doctor," and the instrument passed into a large cavity as deep as the urethra, as was subsequently demonstrated by the operation, which consisted of free incision and dissection. The patient fully recovered, all nervousness and urethral irritation disappearing. Here, then, was a perineal abscess, the result of traumatism, opening both into the urethra and rectum, the urethral orifice closing. Microscopy revealed no gonococci. The following case is rare, only a few of the kind having been reported. Wyeth reports one, to whom I am indebted for the technique of the operation. This case was the result of lithotomy.

J. W., aged 55, occupation, cashier. When 9 years old lithotomy was performed by a prominent Pittsburg surgeon and relieved successfully of a large calculus. His recovery was uneventful, but soon after patient noticed unnatural sensations which convinced him of a connection between his rectum and urethra. Urine passed in large amounts per rectum. Gas and fecal matter per urethra. He consulted various physicians who assured him that such was not probably the case, nor consistent with his apparent good health, and after several years of futile medication he suspended treatment. In October, 1895, after a lapse of twenty years, his condition growing worse, he consulted his physician, Dr. E. L. Neff, of Allegheny, who found a communication between the urethra and rectum by injecting into the urethra several ounces of a weak solution of permanganate of potash. The fluid was found in the rectum. Dr. Neff kindly referred the case to me, when another examination was made. The finger revealed a normal rectum except above the sphincter anteriorly where it passed into a deep sulcus. Passing a sound through the urethra and inserting a speculum into the rectum, a probe readily demonstrated a recto-urethral fistula, the urethral opening being in the membranous portion. The fistula was fully one-half inch in diameter throughout, since the finger passed through readily. A solution of hydrogen peroxid was then thrown into the urethra and readily appeared in the rectum. The wall of the fistula was dark and callous and the rectal orifice more or less irregular. There was no doubt in the diagnosis of a large patulous tract between these cavities. Nov. 2, 1895, Drs. Neff and Adair assisting, an attempt was made to close the fistula. Two crescentic flaps were made about the fistular orifice, the primary incision about a half inch from the margin going through the muscular coats of the bowel. The flaps were dissected up to within an eighth of an inch of the margin between which and the opening the flaps were to receive their nutrition; they were turned toward each other, the rectal mucous membrane becoming the urethral floor, the raw surface being in the bowel. A line of catgut sutures was placed about a fifth of an inch apart, a rubber tube was placed in rectum for the escape of gas, and a silver catheter retained for ten days through which the bladder was flooded with Thiersch's solution each time after the patient voided urine. The wound healed kindly and promptly, and a complete obliteration of the fistula was assured, but a few months afterward patient still complained of small quantities of urine in rectum and gas in urethra, which was only occasional, however. Since the operation, no fecal matter has appeared through the urethra and other abnormal phenomena very much modified. An examination showed a minute orifice at the upper angle of the wound which failed to unite. The patient is anxious to have this closed which he will allow us to do the coming autumn, when we hope to fully succeed. There was no extravasation of urine and his general health is much improved. The importance of the rectal tube can not be overlooked in promoting the healing process with a view of obliterating fistula between rectum and urethra, or vagina. The neglect of this precaution has caused many failures in closing recto-vaginal fistula on account of gas infecting the wound.

(To be continued.)

American Pediatric Society.

*Eighth Annual Meeting held at Montreal, Canada,
May 25, 26 and 27, 1896.*

Owing to the necessary absence of the President, DR. JOSEPH O'DWYER, the first Vice-President, DR. JAMES C. WILSON, presided. The first session was opened by the reading of the President's address, entitled

THE EVOLUTION OF INTUBATION.

This was prepared at the request of the Council and was a paper of interest as it described the labors which Dr. O'Dwyer pursued with untiring devotion to a great idea through five long years. A bivalve tube was first used but after three years of continuous effort it was abandoned and experiments were begun with the solid tube. The paper described the various experiments made with alternating failure and success, until at last obstacle after obstacle had been overcome, and imperfection after imperfection had been removed. As a result of this patient toil, perfected instruments were given to the profession, a very rare thing in the history of medicine. The various steps taken in the attaining of this result were narrated with the simplicity and modesty which has always characterized the literary work of Dr. O'Dwyer.

The first paper was read by Dr. GEORGE N. ACKER, of Washington, on "Gangrene of the Lung following Typhoid Fever." Dr. J. H. FRUITNIGHT, of New York, read a paper on "Malignant Endocarditis" and presented a specimen. As the bacteriologic examination showed the condition to be due to the presence of streptococci, the author advocated the use of streptococcus antitoxin serum in such cases.

At the second session, Dr. A. H. WENTWORTH, of Boston, read an exhaustive paper on "Lumbar Puncture" and reported twenty-nine cases. He affirmed that while normal cerebrospinal fluids contain neither fibrin nor cells and is always clear, it is always cloudy in cases of meningitis, though the cloudiness is sometimes very slight. This is caused by cells, the character of the cells differing with the variety of meningitis. The operation, the author believes, offers a valuable means of diagnosis. For such purpose, however, the microscope is essential and inoculation experiments are also of value. This was followed by a paper on "Tapping the Vertebral Canal," with remarks on local treatment for tubercular meningitis, by Dr. AUGUSTUS CAILLÉ, of New York. He reported twenty-one cases, and believed that a study of the cases reported up to the present time will certainly convince the most skeptical that Quincke's puncture is of positive value as a method of diagnosis. It is simple and usually easy of performance. In two cases Dr. Caillé injected antiseptics into the sub-arachnoid space but without material results. He proposes in some future case to lay bare the dura by removing a button of bone and irrigating from a lumbar puncture upward through an opening in the dura.

Dr. C. G. JENNINGS, of Detroit, also read a valuable paper "Lumbar Puncture," and reported practical experience.

Dr. FLOYD M. CRANDALL, of New York, read a paper on the "Occurrence of Influenza in Children" and reported local epidemics.

Dr. SAMUEL S. ADAMS, of Washington, reported an extremely interesting case of "Temporary Insanity following Typhoid Fever."

Dr. FREDERICK A. PACKARD, of Philadelphia, reported a case of "Endothelioma of the Brain with Atrophy of the Paralyzed Members."

Dr. HENRY JACKSON, of Boston, read a paper on "Nasal Feeding in Diphtheria," in which he advocated feeding by means of a soft tube passed through the nose into the esophagus in certain cases of diphtheria. As this can be done with ease, it does much in preventing exhaustion of the child's strength.

Dr. WILLIAM OSLER, of Baltimore, read a paper on the

CLASSIFICATION OF TICS OR HABIT MOVEMENTS.

He made the following classification: 1. Simple tic or habit spasm. 2. Tics with superadded psychic phenomena: *maladie de la tic convulsif*; or Gilles de la Tourette's disease. 3. Complex coördinate tics. 4. Tic psychique. An imperative idea is the psychic equivalent of, and has an origin similar to, the motor tic. Each of these subdivisions was elaborated, and illustrated by practical examples.

The third session was devoted to the antitoxin treatment of diphtheria. The report of the Collective Investigation Committee of the Society upon the results of the antitoxin treatment in private practice was read. Over five thousand cases were reported, the results being, on the whole, far more favorable than any extended reports have thus far appeared. A complete report will soon be published in full.

Dr. A. F. PACKARD reported favorable results of the antitoxin treatment and Dr. S. S. ADAMS read a paper on the "Comparative Results of the Treatment of Diphtheria with and without Antitoxin in the District of Columbia." It appears that the death rate from diphtheria in the District of Columbia since the introduction of antitoxin has materially diminished.

Dr. A. SIEBERT of New York, read a paper on

SUDDEN DEATH AFTER ANTITOXIN INJECTIONS.

He reported a series of striking experiments which showed that the injection into animals of carbolic acid even in very weak solution was constantly followed by most characteristic spasmodic movements. Another series of experiments was made to determine the effects of subcutaneous injections of air. The results seem to show that antitoxin can contain but infinitesimal quantities of carbolic acid. They also render the proposition reasonable that the few sudden deaths reported after the injection of antitoxin might be due to the injection at the same time of air.

The general discussion elicited by these papers was extremely interesting and showed unanimous and very strong sentiment in favor of antitoxin.

At the fourth session, Dr. ROWLAND G. FREEMAN, of New York, read a paper on "Low Temperature Pasteurization of Milk at about 67 degrees C." He proved that this temperature was sufficient to kill numerous pathogenic bacteria and various atmospheric bacteria, and referred to the importance of avoiding unnecessary heat in the preparation of milk for infant's use. He presented a new apparatus of simple construction, designed to pasteurize milk at 67 C. Dr. CHARLES W. TOWNSEND, of Boston, reported several cases of "Thigh-Friction in Infants." Dr. WILLIAM P. NORTHRUP, of New York, reported a most interesting case of "Apparently Relapsing Cerebro-spinal Meningitis" followed by death and autopsy, which elicited a warm discussion on the pathology and diagnosis of meningitis. Dr. HENRY LAFLEUR, of Montreal, reported a case of "Insolation in an Infant of Thirteen Months." Dr. A. D. BLACKADER, of Montreal, reported a case of "Enlargement of the Liver" in a young child with symptoms closely resembling those of typhoid fever.

Papers were read by title by Drs. B. K. RATCHFORD, of Cincinnati; F. FORCHHEIMER, of Cincinnati; IRVING M. SNOW, of Buffalo, and HENRY D. CHAPIN, of New York.

The last session was devoted to the presentation of pathologic specimens, specimens being presented by Drs. Rotch, Holt, Caillé, Adams, Packard, Acker, Freeman, and Townsend.

In the executive meeting, the following officers were elected for the coming year:

President, Dr. Samuel S. Adams, Washington, D. C.; first vice-president, Dr. W. S. Christopher, Chicago; second vice-president, Dr. Charles W. Putnam, Boston; secretary, Dr. Frederick A. Packard, Philadelphia; treasurer, Dr. Charles W. Townsend, Boston; recorder and editor, Dr. Floyd M. Crandall, New York; member of council, Dr. William Osler, Baltimore; chairman of council, Dr. William P. Northrup, New York.

The Ohio State Medical Society.

Annual Meeting held at Columbus, May 27-29, 1896.

The Society was called to order in the Hall of the House of Representatives, Columbus, May 27, the President, Dr. MILLIKIN, in the chair. An address of welcome was delivered by Mr. GILBARGER, and responded to by the President of the Society.

Dr. JAMES E. PILCHER, Captain Medical Department U. S. A., Columbus, read a paper on

THE PRESENT STATUS OF MILITARY MEDICINE AND SURGERY AND ITS RELATION TO GENERAL PRACTICE.

Military medicine and surgery are simply medicine and surgery adapted to the needs of military work. The relative importance of medicine and surgery in military work may be deducted from the fact that less than one-third of the fatalities in the late war were due to surgical causes. The first duty of one in the medical department of the army is to investigate the sanitary conditions and report fully. In military work the lightning operators are more necessary than in civil surgery. The engagements of the future will probably be more rapid than in the past and it will be impossible to remove the wounded from the field before treatment. The troops, therefore, must be instructed in the art of self-aid. The removal of the wounded from the field will probably hereafter be done after the engagement. This is done by the hospital corps, a band of men under the direction of the Medical Department. These men have charge of the nursing in the hospitals.

Dr. WILLIAM THOMAS CORLETT, Cleveland—"Modern Status of Specific Urethritis, with its Treatment." The essayist took up specific urethritis in the male, its course, complications and treatment. The best results were obtained from the use of permanganate of potassium, gr. ss i to ten ounces of water. Irrigation had also been used with advantage. The water should be 100 degrees F. The disease is self-limited, and we

know no means by which the gonococcus may be quickly destroyed without irreparable damage to the urethra. A free discharge of pus favors the elimination of the poison. Later in the disease topical applications hasten recovery, which may be regarded as complete when upon repeated examination the organism can not be found.

DR. F. F. LAWRENCE, Columbus—"Salpingitis." Salpingitis is always a secondary disease. Gonorrhea plays a role in etiology which has been generally overestimated. Other causes are abortion, the use of unclean instruments, etc. Some cases are largely due to a peculiar condition of the patient, in which there is a tendency to suppuration on the slightest injury or inflammation. Inflammation of the tube can rarely if ever be separated from ovaritis. Salpingitis should never be operated upon, except symptoms of infection are manifest. It is curable without operation and should be so treated. Acute septic salpingitis is always dangerous and often rapidly fatal, and should be operated upon if the patient has a chance of recovery. Chronic suppurative salpingitis should always be removed. Tubercular salpingitis, if no other structures are involved, should be removed. The essayist condemned the attempt to do too much, for instance, the removal of the uterus when the tubes or ovaries only are affected.

DR. GEORGE W. CRILE, Cleveland—"Research into the Technique of Laryngeal Operations, with Report of Four Successful Total Extirpations." The technique was based upon operations upon dogs and the cadaver. The cases reported comprised three of carcinoma and one of tuberculosis. The Doctor advised the introduction of the tracheal tube before operation, and after operation the food should be taken through the tube. In five neurotics there was no nausea from the tracheal tube. The radical operation is sometimes indicated for relief even when cure is impossible. When early recognized, the result of operation will probably be favorable, because the disease does not readily extend through the cartilage. Atropia hypodermatically guards the heart but not the respiration. Cocain, on the other hand, locally applied, guards both the heart and respiration absolutely, even though general anesthetics are employed.

SECOND DAY—MORNING SESSION.

DR. L. B. TUCKERMAN, Cleveland—"Is It Grip, or What?" The Doctor had recently met an unusual number of cases of weak heart with no appreciable lesion of either the heart or lungs. The depression was marked and the treatment used was aperient and tonic. The phenomena seemed to be of nervous origin, and the essayist suggested the name *bradycardia febrilis*, if the condition is not grip or an obscure case of malaria.

DR. S. S. HALDERMAN, Portsmouth—"Antitoxin in the Treatment of Diphtheria with Report of Fatal Termination of Case after Receiving Prophylactic Dose." (Published in the JOURNAL of June 13, p. 1168.)

DR. J. E. FACKLER, Versailles—"The Treatment of Diphtheria."

Early in the Doctor's experience he was impressed with the favorable results obtained from the use of chlorin in the treatment of certain zymotic diseases, notably, typhoid fever. Reasoning from analogy, the use of it was extended to the treatment of diphtheria, and for more than a quarter of a century the chlorin treatment has proven uniformly successful in the practice of the author and of neighboring physicians who have made use of the remedy. Not a case under this treatment has proven fatal thus far.

DR. R. E. SKEEL, Cleveland—"The Etiology and Prophylaxis of Puerperal Sepsis."

Puerperal sepsis is largely due to the action of infectious material to be found normally in the body. Thus, the vagina normally contains microorganisms, inhibited in action during health by the normal secretions. Any dead material as following abortion, should be promptly removed. For the same reason puerpera should sit in the erect position during micturition and defecation, if possible. Antisepsis and asepsis should be observed, beginning with the bath and clean clothing.

DR. M. STAMM, Fremont—"Intestinal Obstruction, Some Diagnostic Points and Treatment."

Pain is not intense and continual in the initial stage. Collapse is generally absent or much less frequent than in strangulation. The inflated coils and their peristaltic movement can be readily detected at the seat of obstruction in the distended abdomen. Some trouble in connection with the bowels has generally preceded the onset of ileus. The Doctor then presented the list of questions furnished by Obalinski. Treatment: With rest, diet and small doses of opium a great many cases of circumscribed peritonitis do well, and even some cases of diffuse peritonitis will recover. If the presence of pus can

be detected an incision should be made in that region and not in the median line. In cases of obstinate vomiting, lavage of the stomach promises great relief. Where the heart begins to fail and to cover the great loss of fluids from the tissues, infusion of salt water often proves of great benefit. Meteorism may call for puncture with the aspirator or hypodermic needle. If with the general signs of obstruction we find a large distended coil, with local meteorism and increased peristalsis, little doubt can exist it is a case of strangulation or volvulus, and we should resort to laparotomy at once. If a foreign body causes obstruction, its extraction by incision would be the proper procedure. In cases of stricture, anastomosis or resection is indicated. If due to compression by a tumor, enterotomy or resection are the preferable methods. In cases where there is some doubt about the nature and seat of obstruction, enterotomy or a fecal fistula would present the best temporary hope. In intussusception or invagination, we may at first try injection of large quantities of water in the genu-pectoral position, or insufflation of air into the rectum. If the invagination is low down, massage, sponges attached to a probe or stem, or the finger alone, may be employed for its reduction. Should all of this prove of no avail, disinvagination by laparotomy will have to be attempted, and where this method fails or where gangrene is already present resection would be the only expedient.

The President, DR. DAN MILLIKIN, then read the annual address

A STUDY IN CREDULITY.

The essayist traced the course of credulity in man from the first or primeval state, when man was simple in his tastes like the child and the savage, to the advanced stages of civilization of to-day, showing wherein the people of the present are possessed with unscientific ideas, superstitions, regarding the nature and cure of disease. The President declared that superstition found its food in disease, and that it was easy enough for the savage to clothe disease in some poetic or simple idea, making disease some terrible monster or demon. But even in the higher civilization of the no distant past, and even in the present, people regard disease as some terrible "it" traveling from one part of the body to another, which can only be cured by some imaginary charm or superstitious custom. The Doctors are not proof against the great wave of superstition or credulity that possesses the people, for it was only a few years ago that bleeding was regarded as the means by which disease could be let out of the body, or that intolerable drugs were poured down throats until either the disease had to go or the soul of the patient. The physician is not alone responsible for these superstitious ideas prevailing but the surgeon also clings to some of the old ideas and practices in his profession and can give no excuse for their existence: as for instance, his use of chloroform. The old credulity breaks out anew at every new discovery in bacteriology. The essayist then paid his respects to the patent medicines, condemning without stint many proprietary compounds. The remedy for all this credulity or safe-guard against more of it, is that the doctors should become scientific, should investigate for themselves, should become closer students of materia medica. The medical profession is not a credulous profession as a whole, and the doctors of the present and future should work out the principles of their science as the scientists in other branches work out the laws and hypotheses.

DR. B. D. MILLIKIN, Cleveland:

SOME OF THE ACCIDENTS OF CATARACT OPERATION.

Of the class of accidents occurring at the time of operation, we have: First, the iris falling before or upon the knife blade; second, the incision into the cornea may be too small to admit the escape of the lens; third, the escape of the vitreous; fourth, luxation of the lens; fifth, hemorrhage; sixth, prolapse of the iris, and seventh, infection. Those accidents occurring after an operation has been completed, may be enumerated as follows: First, prolapse of the iris; second, hemorrhage; third, accidents of more or less gravity resulting from the restlessness of the patient or striking against foreign substances, such as the hands, bed posts, etc.; fourth, infection.

DR. M. ROSENWASSER, Cleveland:

A PLEA AGAINST THE MEDDLESOME TREATMENT OF ACUTE GONORRHEA IN WOMEN.

The title explains quite well the nature of the paper. The author condemned the "early and thorough" treatment as meddlesome and mischievous for the following reasons: It is based on a pathology now discarded as crude and imperfect; it is not applicable to all the tissues simultaneously affected, and hence, it is no cure; the results at the end of the acute stage, are no better than those of a more rational though less

exacting treatment: it is cruelly painful and often dangerous, requiring an anesthetic for its proper execution; it is impracticable, even in the hands of an expert: though the treatment is irrational, inefficient, severe and dangerous: the physician who does not practice it is stigmatized as old fashioned, negligent, and indifferent to the interests of his patient.

Kentucky State Medical Society.

Forty-first Annual Meeting, held at Lebanon, June 10-12, 1896.

FIRST DAY—MORNING SESSION.

The meeting was called to order by the President, DR. JOHN A. LEWIS, of Georgetown, at 11 A.M.

The opening prayer was made by Rev. Dr. Bracken, of Lebanon.

The address of welcome was delivered by B. J. LANCASTER, of Lebanon. He referred feelingly to the fact that forty years ago the Kentucky State Medical Society met in that city, and reminded the members that his instructions were to extend the welcome on behalf of the citizens even more heartily than so many years ago, if such were possible. He referred also to the fact that Dr. W. W. Cleaver, a citizen of Lebanon, now present, was perhaps the only one who was present forty years ago.

The Chairman of the Committee of Arrangements, DR. R. C. MCCORD, welcomed the members on behalf of the Marion County Medical Society.

DR. STEELE BAILEY, the Permanent Secretary, referred to the sound condition of the Society, and said that at the present time there were more county medical Societies throughout the State than ever before and this was attributed to the efforts of the State Society. He referred to the fact that there had been three deaths and four resignations during the year.

On motion of Dr. McCormack, who presented a resolution from the State Board of Health, the President will appoint a committee of five to urge upon the Legislature at its next meeting a statute to punish the crime of abortion.

A symposium of papers upon Bright's disease was begun by a paper from DR. E. S. SMITH, of Hodgenville, upon

PARENCHYMATOUS NEPHRITIS.

A review of the early pathology was made leading up to the present pathologic classification, which is not satisfactory to all. Credit was given Rokitsky for having first classified it as a part of a general condition. The large, smooth, white kidney received the most attention as the typical form of this variety. The symptoms are typical of this form, though they all have a line of symptoms common to all. In the parenchymatous form there is a history of an acute attack; dropsy more common than in chronic form, not confined to any particular tissue but changes capriciously from one locality to another part of the body. Changes in blood common and prominent: face is pale, cutaneous surface white, smooth and glossy; blood more watery, poorer in albumin and red corpuscles: urea, uric acid and white corpuscles relatively increased. Uremic phenomena common, headache, defects of sight and hearing, convulsions and coma. The most logical question is the great absence of convulsions in Bright's disease; 90 per cent. are not so affected; convulsions constitute the exception. The various symptoms met in so-called uremic poisoning is difficult to explain upon hypothesis of poison in blood. Excitant, convulsant or narcotic symptoms rapidly follow each other in same case. That these nervous symptoms are caused by cerebral transudation seems most rational, this causes compression of smaller blood vessels and intense uremia of structures. If effusion in subarachnoid space or over cerebrum, coma ensues; if at base of brain, convulsions. Another significant fact is, the treatment which is most effective is that which relieves edematous effusions. The consideration of treatment is under three heads: 1, prevention of further extension of disease; 2, the relief, if possible, of organic changes; 3, the relief of troublesome symptoms. Under first, ascertain and remove cause if possible; diet, rest and clothing regulated: milk diet important. The second indication has not given so satisfactory results. Some think highly of bichlorid of mercury in doses from 1-36 to $\frac{1}{16}$ grain. Troublesome symptoms, as diarrhea, relieved by dieting, ice by mouth, bismuth, oxalate of cerium and opium; anemia by iron alone or with cod-liver oil: dropsical effusion by digitalis, caffeine, scoparius, hydragogues, as calomel and jalap. Patient may be carried off by uncontrollable diarrhea. Venesection must not be forgotten. Diaphoretics have their place.

DR. GEO. E. DAVIS, of Salvisa, read a paper on

CHRONIC INTERSTITIAL NEPHRITIS.

Probably the most fertile source of unsuccessful treatment

is erroneous diagnosis. Upon an accurate and timely diagnosis depends the correct management of the case. The symptoms taken singly may not be characteristic, but when taken collectively are of diagnostic importance and pathognomonic import. Symptoms are sonorous noises in ears, vertigo, asphyxia of extremities, itching, nocturnal cramps in legs, increased arterial tension, gradual loss of flesh in some cases, incapacity for mental and physical exertion, insomnia, headache, urine may reveal no abnormality, decreased toxicity and reduced specific gravity. Presence of casts while not general is ominous. First symptoms may be of alimentary tract, dyspnea, harassing cough, palpitation of heart, increased arterial tension, edema, disorders of vision, night sweats, increasing anemia, frequent urination. The microscope is much more generally employed and recognized of more importance as a diagnostic means and rightly so. Albumin is increased by full meal and exercise. The reduced toxicity of the urine, or a diminution of its solid elements, is of greater significance of early renal changes than albumin and casts. An interesting case was reported showing an association of symptoms as stated above. In treatment not much progress has been made. Mercury and iodids exercise favorable influences. Digitalis has no essential effect over kidney structures itself, relieving renal insufficiency by increasing arterial tension and stimulating and toning heart. Best results are secured by giving large doses at long intervals at bedtime; strophanthus must be repeated at short intervals. Water is a safe promoter of renal secretion and is best diuretic. Natural alkaline mineral waters have good effect on digestive disturbance. Tatham water exerts a beneficial influence in many cases. Stimulate function of skin and bowels to aid elimination. Diet is important; milk diet lowers specific gravity but increases albumin excreted. Anemia combated by combination of gold and arsenic; bromid of soda for insomnia.

DR. R. C. MCCORD of Lebanon read a paper on

AMYLOID KIDNEY.

In this form we have to deal with a degeneration which is always chronic without any acute stage or in any sense local. Its origin is in changes which pervade the whole frame and produce tangible alteration wherever arteries penetrate. It may invade other organs simultaneously. No alteration in size of kidney or their appearance when arteries principally involved; ocular inspection tells little, but iodine test is great aid. The amyloid tissue is colored a deep reddish brown. Late, the kidneys are increased in size. Microscopic examination shows alteration in walls of blood vessels, Malpighian tufts, vasa recta. It never occurs in those in perfect health, and occurs in connection with chronic suppuration and syphilis. Early symptoms are indefinite, but late easily recognized. The train of symptoms follow prolonged suppuration or syphilis. He loses flesh and strength. Dyspeptic symptoms and shortness of breath develop. Urine is increased in quantity, pale, low specific gravity; casts not abundant. Pale waxy complexion. Differential diagnosis not difficult. Prognosis is uncertain. If due to suppurative causes deposits will continue to increase as long as drain continues and no longer. If cause not removable, death follows. Give antisyphilitic treatment, when syphilis is present. If albumin is present and surgical operation indicated, the albuminuria increases the danger from the operation *per se*, and there is additional danger from the anesthetic. The dangers are usually from exposure and prolonged narcosis.

DR. CARL WEIDNER of Louisville, read a paper on

DIAGNOSIS OF THE DIFFERENT FORMS OF BRIGHT'S DISEASE.

Classification recognized as acute and chronic form. In acute form a nephritis is referred to in which uriniferous tubules with their lining membrane is chiefly involved, and form in which interstitial connective tissue is principal seat, but may have combination of two forms, if localized, a glomerular nephritis. Amyloid or waxy kidney occurs independently of previous kidney disease and simultaneously with the same changes in other tissues or organs. Examination of urine is very important and mostly aids in diagnosing different forms. Changes in urine have characteristics more or less common to all forms, in quantity, general physical character and chemie composition, and presence of certain organized morphologic elements. Acute nephritis, chiefly of diffuse form, quantity is diminished, to few ounces or pint in twenty-four hours, or suppression. With improvement urine increases in quantity, or increased when rapid absorption of dropsical effusion takes place. Specific gravity low in relation to quantity, cloudy, high color, albumin in large amount, urea, uric acid and chlorids diminished. Microscopic examination shows leucocytes, red blood cells either well preserved, discolored or swollen; blood casts, hyaline casts in various stages of degeneration, and renal epithelia. In chronic interstitial nephritis the quantity is increased, resembling diabetes insipidus; low specific gravity;

pale and greenish in color, frequency of urination increased, urine clear, no sediment; acid reaction; urea lessened, albumin in small quantity or absent temporarily; fat seldom present; blood thin, leucocytes and renal epithelium small in number; tube casts few, mostly hyalin and granular. Chronic parenchymatous nephritis the quantity varies. Specific gravity lowered in proportion to quantity, 1010 to 1018; light yellow color, frequent urination; acid reaction; urea lessened; albumin always present in considerable amount; fat present in late stages; blood also; leucocytes in large numbers; tube casts always present in large number of all varieties. In amyloid kidney urine resembles that in interstitial form, increased quantity, light color, clear, small albumin, 1010 to 1018 specific gravity; very long hyalin casts extending frequently through several fields, late they are very long and wide.

DR. HENRY E. TULEY of Louisville read a paper on

NEPHRITIS IN CHILDREN.

Nephritis in childhood may be primary or secondary, the latter due to exanthemata, rheumatism, erysipelas, acute and chronic intestinal diseases, vaccination and pneumonia, the active causative agents being primarily of bacterial origin or result of elimination of toxins. Lesions may be descending nephritis, the essential change being glomerular and epithelial, or ascending due to invasion from urinary organs below. Councilman describes changes as simple degeneration of glomerular epithelium with or without exfoliation, or it may be a glomerulo-capsular nephritis, lesion may be of croupous pneumonia type. Emphasis was made upon importance of frequent examination of urine of infants too often neglected. Catheterization resorted to if necessary. Cold and exposure, long bathing in sea water or fresh, may be cause of primary. Symptoms may be misleading, may be trivial, the younger the patient the more the symptoms may point to brain, lungs, or gastro-intestinal tract. Onset sudden, temperature high; pulse rapid, high tension; early edema; blindness, retinitis; scanty urine, high colored; albumin, microscopic examination showing renal derivatives; anemia; cough; waxy, dry skin; pain in back, headache, restlessness, insomnia, strabismus. Relieve kidneys of extra work of carrying transuded serum; restore kidney to normal condition, endeavor to prevent further damage to diseased organ. Calomel and salines; hot-air bath; acetate of ammonia; venesection; pilocarpin, which is very uncertain in its action; water ad libitum by mouth and large enemata. Diuretin is recommended by some.

DISCUSSION ON BRIGHT'S DISEASE.

DR. JNO. G. CECIL, Louisville—The five papers have covered the ground most elaborately and completely. The pathologist is disposed to subdivide too much. The simple division of acute and chronic parenchymatous and chronic interstitial is all that is necessary for the clinician. The parenchymatous forms are clear in outline, but it is the interstitial form which is of the greatest importance. All life insurance companies magnify the importance of chronic interstitial nephritis, placing it hardly secondary to tuberculosis of the lung. It is insidious and affects the most important citizens of a community, following a life of dissipation it is true, but it is too often found in others who dissipate in work, especially brain work, and unfortunately we find it out too late. This variety creeps on us before we are aware of it. We all know the close relationship between the arterial system and the form of nephritis. All authorities are agreed that arterio-sclerosis is almost invariably associated with it and the great question is: Which goes first, the nephritis or the arterial change? In many instances arterio-sclerosis precedes chronic interstitial nephritis and if we can demonstrate the fact that a man has arterio-sclerosis, we can warn this man of impending trouble. "A man is as old as his arteries." A train of symptoms as headache, nausea, vomiting and diarrhea leads to an ophthalmoscopic examination and the diagnosis can be made early. It is an obscure disease and we can not depend on the symptoms. Anything which will suggest chronic interstitial nephritis should be seriously considered.

DR. WM. CHEATHAM, of Louisville—The ophthalmoscope in many instances has revealed a nephritis never before suspected. In large majority of cases of neuro-retinitis albuminurica seen by the speaker in the last twenty-three years, nephritis was not suspected. Usually glasses are recommended on account of failing vision, though the latter may not be present. Typical cases of papillo-retinitis nephritica may be found with perfect vision. The ophthalmoscope is important in diagnosis and prognosis. It indicates advance or recession of the trouble; a large majority of nephritis in which retina and optic papilla are involved do not live for more than six months or one year. Anatomic lesions in arteries, veins and capillaries are hyalin

thickening and sclerosis, thrombosis and occlusion, said to be due to transuding white blood corpuscles, which degenerate; numerous dilations of capillaries with small aneurysms, liable to occur in all parts of the circulation of the eye, but more often in the retina; hyperplasia of connective tissue often found; if blood vessels extend into inter-granular layers we have hemorrhages; edema of retina with cavities filled with coagulated fluid; granular and fatty degeneration of Muller's supporting fibers; white patches of fatty degeneration; rods and cones may remain normal or become edematous; pigment may remain normal, be absorbed or become swollen; amyloid granules are found in the chiasm and optic tract. Sclerosis of the vessels causes all these changes, more often in retina because its arteries are end arteries with little or no collateral supply. Length of life from a few weeks or a few months, to seventeen years; average of life after involvement of retina, one year. Uremic amblyopia in chronic nephritis usually sudden and permanent. There is occasionally recovery with blindness.

DR. CHAS. W. AITKEN, Flemmingsburg—Dr. Cecil referred to the insidious onset of the interstitial form and that we are likely to overlook it, and not likely to confound it with other kidney lesions. Dropsy is more marked in parenchymatous form than the others. The limbs are swollen at night, the face in the morning, and inflammation of serous membrane and uremia is more likely to occur than in others. Dyspepsia is common, skin dry and harsh, neuro-retinitis should suggest careful urinalysis. Scant high-colored urine, high specific gravity, albumin, fatty and hyalin casts. Dilatation and probably valvular lesion of heart is so common that it is generally mentioned in conjunction with nephritis on the death return. In treatment support strength, guard against exacerbations and meet various symptoms. Strychnia for the heart, nitro-glycerin for the headache, pilocarpin with morphin for uremic intoxication and the latter for dyspnea.

Interstitial form is insidious; dyspepsia; frequent desire to urinate. Close observation may detect dropsy. Sixty ounces of urine may be passed in twenty-four hours; low specific gravity. Hypertrophy of left ventricle: accentuated second sound over aortic interspace; headache, insomnia, irritable temper, capricious appetite, peculiar breathing and death by coma, convulsions or intercurrent affections. The treatment is nutritious diet, warm milk; warm dry climate; no intemperance; potassium iodid, mercury and iron. In amyloid kidney there is increased flow of urine, previous existing disease as a rule, low specific gravity, little or no albumin, waxy cachexia. Palliative treatment unless one can remove the cause. These are "every day" diseases and must be looked at on the practical side.

DR. J. B. MARVIN, Louisville—I am satisfied that time would be saved if the term Bright's disease was narrowed down to those forms of nephritis described by Bright. The amyloid kidney is not a nephritis or a Bright's disease, but is purely a secondary condition following syphilis, tuberculosis of bones and lungs; and the treatment consists in the prevention. The interstitial nephritis was not considered by Bright. It is the most treacherous and the least amenable to treatment. The acute parenchymatous nephritis tends naturally to rapid recovery or death; the tendency with careful nursing is toward recovery. In chronic parenchymatous nephritis the association of anemia and dropsy makes it difficult to overlook. A point in the treatment which was not emphasized enough, is rest; rest in bed. Nothing reduces the amount of albumin quicker. The climatic treatment is good, these patients should leave our climate here with its sudden changes and go to Southern Georgia or Texas, where it is not too high, but where the temperature is equable and dry. Wool should be worn next the skin continuously. One of the essayists condemns pilocarpin. Do not give it by the mouth, but hypodermatically. The symptoms of depression are always combatted by atropia. As to the cause of convulsions by potash salts retained in the blood, why not substitute the soda salts? Don't use digitalis as a diuretic; it is not nearly so good as generally thought. In regard to the interstitial variety and the low tension pulse spoken of by one of the essayists, I disagree with the essayist on this point and regard this as a dangerous symptom. Cases are seen with a hard, high tension pulse years before interstitial nephritis is recognized, and it would be better if we possessed more of the expertness of our forefathers in the feel of the pulse and we would more often be on the track of an interstitial nephritis. Urine, pale in color, of low specific gravity, hard pulse, hypertrophy of left ventricle with absence of valvular lesion, is a strong suspicion of interstitial nephritis. A high tension pulse, associated by bronchitis, asthma, is a suspicion developing in a middle-aged man. Diet, climate and clothing are the best remedies. Three beneficial agents in high tension pulse, are potassium iodid in moderate dose, diluted;

chloral hydrate, not by mouth but by rectum in milk: it reduces temperature also: nitro-glycerin and nitrate of amyl; the former is best, after the first dose tolerance being readily attained. Morphia may kill. There are two separate forms of uremia: Coma and convulsions, the latter with high tension pulse; but with low tension pulse the tendency is to coma and here use morphia sparingly.

DR. W. C. DUGAN, Louisville—It is important to examine urine in surgical cases. I have seen several cases in which death resulted from neglect of this. If an operation must be done to save life, as appendicitis with abscess, you must tell the friends that there may be suppression. Local anesthesia should be used more frequently. I rise simply to urge examination of urine in all cases.

AP MORGAN VANCE, Louisville Surgeons generally understand that amyloid kidney can be cured if the suppurating organ or bone is operated upon. I would like to ask if this operation is done thoroughly will the kidney degeneration disappear.

DR. LOUIS FRANK, Louisville—Frequent examinations of urine may not find albumin, and these cases go on and die after major operations, whether ether or chloroform has been given. In regard to the case reported by Dr. Tuley, it hardly seems possible that one ounce of blood drawn could have caused so remarkable a result; the improvement must have been due to some other cause.

DR. ARCH. DIXON, Henderson—Less than two months ago a surgeon in Henderson did a vaginal hysterectomy in a patient 45 years old. I asked the question if the urine had been examined before the operation. He said it had and the result was negative. The operation was done nicely but the patient died on the fourth day with suppression of urine. A microscopic examination should have been made of the urine also.

DR. R. C. McCHORD, Lebanon—Conservative surgery in amyloid kidney is not good surgery. The disease is stopped effectually if the cause is removed. If death follows operation, it is in most cases from exposure during the operation and the prolonged narcosis.

DR. CARL WEIDNER, Louisville—The patients with neuro-retinitis are not recent cases. It arises as a complication and the subjective symptoms, as dyspnea, dyspepsia, up at night to pass urine, edema. Casts and albumin may be present and no retinitis. The amyloid degeneration is not a Bright's disease. It is found in many conditions, in men as a rule. It is impossible to cure it in view of the pathologic condition. There can not possibly be a revival of the cellular function. But cases may improve; for instance, occurring in a long joint trouble, the amyloid change may be local and not extend. Cases of sudden death after operation are obscure. One examination of urine may not show albumin or casts. Sudden suppression of urine and symptoms of uremia may develop. This may be due to a septic condition causing Bright's disease. Local shock of mechanism of kidney may occur, arresting kidney secretion.

DR. W. L. RODMAN, of Louisville, read a paper upon

INJURIES TO THE BRAIN.

This form of injury is of interest on account of fatality, or conditions worse than death in those who recover. In injuries to the brain, rather than its disease, surgery promises most. Good judgment and prompt action are essential to success. The nature of the cranium prevents drainage by other than surgical interference. Concussion is most frequently encountered in surgical practice; the name, however, is unfortunate. There is usually a macroscopic lesion. Any violence which may cause unconsciousness should be looked on as a severe injury. Keep in bed in a dark room for a week. After shock, recumbent position, mild stimulation by opium, cold to head, calomel, bromids, light diet. Compression may be caused by hemorrhage, depressed bone, inflammatory products and tumors, hemorrhage extra- or sub-dural. One of the branches of the middle meningeal generally gives way; perhaps its anterior branch most frequently. It can generally be easily diagnosed. A large trephine should be used and opening enlarged by mallet and chisel or rongeur forceps. Sub-dural hemorrhage generally accompanies depressed fracture. When dura is opened it should be done by semicircular incision one-fourth inch from bone, so that it can be accurately sutured after hemorrhage has been controlled; unless this is done, fungus or hernia cerebri will likely ensue. Non-chromicized catgut should be the suture material used. If cerebral abscess is large there will be hemiplegia of opposite side. Fractures are dangerous in proportion to accompanying injury to brain and membranes. There is too much thought of fracture, too little of damage to the brain. Dangers are immediate and delayed. We may have

fractures of vault or base; the former usually amenable to treatment, while damages to base usually preclude surgery. In punctured fractures make immediate trephining, free removal of bone, opening of dura, complete disinfection and drainage. Delayed operation in compound fracture is thirty times as fatal as those done at times of accident. In simple depressed fractures with symptoms of compression, trephine immediately. Fractures of base may occur in three fossae. The chief features to be kept in view are drainage and disinfection. If drum membrane has not been ruptured these fractures are compound, communicating with the external air through the Eustachian tube in naso-pharynx.

DISCUSSION.

DR. ARCH. DIXON, Henderson—One of the most important measures is to prevent sepsis. A few years ago I lost a case of basic fracture, there having developed a suppurative middle ear and infection from that. If there is a discharge from the ear or nose these canals must be rendered aseptic. The brain and cavity must be rendered aseptic and is as important as the peritoneal cavity.

DR. W. C. DUGAN, Louisville—Concussion is a misnomer, and the literature of the brain is to be rewritten. Unconsciousness following a severe blow, injury to the brain itself is found in nine out of ten. In linear fracture the inner table, which is very friable, is more extensively injured than the outer table. I have seen a patient go for a week after a blow; later headache develops; then unconsciousness. And operation was done and patient died. Do these operations early; do not wait for misnamed compression and paralysis. Mortality 40 per cent. in late operations, 1 per cent. in early operations. Epileptic habit is bad name; it is due to interstitial changes in brain, hence no relief from the operation. The mallet and chisel are to be preferred to the trephine. Hold the chisel at angle of 10 or 15 degrees to prevent the concussion caused by direct blow. Simple fractures which are inaccessible should be trephined. More frequent operation in basal fractures if able to locate place of fracture.

DR. AP MORGAN VANCE, Louisville—I wish only to sound a warning against opium in head injuries; it may mask coming symptoms.

DR. R. C. McCHORD, Lebanon—There is uncertainty in determining whether fractures of the skull exist if soft parts are not cut; no one can say positively without cutting down and examining.

DR. W. L. RODMAN, Louisville—The mallet and chisel at times are to be preferred. In all cases of fracture I shave the entire scalp, no matter how beautiful the hair. In fracture of base I am in favor of complete drainage and disinfection, which can not be obtained without operation.

DR. DUDLEY S. REYNOLDS here followed with a paper upon "A Term of Clinical Service."

(To be continued.)

Diminution in the Natality of the French Nation.—Dr. D. G. Brinton contributes to *Science*, May 8, the following paragraph on the subject of the above caption:

"This subject occupied a prominent place in the discussion of the anthropologic section of the French Association for the Advancement of Science at its last meeting. More than elsewhere, it deserves attention from the scientists of that nation, for out of the 86 departments into which France is divided, in 51 the deaths exceed the births. The annual natality for the whole country is only 23.7 for each 1,000 inhabitants, and this number includes the stillborn! To remedy this progressive depopulation, its causes must be ascertained. Dr. E. Maurel brought forward an interesting theory. He pointed out that the birth rate is lowest in those departments where food is most abundant and cheapest. The relation between these two facts he held to be the prevalence of hereditary arthritic diathesis (uric acid diathesis), leading to diminution of reproductive vigor in both sexes, this diathesis arising from excessive alimentation. Another speaker, Dr. Pommerol, attributed the diminished natality to voluntary restriction, while others suggested the increase of religious celibacy, the laws relating to the division of property, the lateness of marriages, and the decreased reproductiveness of women."

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Original communications are only received with the understanding that they are exclusively contributed to this JOURNAL.

INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, JUNE 20, 1896.

THE ABUSE OF THE BROMIDS.

At the recent meeting of the Association of American Physicians, one of the papers that attracted most attention was that of DR. S. WEIR MITCHELL on the untoward effects of bromids in certain cases. He showed that the popular usage of these drugs is liable to lead to abuse, and that cases are not infrequent in which serious or even fatal bromid intoxication has occurred. The almost universal use of the bromids makes these effects the more important, as they are sometimes unrecognized by the physician, and still more often by the laity, who have learned to indulge in self-medication with these supposedly innocuous agents. While these facts have not been generally unknown to the profession, it is well to have attention called to them by an authority whose name will insure to any of his utterances a respectful consideration.

One point especially noted by DR. MITCHELL was the danger in certain cases of epilepsy of exciting a maniacal irritability that might sometimes amount to dangerous homicidal insanity by the use of the bromids. This is a possibility that is perhaps better known from experience by asylum physicians than by those in general or special practice outside of these institutions, but it is a little surprising that DR. MITCHELL should have been, as he declares himself, utterly skeptical as to its occurrence as late as ten years ago. At that time it had been many years a

matter of medical record, and had been discussed at length at the meeting of the American Neurological Association in 1881, when it seemed to have been quite generally observed. With very large doses of the bromids irritability and maniacal conditions are easily produced in certain insane epileptics, and it is quite possible, as DR. J. S. JEWELL then suggested, that some epileptics find their way to asylums through this idiosyncrasy.

The liability to mania or to excessive irritability is not the only individual peculiarity as regards susceptibility to the bromids. Within a short time an inquest was held on a man who died suddenly in London who had been taking the bromids very freely for neuralgia without exhibiting the usual symptoms of bromism, and a verdict rendered of death from heart weakness due to the medication. Whether the diagnosis was correct or not in this instance, it is certainly within the bounds of possibility, judging from the general depressing action of the bromids, that there may be individuals with idiosyncrasies that make these effects excessive and dangerous. The rarity of such peculiarities makes them only the more perilous when they do occur.

The bromids in moderate doses judiciously used rarely produce any serious effects in the hands of experienced and careful practitioners, and even in cases of exceptionally pronounced anti-bromid idiosyncrasies they can generally be discontinued before actual harm has been accomplished. The same can not be said when they are given in large doses, and more than one dram per diem may be considered large in many cases of epilepsy or when self-administered by the laity. Undoubtedly damage has been done by the popular usage of such preparations as bromo-soda, bromo-seltzer, etc., as was suggested in the discussion of DR. MITCHELL's paper. That they are also employed too frequently and inconsiderately by the profession is also probably true, and therefore his communication is a timely one. It is one of the utilities of a great reputation that it can give weight to utterances of what ought to be generally recognized truths, but which are likely from that very fact to be too often practically ignored.

HARDLY THE CODE.

One of our exchanges appears especially acrimonious regarding the late meeting of the AMERICAN MEDICAL ASSOCIATION at Atlanta, to the extent even of regret for absences from that most enjoyable "barbecue" with its juicy accompaniments. But speaking in the plural even though our calcitrant brethern were present we opine their enjoyments would not have been cut short by the brutal code, which "has brought death into our world and all our woe." There seems to have been a mock levity about the whole affair; sensoriums were in part not in a proper condition, for

which we are truly thankful, as a cause for the lack of bigotry which was in evidence since "old-coders and no-coders and new-coders, mingled freely together." Indeed, there was no action on the code question, which is very significant.

Again we join hands with our critics in the onslaught upon the supposed originals of likenesses in the lay papers, which seem to have been cartoons, without "criminal ears." For the last mitigation we are truly thankful. From a business standpoint we think that advertising should be restricted to certain classes; it would then be much cheaper and there would be fewer disappointments and a clear saving of at least seventy per cent. of our professional earnings. Still there is a hankering after ante-mortem fame which is rather hard to curb, else why should we run the risk of bulletins regarding the health of distinguished patients, the technical details of reporters and the steps of grand operations.

We think that the general profession has always been content with modest earnings and commendable acts of charity—that it gets but scant thanks for its good will toward men and more especially for its fealty toward the code, which thus far has condoned the faults of even vain-glorious leaders. At all events as some complaints have been made that the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has "a monopoly of the papers and the discussions," we can but reply "why not, if it is to publish the entire proceedings?" The ASSOCIATION pays its own reporters it is true, but the doors are open. The ASSOCIATION owns its JOURNAL and it means to make it a successful one. Trade journals and medical publishers' journals have no claims superior to those of the ASSOCIATION itself, but they may send reporters if they wish.

Now to our critics we can only say that as regards the Code it is not we who are continually opening the gates of glory, or on the contrary that we are striving after the notoriety of detectives. Fortunately many of the evils of which we have spoken redress themselves and the public also, to whom so many supplications have been made, have begun to discriminate in favor of him who does not need to advertise. We can but conclude that it is hardly the Code, which is at the bottom of the "hard times" but over-production and over-inducement. As a profession, at least those who are stranded in it have only the redress of restricted immigration since with all the minute divisions into specialties and the fads of multi-millionaires, we can not expect much gratitude and still less recognition. The no-coders say in effect: "It is the public's right and the world owes every man a living; so let none of us withdraw our small talents from the field, but incontinently convert our profession into a trade. We may then peddle our wares from door to door, and perhaps earn a mansion—in the skies."

COST OF IMPURE WATER.

In his "Notes and Comments" on the May report DR. FRANK REILLY, Assistant Health Commissioner of Chicago, says that if a human life is worth \$5,000, as the Legislature of the State of Illinois has decreed, then it is an easy matter to demonstrate beyond any peradventure that the city of Chicago is losing at the rate of more than \$3,000,000 a year through a polluted water supply. His diagrams furnished with the March, April and May monthly reports show, in graphic manner, the sanitary quality of the water and the average daily deaths from the diseases directly affected thereby for a period of twenty-four weeks—from the week ended December 21, 1895 to the week ended May 30, 1896, inclusive. Examination of these diagrams discloses three continuous periods of several weeks each, to-wit, first, from December 21 to January 25—six weeks; second, from February 22 to April 2—seven weeks; third, from April 11 to May 30—eight weeks. During these periods the deaths from the acute intestinal diseases—also shown on the diagrams—were 206, 137 and 258, respectively.

The water supply was "suspicious" or "bad" during the first and third periods, with an aggregate of 464 deaths, or a daily average for the fourteen weeks of 4.7. The water was "usable" or "good" during the intermediate period of seven weeks with an aggregate of 137 deaths, or a daily average of 2.8. The higher death rate of the first and third periods can be attributed to no other cause than polluted water.

Applying to the entire year the figures of the twenty-four weeks covered by the diagrams—probably a sufficiently long period to generalize from—there would be, with a good sanitary quality of water, 365 days \times 2.8 deaths = 1022 total deaths; with a bad sanitary quality of water, 365 days \times 4.7 deaths = 1715 total deaths. Excess of deaths due to polluted water 693, at \$5,000 each = \$3,465,000. This sum represents the interest at 5 per cent. on a capital of nearly \$70,000,000.

"How much of this amount," DR. REILLY asks, "would complete the drainage channel, build intercepting sewers and insure a pure water supply the year around?"

In view of the demonstrated success of water filtration and the progress made in its adoption as set forth in these columns from time to time, the JOURNAL is moved to ask, how much of this amount would be required to establish a filtration system for Chicago which, while furnishing a wholesome water supply for that city, would not transfer its disease and death producing sewage nuisance to its helpless neighbors.

KENTUCKY STATE MEDICAL SOCIETY.

The forty-first annual meeting of this Society was held on June 10, 11 and 12 and was one of the most successful in its history. The meeting was most ably presided over by JOHN A. LEWIS of Georgetown and

the members were most hospitably entertained through the much appreciated efforts of the able chairman of the Committee of Arrangements, DR. R. C. McCHORD, mostly by the residents of the town.

The features of the meeting were the symposium of papers upon subjects chosen by the program committee, upon Bright's disease, vaginal versus abdominal hysterectomy, and fractures. The papers treating of these subjects were interesting and up to date, while the discussion was able and instructive.

The Society puts itself upon record as being opposed to the prevailing practice of criminal abortion and memorialized the State Legislature to pass a statute which will make it possible to punish offenders as there is none now on the statute books which will convict, if the evidence is sufficient. It also, on motion of DR. HENRY E. TULEY, endorsed the resolutions adopted by the AMERICAN MEDICAL ASSOCIATION against the passage of the bill by Congress prohibiting vivisection in the District of Columbia, and requested the representatives in Congress and Senate to use every endeavor to secure its defeat.

On the last day a resolution was passed protesting against the reduction of the fees for Life Insurance examination, and it was learned that Marion County had formed a league among the local physicians and they refused to make an examination for any company for less than five dollars, and it was the sense of the Society that this could be done in all cities as well as the smaller towns.

The committee appointed at the last meeting to "Collect and Codify the Existing Constitution and By-Laws" reported with a new constitution under the belief that it had been appointed to "Revise" the existing constitution. The president ruled that the report was a revision of the constitution and would have to lay over one year before it could be acted upon. The next day it was decided upon motion to "reconsider the motion to delay the discussion of the committee report for one year." This was done and all of the report was adopted except that portion relating to the method of electing officers, which was made to lie over until the next meeting. The Society is still acting under the old constitution, as the author of the motion to "reconsider the vote" was really asking for a reconsideration of the President's ruling which should have been in the nature of an appeal from his decision.

The genial and popular chairman of the Committee of Arrangements, DR. R. C. McCHORD of Lebanon, was the choice of the Nominating Committee for President, and Owensboro was chosen the next place of meeting.

There is hardly any doubt but there will be a change in the method of the election of officers from the present one, the Nominating Committee being chosen by the representatives from the various Congressional

Districts. The new constitution proposes to place the selection of this committee in the hands of the Executive Committee composed of the officers of the Society, but there will be a strong fight made to have the election take place in open meeting as there is so much opportunity under the present and suggested régime for political work and "log rolling."

PAN-AMERICAN MEDICAL CONGRESS.

Gentlemen intending to take part in the meeting of the Second Pan-American Medical Congress to be held in the City of Mexico, residing in Chicago and the Northwest are requested to send their names immediately to the Editor of the JOURNAL of the AMERICAN MEDICAL ASSOCIATION, 61 Market St., Chicago, for transmission to the Mexican Headquarters.

THE BALLOTING.

Several gentlemen have asked if they would be allowed to change their votes before formal announcement. To that we have to say that any member so desiring, should send another ballot properly filled out, marked "*changed*" and properly dated, when, at the counting his original ballot can be found, it will be returned to him.

CORRESPONDENCE.

Proposed Testimonial to Dr. Davis.

ROCKFORD, ILL., June 3, 1896.

To the Editor:—In view of the coming meeting at Philadelphia, which is to celebrate the semi-centennial of the organization of the ASSOCIATION, though still appearing remote, it occurs to me to be none too early now to suggest that an honor, long deferred, though well deserved, be in some commendable way presented through the ASSOCIATION to the medical world, by which our venerable teacher, mentor and friend, Dr. N. S. Davis, the man whose keen and fertile brain, whose prescience ever on the alert for the good of medicine and humanity, originated the plan of the AMERICAN MEDICAL ASSOCIATION, and as constantly and unwaveringly stood by it until its maturity has been attained and all the medical profession of the United States, if not of the civilized world, are ready to rise up and do him homage. Not only has he done this but, with a persistence and courage equally to be commended, he has advanced the standard of medical education, when the espousal meant loss of money and threatened non-affiliation. He lent dignity to the Ninth International Medical Congress, and presided with such evidences of learning and grace as made every American physician proud to own him. Now, when his fifty years of unusually active medical life are rounded out, I believe if the attention of the members of the AMERICAN MEDICAL ASSOCIATION be properly called to it, there can be some tangible recognition of such service given that will be a source of never-failing pleasure to him in his beautifully declining years. Let this be done while his great mind, inured to early toil and serious thought, may be mel-
lowed with a loving and thoughtful deed that will make his pathway strewn with some of the kindlier actions of his admiring brethren in the medical fraternity. No towering shaft or non-corroding bronze can take the place of a loving testimonial tendered him now. He should have been presented with a

general's badge or epaulet with the red cross, after the Ninth International Medical Congress, as well as some recognition of your own untiring service as Secretary General.¹

I think if you will suggest this thought in some suitable way it will not be too early to call attention to it now, and you will be surprised what a universally responsive chord it will strike in the hearts of the profession. Yours, D. L.

Reuben D. Mussey.

NEW CASTLE, COLO., June 8, 1896.

To the Editor:—During my first course of lectures at the Ohio Medical College, 1848-9, R. D. Mussey was Professor of Surgery. He was always kind to his students and patients, though sometimes decidedly brusque with those who had by improprieties brought themselves to grief. As an illustration, a man was placed on the table at the Commercial Hospital with a bubo in either groin. The Professor said: "Young gentlemen, we open these abscesses with a number of small punctures," suiting his action to the word. The patient's hand went involuntarily to the wound with the cry of "Oh God! oh God!" The Professor bluntly said: "Turn over, sir; the way of the transgressor is hard; they that sow to the wind must reap the whirlwind." We open this, you see, in the same way."

Age had made his hand tremulous, and it trembled until the knife touched the desired spot, when it was as steady as in youth.

His lectures were always practical, but extremely terse, never adorned by a single flower.

In the summer of 1849 I went East with Dr. Lyman Beecher, father of Henry Ward, wife and daughter and Dr. Mussey. We crossed Lake Erie on the 4th of July, and at the instance of Dr. Mussey, the passengers invited Dr. Beecher to give us an oration. At Buffalo we parted company with Dr. Mussey, meeting him again at Saratoga and Hanover, N. H., Dr. Beecher and family and myself going to Niagara, Lundy's Lane, and across Ontario to Oswego and so to Saratoga, where we again met Dr. Mussey. Parting company here with these venerable and noble people I went to Caldwell and crossed Lakes George and Champlain to Burlington, and thence by stage via Montpelier to Dartmouth College, where I again met Dr. Mussey and his son, who was a student at Dartmouth. Turning his boy about, he said: "Feel of him; he has never tasted meat."

I suppose all men have their hobbies, and some physicians ride them wildly. Professor Mussey's was diet, well-nigh absolute. After some of his operations he kept the patient for twenty days upon water and three small crackers a day. He was personally very abstemious and for many years a strict vegetarian. He was honest, earnest, a hard student and always a Christian gentleman. In his daily walk and professional life he was a fit exemplar to us all. W. L. SCHENCK, M.D.

The Second Pan-American Medical Congress.

CHICAGO, June 5, 1896.

To the Editor:—To the dignified letter in the May 30 number of the JOURNAL, protesting against the unjust attack on the Mexican people and medical profession, allow me to add my own experiences in support of Dr. Cerna, in the hope that the medical profession in this country may not become prejudiced against our southern neighbors. It would be a pity if any word of hostility to the Mexicans should be the means of reducing the number of those who expect to attend the next Pan-American Medical Congress, because this will undoubtedly be the test meeting, and if it is poorly supported, interest will cease and our relationship with the rest of America will return to the apathy of former years.

¹ A bronze medal was struck, commemorative of this Congress and its chief officers, in 1887.

I have practiced medicine among the Mexicans on terms of greatest intimacy, meeting all classes and finding all degrees of education. I know that Anglo-Saxons are not Mexicans nor Mexicans Anglo-Saxons, but this is a vital reason why it is unjust to study them from one standpoint only. I grant that the percentage of illiteracy is high and superstition consequently more evident, but I failed to find impenetrable stupidity among them, while I did find that the doctor is held in much higher respect than he is in Texas. Next to the priest comes the doctor, and his patient follows the doctor's directions with a strictness that seldom marks the attitude of the patient in this country. Doctors are not nearly so abundant there, and their journeys are often of enormous distances; yet I never found anything but courtesy and hospitality in making my visits, and I was never refused payment for my labor, although my fees were sometimes reduced at the pleadings of the patient.

The National School of Medicine, a part of the University of the City of Mexico, grants degrees entitling the holder to practice throughout the Republic, while a few local schools like that at Monterey can grant this right within the one state only. The result is that the graduate of the National School is a well-posted man, fit to be admitted, as equal, to any medical association in the world; but while the graduate of the local school may be uninstructed in the technique of some of our modern methods, he is always an educated man, able to write his own language and his prescriptions correctly, and fitted to take an honorable place in the society to which his ambition calls him. The Mexican doctor is never ignorant; he may sometimes fail to practice the principles of antiseptics and asepsis, and he may often purge and puke rather briskly in fevers and inflammations, but not every surgeon outside of Mexico avails himself of the principles of his art, nor does every physician in our country abstain from the use of calomel when his diagnosis is doubtful. Above all this, the Mexican physician preserves his dignity, and respects himself and his profession, so that his influence in the community is far greater than is ours at home.

I need say nothing of the morals of the Mexican people. I found them about the same as one finds morals in England, Germany or Spain. But the resident of San Antonio or Chicago had better purify his own social atmosphere before condemning that of his neighbor.

I have purposely generalized my note, but did not space prevent, I could give many an illustration of the courtesy of that people, and of their honor for the man of education, while instances of the very traits criticized in the Mexicans can be found within our borders.

Any one who attends the meeting in the City of Mexico next November will meet with unbounded hospitality, and will return with such broadened knowledge that he will earnestly desire the perpetuity of the Pan-American Medical Congress.

Very respectfully yours,

ALBERT B. HALE, M.D.

The Colorado Ice Decision Not Final.

BUREAU OF HEALTH, DENVER, COLO., June 10, 1896.

To the Editor:—I have noted with some interest the editorial excerpt published in last week's issue of a recent decision of the Colorado Court of Appeals in regard to the limitations of the power of a health commissioner to condemn ice.

Inasmuch as the opinion as rendered is quite misleading and has deliberately ignored, or in some instances contradicts the record as certified in the lower court, and also because the decision as rendered by the court of appeals is not final, the case being now pending in the supreme court of the State of Colorado, I deem it entirely proper to state certain facts in connection with the case which will at least militate against

the acceptance of the decision as rendered as either good law or as justice.

The record as certified showed that the order prohibiting the sale of impure ice was based upon :

1. Repeated analyses of the ice by the bacteriologist of the Denver Health Department and its condemnation by him. Each cubic centimeter was found to produce an average of 40,000 colonies upon the gelatin plates.

2. Repeated analyses of the water of the lake from which the ice was obtained.

3. Sanitary inspection of the lake and demonstration that it was fed by an irrigating ditch which flowed through many manure-covered fields and that it also received direct contamination from sewage. (This may not have been so distinctly brought out in the record as submitted, but the evidence in the lower court was overwhelming.)

4. Conviction in the police magistrate's court after a prolonged hearing covering several days, in which all these points were brought out.

5. Subsequent convictions in the police magistrate's court in at least seven cases where sale of the same contaminated ice for human consumption was proven and the fact of its actual use for human consumption shown beyond possibility of contradiction.

In addition there was pending in the county court at the time the record of proceedings was certified, an appeal, which was prosecuted to a final determination before a jury, resulting in a conviction of the defendant for selling impure ice. Upon this conviction he was fined.

Further, a district court judge, while holding that the sale of such impure ice for storage purposes might not be interfered with, had already issued an injunction restraining the defendant company (the Corbin Ice Company) from selling their ice for human consumption or for use in any place where it might come in contact with human food.

The decision of the court of appeals, ignoring these plain facts which were of record, was received with considerable surprise by the citizens of Denver, especially inasmuch as the defendant company had, through one of its own attorneys, tacitly admitted that their ice was not of a character suitable for human use, and that in selling it as "pure lake ice" they had been doing wrong.

While I do not intend to overstep those bounds which precedent has established as constituting the proper respect to be shown by all citizens for the decisions of the judiciary, I am fain to say that the comment of the decision upon the health commissioner was distinctly improper. The interests of the public are apt to be better safeguarded by the decisions of competent sanitarians, formulated after many months of painstaking investigation and only enforced by the lower courts (as in the present instance) after an impartial consideration of evidence, than by the haphazard decision of any lawyer whom the fortunes of politics or the result of political barter have placed in positions of honor.

As sanitarians work for actual results, it may be of interest to add that no ice from the lake in dispute is being sold in Denver this year for human consumption, nor so long as the responsibility of the enforcement of our present law depends upon me will such sale be permitted. Very respectfully,

WILLIAM P. MUNN, M.D., Health Commissioner.

A Nameless Secret Remedy.

CHICAGO, June 12, 1896.

To the Editor:—In the June 6, 1896, number of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the agent of an Iowa secret remedy for diphtheria states that Dr. Matter and the consulting physician had pronounced a patient suffering from pneumonia beyond recovery, and that the life of this patient had been saved by the nostrum which he advertises.

As I was the consultant in question, I wish to state that neither Dr. Matter nor myself had pronounced the patient beyond recovery, but merely pointed out the doubtfulness of the prognosis in view of the advanced age of the patient and of the severity of the infection. This is a precaution which no responsible physician will ever omit, and requires no justification. The patient's recovery was such as we see constantly in practice, in illustration of the ability of the human organism to recover from serious illness.

As this bactericide scheme is, in my opinion, a mercenary enterprise under the cloak of philanthropy, it seems unwise to advertise the nostrum even by denouncing it. It would therefore not occur to me to waste any time over it, if physicians graduated from reputable colleges did not stoop to air their "cures" in the newspapers. They give the name, disease and address of their patients, and in most of their reports display such an awkwardness and illiteracy as should make our profession blush both for their effrontery and boorishness.

The agent in question, whom this wily Iowa physician evidently uses as a shield, is waging a warfare against the diphtheria antitoxin, which he is attempting to degrade into a competitive remedy. His method forces the analogy upon me of a drunken man spitting upon a Raphael Madonna. What I therefore wish to protest against is not the character and method of pushing a secret medicine, which is necessarily always dishonest, but the stupidity and recklessness of regular physicians in championing it.

Respectfully,

EDWIN J. KUH, M.D.

Notes on O—a, and the B— C—, with a Few Words on Quackery in General.

CHICAGO, June 15, 1896.

To the Editor:—In my letter of May 2, on Omnicura and the Bracelin cure, I refrained from taking much space in the JOURNAL, because the smallness of the subjects did not warrant it. But in the number of June 6 I find J. J. Russell spreading himself over four columns, ostensibly to answer my criticisms. And there I find that the omnicura has now become a waif and an orphan, disowned and rejected by the very one into whose lap she has poured her golden treasures.

But strange as this may seem, it was his only means for smuggling his letter into print, and use mine as a pretext for sponging a free advertisement out of the JOURNAL. In this he has succeeded as usual and it was necessary that he should. Experience shows that it is difficult to land a shark without giving him plenty of rope and space to flop around in; especially if he is an old one. The same applies to the fresh-water species. These are apt to hold the bait between their teeth, and sulk for three or four weeks at a time, before they start on a run. When they feel the hook they begin to snap with great fury, but being cowardly they can never frighten an honest fisherman. Although worthless when caught, they can be made to furnish excellent sport when properly handled, and before they turn over they invariably try to prove an alibi.

This is just what J. J. Russell, president of the Omnicura Co., and manager of the Bracelin cure has been trying to do by "emphatically stating that there is no more relation or connection between these two, than there is between the Klebs-Loeffler bacillus and the Ferris wheel," wanting to be understood that he is in no wise connected with the omnicura.

The following will prove the value of his statements :

SPRINGFIELD, ILL., June 10, 1896.

MARTIN MATTER, M.D., 3137 Wabash Ave., Chicago.

Dear Sir:—Replying to your letter of June 8. The "Omnicura Remedy Company" was incorporated April 9, 1895, with a capital stock of \$20,000, and the following object: "To manufacture, use and sell 'Omnicura' a new medical discovery." The incorporators were: James J. Russell, Robert E. Buchanan and Hart. J. Fitzgerald. Yours very truly,

W. H. HINRICHSSEN, Secretary of State.

This sample of J. J. truthfulness is not so alarming: but to even grossly slander the Ferris wheel without any use or provocation whatever, shows a very mean disposition.

The letter of thanks which he states the Eppstein family wrote to him, is another myth. He wrote it himself and became so obtrusive to the family that they finally signed it to get rid of him. Any one doubting this may address B. Eppstein, 3144 Wabash Avenue.

No one who is acquainted with the Omnicura will find it strange that J. J. Russell does not want to be connected with this "new medical discovery." Imagine a string or piece of tape, joined at the ends and hanging loosely about the neck, with a number of little plasters attached to it, which are claimed to possess the miraculous power of drawing every known disease out of the system: curing Bright's disease, consumption and every ailment imaginable; this is the Omnicura. The price is \$10 and is based on profound psychologic reasoning. It is well known that a man who is swindled out of a quarter is apt to talk about it; but when the amount is \$10 nothing but silence can keep him from ridicule.

This is the individual whom any physician in this city may meet some day at the bedside of a patient, telling the latter how badly he looks and how hopeless his case is without the Bracelin cure. In one case antitoxin has been used an hour or two before his intrusion—and his nostrum has cured diphtheria when antitoxin had failed. In another a patient is gradually recovering from pneumonia or some other illness—and he was cured by Russell after his physicians had given him up.

Formerly a politician in Iowa, he now uses even physicians as willing or unwilling tools to advertise his nostrum: a fact which must bring a blush of shame to the face of every honest medical man. With overwhelming effrontery he has even brought a mandamus suit against Dr. Reilly, Chief of the Board of Health, because he was refused access to the daily reports of contagious diseases. When a physician resents his impudence he is made an example of in the *Tribune*, by being exposed to public ridicule. The name of Dr. Edwin Kuh, a man of the highest professional standing, is held up to every reader of Russell's pamphlet on the Bracelin cure, as a warning to others who might have the temerity to question its claims, in a letter refilled with new spelling, the main argument being, that Kuh means cow in English.

Quackery will exist as long as there are dupes among mankind, but it must be kept out of contact with legitimate medicine, the quack or his agent is as much out of place in a physician's office or at the bedside of his patients, as a prostitute in the home of a virtuous woman. Our legislation has made enough concessions to mountebanks, without physicians adding thereto. Legalize quackery as such is a well paying business and heeds no encouragement from medical men.

MARTIN MATTER, M.D.

The Wisconsin Diploma Mill.

OFFICE OF ATTORNEY GENERAL,
MADISON, WIS., June 13, 1896.

To the Editor:—Your JOURNAL of April 25 was forwarded to me by one of the good physicians of this State and furnished valuable information to this office for the purpose of bringing an action to dissolve the Wisconsin Eclectic Medical College at Milwaukee.

We have just prepared a complaint and I take great pleasure in forwarding a copy to you. You are at liberty to use it as you see fit. You will notice that I have obtained leave from the Supreme Court of this State to bring an action to annul its charter. This action will be brought in Milwaukee county. I have to-day mailed the papers to the sheriff of that county requesting his service.

Yours truly,

W. H. MYLREA, Attorney General.

STATE OF WISCONSIN, CIRCUIT COURT FOR MILWAUKEE COUNTY.

State of Wisconsin ex re W. H. Mylrea, Attorney General, Plaintiff, vs. Wisconsin Eclectic Medical College, at Milwaukee, Defendant.
The State of Wisconsin, upon the relation of its attorney general, respectfully informs the Court:

That the defendant, the Wisconsin Eclectic Medical College at Milwaukee, is a corporation formally organized and colorably existing under the statutes of this State, and that it was so organized for the nominal purpose of teaching students the science of medicine and preparing and educating them to practice as physicians, and conferring upon them, upon having been examined, and they having succeeded in passing such examinations as to their knowledge of said science, the degree of Doctor of Medicine, or such other degree which might be proper, according to their knowledge exhibited on such examination.

That the date of its supposed organization was on or about the 31st day of December, A. D. 1895, and in the preliminary papers preparatory to organization its principal office and place of business is stated to be in the city of Milwaukee and county of Milwaukee aforesaid.

That heretofore, on the 27th day of May, A. D. 1896, upon the application of W. H. Mylrea, attorney general for the State of Wisconsin, it was by the consideration and judgment of the Supreme Court of said State of Wisconsin ordered that leave and permission be and they were then granted by said Court to said attorney general to commence an action in the Circuit Court of Milwaukee County and State of Wisconsin, upon his relation, against the corporation known as the Wisconsin Eclectic Medical College, to vacate its charter and annul its existence as a corporation, together with such other and further relief as to the Court may seem just and equitable.

And thereupon the State of Wisconsin, by its said attorney general, complaining, shows to the court and alleges:

That on the 23d day of December, 1895, Fred Rutland, Ann Neve Rutland and H. Meyer associated together for the purpose of forming a corporation the object and business of which was stated in the articles of association to be as follows:

1. "For the purpose of teaching students the science of medicine and preparing and educating them to practice as physicians and conferring upon them, upon having been examined, and they having succeeded in passing such examination as to their knowledge of such science, the degree of Doctor of Medicine, or such other degree which may be proper, according to their knowledge exhibited on such examination.

2. "The name of such corporation shall be the 'Wisconsin Eclectic Medical College at Milwaukee,' and its location is in the City of Milwaukee, County of Milwaukee and State of Wisconsin.

3. "This corporation is formed without capital stock.

4. "The general officers of this corporation shall consist of a president, a treasurer and a secretary, the office of secretary and treasurer may be held by one person.

5. "The Board of Directors shall consist of three persons who shall hold their office for five years and shall be elected by the members of the corporation. The Directors shall have the general charge, control and management of the corporation, its affairs and property. The President shall preside at all meetings of the Board of Directors and of the members of the corporation; the Secretary shall preserve the seal, archives and correspondence of the corporation and attend to all business incidental thereto. The Treasurer shall receive and disburse funds of the corporation and shall keep the accounts of the corporation and books belonging to it. Any of these officers may act for the other officer in the absence of the same, and the office of secretary and treasurer may be filled by one person.

6. "Every person of good moral character having a diploma entitling him to practice as a physician may become a member of this corporation by a majority of the vote of the members of this corporation.

7. "Regular meetings of the members of this corporation for the election of directors and for the transaction of other business shall be held annually on the first Tuesday after the first day of January of every year.

8. "The signers of these articles are at the time of the signing thereof the only members of the corporation, and the first meeting of the members thereof for the purpose required by law shall be held at Room 7 of Lipp's Block, City of Milwaukee and County of Milwaukee, on the 27th day of December, 1895, at 3 o'clock in the afternoon."

Said articles were signed by Fred Rutland, Ann Neve Rutland and H. Meyer, on the said 23d day of December, 1895, recorded in the office of the Register of Deeds for Milwaukee County, and on the 31st day of December, 1895, duly filed in the office of the Secretary of State of said State of Wisconsin.

Complainant further complaining denies that he has any knowledge or information sufficient to form a belief as to whether or not a Board of Directors for said corporation has ever been elected, or as to whether or not the person "H. Meyer," one of the alleged signers of said articles of incorporation, has any existence in fact.

Complainant alleges upon information and belief that no record has been kept of the meetings of the Board of Directors of said corporation, if it has a Board of Directors, and that no by-laws have been adopted by said corporation, and that no record of any of the acts or doings of said corporation has been kept or preserved in any manner. That said corporation pretends to be carrying on the business of a medical college at 1809 Fond du Lac Avenue, in the City of Milwaukee, Wisconsin, in certain rooms above a store building located at that place, which rooms are adapted for residence purposes only and are utterly unfit for the purpose of the business of carrying on a medical college. That said corporation has no apparatus or paraphernalia of any kind suitable for the carrying on of a medical college, or for the giving of instruction therein. That it has no medical library of any kind suitable for the use of teachers or students. That it employs no teachers to give instruction to persons desiring to obtain a medical education. That it has never exercised the rights and privileges intended to be conferred upon it by its articles of organization, and does not intend to exercise any of the rights and privileges so intended to be conferred upon it.

Complainant further alleges upon information and belief that said Fred Rutland, Ann Neve Rutland, the wife of said Fred Rutland, and said H. Meyer, if there be a person by that name, did not organize said corporation in good faith for any of the purposes mentioned in its said articles of organization, but fraudulently and unlawfully organized said corporation for the sole purpose of enabling them to issue to ignorant and unskilled and wholly incompetent persons, spurious and bogus diplomas purporting to confer upon such persons the pretended authority of practicing medicine and surgery with intent thereby fraudulently to procure from such persons large sums of money in payment thereof.

Complainant further alleges upon information and belief that after said association had thus been formally organized in accordance with the laws of this State, the said Fred Rutland and Ann Neve Rutland, his wife, in furtherance of the unlawful and fraudulent scheme aforesaid,

procured from the Secretary of State of said State a certificate such as he is required by law to issue, certifying that there had been on the 31st day of December, 1895, filed in his Department "an instrument in writing, purporting to be articles of association of a corporation to be known as the Wisconsin Eclectic Medical College at Milwaukee, without capital stock," the business and purposes of which was to conduct a medical college, etc., and that, therefore the State of Wisconsin did certify and grant unto the said Wisconsin Eclectic Medical College at Milwaukee, the powers and privileges conferred by Chapter 66 of the Revised Statutes of the State of Wisconsin, and all acts amendatory thereof, for the purposes above stated, and in accordance with their said articles of association."

In witness whereof the said Secretary of State affixed his hand and official seal on the said 31st day of December, 1895.

Complainant further alleges upon information and belief that thereafter Fred Rutland and Ann Neve Rutland, for the purpose of carrying out their fraudulent scheme as aforesaid, caused a large number of advertisements to be inserted in newspapers throughout this and other States, and a large number of circulars soliciting persons to apply to it for diplomas and licenses such as would permit them to practice medicine and surgery in this and other States, said advertisements and circulars among other things stating in substance that if the applicant should be able to answer before a notary public of his own town certain questions to be submitted by said corporation, and upon the payment of a fee prescribed by said corporation, that said corporation would issue a diploma to such persons, which diploma would enable such persons to practice medicine in this and other States of the Union, and in proof of its authority to issue such diploma, and for the purpose of inducing persons to act upon these statements, said Fred Rutland and his wife would send out with such circulars a copy of the certificate issued by said Secretary of State, as aforesaid, and would further allege in said circulars that the State of Wisconsin had satisfied itself that the purposes of the corporation were regular and in accordance with the law, and had accepted a fee for incorporation and affixed its seal to the charter of said corporation, which charter declared the purposes and methods of the corporation, and that the State thereby had sanctioned such purposes, and that therefore no person or power could disturb either said college or its graduates.

That by means of the authority apparently conferred upon said corporation by its articles of incorporation and through said advertisements and said circulars the said Fred Rutland and wife have induced a great many persons to apply to them for and to pay them considerable sums of money for such diplomas, and have issued a great many of such diplomas to such persons, who have made no preparation or study of either the science of medicine or surgery, and who are wholly unfit and incompetent to practice either the science of medicine or surgery.

Complainant denies that he has any knowledge or information sufficient to form a belief as to how many of such diplomas have been issued, but alleges that a large number of them have been issued, and that Fred Rutland and Ann Neve Rutland, his wife, have by the means aforesaid fraudulently procured considerable sums of money, the exact amount of which complainant is unable to state, but he alleges upon information and belief that said Fred Rutland and wife have received for each of said diplomas a sum varying from \$15 to \$60, according to the ability of the applicant to pay for the same.

Complainant alleges upon information and belief that not only was said corporation organized as aforesaid solely for the purpose of enabling its incorporators to carry on the fraudulent business above described, but that said fraudulent business above described is now and will continue to be its only business so long as said corporation shall be permitted to exist.

That the carrying on of said business is detrimental to the advancement of the science of medicine and surgery, as well as contrary to good morals and public policy. That it directly tends to encourage ignorant, unscrupulous and wholly unfit persons to practice the important professions of medicine and surgery, thereby greatly endangering the welfare and good health of many of the people of this State.

In short, that the carrying on of said business by said corporation is clearly a wilful misuse and abuse of the privileges and franchises conferred upon it by its articles of incorporation.

WHEREFORE, Complainant prays the Court that it will vacate the charter and annul the existence of the said Wisconsin Eclectic Medical College at Milwaukee, together with such other and further relief as to the Court may seem just and equitable.

Medical Society of State of Pennsylvania.

HARRISBURG, PA., June 15, 1896.

To the Editor:—In your issue of May 30, page 1092, it is stated the "next convention will be held at Pittsburg in September, 1897." The next meeting of the Medical Society of the State of Pennsylvania will be held in Pittsburg, Pa., the third Tuesday of May, 1897. There was some mention of September, but May is provided for in the By-Laws. Convention is not a good word to use for meetings of medical men, though a good many journals use it, our JOURNAL should set a better example. The above correction of date and title is so you can have the list of meetings correct. Very truly,

W. T. BISHOP, M.D.

The Journal Itself.

NEW CASTLE, IND., June 5, 1896.

To the Editor:— . . . It is the best medical journal published, the best the Association has ever had, and improving weekly.

G. W. BURKE, M.D.

LIBERTY, MO., June 14, 1896.

To the Editor:—Allow me to compliment the JOURNAL as one of the best in the United States.

J. M. ALLEN, M.D.

CHICAGO, June 6, 1896.

To the Editor:—In enclosing my vote, I take pleasure in asking to be allowed to thank you for your good work on our JOURNAL. I think it is the high-class weekly for the general profession in the United States. Cordially yours,

ALBERT B. HALE, M.D.

CLYDE, N. Y., June 12, 1896.

To the Editor:—With great pleasure I acknowledge the receipt of my much wished for copy of the JOURNAL of Dec. 28, 1895. I am more than ever tenacious that there shall be no break, as, without flattery, under the present editorial conduct, it is a library of itself, and the best medical journal now published.

I assume to be a competent judge, as I have been a reader of it since its first publication in the weekly form.

Yours truly, D. COLVIN, M.D.

CINCINNATI, June 5, 1896.

To the Editor:—I enclose to you my ballot, as also my check for \$5 for yearly dues.

Now, my dear Doctor, I want to thank you for your distinguished services as Editor of the JOURNAL. I think it ranks with the journals of the East.

The tone of the JOURNAL is high. It firmly supports the Code. In my opinion, it will grow and grow, and show the world that no section can control the Western and Southern profession. Wishing you and the JOURNAL all success, I am

Yours truly, JOHN A. MURPHY, M.D.

PUBLIC HEALTH.

Dr. Bond of Gloucester, Eng., sends us a copy of a useful leaflet drawn up by him and entitled "Our duty in regard to Vaccination, or fifteen reasons why we should believe in the efficacy of Vaccination as a Preventive of Smallpox." This might be distributed broadcast in those districts where recalcitrant Board of Guardians have failed to do their duty.

Low Sickness-Rate in the German Army.—It is pleasant now and then to put one's finger on a fact that sustains faith in the application of hygienic measures. The General Staff Surgeon of Prussia reports that by the energetic application of hygienic measures—which include vaccination and revaccination—the invaliding among troops has been reduced 42 per cent. since 1868, and the mortality has been lessened 57 per cent., which means that two thousand men were alive at the end 1895 who would not have been had the former conditions obtained.

Schools and Disease; A Model Preventive System.—Dr. Leslie McKenzie, the Health Officer for the Borough of Leith, refers in his annual report for 1895 to the system followed in the town for the better prevention of the spread of infectious disease by the agency of schools. Each day an official of the School Board of Leith calls upon the health officer for the purpose of receiving lists of infectious cases notified to him, and then proceeds to distribute particulars to the different masters whose schools are interested in the cases, with the view of at once securing the absence from school of all children from an infected house until the house has been declared to be disinfected, etc., to the satisfaction of the health officer or some medical practitioner. Headmasters also notify to the School Board all cases of sickness coming to their knowledge, and thereupon similar steps are taken. The system is modeled on that obtaining at Glasgow, and gives satisfaction. Given the strict carrying out of the plan it ought to succeed.—*British Medical Journal*.

Annual Death Rate in Peru.—Odriozola's address at the Commencement of the University at Lima, contains the statement that the annual death rate at Peru is from 35 to 40 per thousand, of which a third is due to tuberculosis, while many of

the rest, and an immense proportion of the ills, are due to alcoholism in its effects on generation after generation. As the population of Peru is so small he urges that the very existence of the nation, to say nothing of other reasons, demands the improvement of this state of affairs. Special institutions should be established for the tuberculous poor, one in the mountains and one at the seashore, which might save many lives now doomed, while preventing the infection of countless others. The climate of Peru is peculiarly healthful, and careful sanitation might make it the most favored spot on the globe instead of its present record of elevated mortality.—*El Monitor Medico*, May 1.

The Prevention of Caisson-Disease.—According to the *Medical News* the prophylaxis of this affection, or chain of symptoms, has been the subject of experimental investigation in France. M. Hersent, a civil engineer, expresses the firm conviction that the large sacrifice of life in the past has been due to the rapid variations in the degree of compression brought about by ignorance or carelessness. He found that dogs could endure, without danger, a pressure of seventy-five to eighty pounds to the square inch for as much as five hours, provided that twenty-five minutes were occupied in gradually producing this amount of compression and one and a half hours in "decompression," a uniform temperature being maintained. Practically the same experiments, with perhaps a more gradual change in the pressure, were carefully made upon workmen, with only a little lassitude, lumbago, and slight prickling sensations of the surface resulting. It was thus demonstrated that without overtaxing the workmen they can labor uninterruptedly for four hours or more under a pressure of seventy-five pounds or more; that is to say, at 150 to 175 feet below sea level, on condition that they should experience a very slow compression and "decompression," and that the temperature be uniformly maintained.

The Identity of Diphtheria in Man and the Lower Animals.—The *British Medical Journal* quotes from the article on the above subject, by Dr. Leon Gallez, of Chatelet, in the *Bulletin de l'Académie Royale de Médecine de Belge*. The writer states that the bacterial proof of the non-identity of the diphtheric organisms found in man and the lower animals, such as the pigeon, chicken, calf, rabbit, cat, dog, horse and pig, is not conclusive. On the other hand, the numerous observations of the transmission of the disease from man to the lower animal, nine cases being cited from the literature upon this subject, and vice versa, seventy-two observations, are considered by Gallez to be almost positive proof of the identity of the different organisms which have been described in connection with diphtheria in man and the lower animals. Four histories are also given in which the transmission of human diphtheria to an animal has been in return followed by its recommunication to man. While the morphology is different, it is not more so than can be explained by the variations of the Klebs-Löffler bacillus as seen upon different culture media, likewise the symptomatology differs on account of the various anatomic peculiarities of the different species of animals in which the disease occurs. The author considers that we have in animals both an accidental form and an habitual one, the latter being merely a repetition of the culture of successive generations in the individual of the same species, the organism finally taking on special characteristics.

Salutary Influence over Medical Education of a National Board of Examiners. An editorial in the *Public Health Journal*, May, presents the following argument on behalf of a National Department of Health: During the last few years nearly all the States of the Union have passed stringent laws with a view to regulate the practice of medicine, abolish quackery and elevate the standard of medical education, and in order to test the qualifications of physicians proposing to practice, examining

boards have been created. In many of the States having such boards no weight whatever is given to the fact that a physician who may wish to locate in such State already has a diploma from some medical college of high standing; that he may have already honorably passed the examining board of some other State, and has been perhaps for many years a successful or even eminent practitioner; he must be again examined by the State board to which he desires to remove. These matters are regulated much better in France, and, we believe, in other European countries. When a student has passed his examination before any of the French medical faculties, his diploma is indorsed by the government; that done, he has a right to practice his profession wherever the tricolor flies. The cumbersome and unjust methods adopted by the several States in licensing physicians to practice should be terminated with as little delay as possible. We are of the opinion that the various State medical societies should co-operate to formulate plans for the creation of a National Examining Board, which should have the power to examine physicians and grant certificates to practice, valid in any part of the United States, as well as to indorse the certificates of State boards, thus rendering them universally valid in this country without further inquiry.

Cause of Death Following Serum Injections.—A most interesting series of experiments have been made by Drs. A. Siebert and F. Schwyzer of New York City, with a view of determining the cause of sudden death following the injection of antitoxic serum. Their processes, results and conclusions form the subject of a paper read before the American Pediatric Society at its meeting in Montreal, May 26, ult. The scope of the experiments had reference to: 1. The possibility that the serum itself might do the killing, either by entering the circulation too rapidly and in too large a quantity by an opened vein, or by poisonous substances having formed in the antitoxin in consequence of decomposition. 2. The possibility that the carbolic acid used in preserving the serum was the cause of death. 3. The possibility that death is caused by the injection of air into the blood current with the serum.

The experiments made to determine these three possibilities seem to have been made, judging by the detailed accounts, with due care and thoroughness and upon them the authors base the following statements and conclusions: "1. Antitoxic serum does not seem to be capable of causing threatening symptoms and speedy death, even when brought quickly into the blood current in very large doses. 2. The carbolic acid used in preserving the antidiphtheritic serum must be in such a weak solution as to be entirely unable to cause the characteristic carbolic convulsions produced in every one of our second series of experiments. The absence of these convulsions in the cases of sudden death in patients, the entirely different group of symptoms reported in them and the fact that guinea pigs and rabbits will survive even very large and concentrated doses of carbolic acid injected into a vein, lead us to discard the possibility of this drug having caused the reported deaths. 3. Ever very small quantities of air caused severe disturbances and ultimate cessation of breathing in every animal experimented upon. These disturbances are entirely analogous to the symptoms reported as preceding the sudden deaths after antitoxin injections. Air is found alongside of the fluid in every syringe used for hypodermic injections, and being pressed under the skin with the fluid may readily come in contact with a punctured cutaneous vein and so may enter the blood vessel and the right heart, even before the serum has been absorbed. "In view of these facts and of our experiments, we here express our firm opinion that the sudden deaths reported after antitoxin injections were caused by injected air and not by antidiphtheritic serum." This conclusion would be more forcible if the fact were stated that in ordinary hypodermic injections of other substances instances of sudden death have been

uncommon as altogether to escape notice. Every practitioner we believe invariably excludes the air from the syringe before making the injection. Is it supposed that his practice changes when using antitoxin?

A New Anti-tetanus Serum.—The following circular of the New York City Board of Health shows the enterprise and industry of the bacteriologists of that Board:

"The New York City Health Department is prepared to furnish antitoxin serum for the treatment of tetanus. Each vial contains 20 c.c. of serum, having an immunizing power of 1 to 3,000,000; i.e., 1 c.c. of serum protects 3,000,000 grams of guinea pigs in weight from a fatal dose of tetanus toxin. The average initial dose of the serum varies with the gravity of the case and the time when treatment is begun. The remedy is administered by deep hypodermic injections, a large syringe (such as has been employed for diphtheria antitoxin) being preferably employed for the purpose, although an ordinary hypodermic syringe carefully cleaned may be used, the barrel of the syringe being repeatedly filled. Some point on the anterior surface of the body should be chosen for the injection, where there is an abundance of subcutaneous cellular tissue, as the anterior surface of the abdomen or thorax or the outer surface of the thigh. Before the remedy is administered the skin should be carefully washed with some disinfecting solution, and the syringe carefully sterilized and then washed with sterilized water. The solution is rapidly absorbed and it is better not to employ massage over the point of injection. It is of vital importance in tetanus that the antitoxin be administered at the earliest possible moment, as the dose required to neutralize the tetanus toxin absorbed increases with great rapidity with each hour's delay. When the treatment is begun at the first appearance of tetanic symptoms and they do not point to a very severe infection, and especially when the incubation period has been long, e.g., two weeks; one vial, or 20 c.c., may suffice for the first injection, and, according to the results, one-half the quantity or the same quantity should be repeated at intervals of from six to twelve hours during the four following days. If the infection is intense, as shown by a short incubation period, e.g., five to eight days; or by the rapid development of the tetanic symptoms and by the predominance and intensity of bulbar phenomena, or if the treatment is begun several days after the appearance of the tetanic symptoms, even if at the time of injection they are not severe, the contents of one vial should be at once injected, and the dose repeated at short intervals, according to the effect produced on the tetanic symptoms. The doses required where the wound has been previously untreated, even if the symptoms are slight, are usually large. The dose for children under twelve should be one-half or less than that for an adult. The use of tetanic antitoxin does not preclude the employment of other remedies, such as chloral, the bromids, physostigmin or morphin. Some one or more of these remedies should be employed in full doses. It is also thought to be advantageous to give large amounts of water to the patient for its diuretic effect, as the tetanus toxin is eliminated by the kidneys. Where tetanus follows some wound of the surface, this should be treated freely with some preparation of iodine in solution, to destroy the toxins in it. The ordinary antiseptic solutions, such as carbolic acid and bichlorid of mercury, are of little value for this purpose. The exact value of tetanus antitoxin in the treatment of this disease and the best method of administration have not been fully determined and the Health Department of the city of New York especially requests that all persons using this preparation of antitoxic serum will forward a full report to the Department of the case and the results of treatment. All public institutions in New York City, on application, will be furnished with tetanus antitoxin free of charge.

"Approved by the Board of Health at a meeting held May 19, 1896. EMMONS CLARK, Sec'y; CHARLES G. WILSON, Pres.

"Address The Bacteriological Laboratories, Health Department, Criminal Court Building, Center, Elm, White and Franklin Streets. Telephone, 448 Franklin."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General, U. S. Marine-Hospital Service:

SMALLPOX (UNITED STATES).

Louisiana: New Orleans, May 31 to June 6, 4 cases, 1 deaths.

SMALLPOX (FOREIGN).

Birmingham, Eng., May 23 to 30, 2 cases.

Bombay, India, April 28 to May 12, 58 deaths.

Buenos Ayres, Brazil, March 1 to 31, 24 deaths.

Calcutta, India, April 25 to May 2, 1 death.

Callao, Peru, May 3 to 17, 13 deaths.

Genoa, Italy, May 23 to 30, 1 case.

Guayaquil, Ecuador, May 15 to 30, 7 deaths.

Licata, Italy, April 16 to 23, 3 deaths.

Madrid, Spain, May 19 to 26, 10 deaths.

Naples, Italy, May 23 to 30, 4 cases, 1 death.

Odessa, Russia, May 11 to 23, 7 cases, 4 deaths.

Pernambuco, Brazil, April 1 to 30, 55 deaths.

Prague, Austria, May 16 to 23, 6 cases.

Rotterdam, Holland, May 23 to 30, 1 case.

Tuxpan, Mexico, May 16 to 23, 3 deaths.

Warsaw, Russia, May 9 to 25, 4 deaths.

CHOLERA.

India: Bombay, April 28 to May 12, 31 deaths; Calcutta, April 25 to May 2, 252 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, May 2 to 9, 38 deaths; Pernambuco, April 1 to 30, 8 deaths.

Buenos Ayres, March 1 to 31, 5 deaths.

Cuba: Havana, May 28 to June 4, 9 deaths.

ASSOCIATION NEWS.

Notice.—Members of the ASSOCIATION desiring to attend the Second Pan-American Medical Congress at Mexico in September, as delegates to that body, will please address the Permanent Secretary, William B. Atkinson, M.D., 1400 Pine Street, Philadelphia, Pa., for their credentials.

Section on Materia Medica, Pharmacy and Therapeutics.—*To the Editor:*—Enclosed please find copy of resolutions passed by the Section on Materia Medica, Pharmacy and Therapeutics, AMERICAN MEDICAL ASSOCIATION, at Atlanta, Ga., May 7, 1896, in regard to a paper on "Anti-Phthisin," read by Dr. Ambler.

Dr. Stewart has written you in regard to it. I also enclose the address of Professor Klebs, delivered on the same subject.

Yours truly, W. B. HILL, M.D.

Milwaukee, Wis., June 11, 1896.

The Committee beg to report as follows:

That Dr. Klebs disclaims any knowledge that Anti-Phthisin is a proprietary remedy, although he admits having heard that the name was copyrighted in Germany, and that he has heard that application for the same has been made in this country.

We also find that all rights to this remedy have been transferred to Karl von Ruck, and therefore find that it does come in under the head of proprietary medicines, and respectfully refer the publication of the paper to the Business Committee for their consideration.

WHEREAS, The AMERICAN MEDICAL ASSOCIATION'S Code of Ethics has declared its opposition to secret remedies and refuses to be used as a body, and through its official organs, to further the interests of any and all patent medicines; and

WHEREAS, Dr. C. P. Ambler, Associate Medical Director and Laryngologist of the Winyah Sanitarium of Asheville, N. C., representing and defending the Klebs Anti-Phthisin before the ASSOCIATION and also Dr. Karl von Ruck, the controller of this product, has declared before the Section on Materia Medica, Pharmacy and Therapeutics, that it is true that Klebs Anti-Phthisin is protected by copyright and that a patent has been applied for both in this country and Germany, to restrict its production for the benefit of the owners of the patent.

Resolved, That a committee of three be appointed to investigate the matter without delay, and report its finding to the proper officers of this ASSOCIATION and in the columns of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Resolved, further, That the Committees on Ethics and Publication and such other committee as the Chairman of the Section may deem fit, shall take cognizance of the matter and take such steps as may be considered necessary to prevent the prostitution of this ASSOCIATION and of its JOURNAL for the advancement of this remedy if found excluded by the rules and laws of medical ethics, and shall publish their finding in said JOURNAL.

SOCIETY NEWS.

Chicago Medico-legal Society.—At the last meeting of this Society the following officers were elected to serve for the ensuing year: President, Dr. E. J. Doering; first vice-president, Dr. Sanger Brown; second vice-president, Dr. A. H.

Cooke: treasurer, Dr. Jos. Matteson: secretary, Dr. John Ridlon, 103 State Street.

Washington State Medical Society.—At the annual meeting of this society held in Tacoma May 19 and 20, Dr. R. L. Thomson, of Spokane, was elected president, and Dr. J. M. Semple, of Medical Lake, Secretary. The next meeting will be held in Spokane, May 1897.

Nebraska State Medical Society.—At the annual meeting the following officers were elected for the ensuing year: President, F. D. Haldeman, Ord; first vice-president, J. Lue Sutherland, Grand Island; second vice-president, O. Grothan, St. Paul; recording secretary, G. H. Simmons, Lincoln; treasurer, W. M. Knapp; corresponding secretary and librarian, H. B. Lowry, Lincoln. The next annual meeting will be held in Lincoln.

Veterans of Indian Wars.—The latest society with military features is the Society of Veterans of the Indian Wars. Article 3 of the constitution provides that any past or present officer or acting officer, non-commissioned officer or soldier of good moral character and reputation, who has served in the army of the United States during an Indian war, and who has actually been in service in the country occupied by hostile Indians, and whose services terminated honorably and who can furnish suitable certificate as to such services, is entitled to active membership. No honorary membership is permitted. Dr. W. T. Parker, Groveland, Mass., will furnish information on this subject to those who desire it.

Association of Life Insurance Medical Directors.—The following are the officers of the Association for 1896-7: President, Edgar Holden, M.D., Newark, N. J.; first vice-president, H. Cabell Tabb, M.D., Richmond, Va.; second vice-president, J. H. Webb, M.D., Waterloo, Ont.; secretary, O. H. Rogers, M.D., New York City; treasurer, John W. Brannan, M.D., New York City; executive committee, Drs. Edward Curtiss, New York City, Abel Huntington, New York City, G. R. Shepherd, Hartford, Conn. and Albert Wood, Worcester, Mass. Dr. J. W. Fisher is chairman of a special committee on collective investigation on accurate statistics on certain kinds of impaired lives and Dr. E. H. Hamill is chairman of a committee on research as to impaired family history.

Mississippi Valley Medical Association.—A meeting of the Executive Committee of this association was held at Atlanta, on May 6, and the following gentlemen were appointed to deliver addresses: Dr. H. N. Moyer, Chicago, address on medicine; Dr. Horace H. Grant, Louisville, address on surgery; the indications are that the meeting to be held at St. Paul, on October 20, 21, 22 and 23, will be the largest and most successful in the history of the association. As all the railroads will offer reduced rates for the round trip, an opportunity will be given to visit St. Paul and Minnesota during the most delightful season of the year. H. O. Walker, M.D. Detroit, Mich., president; H. W. Loeb, M.D., 3559 Olive Street, St. Louis, secretary; C. A. Wheaton, M.D., St. Paul, Minn., chairman committee of arrangements.

The American Medico-Psychological Association. According to the *Boston Medical and Surgical Journal*, May 28, the fifty-second annual meeting of the Association, held in Boston during the last week in May, has been largely attended. An address of welcome was made to the society by Governor Wolcott, and the President, Dr. Richard Dewey, delivered an address on "Our Association and Our Associates." At the afternoon meeting papers were read by Dr. Theodore W. Fisher of Boston, Dr. W. Worcester of Danvers and Dr. Henry J. Berkeley of Baltimore. An evening session was held at the Hotel Brunswick, the headquarters of the Association, on which occasion there were given addresses by Dr. R. M. Burke of London, Ont., Dr. Joseph G. Rogers of Logansport,

Ind., and by Dr. E. N. Brush. On Wednesday morning the annual election of officers took place, and in the afternoon the members, with ladies, were given a lunch at the McLean Hospital in Waverly. In the evening a reception was given to the members by the Boston Medico-Psychological Society at the University Club.

Concerning Antivivisection.—The American Laryngological Association, in annual session at Pittsburg, Pa., May 15, 1896, by unanimous vote, and by appended signatures of its officers and members of committee, hereby records its most earnest and emphatic protest against such legislation as that proposed by the bill entitled, "A bill for the further prevention of cruelty to animals in the District of Columbia," Senate bill 1552, in so far as this legislation embodies measures intended to control and restrict experimentation upon animals conducted in the government laboratories, the medical schools and other institutions of higher learning in the District of Columbia. In making this protest the Association begs to present to the members of Congress the following considerations: Animal experimentation has proved itself by years of usage, the most important and indispensable method of arriving at conclusions concerning the functions of, and the influences which modify or develop, all living organisms. All the greater advances which have been made in the science and art of medicine in recent years have been based, to a great extent, upon such experiments upon the lower animals, especially as conducted in the laboratories of the Government, and in other scientific institutions. These advances would, in fact, have been impossible without such aid. The untold benefit which mankind has derived, and will continue to receive, from these advances, need not be further detailed than to mention the inestimable boon conferred by the discovery and development of the antitoxin treatment of diphtheria, the inoculation for rabies, the detection for tuberculosis in animals, and the consequent lessening of its spread among human beings. The revolutionizing of surgical practice and the success attending the major operations by the introduction of antiseptic measures have been brought about chiefly through animal experimentation. The benefits derived from these experiments largely go to improve public health and prevent infectious diseases. This fact is often overlooked by the laity. J. H. BRYAN, M.D., Chairman of Committee; WILLIAM H. DALY, M.D., President; H. L. SWAIN, M.D., Secretary.

Ontario Medical Association.—This Association met at Windsor, Ont., June 3 and 4. President, F. LeM. Grasett, Toronto. The following papers were read: "The Treatment of Puerperal Sepsis," by H. T. Machell, Toronto; "The Operative Treatment of Mammary Carcinoma," by W. Burt, Paris; "The Preservation of the Perineum in Labor," by C. B. Oliver, Berlin; "Neurasthenia," by E. E. Harvey, Norwich; "Pregnancy Complicated with Retroversion—a Case," by Alex. Bethune, Seaforth; "Broncho-pneumonia," by A. E. Harvey, Wyoming; "Hemoptysis," by J. M. Cotton, Lambton Mills; "Movable Kidney and Another Way of Anchoring It," by F. B. Wilkinson, Sarnia; "Treatment of Abortion," by G. McKeough, Chatham; "Skin Grafting," by R. Whiteman, Shakespeare; "Glioma of the Brain," by A. J. Johnson, Toronto; "Roentgen Photography and Its Application to Medicine and Surgery, with Exhibition of Apparatus and Demonstration," by Edmund E. King, Toronto; "The Rational Treatment of Typhoid Fever," by J. P. Armour, St. Catharines; "Treatment of Phthisis," by W. B. Geikie, Toronto; "Phthisis as a Factor in the Causation of Insanity," by E. H. Stafford, Toronto; "Absorbable Ligature in Abdominal Surgery," by M. V. Mann, Buffalo, N. Y.; "Mixed Infection," by J. Caven, Toronto; "Missed Abortion," by F. R. Eccles, London; "The Total Stamping out of Transmittable Diseases," by A. Groves, Fergus. The following officers were elected: President, Dr. John Coventry, Windsor; First Vice-President, Dr. F. R. Eccles, London; Second Vice-President, Dr. Clark, Kingston; Third Vice-President, Dr. H. T. Machell, Toronto; Fourth Vice-President, Dr. J. C. Armour, St. Catharines; General Secretary, Jno. N. E. Brown, Toronto; Assistant Secretary, E. H. Stafford, Toronto; Treasurer, Geo. H. Carveth, Toronto. The next place of meeting is Toronto, Ont.

Indiana State Medical Society.—The following resolutions were unanimously adopted by the Indiana State Medical Society at Ft. Wayne, May 28, 1896, as presented by Dr. E. L. Larkins of Terre Haute.

WHEREAS, A bill is now pending before Congress known as Senate Bill No. 1552 entitled "A bill for the further prevention of cruelty to animals in the District of Columbia;" and

WHEREAS, Such a bill is an unjust reflection upon the humanity of the members of the most humane and charitable profession in the world, and especially against those engaged in experimental work; and

WHEREAS, The passage of such a bill for the District of Columbia would only serve as a nidus for its spread to other States; therefore, be it

Resolved, That the Indiana State Medical Society hereby indorses the report of the Committee on Vivisection of the AMERICAN MEDICAL ASSOCIATION and adopted by that body at the recent meeting in Atlanta; and be it further

Resolved, That the secretary be and is hereby instructed to immediately furnish each member of Congress from this State (House and Senate) a copy of this preamble and the resolutions, properly signed by the president and secretary under seal of the Society, together with a copy of the above named report, instructing them to oppose the action of the so-called Humane Society of the District of Columbia.

F. C. HEATH, M.D., Secretary.

Indianapolis, June 16, 1896.

BOOK NOTICES.

A Text-Book of Bacteriology. By GEORGE M. STERNBERG, M.D., LL.D., Surgeon General U. S. Army. Illustrated by heliotype and chromo-lithographic plates and 200 engravings. Cl., 8vo, pp. 693. New York: William Wood & Co. 1896.

This book is really a revision of the well-known Manual by the same author, published in 1892. The author says in the preface: "For the benefit of students of medicine and others who do not care especially for the detailed descriptions of non-pathogenic bacteria and the extensive bibliography contained in the Manual, this Text-Book of Bacteriology is now published. It comprises that portion of the Manual above referred to as printed in large type, revised to include all important additions to our knowledge of the pathogenic bacteria since the original date of publication." This is an honest revision and the reader will have cause to complain of few if any omissions. The same modesty has characterized the author's statements in this work in all matters concerning his own discoveries as in the Manual. With regard to the phagocytic action of the white corpuscles, he thus mentions his own clear priority over Metchnikoff: "Now the theory of phagocytosis assumes that the bacilli are picked up by the leucocytes and destroyed in their interior, and that immunity depends largely upon the power of these phagocytes to capture and destroy living pathogenic bacilli. The writer suggested this as an hypothesis as long ago as 1881, in a paper read before the American Association for the Advancement of Science in the following language: 'It has occurred to me that possibly the white corpuscles may have the office of picking up and digesting bacterial organisms which by any means find their way into the blood: the propensity exhibited by the leucocytes for picking up inorganic granules is well known, and that they may be able not only to pick up but to assimilate and so dispose of the bacteria which come in their way does not seem to me very improbable in view of the fact that amebæ, which resemble them so closely, feed upon bacteria and similar organisms.' At a later date (1884) Metchnikoff offered experimental evidence in favor of this view, and the explanation suggested in the above quotation is commonly spoken of as the Metchnikoff theory." He then quotes Metchnikoff extensively as showing the details of phagocytic action and refers to recent contradictory statements as follows, p. 257: "Numerous experiments have been made during the past two or three years with a view to determining whether pathogenic bacteria are, in fact, destroyed within the leucocytes after

being picked up, and different experimenters have arrived at different conclusions. In the case of mouse septicemia, already alluded to, and in gonorrhea, one would be disposed to decide, from the appearance and arrangement of the pathogenic bacteria in the leucocytes, that they are not destroyed, but that on the other hand, they multiply in the interior of these cells, which in the end succumb to this parasitic invasion. In both of the diseases mentioned we find leucocytes so completely filled with the pathogenic microorganisms that it is difficult to believe that they have all been picked up by a voracious phagocyte, which has stuffed itself to repletion, while numerous other leucocytes from the same source, and in the same microscopic field of view, have failed to capture a single bacillus or micrococcus. Moreover, the staining of the parasitic invaders, and the characteristic arrangement of the 'gonococcus' in stained preparations of gonorrheal pus indicate that their vitality has not been destroyed in the interior of the leucocytes or pus cells, and we can scarcely doubt that the large number found in certain cells is due to multiplication *in situ* rather than to an unusual activity of these particular cells. . . . We can not consider this question as definitely settled." The author then quotes Metchnikoff's views in full. The Americans may congratulate themselves that the ablest and most comprehensive text-book on bacteriology in the English language has been given to the world by one of their own countrymen. The publisher has done his part of the work with the uniform excellence which is characteristic of the house.

Typhoid Fever and Its Abortive Treatment. By JOHN ELIOT WOODBRIDGE, M.D. Copyrighted. Cl., 8vo, pp. 368. Price, \$3. Cleveland, Ohio: L. Leavengood & Company. 1896.

This book is a revision of the various essays of the author, most of which have been published from time to time in this JOURNAL. His "theory" being: 1. Full acceptance of the microbic causation of typhoid fever; 2, an opinion that the bacilli in question may be destroyed in the body; 3, in consequence of that destruction the fever may be aborted or cut short. The means of accomplishing these laudible objects, Dr. Woodbridge thinks is found in the small doses of calomel and other drugs which he specifies. Few statements have met with more vituperative comment than the statement that typhoid fever may be cut short or aborted, and Dr. Woodbridge is not to be blamed if he repels some of the attacks with some heat, although enthusiastic as he is, he must admit that the majority is against his doctrine to-day. Whatever may be urged against Dr. Woodbridge's theories of treatment, all can agree with his notions of prophylaxis, which consist in the application of all known means of securing a good supply of pure drinking water and of preserving that water supply from pollution.

The chapter on diagnosis is an excellent one, and the book as a whole will constitute a valuable addition to the literature of the subject.

Instead of a series of essays, we look to see the work at its next edition grow into a systematic monograph on typhoid fever, for whether the antiseptic treatment of typhoid shall be generally adopted or not, the discussion on symptomatology, etiology and diagnosis will always be of value. The controversial character of the first essays in the volume are bound to attract attention, but in the next edition we trust the author may find it expedient to eliminate all that part of the book.

The Diagnosis and Treatment of the Diseases of the Rectum, Being a Practical Treatise on Fistula, Piles, Fissure and Painful Ulcer, Proctidientia, Polypus, Stricture, Cancer, etc. By WILLIAM ALLINGHAM, F.R.C.S., Eng., and HERBERT W. ALLINGHAM, F.R.C.S., Eng. Sixth edition. Cl., 8vo, pp. 485. New York: William Wood & Co. 1896.

When a book has reached its sixth edition it has passed beyond ordinary criticism. We can only note changes, and satisfy ourselves by reference that recent literature has been

considered. In this respect the sixth edition of Allingham is not disappointing. In the treatment of internal hemorrhoids the Messrs. Allingham still prefer the ligature as a rule. They however give a careful review of other methods. In regard to injection by carbolic acid and other substances, they quote with approval. Matthews and Andrews, and say: "For our own part we agree with Dr. Matthews. We have tried the injection plan in many cases, but there was generally much pain, more inflammation than was desirable, a lengthy treatment and the result doubtful—certainly not a radical cure. For it must be borne in mind that though the injection of carbolic acid into the interior of piles may in some instances stop the bleeding for a time, yet it can not and does not in any way remove the tumors." Beside this, the danger of embolism is pointed out. We think the authors do not do full justice to the "clamp and cautery" operation, which is not only dismissed with scant reference, but with condemnation. "This operation has little to recommend it. As regards danger to life—after all, the issue of greatest moment—as far as our most careful researches have led to a conclusion, it is quite six times as fatal as the ligature properly and dexterously applied." In the Rush Medical College clinic, Chicago, both operators use the clamp with cautery, and in five years no case of severe hemorrhage has been recorded, but the clamp used is of the Smith pattern, quite different from the Allingham clamp, and for the prevention of after-hemorrhage the hard rectal tube covered with iodoform gauze is used. The pressure exerted by this tube is an entire support to the eschar formed by the red-hot iron. The authors favor colotomy in selected cases, but the operation should be either inguinal or lumbar as the nature of the case indicates. No surgeon's library may be considered complete without this edition of this old favorite.

Jahrbuch der Practischen Medicin. (Yearbook of Practical Medicine. By Dr. J. SCHWALBE. Stuttgart: Ferdinand Enke. 1896.

This annual publication has been for many years a convenient and fruitful source of information to the German medical profession. To the English and American physicians the title of the work is misleading, as the book contains not only an accurate account of what has been done in the practice of medicine during the last year, but is equally reliable in giving valuable information of the advances in surgery, gynecology, obstetrics, ophthalmology, sanitation, physiology, pharmacy, etc., during the same period of time. Dr. Schwalbe has the assistance of a large corps of collaborators, and each one appears to have done his work well. The marginal annotations of the names of authors and subject matter are an important and convenient feature of the book. The work is not as exhaustive as Virchow's *Jahrsbericht*, but equally valuable and much more convenient for the busy general practitioner. It is an exceedingly useful work for reference, which should be in the hands of every German speaking physician and surgeon.

The National Formulary of Unofficial Preparations. Revised edition. By authority of the American Pharmaceutical Association. Cl., 8vo, pp. 195. 1896.

This is the second revision of this well-known work. The revision committee was composed of the following well-known members of the American Pharmaceutical Association: C. Lewis Diehl, A. B. Stevens, C. T. P. Fennel and Chas. Caspari, Jr. Most of the articles, or at least a large portion of them, should have been included in the U. S. Pharmacopeia, but even then we suppose as some sort of a supplement to the Pharmacopeia. In this edition the formulas of such preparations as were dropped from the last Pharmacopeia have been included. The decimal system of weights and measures has been introduced, and the work is now, in the language of the committee, "abreast of the times." We commend it to the profession.

Transactions of the Royal Academy of Medicine in Ireland. Vol. XIII. Edited by WILLIAM THOMSON, M.A., F.R.C.S., General Secretary; surgeon to the Richmond Hospital, Dublin. Cl., 8vo. Dublin: Fannin & Co., Ltd. 1895.

In this volume the high standard of its predecessors has been maintained. It is divided into six sections as follow: Medicine, surgery, obstetrics, pathology, state medicine, anatomy and physiology, containing articles by some of the most eminent of the European medical men.

Archives of Clinical Skiagraphy. By SYDNEY ROWLAND, B.A. Camb. The first number has just been published. Price, 4s. net per issue; with postage, 4s. 4½d. London: The Rebman Publishing Company, Limited.

This will be a record of the progress of medical photography and its various branches. Each number will contain six handsome collotypes, printed on the finest art paper and representing clinical cases in which diagnosis has been effected with the aid of Röntgen's X Rays. (The size of each plate is 10 by 12 inches.) Each plate is accompanied by explanatory text, printed on the best supercalendered paper (10 by 12 inches). The first number contains an introduction giving a full illustrated description of the methods relating to skiagraphy.

The Three Ethical Codes. Price, 50 cents. Detroit, Mich.: The Illustrated Medical Journal Co., Publishers.

This purports to give the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION, the American Institute of Homeopathy and the National Eclectic Medical Society. It is in convenient size and well printed.

The Audiphone and How to Use It in Hearing Through the Teeth. By RICHARD S. RHODES. Cl., 8vo, pp. 35. Chicago: Rhodes & McClure. 1895.

This book comprises a lecture on the audiphone and its use in hearing through the teeth, delivered by its inventor, Dr. Rhodes, before the fourteenth convention of American teachers of the deaf, at Flint, Mich.

NECROLOGY.

AGATHON WERNICH, at Berlin, aged 53. His name is familiar to Americans by his studies on abdominal typhus, beri-beri, etc., and his numerous contributions to hygiene and medical jurisprudence. He was, perhaps, better known at the antipodes, as he was for three years professor at the College of Physicians and Surgeons of Tokio when it was first opened. As a practical and scientific physician his loss is sadly felt in Berlin.

GERMAIN SÉE. Paris paid the last honors, May 17, to this distinguished physician, "the apostle of physiologic therapeutics." Although he did not add anything directly to the "materia medica," yet many of our most important remedies owe their prompt appreciation and adoption to his broad and constant outlook over the international world of science, and his ability to perceive and decide what was of true value in the new things presented. He stood sponsor in this way for the salicylates in the treatment of rheumatism, for potassium iodid in asthma, for caffeine and theobromin in renal and cardiac insufficiency, etc. His articles on the treatment of typhoid fever with quinin and alcohol, on strophanthin, terpin, etc., are classics, while those who have been signaling albuminuria as the result of antitoxin treatment of diphtheria, should read Sée's article on "Croupous Albuminuria" published in 1858. His large works, "Médecine Clinique," "Exper. Pathology," etc., are too well known to need mention.

DAVID C. CHAMBERLAIN, M.D. (Castleton Medical College, Castleton, Vt., 1837), of Leroy, N. Y., at Detroit, Mich., June 4, aged 81. He was a surgeon of volunteers during the late war.—ANA HOW, M.D. (Western Reserve University Medical Department, 1886), at Fairfield, Iowa, June 5, aged 78. He founded the Iowa Institution of Science.—J. W. PHIPPS,

M.D. (Rush Medical College, 1850), at Evansville, Ind., June 8, aged 79. He was a veteran of the late civil war, having served as a surgeon in the Eighth Illinois Volunteers.—B. G. CULVER, M.D., at Kane, Mo., May 28, aged 65.—M. H. PICOT, M.D. (Jefferson Medical College, 1861), at Geneva, N. Y., June 5.—JOHN GILLESPIE, M.D. (Harvard University Medical School, Boston, Mass., 1885), at Boston, Mass., June 5, aged 36.—JOHN MCLEAN FLEMMING, M.D. (Rush Medical College, 1872), at Chicago, Ill., June 10, aged 50.—EDWIN A. HILL, M.D. (Harvard University Medical School, Boston, Mass., 1850), at East Killingly, Conn., of hepatic cancer, May 30.—DR. O. T. AZBILL, M.D., died suddenly on June 7 at his home near Big Hill, Ky., of apoplexy. He was about 60 years old.

MISCELLANY.

Franklin E. Murphy, M.D., has been elected secretary of the Kansas City Medical College.

Arthur R. Elliott, M.D., of Chicago, has been elected Professor of Preventive Medicine and Urinary Diagnosis, at the Post-Graduate School, Chicago.

Health Office Report.—The health Office report at Detroit, Mich., for week ending June 6, 1896: Deaths: Under 5 years 35, total 85; births, male 52, female 40, total 92. Contagious diseases: diphtheria, last report 17, new cases 4, recovered 13, died 1; scarlet fever, last report 23, new cases 8, recovered 8; measles, last report 3, new cases 1, recovered 2.

Asked to Change its Name.—Press dispatches of June 13, state that President Eliot, of Harvard University, has filed a bill in the Federal court asking that the "Harvard" Medical College of Chicago take some other name. It is to be hoped that success will crown the efforts of the Massachusetts school, as it is too palpable an attempt to make capital out of a great name.

Woman's Medical College, Baltimore.—This college has lengthened its annual course to eight months (October 1 to June 2). The following appointments have been made in the faculty: R. Tunstall Taylor, M.D., Professor of Orthopedics; Thomas C. Gilchrist, M.R.C.S., Professor of Dermatology; Henry P. Hynson, Ph.G., Professor of Pharmacy; G. Milton Linthicum, M.D., Professor of Physiology; Kemp Battle Batchelor, M.D., Associate Professor of Obstetrics. A chair of Mental Diseases has been added; also department of bacteriology and embryology.

Menthol in Gastric Diseases.—Dr. A. L. Benedict, in the *American Therapist*, speaks favorably of menthol, as follows: It is an excellent antiseptic for stomach and intestine. I usually employ ten centigram doses, two or three hours after meals, to act in the intestine. For the stomach I prefer to spray it through the stomach tube. Aside from its antiseptic properties, this drug is stimulating to the local blood supply, and hence, to secretion, and it also relieves painful spasm of smooth muscle.

Must Receive all Insane.—A resolution was passed by the House of delegates of Virginia, in which the senate concurred, and which was approved March 4, 1896, that all persons who have been legally adjudged insane, who have or may hereafter make application for admission into a State hospital, shall be received. The superintendents of the several State hospitals shall be required to send promptly for all such insane persons and receive them until all vacancies in the same are filled.

Can Marry.—Sections 2224 and 2225 of the code of Virginia were amended by the 1895-6 general assembly so that the former section shall not be construed as prohibiting a man from marrying an aunt of his former wife, and the latter section no longer contains the provision that no woman shall marry the

husband of her brother's or sister's daughter, adding that if any woman shall have heretofore married her brother's or sister's deceased daughter's husband, such marriage shall be considered valid.

Can Have Order for Examination Modified.—The general term of the city court of New York holds, in the case of *Lawrence v. Samuels*, April 27, 1896, that, in a personal injury case, where the defendant procures an order from the court, that the plaintiff, a female, submit to an examination, before trial, by a physician named in the order, the fact that the order compels her to submit to an examination by a physician not of her own sex, is not a ground for the vacation of the order, she not having made any effort to have the order modified, though, as the New York code provides that she may require the examination to be made by such a physician, it furnishes ground for applying to have the order modified.

The Homeopathic Crusade.—Senator Gallinger's report in favor of legislation to restrict animal experimentation in the District of Columbia, which is a rehash of the report of the American Humane Association, brings to light the important fact that the homeopathic fraternity has originated and is pushing this crusade against scientific investigation and progress. It is a clandestine effort to humiliate the science of medicine. The Senator concludes his report with the statement that it is the unanimous expression of opinion by the Senate Committee on the District of Columbia, which is equivalent to the assertion that the Senate of the United States will unite with him in the promotion of this homeopathic crusade. Will the profession submit?

Case for Expert Testimony.—Whether criminal charges preferred by a female patient against a physician are the result of hallucination, while under the influence of chloroform and ether, the supreme court of appeals of West Virginia holds, in the case of *State v. Perry*, decided March 18, 1896, is a question that must be determined by expert medical evidence, as it is not a matter of ordinary human experience or knowledge. If such testimony establishes the probability of such hallucination, and such charges depend entirely on the uncorroborated and contradicted testimony of such patient, the jury, it says, should acquit the accused. Whether a person with a wooden leg is incapacitated from kneeling, and thereby rendered incapable of committing an offense while kneeling, in the manner charged in this case, the court also holds as a subject-matter of inquiry justifying the introduction of expert medical testimony, to assist the jury in arriving at a correct conclusion.

Hot Water Baths in Two Cases of Cerebro-spinal Meningitis.—Woroschilski has followed the example of Aufrecht and employed baths at 32 C. in a couple of cases of severe cerebro-spinal meningitis, with such success that he thinks this treatment should be widely adopted. The effect from the first bath was surprising. The irregular pulse became regular, the temperature fell, and the patient felt so much improved in every way that he begged for more. One case was complicated with heart disease, but the relief was equal to the other. The usual remedies, ice, calomel, iodine, etc., were also given. Bälz and Renaut have also advocated hot baths in children's bronchitis.—*Memorabilien*, April. This treatment has been used in America for a long time. In a local epidemic of 1873 in Illinois, there was much testimony in favor of the benefit of warm water immersion.

Treatment of Acne.—Franke states in the *Med. Neuigkeiten*, that the important point in treating acne is to prevent the transference of the infective germs to new localities and glands. Hence he strictly forbids all massage. Each papule must be allowed to develop naturally undisturbed. When it is ripe, the pus discharged on slight pressure should be carefully wiped off with a clean rag, and the skin around it disinfected with a 1 to 1,000 sublimate solution, concluding with the application

of a thin layer of ungt. len. The skin of the face must never be touched with the bare fingers, and they must not come in contact with the skin anywhere after handling the ripe papule. Excellent results, according to Franke, follow this treatment if persevered in for months.—*Memorabilien*, April.

Rush Medical College.—The annual commencement exercises of Rush Medical College, Chicago, were held May 27. The audience that assembled to witness the exercises was a large one. The degree of Doctor of Medicine was conferred upon 211 candidates. Beside the usual degrees, an honorary degree was conferred on Dr. Nathan M. Dobson of Berlin, Wis. Prof. H. M. Lyman delivered the doctorate address. Sumner A. Edmunds was valedictorian. The faculty and members of the Alumni Association held the annual banquet of the college at the Auditorium Hotel. Nearly six hundred guests were present and the occasion was made most enjoyable. Dr. A. C. Cotton, a graduate in the class of 1878, officiated. Among the speakers were President William R. Harper of Chicago University, Luther Latlin Mills, Dr. J. B. Hamilton and Dr. J. E. Cox.

"Palatable Castor Oil."—We are in receipt of the following letter from Mr. A. J. White, of New York, in which he encloses a list of patents dating from Sept. 10, 1889, to Aug. 14, 1894, inclusive, and warning druggists against using this formula, because of liability to lawsuits for infringement of patent. We have no personal knowledge of the case. We quote Mr. White's letter for general information.

NEW YORK, June 6, 1896.

To the Editor:—A paragraph is going the rounds of the medical journals, giving a formula for making Palatable Castor Oil. This formula is patented as per following list of patents:

No. 410,940, dated Sept. 10, 1889; No. 470,715, dated March 15, 1892; No. 470,714, dated March 15, 1892; No. 524,513, dated Aug. 14, 1894; No. 524,514, dated Aug. 14, 1894; and if druggists are induced to prepare this article themselves, it will lead to a multitude of lawsuits like those instituted in the "Drive Well" case. Some scheming lawyer would like to take up this case for one-half the profits, and I think the journals should warn the druggists so that they may not be caught in a trap. Yours very truly, A. J. WHITE.

Professor Edwin Klebs. The removal of Professor Klebs to Chicago has been signalized by his immediate appointment as Professor of Pathology in Rush Medical College and in the Post-Graduate Medical School. This distinguished bacteriologist is already well known in America, but as a reminder to our readers of the valuable services of Professor Klebs, we append a list of the titles of some of his more important papers. His appearance is that of a well preserved, good humored, scientific gentleman, without a tinge of brusqueness or hauteur, still in vigorous manhood.

America, and particularly Chicago, should be congratulated on this notable acquisition to the teaching force of the Northwestern metropolis.

KLEBS, EDWIN: *Handbuch der Pathologischen Anatomie*. Berlin. A. Hirschwald, 1868 80.

Beiträge zur Pathologischen Anatomie der Schusswunden. Nach Beobachtungen in den Kriegslazarethen in Carlsruhe, 1870-1871. Leipzig, 1872.

Studien über die Verbreitung des Cretinismus in Oesterreich sowie über die Ursache der Kropfbildung. Prag, 1877.

Ueber die Umgestaltung der Medicinischen Anschauungen in den letzten drei Jahrzehnten, Vortrag. Nebst einem Vorwort enthaltend die Entgegnung auf Virchow's Rede über Die Freiheit der Wissenschaft im Modern Staat. Leipzig, 1878.

Ueber Cellularpathologie und Infectiouskrankheiten. Prag, 1878.

Ueber Cholera Asiatica. Nach Beobachtungen in Genua. Basel, 1885.

Die Trinkwasserversorgung der Stadt Zürich und ihrer Ausgemeinden. 1885.

Die Causale Behandlung der Tuberculose. Pp. 500: Leipzig, 1894.

Klebs was also editor of the *Correspondenz-Blatt für*

Schweitzer Aerzte, in 1871. His work in the Berne Pathologic Institute (Würzburg, 1873) and with Tommasi-Crudelli on Malaria are of international interest.

His great work on General Pathologie, Jena, 1886, is, however, that on which his fame will chiefly rest. The fact remains, however, that at this time Professor Klebs, in Pathology, is second only to Virchow.

Practical Notes.

Advantage of Using Warm Solutions of Cocain.—Costa has found that the local anesthetic effect obtained with cocain is more rapid, more intense and more lasting, if the solution is warm. The dangers of intoxication are thus much diminished, as the quantity of cocain can be very much reduced, if it is warmed. A solution at 0.5 or 0.4 per cent. heated, will produce a powerful effect.—*Semaine Médicale*, May 9.

Nicotin Soap in Dermatology.—The use of soap strongly impregnated with nicotin is recommended in the *Monatsh. f. prak. Derm.* Vol. xxi, No. 12, for cutaneous diseases produced by a parasite, especially for scabies. It is effective, cheap and easily used by anyone, although it should be watched to prevent accidents from its use, as it has been known to produce vomiting in a child, with change in the pulse. The soap should contain about 0.7 per cent. nicotin, or extract of tobacco.—*Nouveaux Remèdes*, May 24.

An Excellent Diagnosis by the Roentgen Rays.—We have a photograph giving not only a clear illustration of the Roentgen process but a clear diagnosis in a case which could not otherwise be made out. Dr. Charles Denison, who sends it to us, says that several physicians saw the arm, but all were uncertain as to what had occurred. The old lady, in falling to the ground, had received the force of the fall upon the palm of the hand and had sought no physician's advice till nearly four weeks after the injury. The impaction of the shaft of the radius into the head of the bone is very clearly shown. The work was done by the Mountain Electric Company in Denver, under the supervision of Mr. Charles F. Lacombe.

Treatment of Alopecia Areata with Acetic Acid and Scarifications.—Faivre ascribes this affection to a micrococcus (Vaillard's), and has found that by slightly scarifying the surface with the point of a bistoury and painting it with acetic acid, a growth of pathogenic staphylococci substitutes the former growth, and recovery ensues. After the slight eschar thus produced has fallen off, a growth of natural hair follows, unless the trouble is complicated with a destructive folliculitis, or it proves to be the decalvant form, which resists all treatment and is probably of tropho-neurotic origin. It may be necessary to repeat the operation every day for a month, or more. Rigorous antiseptic precautions should be taken to prepare for the scarifications, and to prevent the spread of the affection in all its stages. Full details of this treatment are given with reports of cases in the *Archives Cliniques de Bordeaux* for April.

Washington.

WEEKLY REPORT OF HEALTH OFFICE.—The report of the Health Officer for the week ending June 6, 1896, is as follows: As reported the deaths numbered 83, while for the previous week they amounted to 85. The death rate for the week was 15.63 for the total inhabitants, that for the whites being 13.58, and that for the colored 20.11. The annual average death rate for the District of Columbia is 23.67, being 18.84 for the whites and 33.44 for the colored. Of diphtheria 3 new cases and 1 death were reported. No house was released from quarantine and six remained placarded. No death from scarlet fever occurred; 3 new cases were reported; three premises relieved from quarantine, leaving eight in quarantine.

IMPOSTOR FOOLS THE DOCTORS.—An alleged deaf and dumb man has been securing donations from medical men in this city by presenting a certificate of disability purporting to be signed by Dr. G. W. Cook. Quite a number were victimized.

VACCINATION WILL NOT BE PAID FOR.—A great injustice has been done to the Physicians to the Poor of this city by Congress striking out the item in the Appropriation bill of \$1,500 to pay those physicians for extra work in vaccinating a large number of persons during the smallpox epidemic last year.

THE BOARD OF MEDICAL EXAMINERS for the District of Columbia will in a short time be appointed by the Commissioners as provided for in the new law regulating the practice of medicine and surgery in the District. They have sent notices to the medical societies of the city, from whose members the examiners will be selected. The societies are requested in these notices to furnish the names of their members within fifteen days. According to the act, the Commissioners are to appoint three boards of medical examiners, one for each school of medicine. The passage of this bill has been desired for the past twenty years and is now a law. The credit of its passage is due almost entirely to the personal efforts of Dr. Samuel C. Busey, President of the Medical Society and chairman of the legislation committee, who has given most of his time in looking after medical bills of benefit and interest to the medical profession. This JOURNAL has added its influence in these matters.

APPOINTED PROFESSOR IN HOWARD UNIVERSITY.—At the last meeting of the faculty of Howard University Dr. Charles Emmons was elected professor of mental diseases.

FOR THE HOME FOR INCURABLES.—A little over a year ago a chain letter scheme was started for the benefit of the Home for Incurables. It has met with a generous response, and has brought in \$1,735.

A NEW HOME AND HOSPITAL.—Articles incorporating "The National Hospital and Orphanage" have been filed by Rachel E. Tomlinson, president; Amelia Marggraf, vice-president; Edith A. Bauer, secretary; Sarah J. Douglas, financial secretary; Eliza A. B. Chambers, treasurer. The purposes of the association are to provide a home and care for homeless, aged and indigent men and women, and also a hospital, as well as to educate, care and provide for orphans and homeless children without regard to sect or creed.

ITEMS INCLUDED IN THE DISTRICT APPROPRIATIONS BILL.—Under the health department the following organization is authorized: Health officer, \$2,000; nine inspectors at \$1,200; sanitary inspector, who shall also be a chemist, \$1,500; inspector of live stock and dairy farms, \$1,200; inspector of marine products, \$1,200; chief clerk, \$1,800; clerk, \$1,400; four clerks at \$1,200, two of whom may also act as inspectors; clerk, \$1,000; janitor, \$600; poundmaster, \$1,200; laborers, 1,920; driver, \$480; in all, \$30,000. Other items under the health department are: Rent of stable, \$120; collection of garbage, dead animals and the distribution, \$57,000; enforcement of the act to prevent the spread of scarlet fever and diphtheria, \$5,030; for ambulance for contagious diseases, \$350; for the relief of poor, \$13,000; Central Dispensary and Emergency Hospital, \$15,000; Children's Hospital \$10,000; Homeopathic Hospital, \$8,500; Washington Hospital for Foundlings, \$1,000; Eastern Dispensary, \$1,000; Home for Incurables, \$1,000; Columbia Hospital for Women, \$25,000, including pairs.

FREEDMEN'S HOSPITAL AND ASYLUM.—For subsistence, 2,500; for salaries, \$16,000; for rent of hospital buildings and grounds, \$4,000; for miscellaneous expenses, \$11,500.

The following important proviso was added: Provided, that no member or members of any board or boards of trustees or directors of any charitable institution, organization or corporation in the District of Columbia, which is supported in whole or in part by appropriations made by Congress, shall engage in traffic with said institution, organization or corporation for pecuniary gain, and any member or members of such board of trustees or directors who shall so engage in such traffic shall be deemed now and hereafter legally disqualified for service on said board or boards.

SUICIDE IN ST. ELIZABETH'S ASYLUM.—An insane inmate of St. Elizabeth's Hospital committed suicide on the 11th inst., by hanging himself to the iron bars of his cell. He was discovered dead the following morning.

Philadelphia.

THE FIRST EXAMINATION IN OPHTHALMOLOGY AT THE JEFFERSON.—In connection with the very interesting series of papers recently read before the Academy of Medicine, discussing the best methods of teaching various branches of medical study, it may be of some interest to refer to the results of the examinations upon ophthalmology of the last graduating class of Jefferson Medical College. It may be said in explanation that two circumstances make this examination a memorable one: One being that this is the first time in the history of the college when this examination was made obligatory and its results taken into consideration in determining the standing of the candidate for the degree; the other being that the next course will inaugurate a radical change in the system of teaching ophthalmology at this school. In the four-year graded course, the members of the graduating class only, will be required to attend one lecture per week, and class sections will attend daily clinical demonstration and the quizzes, under the direction of Professor William Thomson, Clinical Professors Howard F. Hansell and G. E. DeSchweinitz, and their Chief Assistants, Drs. Sweet and Veasey. The class that had just graduated has had the opportunity of attending weekly lectures upon ophthalmology during the last three years, and also the daily clinics which were established twenty-four years ago by Professor Thomson, and have formed an integral and important part of the teaching at this school since that time. The results of the examination may be summarized as follows: The number examined was 229; of whom twelve received the highest mark 100; from 90 to 99 was taken by ninety-nine; from 70 to 89 by ninety; from 60 to 70 by fifteen; and below the minimum of 60 was received by only thirteen. It is seen that over 200 passed above 70 and that nearly half passed above 90, only twenty-eight were below 70, which might well have been taken as the minimum. Those who passed high had attended the clinics regularly and were members of the quiz classes; those who fell below the average had evidently made little or no use of their advantages. A gold medal for an essay on Color Blindness was awarded at the Commencement to Albert W. Garren, Jr., of Philadelphia. It may be of interest to teachers of this branch to publish the list of questions asked at the first examination upon ophthalmology at the Jefferson Medical College. On account of the size of the class it was divided and examined on two successive afternoons. The examinations were in writing and the time was not limited.

QUESTIONS: What is meant by normal acuteness of vision; and how is it tested and expressed? 2. What are the most common constitutional conditions that may be revealed by an ophthalmoscopic examination? 3. Give a brief definition of the chief anomalies of refraction. 4. How may a concomitant squint be distinguished from a paralytic squint? 5. What are the prophylaxis and treatment of ophthalmia neonatorum? 6. What should be done to check the progress of a corneal ulcer? 7. How would you distinguish between acute iritis and acute glaucoma? 8. What are the causes, symptoms and treatment of interstitial keratitis? 9. Describe the methods for the diagnosis and treatment of cataract. 10. What is meant by the "dangerous zone" of the eye, and what are the dangers of injuries in that region?

(Second set.) 1. Give the differential diagnosis of iritis and conjunctivitis. 2. What is the proper treatment, local and constitutional, of acute syphilitic iritis? 3. Describe the operations of enucleation of the eyeball. 4. What operations are used in the treatment of congenital and senile cataract? 5. What is epiphora and its treatment? 6. What is central scotoma and give its causes? 7. What are the errors of refraction and how are they corrected? 8. What reflex symptoms attend ametropia? 9. What relation is there between internal squint and hypermetropia? 10. What is the treatment of internal squint combined with hypermetropia?

Louisville.

THE HOSPITAL COLLEGE OF MEDICINE, of Louisville, has purchased a lot adjoining the college buildings for the erection of a hospital. Ground will be broken immediately and the work will be pushed to completion before the opening of the session of 1897. The hospital will have a modern clinical and operating theater with seating capacity for 300 students, with ample wards and private rooms, and will be a most important addition to the teaching facilities of the college.

THE KENTUCKY SCHOOL OF MEDICINE held its annual commencement on June 16. The Hospital College of Medicine held its graduating exercises on the 18th.

JENNIE CASSEDAY INFIRMARY.—Two graduates of the training school for nurses of this institution were awarded diplomas at the completion of their course on the 8th inst. The address was made by Dr. J. M. Mathews and by the Rev. Mr. Jennings, at the conclusion of which the assembled guests were shown through the infirmary and a collation was served.

LOUISVILLE COLLEGE OF MEDICINE.—At the faculty meeting recently held the announcements of the changes in the personnel of the faculty was made. As already announced in these columns, Dr. A. M. Cartledge was elected to succeed Dr. J. A. Ireland, who was made emeritus Professor of Gynecology; Dr. W. C. Dugan was made Professor of Surgery in the place of Dr. Cartledge; Dr. J. W. Guest will be Clinical Assistant to the Chair of Surgery; Dr. J. W. Williams will be Lecturer on Proctology; and Dr. Curran Pope will lecture upon Diseases of the Mind and Nervous System. This leaves a vacancy in the Assistant Staff of the Kentucky School, Dr. Guest resigning as Assistant in Gynecology and Abdominal Surgery, and Dr. Pope resigns from the Hospital College of Medicine where he held the same position as the one in the Louisville School. Dr. Harris Kelly has been made Lecturer on Histology and Chemistry.

FEEBLE-MINDED INSTITUTE.—Dr. J. P. Huff, the Superintendent of the Institution for Feeble-Minded Children located in Frankfort, received the World's Fair medal and certificate of first award granted to Kentucky for the finest and best display of work done by any institution for feeble-minded children. The medal is a handsome bronze affair and the certificate of award is engraved on parchment.

TEMPERATURE.—A case of malaria developed in the person of one of the children of the Masonic Widows' and Orphans' Home, aged about 11 years, in which the temperature reached 107.5 degrees. This was tested by several thermometers, two of them being registered Hicks.

DURING THE EXAMINATION of students for degrees at the Hospital College of Medicine a bottle of bromin exploded in the hands of Prof. Philip F. Barbour, by which he was badly burned, and a student was also seriously burned, also inhaling some of the fumes from which a bronchitis has developed and he is in a serious condition. Dr. Barbour's injuries were only burns on the hands and wrist but were very painful.

STATE BOARD OF HEALTH.—The regular meeting of this board was held June 9. Dr. Mathews was re-elected president; Dr. McCormack, secretary; Dr. Eisenman, veterinary surgeon; Jno. L. Long, sanitary inspector; Jno. Cashin, bacteriologist. Drs. Kinnard and Samuels are the new members appointed in the place of Drs. Beeler and Lucy, whose terms had expired. Dr. Long submitted a report of his investigations of epidemics of smallpox through the State. Representatives of the Physio-Medical College of Indianapolis appeared before the board requesting that their diplomas be recognized by the board, but on consideration the board refused to grant their request. Dr. McReynolds offered the following resolution, which was adopted: "Resolved that the State Board of Health requests the State Medical Society to recommend the passage of a statute by the next Legislature to punish the crime of abortion. That the Society be requested to instruct the president to appoint a committee of five to investigate the laws and urge the passage of a law by the legislature." Dr. McReynolds, speaking to the above, cited the case of a man in Owen County who was fined \$300 in the lower court, but this decision was reversed in the court of appeals, Judge Hines in handing down his decision stated that there should be a law to cover this crime. The following resolution was also passed by the board: "Resolved that the State Board of Health of Kentucky regards the intentional production of abortion upon any woman either before or after quickening (unless it shall be deemed necessary after consultation with at least one licensed physician of good moral character to preserve the life of the woman). The State Board of Health will revoke the license of any physician found guilty of such crime. An attempt to conceal the fact that an abortion was produced will be considered as *prima facie* evidence that it was not done to preserve the life of the woman." The committee appointed to consider the President's address reported as follows: "We heartily endorse the paper so ably prepared and delivered to-day, which we recommend for adoption and publication that the profession may be benefited thereby. We suggest that the State Board of Health take immediate steps to abate the spitting nuisance and if possible interest the State and municipal

authorities in the suppression of this evil. We would dissent from the New York requirements for graduation, in that we hold that a college education is not a requisite, but that a good, thorough education in English in some academy or high school is sufficient preliminary training for the majority. It is not our intention to discourage a thorough literary course for medical students, but such an education is impossible to many worthy young men who wish to enter upon the study of medicine. We would not have the board discriminate against the diplomas from medical colleges in small cities, for many of them are controlled by men eminent in our profession and their graduates are the peers of educated men from the colleges in the larger cities. The address of President Mathews should be widely read and the principles enunciated carried into practice."

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from June 6 to June 12, 1896.

Capt. Philip G. Wales, Asst. Surgeon, is relieved from temporary duty at Ft. Monroe, Va., and will return to his proper station, Ft. McPherson, Ga.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending June 13, 1896.

P. A. Surgeon P. H. Bryant, ordered to naval station, Newport, R. I. Asst. Surgeon C. M. De Valin, detached from the Chelsea (Mass.) hospital, and ordered to the "Blake."

P. A. Surgeon E. R. Stitt, detached from the "Bache" and ordered to the "Vermont" June 15.

Change of Address.

Baird, T. M., from Forest City, Ark., to Thurber, Texas.
Bartlett, R. H., from 167 Dearborn St. to 125 La Salle St., Chicago, Ill.
Beegle, H. B., from Chicago to Blue Island, Ill.
Brauns, E., from 3 Lincoln Av. to 510 Cleveland Av., Chicago, Ill.
Caldwell, Joseph R., from New Hamburg to Greenville, Pa.
Carr, J. T., from Chicago, Ill., to Franksville, Wis.
Cutlin, W. H., from 301 E. Fayette St. to 408 E. Genesee St., Syracuse, N. Y.
Englemann, Rosa, from 3444 to 3027 Indiana Av., Chicago, Ill.
Gillman, J. E., from 2419 Indiana Av. to Metropole Hotel, Chicago, Ill.
Halse, Ellen H., from Canton, Ill., to Bay View, Mich.
Hills, A. K., from New York, N. Y., to Hudson, N. H.
Schottler, G. J., from Chicago, Ill., to Dexter, Minn.
Sherman, H. M., from 705 Sutter St. to 1303 Van Ness Av., San Francisco, Cal.
Sobey, A. L., from 810 to 3521 20th St., San Francisco, Cal.
Strong, B. F., from Chicago, Ill., to Howard, Kan.

LETTERS RECEIVED

Adams, Ovid L., Shelbyville, Ind.; Allen, J. M., Liberty, Mo.
Barringer, J. C., Oskaloosa, Iowa; Bates, X. T., Poughkeepsie, N. Y.; Bell, A. E., Zanesville, Ohio; Blech, Gustavus, Detroit, Mich.; Briggs, T. C., Pierz, Minn.; Burge, J. H., Hobart, Brooklyn, N. Y.; Burr, C. B., Flint, Mich.; Busey, S. C., Washington, D. C.
Christison, J. Sanderson, Chicago, Ill.; Cleveland, J. L., Cincinnati, Ohio; Collard, W. A., Cincinnati, Ohio; Cole, C. K., Helena, Mont.; Cokenower, J. W., Des Moines, Iowa; Connor, Leartus, Detroit, Mich.; Craig, G. G., Rock Island, Ill.
Daniel, John B., Atlanta, Ga.; Dewey, Richard, Wauwatosa, Wis.
Elliott, Arthur R., Chicago, Ill.; Elliott, A. R., New York, N. Y.
Fehr, Julius, Hoboken, N. J.; Fite, C. C., New York, N. Y.; Fuller, W. M., Bowling Green, Ohio; Fulton, A. L., Iola, Kan.
Gates, Wm. S., Chicago, Ill.; Gihon, A. L., New York, N. Y.
Haldeman, F. D., Ord, Neb.; Haldenstein, I., New York, N. Y.; Hale, Albert B., Chicago, Ill.; Hamilton, C. S., Columbus, Ohio; Hayes, D. J., Milwaukee, Wis.; Hayes, R. H., Union Springs, Ala.; "Health," The Proprietors of the London, England; Hewitt, Chas. N., Red Wing, Minn.; Hill, Warren B., Milwaukee, Wis.; Hill, C. E., East Killbuck, Conn.; Holt, E. E., Portland, Maine; Hubbard, Thos., Toledo, Ohio; Huff, O. N., Palmyra, Wis.; Hummel, A. L., Advertising Agency, New York, N. Y.
Inrie, Andrew W., Detroit, Mich.
Jelks, Jas. T., Hot Springs, Ark.; Johnson, N. L., Williamsport, Pa.
Kegan, Paul, Trench, Trubner & Co., Ltd., London, England; Kettner, C., Albion, Mich.; Kingsley, B. F., San Antonio, Texas.
Leaming, J. K., Cooperstown, N. Y.; Le Roy, L. D., Pleasant Valley, N. Y.; Lippincott, J. B. Co., Philadelphia, Pa.; Lord & Thomas, Chicago, Ill.
Macdonald, W. G., Albany, N. Y.; Malsbary, Geo. E., Cincinnati, Ohio; Marchand, Chas., New York, N. Y.; Macey, The Fred., Co., Grand Rapids, Mich.; Merriek, M. B., Passaic, N. J.; Mettler, L. Harrison, Chicago, Ill.; Moran, J., New York, N. Y.
Nelson, Chesman & Co., Chicago, Ill.; Nixon, J. W., Soldier, Kan.
Parker, W. A., Holyoke, Mass.; Portman, Adeline E., Washington, D. C.; Prentiss, Spencer B., Washington, D. C.; Pressey, A. J., Grand Rapids, Mich.; Pusey, W. A., Chicago, Ill.
Reddick, J. T., Paducah, Ky.; Reed, R. Harvey, Columbus, Ohio; Reed & Carrick, New York, N. Y.; Renfro, J. C. B., Houston, Texas; Ruth, C. E., Keokuk, Iowa.
Scherling & Glutz, New York, N. Y.; Simmons, Geo. H., Lincoln, Neb.; Staver & Abbott Mfg. Co., Chicago, Ill.; Standard Mfg. Co., Pittsburg, Pa.; Straus, Irving J., Chicago, Ill.; Sutherland, J. Lue, Grand Island, Neb.
Tuley, Henry E., Louisville, Ky., (2); Tyler, J. B., Billerica, Mass.
Vaughan, G. T., Port of Philadelphia, Pa.
Walker, Geo. W. W., Roseville, Ohio; Weaver, J. B., Evansville, Ind.; West, C. J., Washington, D. C.; White, A. J., New York, N. Y.; Whitford, Wm., Chicago, Ill.; Wood, Wm. & Co., New York, N. Y.; Wyeth, M. C., Fort McPherson, Ga.
Young, Stephen J., Terre Haute, Ind.

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No. 26.

ORIGINAL ARTICLES.

PRECEDENT CAUSES OF TUBERCULOSIS.

Read in the Section on Practice of Medicine, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY J. WELLINGTON BYERS, M.D.

CHARLOTTE, N. C.

I invite your attention to some views in regard to the condition that has been designated as the precedent or pretubercular stage of consumption. That there is such a condition capable of distinct clinical position and recognition, is very generally conceded, though as to the exact nature of its underlying phenomena there remains much yet to be determined. We are not, however, without some useful and guiding data and such as we do possess has not received the consideration that the condition would appear to warrant.

We have reached a position where we can appreciate the discoveries and bearing of the work of Koch, and we realize the fact that these have not furnished the therapeutic resources that their first announcement seemed to promise. Influenced by this fact, investigation has been compelled to turn to other paths of work. The history of the pathology of tuberculosis has been varied. Our earliest conceptions of the disease was that it was pus, a process of suppuration; second, that it was inflammatory nodules; third, that these were distinct tubercles; fourth, that these tubercles contained a virus; fifth, that this virus was inoculable; sixth, that inoculability was due to a specific bacillus. When this sixth and last stage of our knowledge was reached a strong hope possessed us that means for the prevention and cure of tuberculosis would soon be forthcoming. So far this has been a series of disappointments and we do not possess a single remedy capable of effecting anything like a cure of this disease. Baffled by repeated efforts to treat tuberculosis from its bacteriologic standpoint, research has turned to an investigation of its precedent causes, and is making an effort to detect and control those contributing factors, as the only possible means of modifying this disorder. Clinical experience has long taught that pulmonary tuberculosis to be successfully combatted must be taken in its very earliest stage and that the ratio of arrests, or cures, is invariably in proportion to the recency of the disease. The reason for this is now plain. The older theories of Virchow which showed that the disposition to tuberculosis was the same as the disposition to inflammation and that the primary foci constituting the anatomical basis for the implantation of the bacilli and the production of tuberculosis, was a previous inflammation, and now admitted as the correct ones. It has been established that tubercular changes are always secondary to inflammation and that infection of the human organism does not occur in the

absence of the latter. These precedent causes, consisting of changes in the integrity of the tissues and cells, are local and general, acquired and hereditary. Before the bacilli can enter and flourish there must exist certain favorable conditions in the soil. The fact that it is not always possible to point out the precise location or seat of these vulnerable foci in no way invalidates the correctness of this statement; they must always be present. Experiment, experience and analogy all demonstrate that tuberculosis is never primary but secondary in time and pathologic importance. In the normal condition of the tissues no foci exist and the bacilli entering through the respiratory channels are removed with the expectoration or destroyed by the phagocytes. The system is in this way kept immune. If, however, the pulmonary tissue contain lesions, or foci, the effect of previous inflammatory disease, such as tracheitis, bronchitis or broncho-pneumonia, or foci such as are produced by foreign bodies incident to the occupations of stonecutters, cutlery works and the like, they constitute vulnerable points for the implantation of the bacilli, and are liable to invite tuberculosis. It is almost certain that the presence or absence of these points in the lungs constitute the real basis for the difference of susceptibility manifested at different periods. Croupous pneumonia is rarely followed by tuberculosis, though furnishing the gravest changes in the lungs. The reason for this is that the exudation in the alveoli consists largely of fibrin and leucocytes, which quickly break down and is soon reabsorbed, and the bacilli find no foci to infect. In bronchitis and catarrhal pneumonia the absorption is much slower, the products of inflammation last longer and the bacilli have the favorable conditions present for a longer time and hence we find tuberculosis a frequent result. It is reasonable to conclude that these products of inflammation must constitute the controlling factors and operate in the manner stated. Niemeyer taught that tubercular changes were always originated in previous inflammatory conditions, and while he did not clearly interpret the meaning of them, he chronicled the fact which we are now able to understand. His views were abandoned only for a time, and we are again realizing their importance and truth. So far, tubercular processes are seen to be the result of inflammatory changes. There are, however, cases of tuberculosis in which no such factors form a part of their clinical history. The disease appears in the absence of bronchitis, broncho-pneumonia, whooping-cough, measles and other diseases involving the air passages, and also results from fevers, anemia, gastric and other diseases. How can the theory of primary inflammatory foci in the pulmonary tissues be made to fit these cases? In my opinion we must assume that the organism under certain conditions of nutrition, such as follow the diseases enumerated,

manufactures or produces defective blood cells or leucocytes. These leucocytes, following the general law of physiology, are either encysted or destroyed by the organism. When from any cause the blood-forming organs produce defective cells they are treated like other extraneous or foreign substances and destroyed, encapsulated or extruded. In the diseases mentioned this is, in all probability, the case: the imperfect leucocytes are extruded into the tissues and at different localities, such as the lungs, form nodules of dying or dead cells. These nodules set up a low grade of inflammatory reaction which may continue until infected by the bacilli or cast off by expectoration or destroyed by the phagocytes. Under these conditions the foci are present and constitute the same kind of pathologic seats as those following inflammatory diseases. That this is a correct view of the infecting process in tuberculosis, can be experimentally shown by the introduction of such substances into the tissues as bits of sponge, cork or cloth and allowing them to remain for a time. After awhile they are seen to induce inflammatory reaction of a very low grade, and later on become tubercular. The natural history of the bacilli shows that they never possess the power of unconditionally attacking the organism; that they are peculiar in their methods of invasion and invariably demand precedent conditions, causes or susceptibility in order to attack. Seeing the nature of these conditions, their place in the pathologic condition involved and their connection with the etiology of this disease the question may be asked here, can they be controlled? In the beginning, when the foci are few and small, we may hope to accomplish much by proper treatment. Loss of weight and capricious appetite are the first indications of altered nutrition. We should endeavor to meet these with proper food, exercise in the open air and other well recognized means. The possibilities of cure in this stage are numerous since the organism has not the toxic phenomena as a result of the pus cocci to contend with, which appears later on. We should direct our efforts toward removing the inflammatory nodules through tissue nutrition, thereby stimulating the processes of phagocytosis, absorption or fibrosis in the affected regions. In case we do not get the desired results the administration of an arsenic preparation to promote fatty metamorphosis and the hypophosphites to remove them might offer some advantage. The patient undergoing this treatment should be placed, as far as possible, in aseptic surroundings, such as mountains, in rural localities where the chances of bacillary infection are reduced to a minimum. The important point is to prevent the simple inflammatory process from becoming complicated by specific infection when it rapidly passes beyond ordinary measures of control. In subjects presenting evidence of hereditary influences we know that the bacilli are likely to thrive and we must not wait, but treat long before hemoptysis, pain in the side, wasting signs of active symptoms have appeared. We are too much inclined to give conservative advice in these cases and find later on that we should have been active in the work of prevention.

In this paper I have attempted to point out that the control of tuberculosis lies largely in its early and preventive stages. That its precedent causes, in inflammatory foci, are the result of previous disease. That the early recognition and treatment of this condition would remove the chief cause of tuberculosis.

SOME REMARKS ON THE MANAGEMENT OF VALVULAR CARDIAC DISEASE.

Read in the Section on Practice of Medicine, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY GEORGE L. COLE, M.D.

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I shall not consume the time of this society by entering into the history, etiology, etc., of valvular heart disease, but I do wish to say, by way of preface, a few words about prophylaxis. I had the pleasure of listening to the last course of lectures delivered by the late Austin Flint, in Bellevue Hospital Medical College, in the winter of 1885-6, and if there was any one fact that he endeavored to impress upon his class more than another, it was the duty of the physician, in treating articular rheumatism, to so adjust the treatment as to place the complication of valvular disease at the minimum. The question asked most frequently by him in the weekly "quiz" was, "What shall we do in acute articular rheumatism to render the patient least liable to cardiac complications?" The reply he wished was this: "Render the secretions of the body alkaline as speedily as possible, and in so doing not rely upon the salicylates alone." In other words, from the rich storehouse of knowledge garnered by over fifty years of conscientious, indefatigable and brilliant labor, came this *gem* to be handed down to posterity with emphasis, *i.e.*, that the stronger alkalies, such as sodium bicarbonate in large doses, are as essential, and even more so, early in the treatment, than the salicylates. When we remember the large percentage of valvular disease caused by articular rheumatism, it is easy to understand why this great master wished to so impress this truth upon his class that they should never forget its importance.

Regarding the management of the disease, it is to be remembered that there are other things to be taken into account than the medicinal treatment. Diet and regimen are two factors never to be neglected. The food should consist largely of nitrogenized material, taken in quantities that can be easily cared for by the stomach and digestive apparatus, and at intervals best adapted to the accomplishment of perfect assimilation. The secretions of the body are to be kept in as nearly a perfect a condition as possible. The emotions and passions are to be under the control of the patient, and he is to remember that upon such judicious control depends to no small degree the conserving of compensatory force. With regard to the question of enforced exercise as opposed to rest, I favor rest. Why there should have arisen an advocacy of mountain climbing, etc., in this condition, I am totally unable to comprehend any more than I can understand why a crippled dray horse should have his load increased instead of lightened in order to prolong his days of usefulness. Here I wish to be distinctly understood as referring to enforced exercise with the object of increasing the heart force. If by increased labor you wish to aid in elimination of urates and other poisonous material from the blood, or to reduce a flabby, obese structure in order to lessen the amount of labor required by the heart to sustain the circulation, I will agree that in a few well-selected cases there may be something to be gained, but such cases are extremely rare with us, and in the great majority of cases rest, both mental and physical, is absolutely necessary to the best interest of the patient.

In some cases of beginning loss of compensatory

force, prolonged rest in bed, by lessening the amount of work required of the heart, will restore compensation without any medicinal treatment. In all cases when possible, at such times, complete rest in the recumbent position for a time will do much to facilitate restoration.

With regard to the medicinal treatment, let me first say a few words about the most commonly used drug, digitalis. That many cases of valvular disease are treated with digitalis when it would be far better to use *no* remedy, is a truth which we should all bear in mind. The one great question in giving cardiac tonics is, "Has compensatory hypertrophy failed to make the power of the lame heart equal to the amount of work to be accomplished by it?" No matter how loud the murmur, no matter where the apex may be, no matter how large the superficial cardiac space; so long as hypertrophy is compensating for the valvular leakage or stenosis, so long should we religiously let cardiac tonics alone. But sooner or later there comes a time when hypertrophy ceases to compensate; there may be dyspnea, pulmonary congestion or edema, edema of the extremities, portal congestion, one or all, in greater or less degree, and here we have coming to our aid something in the way of heart tonics that will for a time urge on the flagging heart to continue what it has previously been doing by means of increased strength derived from increase of muscular fiber. It matters little which valve is affected, the therapeutic indications are practically same for each and all. It also matters little what form of digitalis is given, provided it be reliable. The difference in dose has more practical importance than the form in which it is given. There are now and then cases where the heart is acting tumultuously in the later stages of dilatation, the kidneys not secreting urine and the patient to all appearances approaching death, in which two, three or four large doses of digitalis, *i.e.*, an equivalent to one-half dram of the tincture, may work a transformation, after which smaller doses may be continued, always bearing in mind that while at first the drug stimulates secretion of urine, if long continued, and especially in large doses, the opposite effect may be produced. I know of no other drug that will take the place of this. Strophanthus, spartein, strychnin, etc., may be substituted, when we find it necessary to leave off the digitalis for a time, and indeed may be used as adjuvants often with great advantage.

Next to digitalis in importance in these cases of valvular disease where hypertrophy has ceased to compensate, I would place calomel, or some other form of mercury. Doubtless all the good derived from this class of drugs comes mainly from its action upon the portal system. Nearly every case of valvular disease of long standing is accompanied by a congested liver and portal system. A mercurial purge followed by the continued use of small doses of calomel, or smaller doses of corrosive sublimate, tend better than any other remedy to relieve this condition. By exercising care and judgment, this can be done in such a manner as to better the digestive apparatus rather than to impair it. Indeed, the change wrought by mercurials has sometimes been so marvelous that we have wondered if some other explanation than this action upon the portal system ought not to be offered to account for the good done. However, when we remember that this venous stasis is the forerunner of edema and ascites in all cases; that edema can not well occur

until the venous system has been obstructed at this point, we readily understand how we should expect to accomplish the great good we do by it. In those cases where we have a history of specific disease, there may possibly enter another element to account for the transformation that sometimes follows the persistent use of mercury. While I have seen mercurials used extensively for a long period of time in this disease, I have yet to see a case in which salivation, or any other unpleasant symptom, resulted from it, unless it be nausea and vomiting temporarily.

In nitro-glycerin we have a remedy that, instead of increasing the heart power as does digitalis and strophanthus, lessens the arterial tension by dilating the peripheral arterioles. Hence it is often of the greatest advantage in a crisis where by it we can take the load off the over-burdened heart, and allow it, temporarily at least, to gain its equilibrium. It acts much in the same manner that venesection does in a crisis, but with the additional advantage that the blood is not sacrificed, but remains where it can be restored to the system when the critical time has passed. It is to be remembered that to be of any great advantage, *often repeated small doses* are to be administered, and that its use is to be discontinued when its physiologic effect is shown by persistent headache.

I wish briefly to speak of another drug which I believe has not received the attention it deserves. During the last three years quite a number of chronic valvular cases in the later stages have fallen into my hands, upon which digitalis, strophanthus, nitro-glycerin and, in fact, the whole line of ordinary heart tonics, had been used until apparently all the good to be derived from them had been exhausted, and death seemed imminent. In these cases I have found *diuretin* to act beneficially. How it acts I do not know. It certainly stimulates the kidneys to better secretion, and in doing this acts better in cases where albuminuria *does not* exist. In other words, my own experience with this remedy demonstrates that the diuretic action is more marked in valvular disease of the heart than in Bright's disease of the kidneys. And in this I am not alone, as some others find the same result. In these cases that I have just mentioned as recently coming under my care, the use of diuretin in doses varying from one-half to two drams daily in divided doses, in combination with mercurials, has worked as much of a transformation as we often see by the combination of digitalis and mercurials at a much earlier stage in the disease.

THE VALUE OF THE PULMONIC SECOND SOUND.

Read in the Section on Practice of Medicine at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

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My object in presenting this paper is to call attention to a well-known but much neglected subject, the investigation, in diseases of the chest especially, of the character of the second sound at the orifice of the pulmonary artery. It appears to me that many physicians, although gauging quite accurately the tension in the systemic circulation, by means of the pulse and the character of the aortic second sound, pass over as almost unworthy of notice the examination of the pulmonic area. And yet, in a few seconds, with the

stethoscope as much may be learned of the conditions of the circulation in the lungs as has been learned, at the aortic area, of the systemic circulation.

In diseases of the mitral valve, whether obstructive or regurgitant, all authorities agree as to the importance of the accentuation of the pulmonic second sound, in deciding as to the degree of obstruction in the pulmonary vessels. One may probably, with safety, go even further than most authors go, in the case of an apical systolic murmur, which has existed for some time, and say, given such a murmur, not transmitted greatly to the left, without enlargement of the cardiac area, and without accentuation of the pulmonic second sound, that probably no serious change has taken place in the valve. In other words, it is a crucial test when one is in doubt as to the character of an apical systolic murmur, and, I believe, not appreciated at its full value.

This sound is equally available in case of a mitral obstructive lesion in forming a correct judgment as to the degree of obstruction, and the degree of compensation as well. In case of doubt as to whether a presystolic murmur at the apex were due to mitral obstruction or to aortic regurgitation (Flint's murmur), the absence of marked accentuation of the pulmonic second sound would weigh decidedly in favor of the integrity of the mitral valve, although I have not found this point mentioned in any of the treatises upon this subject.

In chronic disease of the chest of whatever nature, a marked accentuation of the second sound at the pulmonic orifice is of grave prognostic import, indicating a decided obstruction to the circulation in the vessels involved, although indicating as well an hypertrophy of the right ventricle to meet the increased demand. Whether the obstruction be from the destruction of capillaries in emphysema, the contraction of the interstitial tissue in fibroid phthisis, or the combination of destruction of tissue, infiltration of the new products and possibly other processes in ordinary tuberculosis, it indicates serious trouble.

A knowledge of the value of this sign may at times save one from serious error, as in the following case, seen in consultation some years since: A girl, six years of age, had presented for five days all the rational signs of acute lobar pneumonia, but the attending physician had been unable, after repeated examinations, to locate the disease. Finally, fearing that some other trouble was setting in, he asked me to see the case with him.

After hearing the history I confidently expected to find the signs of pneumonia in the left chest, and was surprised to find the fronts entirely normal, so far as I could determine. Because of the child's weakness, it was proposed to me that the examination of the back be omitted, but, having noted a decided accentuation of the pulmonic second sound, and called the attending physician's attention to it, I insisted upon the complete examination, confident that anything of sufficient gravity to cause a decided increase in the tension in the pulmonic artery, must be discoverable upon careful examination. The back was found normal, however, with the exception of an area two inches in diameter near the lower angle of the left scapula; here very moderate dulness existed, but the auscultatory signs were marked, namely, bronchial respiration, bronchophony and moist râles. It was evidently an acute pneumonia which approached the surface of the lung only at this point, and, to one not fairly expert

in physical diagnosis, not easy to discover. I admit, of course, that no physician should overlook such signs, but they *were* overlooked by the attendant in this case, and by a previous consultant. If the two had appreciated the meaning of the decided accentuation of the sound in question, they would probably have been led to make a successful search for the cause of it.

Other instances of somewhat similar nature might be quoted, but this one will suffice for illustration.

I believe that most of the present generation of physicians in active practice were taught that the murmurs at the pulmonic orifice were not only rare, but of comparatively little importance. The effect of this teaching has been to lead many of us to entirely neglect all sounds at this orifice in ordinary examinations, for I have often seen its area passed by without so much as the touch of the stethoscope. Inasmuch as a proper idea of the amount of obstruction in the pulmonic circuit in pneumonia, and hence of the amount of work called for from the right ventricle—a most important factor in prognosis and in deciding upon the advisability of administering cardiac stimulants—can not be obtained without an examination of the sound in question; nor a correct judgment be formed, in a case of chronic bronchitis, as to whether there is beginning obstruction, and consequent hypertrophy of the right heart, from emphysema which has not yet developed sufficiently to be patent to percussion, it would seem to be proven, when the evidence we have heretofore adduced is considered, that this sound should be investigated in every day practice exactly as other accessible chest sounds are, the ease with which such examination can be made being a powerful recommendation of the procedure.

THE CARE OF CARDIAC DISEASE DURING THE QUIESCENT PERIOD.

Read in the Section on Practice of Medicine, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY LOUIS FAUGERES BISHOP, A.M., M.D.

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The term "care of disease" is a very pleasing one as representing one of the most honorable offices of the physician. The old Homeric definition of the physician as the one who cured internal diseases and took care of that which he could not cure, always seemed very happy especially when coupled with the definition of the surgeon as the one who cured external diseases. It is a very practical question, indeed, how we shall manage cases of organic cardiac disease so that the patient may enjoy a prolonged and comfortable existence.

A great change of public and professional opinion as to the grave prognosis, which was formerly given in valvular disease, has occurred during the present century. The old feeling was that a person with chronic heart disease was certain to die in a moderate length of time and was in constant danger of sudden death. The more careful physical examination of modern times has modified this view to a great extent, but credit must also be given to the better care of such cases. Sudden death is uncommon except in aortic insufficiency, and in cases complicated by true angina pectoris. It may be that sudden death was more common at a period in medical history when the use of digitalis was habitually abused.

Time will not allow even the consideration of pathology in a most cursory way.

We are apt to think of chronic cardiac disease as confined too strictly to the valves. This contrary to analogy of the same class of lesions in other parts of the body. When a joint becomes the seat of chronic arthritis, the connective tissue of the remainder of the limb is frequently also involved, and the muscles are often the seat of pain.

The care of cardiac disease during the quiescent period is the care of the myocardium; for the endocardium we can do but little.

The causes of hypertrophy and dilatation are important to be understood. We refer to hypertrophy which goes beyond that degree which is desirable in a heart with damaged valves. Excessive hypertrophy is best avoided by a regular hygienic life and by systematically watching for any cause which might increase the burden of the circulation, and removing it by treating the cause, or if that is not possible by the systematic use of arterial dilators.

Dilatation is that condition which the heart reaches when struggling under the burden of a circulation it can no longer maintain on account of the weakened myocardium. Instead of a firm contraction almost emptying the heart at each stroke, the systoles only partially expel the blood, and symptoms of impaired circulation are immediately evident. Dilatation is usually gradually established, occurring at intervals, for a time from a sufficient cause, and then perhaps disappearing. However, cases of acute dilatation, even in those previously unaffected by cardiac disease, are not at all uncommon. This gradual onset of dilatation is commonly brought about by overwork, anxiety, long continued excitement, intercurrent disease, or some other cause of increased cardiac strain. The study of the pulse as indicating various plans of management in the course of a cardiac case during the quiescent period is not as easy as one might suppose. If we are familiar with the case, and familiar with the personality of the particular pulse, it is easy enough to detect danger in some marked change. We have all of us seen cases of valvular disease in which a good degree of health and functional activity was carried on for a long period of time, and yet a person examining the pulse, who was not familiar with its habitual irregularity, intermittance, or permanent extreme feebleness, would give a prognosis of immediate calamity. The mere objective weakness of the heart's action apart from the signs of passive congestion should not lead to too bad a prognosis.

The question of exercise is important and interesting. Judicious exercise may bring about compensation, and prolong the period of its existence, and the deference of that time when the cardiac lesion will overbalance the power of the myocardium.

Taking our patient at the time when a valvular lesion has been the result of endocarditis or atheroma and the heart muscle has assumed successfully its additional burden the question arises in the mind of the physician, or perhaps is put by the patient, what forms of exercise shall be taken from a sense of duty, or may be indulged in for pleasure. To this question a categorical answer is not possible. We have to consider the occupation of the patient, his surroundings and his habits. Often enough his daily occupation and life will be found well suited to his condition. Such would be the case of a man whose business required a superintendence of out-door work or the

work of a factory, that is, work devoid of sudden demands of strength, and devoid of mental excitement. The other two classes are those who do not get sufficient exercise, and those who are called upon for a dangerous amount of physical exertion. Curiously enough the former often suffer as much as the latter. The patient who leads a sedentary indolent life develops very soon the lung effects of passive congestion. The blood stasis, due to the poor heart performance, is augmented by the physical stagnation which follows insufficient exercise. Thus we see early developed in these patients chronic gastritis, constipation and the train of symptoms best described as biliousness. They take cold easily and there is quickly established a chronic catarrhal tendency in the respiratory passages. For these patients systematic out-door exercise in spite of their permanent cardiac lesion is of enormous advantage. The form of exercise must be such as will be of interest to the patient, otherwise persons of this disposition will never persist in carrying it out. The introduction of the game of golf would seem to afford an unusual opportunity for just such cases. It requires movement from place to place in the open air, pleasant surroundings, and is devoid of dangerous excitement and exertion. In certain cases bicycling on level roads in quiet districts is to be recommended, but such persons must be trusted not to enter into speeding contests. Driving, walking and calisthenics with light apparatus are also suitable. The patient should be instructed as to the principles involved, that is, that the exercise should be carried on slowly, systematically and never to the point of producing dyspnea, and never under any circumstances must competitions of strength or speed be entered into. The third class of patients who carry exercise too far are often difficult to manage because frequently enough their occupation is the only source of livelihood, and can not be readily abandoned or changed. Fortunately these patients frequently develop an unexpected degree of compensation, and provided the labor is regular they may continue for many years without the final reckoning. Still the average life of such individuals is very much shortened. If possible, these patients must be trained to do their work in a deliberate manner, avoiding sudden strains, and as much as possible they must be watched carefully for the signs of failing compensation. In some instances, when no other resource seems to be available, they must be tided over at times by the use of digitalis. Provided the work is systematic, even though severe, it is extraordinary how well some of these patients get along. We have all of us seen men with nearly all the murmurs in the whole circle of valvular lesions, who carry on occupations some of us could not endure for a single day; but all of us have likewise seen the day of reckoning when these men of powerful muscular development and splendid physique, except for their cardiac lesion, have come to a state where they can hardly lift a finger without gasping for breath. So in maintaining compensation, judicious exercise is one of the most important factors.

In connection with exercise massage should be mentioned. It has been happily defined as a process in which the operator takes the exercise and the patient receives the benefit. The use of hydrotherapy to improve the general nutrition and circulation is something worthy of attention.

It is a pity that in this country, at least, it is so

difficult to obtain a proper carrying out of these measures. The advocates of hydrotherapy have so exaggerated its therapeutic value, great as it may be, that one often hesitates to subject his patients to their care. It is hoped that the time will come when properly trained persons will be available at a moderate cost to carry out hydrotherapeutic measures and not exceed the limits of their sphere. A drawback of hydrotherapy is that when carried out as it should be it will take a great deal of time. Much of the benefit is lost if a patient can not rest after bathing. The effect of a warm bath upon congested organs accompanied by gentle rubbing and followed by a period of rest in a recumbent position can not but be beneficial when carried out under proper precautions. The importance of the care of the skin aside from any special system in chronic cardiac disease is very great. The theory that dirt obstructs the pores, however pleasant to believe, is probably not true. The value of bathing as far as health is concerned is more indirect in its effect. It improves the nutrition of the skin and stimulates its action and the tone of the general circulation.

As to clothing, the whole surface of the body except the hands and face should be always enveloped by flannel, and in severe weather this should be very much heavier than is thought necessary for healthy people.

One of the first considerations when we come in contact with such a case, is the advisability of telling the patient of the existence of the condition. To my mind in the great majority of cases this is best. It requires a good deal of patience to supply the patient with a sufficient amount of knowledge to make the explanation comprehensive and free from terror. The first point is to disabuse the patient of the popular superstition that organic heart disease is a common source of sudden death. The tendency of the day to speak of death as "heart failure" exaggerates the difficulty at the present time. It may truly be said of a case of valvular disease of the heart that sudden death is not at all probable, and it might be added that it would be preferable to the long-drawn-out death by the gradual involvement of the organs from passive congestion, dyspnea and the supervention of dropsy. It is important that the patients should know that they have a damaged heart, because their coöperation is absolutely necessary in carrying out the proper regimen. The use of drugs in these cases directly stimulating the heart's action is seldom necessary. If the heart is unable to do its work by the physiologic increase of activity with the hypertrophy that naturally takes place, it is far better by absolute rest of the patient to give the heart a chance to catch up by its natural force than to whip it up to its work by drugs. Sometimes there will be cases when circumstances do not allow a cessation of the routine work of the patient. In these cases digitalis will often remove the symptoms of the heart's deficiency. When we have the coöperation of the patient a plan of existence must be laid out as free as possible from overwork, worry, over-exertion, and dissipation.

Physical labor, if not such as causes sudden strains upon the heart's action, need not be interdicted; but all causes leading to undue excitement, or such as tend to a neurasthenic condition, must be especially avoided. A person with organic cardiac disease can often perform very hard mental or even physical labor, provided it is unaccompanied by excitement or

worry. These cases do better in the country than in the city. Routine existence is more naturally attained and the purer air and quieter surroundings conduce to the even plane of existence which we are seeking.

Whatever plan of life is made, the great point is regularity. This is none the less true in the average case because now and again instances come under our notice of persons with badly damaged hearts, who lead lives of activity and excitement and accomplish a prodigious amount of labor, and still survive. These patients live longer than might be expected, but nearly all of them pay the penalty by a period of collapse and suffering. These cases of severe valvular disease, who do not submit to a proper regimen, nearly always succumb in the end, however long deferred, to the disease itself, while the others may, as far as the heart is concerned, maintain an even plane of health, and die after a very long time only from some other disease.

In the drug treatment of these chronic cases the use of iron is of great value. The tendency to anemia which exists in all chronic diseases has in this instance a very direct tendency to exaggerate the symptoms. Sometimes dyspnea is entirely relieved when the impoverished blood is brought up more nearly to par. The alimentary system must receive very careful attention. The tendency of passive congestion to produce damage is very much increased by any functional derangement. Constipation is a very great evil in these cases, and regularity of this function should be absolutely insisted upon. The means must be chosen according to the merits of each case.

Against the use of digitalis and drugs of this class in the stage of compensation we would enter a strong protest. The routine practice is now happily rare of giving digitalis on account of the presence of a murmur without regard to other necessities. Strophanthus has proved in our hands a very valuable drug in tiding over periods of failure of compensation. For long use it has not been so satisfactory as digitalis.

The use of drugs during the quiescent period must to a large extent be the drugs which we are pleased to call "hygienic" drugs, namely tonics, laxatives, and occasionally alteratives. Strychnin is at times indicated in nearly all of these cases. It stimulates the nervous system in every part of the body, and in that way affects favorably the functions of nutrition, motion and secretion. Digitalis may be used at times when the circulation seems to overburden the heart and when for any reason the better remedy, rest, can not be applied. In chronic heart disease in individuals with specific taint, occasionally brilliant results have been obtained by specific treatment, the heart tone being apparently much improved under the course of medication.

The occasional use of mercurial purges in patients with chronic cardiac disease, who habitually overeat, is very important.

The use of alcohol in chronic heart disease is often baneful in its effects, and it is extremely difficult for the patient to break the habit. In the ordinary drunkard it is really the heart that cries out for alcohol when an attempt is made to stop its use, though the effects of the depressed heart are referred to the stomach, brain and general circulation.

The habitual use of alcohol is also to be discouraged on the ground of causing unnecessary exhaustion of the heart muscle and a tendency to tissue degeneration throughout the body. It is to be remembered

that fat is as often an indication of misdirected nutrition or degeneration as it is of hypernutrition. On the other hand in emergencies there is no drug so useful as alcohol in developing quickly and strongly, and at the necessary moment, the latent powers of the heart.

A discussion of the management of chronic heart cases would not be complete at this time without some reference to the influence of thyroid activity upon the heart's action. Without going into a full discussion of the probable fact that exophthalmic goitre is due to a hyposecretion of thyroid products, and that many conditions resembling obesity with its accompanying sluggishness of heart's action and tissue metabolism are to some extent dependent upon an under secretion upon the part of the thyroid, we can not but feel like administering the thyroid gland, at least in an experimental way, to those cases of chronic heart disease in which the heart as a whole and the heart fibers seem to be impaired in their action by fat. One of the most distressing complications of chronic cardiac disease are the attacks of pain, whether or not we dignify these attacks by the name "angina pectoris." The treatment of the attacks when they occur is not to be discussed here. The patients who seem to be liable to such attacks should often systematically take iodid of potassium.

While we have gone over at some length the considerations which are to be reviewed in forming a plan of management for each case, still much remains for the domain of individual judgment. In these patients much must be considered besides the actual objective symptoms at the time of the examination. Hereditary tendencies are a factor which must never be overlooked. If several members of the patient's family have succumbed to cardiac disease at about the same period of life, it is always a grave element in prognosis. That mysterious force, or rather storehouse, which we call latent energy, can not be fathomed and its capacity estimated with any degree of certainty. We have all of us seen patients who had apparently reached a state where compensation seemed impossible, gradually climb to a state of fair health and comfort. We have also seen patients who had gone on well for a long period of time, without apparent cause, suffer a loss of balance and perhaps go very quickly to a fatal termination.

In emphasizing the importance of hygiene in the management of cardiac disease during the quiescent period there is no stronger warning than that a recurrence of valvular inflammation is sure, by extension as well as by overwork, to involve the heart muscle in a secondary degeneration. Anti-rheumatic treatment should be instituted whenever any return of inflammation is feared, and the case should, for a short time at least, be managed with absolute rest, and the bland diet suitable to the inflammatory stage.

In discussing this subject we have not considered very much the particular lesion which might be found in the valves upon examination. We can not lay down specific rules for the management of mitral insufficiency, another set of rules for mitral stenosis, though the same management would be much more efficient when the former is the predominant lesion than when the latter exerts the greater influence. We can not treat a valvular lesion directly. Our prime object is to keep nutrition of the heart as good as possible, and by this we mean the avoidance of degeneration and the avoidance of excessive hypertrophy.

The nervous mechanism of the heart, as representing the conservator of heart energy, must be treated with consideration.

It would be an interesting question to have definitely decided whether the actual volume of blood is greatly influenced by any practicable degree of dry diet. It has always seemed to us that the mechanism whereby the volume of fluid is maintained at a certain normal level was so perfect that any attempt to alter the volume of the blood by putting that mechanism on the strain must be inevitably fruitless. It is different, however, with the practical reduction of volume obtained by the use of nitro-glycerin, and such drugs, which diminish the resistance and by relaxing the smallest vessels bring about a relative reduction in the volume of blood.

In these ways and by many other little details, with the coöperation of an intelligent patient who understands thoroughly his condition, we can care for and maintain an even condition of apparent health for many years. Far more satisfactory is such a procedure than the up-hill work of the treatment when compensation has not been maintained, a contest which however much prolonged has but one final termination.

LYCOPERSICUM CARDIOPATHIA.

Read in the Section on Practice of Medicine at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY W. T. ENGLISH, A.M., M.D.

PROFESSOR OF PHYSICAL DIAGNOSIS IN MEDICAL DEPARTMENT OF WESTERN UNIVERSITY OF PENNSYLVANIA AND CONSULTANT IN CHEST DISEASES IN THE SOUTH SIDE HOSPITAL, PITTSBURG, PA.

The *lycopersicum esculentum*, natural order of solanaceae, indigenous to South America, is a vining plant with irregular sessated leaves, bearing fruit of various shapes and colors. It is also known as the "love apple," but more commonly is called the "tomato." It was introduced into America in the latter part of the sixteenth century as an ornamental natural curiosity, and was found only in the conservatories of the wealthy. On account of its peculiar beauty it was subsequently taken to Europe. The fruit was considered poisonous to the human, but was observed to be eaten by lower animals. This fact excited Yankee curiosity and it was tested and adopted as an article of diet in some sections of America. It was not until the beginning of the civil war that its acceptance as an edible food became general. Europe has not up to the present given it general welcome as a food. Its principle utility is that of a relish and an agreeable addition to sauces. However, some people regard it as a wholesome and desirable acquisition to the list of foods. Because of its low nutritive value it does not merit a place with substantive aliment. Analyses have placed it among the vegetables consisting of over 85 per cent. water. According to Chambers and other writers on dietetics it is a diluent and not a food. The fluid element has been found to consist of an acid, called by some *acidum lycopersicum*. Others have claimed the acids to be acetic and malic in combination. Notwithstanding the almost universal indulgence in this fruit there is a certain proportion to whom it acts as a poison. In some the symptoms are gradually developed; in others they become immediately alarming. Some cases show no immediate evidences, but the results are cumulative. Once the abnormalities appear they are liable to continue to increase as long as the fruit is ingested. Even in

those, who for a time abstain, it is observed that the hiatus in the symptoms does not diminish susceptibility, but that the organ influenced retains it in the same degree as when the habit was omitted; and, that, despite apparently normal findings, it is proven that there is engendered an abnormal hypersensitive condition in the heart and circulatory apparatus; and if the toxic effects are once experienced they are more easily excited thereafter. First it appears as a simple cardiac irritability, but persisted in, it assumes the character of a latent endocarditis and endoarteritis favoring the deposition of the products of inflammation throughout the circulatory apparatus, but more especially about the aortic roots and valves. The circulatory tubes, as well as the central organ, contribute to the concomitant faulty functionation so that perturbation of circulation and organic changes constitute the zenith point appropriately denominated *lycopersicum cardiopathia*. It is in the direction of the heart and circulation that the tomato habit exerts its ill effects. In early stages, in most cases, little abnormality can be found, but the apparent relation of cause to effect is empirically determined. The heart passes out of the condition of equilibrium into a habit of irregularity and inequality of rhythm and force. Dyspnea supervenes, limiting the capacity for exertion. Age and sex are influential factors. Adolescence and puberty with their new obligations make these periods especially liable. Heart development adds a new impetus to the irritation. The aged with the circulatory apparatus already upon the verge of change readily receive the initiative thus extended. Women during pregnancy and also at their menopause are often among those who exhibit the most severe and immediate results. In many maladies there is a peculiar pathology belonging to the rich man because of excesses, and on account of poverty and self-denial the poor man has his peculiar ills, but the tomato cachexia fastens itself upon each with the same hostile grasp.

Doubtless many cases of the tomato heart occur among those who are susceptible to a marked degree, and this sensitive condition permits the disturbance to augment in geometric rather than in arithmetic ratio. This predisposition aids in establishing a pathologic modality, which is readily observed to be a factor. But there is a growing sensitiveness noted at each succeeding alarm, until the body betrays its sympathy with the heart and circulation. But again there are those from whom the suffering line is very far removed and to whom even sentimental fears are distributed with extreme parsimony. These different neurosal types constitute the extremes in these cases.

Among the pathologic phenomena that appeal to us are the acidulous conditions of the stomach and the bodily fluids. With this state of the fluids there is a concomitant lowered alkalescence of the blood. The blood pressure is high because of the peripheral vasomotor contractions incident upon the variations in the blood of reduced alkalinity. The subendocardial ganglia also feel its influence directly applied to the sensitive endocardium. The ganglia in the muscular substance are brought into intimate relations with the blood through the medium of the coronary arteries and their branches and these are likewise perturbed.

High blood pressure excites the heart to vigorous action and causes a spastic rather than a paralytic condition. Myocardial weariness is induced and corresponds with the excitement as to degree and persistence.

Because of the irregular and spasmodic stimulation of the ganglionic cells there is a gradual deterioration in nutrition, beginning primarily with the trophic nerves and extending its pernicious influence to the other nerve supplies, materially damaging the cardiac enervation and begetting irregular action. At each succeeding paroxysm of palpitation there is noticed an increased inability to adjust the errors existing between blood pressure and heart action. Each paroxysm becomes easier of precipitation, and although the individual is more accustomed to the turbulence, the alarm and sensation are on the increase. The perfect functionation of the heart is held in abeyance by the continuous ingestion of the tomato, and the irritation becomes chronic. When long continued there are organic changes introduced, the tomato habit acting primarily as an irritant and later becoming an excitant to the already abnormally irritated organs. The left ventricle being more sensitive than the right, it is impelled to a premature attempt at systole, causing irregular rhythm, and this, together with the overfilling of the capillary pulmonary circulation produces a prodromal asthma, which remains prodromal only so long as the heart maintains its unchanged structure.

Observations have been conducted over fifteen years and experience assures me that at least one-half of those who use them suffer more or less, while one-fourth are obviously injured. A small percentage exhibits all the evidences of acute poisoning.

The symptoms first noted are those of the immediate effects of acidum lycopersicum upon the stomach and *prima via*. Pain and gastric uneasiness are succeeded by burning, choking, pyrosis and heartburn. These are succeeded by acid eructations with gaseous emanations from the stomach and, in some cases, vomiting.

Borborygma and active peristalsis are the enteric announcements, and these are speedily succeeded by stools of fermentative and offensive character. Eructations or expulsions of intestinal gases give temporary relief to the asthmatic oppressions, which proves that mechanical distention has something to do with the symptom of dyspnea. The appetite is usually good until the onset of these symptoms, when the desire for food is supplanted by a craving for drink, which is the result of irritation, or congestion, of the gastric mucous surfaces. There are some cases in which these local symptoms are pronounced immediately after the ingestion of the fruit. The matter vomited is acid and of an odor betraying fermentative action. The excretions are acid, and the emunctories are usually very active.

Rapidly following these local phenomena pertaining to the digestive tract there is a rise in blood pressure proven by sphygmographic tracings. If the pressure is already high, it will be still higher. The tactile sense appreciates it in the apex beat and the pulse.

One of the most constant symptoms of the tomato malady is the sighing respiration. The missing heart beat or the half executed circulatory cycle conveys to the patient the startling announcement that there is a serious and sudden arrest of vital activity within the thorax and it creates in the psychologic function as well as in the conceptions of the mind an uncomfortable surprise. The gap in the circulation is associated with a spasm of the respiratory function and a gasp for breath is the effort for relief. The patient's mental, moral and physical sympathy is

aroused with as much earnestness as if he were receiving the immediate herald of impending death. Unlike the habitual mountain climber's heart and respiratory organs, the tomato habit observes no quietus from custom, but at each return the irritation seems to find more sensation and prompter response. If the paroxysmal palpitation reaches its typical acme, as in the very acute forms, the distress and anxiety are so pronounced that they approach all the terrors of true angina pectoris. Cold sweats appear upon the forehead and there is an imaginary intensity in the symptoms of bodily and heart fright, which steals over the patient's senses, that can not be measured by comparison with those which are real. The fluttering and fullness in the precordial region continue after the subsidence of the violence of the paroxysm, and are associated with cephalalgia, supra-orbital tension and a constitutional languor. In acute cases speech is greatly impeded and articulation at times almost impossible, though there is never complete aphasia. Together with this indistinct enunciation there is occasionally an incoherence of thought and several ideas seem to seek expression at the same time. Disturbed vision, floating objects in the visual field, beating and singing in the ears, giddiness, mental apparitions, numbness of the fingers and tongue, and general perversion of the senses, constitute a part of the neurosal procession.

Some marked cases have been observed by me, which have presented a complete panorama of these symptoms within two hours after the ingestion of tomatoes. A number of patients are under my observation upon whom these symptoms can be reproduced within two or three hours after introducing into the stomach two ounces of tomato fruit. Immediately in some cases the irritation of the peripheral nerve terminations in the stomach produces a species of nervous cyclone, or a little nerve storm in the heart and its intrinsic ganglia. The symptoms which have arisen after the ingestion of tomatoes in the presence of preëxisting heart maladies have been deplorable, and have been introductory to, if not the immediate prodromata of death. In weakness of the respiratory muscles there will be corresponding augmentation of attending distress. In emaciated persons or those reduced by poverty or loss of blood the symptoms of palpitation are precipitated with alarming celerity. The use of tomatoes as an article of diet among pregnant women is followed by tumultuous demeanor of the heart, and where predisposition to abortion obtains may produce hapless results.

During the developmental period of the heart—especially that marking the rapid increase in cardiac growth between adolescence and maturity—the tomato should be discarded as likely to occasion unpleasant symptoms and precipitate evil. The period when it seems foolhardy for women to use this fruit is at the climacteric, on account of the abnormal cardiac phenomena they excite and the disposition to inflame preëxisting nervous irritability.

The diagnosis of the disorder propria is usually not difficult, if we are once rid of the preconceived notions with which the symptoms enumerated have been connected. One is likely to fall into the habit of estimating by former and more familiar standards. Some effort will become necessary to disassociate them from dyspeptic symptoms and phenomena connected with cardiac lesions. This need becomes the more urgent to my mind, when I recall the fact that of the

heart maladies sent to me for diagnosis, a large percentage are functional and fully one-half of these are due to the tomato habit. When once pointed out, however, these cases can scarcely be overlooked or their symptoms confounded. The history will aid us, and if one attack does not satisfy our mental questioning, there will be little loss of time until another opportunity is secured to indulge in a second observation, as patients are loath to accept the theory of tomato poisoning; and under any circumstance humanity, including the medical man, is slow to acquiesce in anything which limits dietetic privileges. While the picture presented may not be as complete as the present aspect of medical inquiry demands, it is as conscientious and faithful as I can at present give.

The best treatment is to abstain from the use of tomatoes. During a paroxysm, and immediately succeeding one, it is needful to employ an antidote to the toxic conditions. This agent should include the capacity to annul the irritation that is local to the stomach and prima via, as well as to place a quietus upon the neurosal storm which is usually present in the acute form of the malady. This agent is acetanilid, one of the coal tar products; and it is always applicable, except in the chronic cases attended with heart degeneration. The following prescription is as perfect an antidote to lycopersicum poisoning as I have discovered:

R Acetanilid 5ij 8
 Spr. vini rect. 3ij 64

Misc. Sig. Teaspoonful in water hourly until three doses are taken, thereafter every eight or ten hours.

This clears the vision, restores the wandering senses and rapidly places the organs within range of their lost tonicity. On its exhibition there is almost immediately a clarification of the visual and mental fields, and a return, within an hour after the first or second dose, to a desirable circulatory and respiratory calm. Some slighter neurosal phenomena as tremor and general depressions are more deliberate in their leave taking.

Antacid diuretics are needful to divest the bodily fluid of the influence of acidum lycopersicum. Quiet and general hygienic restrictions are always commendable.

There is a peculiar virulence to acidum lycopersicum that can not easily be overpowered, and its effects remain apparent in the stomach and intestines for some days, despite the use of alkalin purges and occasional draughts of lime or potash water. The use of disinfectants is to be commended, as of creosote, charcoal, etc. Observations of the patient's diet are necessary in a special way. The most wholesome articles of diet in ordinary conditions must, in many of these cases, be avoided. Milk is not admissible immediately after, or during an attack, as it forms into a substantial curd and is totally undigested. Eggs are rendered rancid. The diet should be restricted to light foods and those easy of digestion, and this restriction should be continued for at least one week. Tonics and supports for the offended nervous system are to be employed, and when greatly irritated they demand sedative treatment. The former may be secured by the administration of strychnia. The latter is accomplished by the use of chloral or the bromids. Chloral acts well if the patient is persistently somnolent.

The circulatory changes involving myocardial

degeneration or including sclerosis of the tubes will suggest recourse to special cardiac support and remedial agents.

To a number of medical men I owe my thanks for faithful observations, and the record of facts associated with the use of the *lycopersicum esculentum* in public institutions, hospitals and alms houses, which I can not detail here.

Personal experiences are in my possession, delivered orally and in writing by those who have individually noted the deleterious effect of the acute attacks as exemplified in their own bodies and which are not within the scope of this paper to recite. They, however, suffice to prove the tenable ground upon which this theory is based. General depression is reported to have been a common sequence to their employment in one of the alms houses near Pittsburg and also in several of the hospitals in the vicinity. Many of those who were in health were reported as being depressed, while the ill were rendered worse after their use. This would lead us to the conclusion that those in charge of hospitals, alms houses and other charitable institutions in which they are employed should expunge them from the list of foods.

The supplies for the military should never include this vegetable, as it has been abundantly proved that it can not be for the physical good of the men or subserve the interests of hygienic and economic food supply.

At any time when any great mental or bodily endurance is required, the tomato is treacherous and can not be relied upon as a food. When some acute loss or bereavement occasions emotional influences that call for cardiac reserve force, and under all circumstances where fortitude is demanded, the ingestion of tomatoes is to be discouraged. Those who are called upon to endure loss of sleep or mental strain, the student, the speaker or the statesman, will find them worse than useless.

DISCUSSION.

DR. PAUL PAQUIN, St. Louis—I never before knew that tomatoes were injurious to mankind. According to the paper, I should have been dead ten years ago, and I doubt if many of us would remain in good health. I remember when the tomato was not used at all as an article of diet, but since then it certainly has been used very extensively, and I had never before supposed that there was anything poisonous about it. But I would like to know if we are still to have some other kinds of heart. We have a tobacco heart, we have the onion breath; probably we will have a carrot heart, and a potato heart. I doubt, indeed, if we will ever be able to make a list of the vegetables which we may eat safely. Are not some of the results attributed by the author to eating tomatoes produced by eating anything, almost? I would like to know on what scientific investigation it has been discovered that the tomato is a baneful enemy of mankind.

DR. HILL, Milwaukee—I wish to say that in my opinion the symptoms which he has ascribed to the tomato are the result of wind on the stomach—being the direct effect of fermentation. I wish to call attention also to one other fact, that is, that in rural districts where the tomato is grown and ripened on the vines these results are not often observed; that it is not only not harmful, but that it acts as a most excellent regulator of the bowels and an excellent article of diet. But in cities the tomato, like all other fruits, has been of necessity shipped in the green state and not allowed to ripen by nature's process, but by the process of putrefaction, which continues in the stomach, and if used in large quantity it produces fermentative change and the results named in the paper. One other remark; it concerns his treatment. It is the use of two drugs diametrically opposed to each other, one a cardiac depressant, the other a cardiac stimulant—acetanilid and alcohol. I would suggest that it is rather to the alcohol that the relief is due, because the alcohol given in that form, although not quite as efficient as the aromatic spirits of ammonia, acts as a stomachic,

relieving the stomach of its gases by stimulating the action of the muscular fibers and increasing peristalsis, as well as incidentally stimulating the heart.

DR. J. W. GROSVENOR, New York—I would ask the reader if he knows what the toxic agent is that produces these dire results. Have any chemical studies been made to show what the toxic principle is?

THE CHAIRMAN, DR. QUINE, reminded Dr. Grosvenor that it had been suggested in the paper that the toxic agent was *acidum lycopersicum*.

DR. ENGLISH—Dr. Hill, who has called attention to the fact that my prescription is incompatible physiologically, is certainly correct, and its very incompatibility is the very essence of it. In the first place it contains acetanilid, an anti-acid, which has a corrective action on the conditions in the stomach generated by the tomato, but at the same time depresses the heart. It is necessary to support the heart by the use of alcohol. It is the proper way to employ acetanilid unless you want to employ it for its depressing effects.

THE EFFECT OF ALCOHOL ON THE ORGANS OF SPECIAL SENSE.

Read in the Section on Practice of Medicine, at the Forty-seventh Annual Meeting of the American Medical Association, Atlanta, Ga., May 5-8, 1896.

BY J. W. GROSVENOR, M.D.

NEW YORK.

No extended argument is needed to demonstrate the effect on the organs of special sense¹ of alcohol in large quantities, sufficiently large to destroy temporarily the functions of these organs.

Any person in the condition in which he may be properly called "dead drunk" is completely narcotized. His entire nervous system is paralyzed. He may have taken a half pint or a pint of whisky or brandy. Either of these amounts is a large quantity, the former for a child, the latter for an adult.

The person overcome by a complete alcoholic stupor has lost for the time being the functions of the special senses. Speak in stentorian voice to the victim of such a condition and he gives no sign of the existence of the sense of hearing; expose his eyeballs to a bright light and the pupils give no response to indicate the presence of vision; prick and cut the body with a sharp instrument and he manifests no sense of feeling; place the most pungent volatile substances near his nostrils and you observe no suggestion that they painfully affect the olfactory nerves. He is as profoundly narcotized as though he were fully under the influence of ether or chloroform.

The person who has taken an alcoholic drink in quantity sufficient to place him under its positive influence though not sufficient to profoundly narcotize him, who is able to control his acts to a considerable extent suffers in his organs of special sense in like manner, though not to the same degree, as the person whom it has completely overwhelmed with narcotism.

Hearing is lessened, as evidenced by the fact that a much louder voice than ordinary is necessary in order to attract the attention; such a person on the street for lack of normal vision frequently comes in contact with a post or another person; the sense of feeling is blunted, since he may fall and bruise himself severely without complaint of injury or pain; or he will drink a glass of rum, brandy or whisky without observing the caustic effect usually produced upon the mucous membrane of throat and stomach.

It is a well-established fact that the sense of sight is permanently injured by the excessive use of alcohol. Amblyopia alcoholica is noticeable in the early stage of alcoholism. The disease advances or recedes

¹ Special attention is directed in this paper to the senses of seeing, feeling, hearing and weight.

according as the amount of alcohol taken is increased or diminished. The pathologic factor of the disease is an interstitial neuritis, proliferation of connective tissue followed by degenerative atrophy of the optic nerve. This disease has been clearly described by Dr. Charles H. May. (*The Medical Temperance Journal*, July, 1891, taken from *Quarterly Journal of Inebriety*.)

The effects upon the organs of special sense of extremely large and moderate quantities of alcohol as stated above have been recognized by common observation ever since the discovery of this substance several centuries ago. Among physiologists and therapeutists of the present day there appears to be no very marked difference of opinion as to the most prominent effects of alcohol upon the human organs when taken internally in large quantities.

It is acknowledged to be an anesthetic, a paralyzer. Opinions widely diverge, however, as to its effects when taken in small or minute quantities.

The effect of exceedingly moderate or minute quantities of alcohol upon some of the organs of special sense has been demonstrated by carefully conducted experiments. Of all scientists, perhaps no one has wrought more thoroughly and satisfactorily in this field than Dr. J. J. Ridge, of London, England. For the purpose of determining the effect of small doses of alcohol upon the sense of feeling he used an instrument which is best described in his own words:

"An instrument was constructed in which were two points in an upright position, and about half an inch apart. A third upright point was situated between the two, and was capable of being moved in a straight line nearer to one or the other of the stationary points. These three points were covered in so as to be invisible, but the forefinger could be passed through a hole in order to feel them. The middle point was moved by a rack and pinion, and the person tested was required to move it until, in his opinion, it was as nearly as possible equally distant from the two outside points. The movement of the middle point was recorded on a dial invisible to the subject of the experiment. This form of instrument was preferred to the ordinary esthesiometer, because in that instrument (in using which the person has to state the earliest moment that he can distinguish the points of a pair of compasses or two, while they are gradually separated) imagination might more easily vitiate the conclusions."

The results of his experimental researches made upon the sense of feeling, with the instrument above described, are embodied in the following table:

FEELING.

Ab. abstainer.	Number of degrees on the dial from exact center before alcohol.				Average.	Number of degrees on the dial from exact center after alcohol.				Average.	Amount of absolute alcohol given.
Ab...	6	6	3			5	10	8	10	9.3	2 drams
Ab...	6	30	4	30	16	16	20	24	46	28.	2 drams
Ab...	8	40	7	9	16	33	24		7	23.5	2 drams
Ab...	3				3	14				14.	2 drams
Ab...	75				75	115				115.	2 drams
					115					189.8	

The quantity of alcohol, two drams, given to each individual tested may reasonably be regarded as quite small. Five abstainers were tested, the total number of tests being fourteen *before* and the same number *after* alcohol was given. The average number of degrees on the dial from the exact center *before* taking

the alcohol was 23; *after* taking the alcohol 38. The smaller number represents the greater sensitiveness of feeling or touch.

This may not be regarded as a great difference, but it is a difference that is positive and shows that so small a quantity of alcohol as two drams may sensibly affect the nerves of feeling and decrease their sensitiveness.

The effect of small doses of alcohol upon the sense of vision was tested by Dr. Ridge as described by himself as follows: "Vision was tested by noting the distance at which a row of letters could be read with one eye without alcohol, and then the distance at which the same letters differently arranged could be read with the same eye afterward. The distance varies very greatly in different individuals; but of course in the same individual it would remain the same, provided that the alcohol had no effect. Indeed, one might naturally expect a slight improvement in the latter trials, by reason of the fancy letters employed. The following table gives the results obtained:

VISION.

Ab. abstainer.	Distance of distinct vision in feet before alcohol.				Average.	Distance of distinct vision in feet after alcohol.				Average.	Amount of absolute alcohol given.
Ab.	7	7.25	7	6	6.81	7	6.75	6.50	5.75	6.50	½ dram
Non-Ab.	9	7	7	8.5	7.87	8.75	6.75	5.75	8	7.31	1 dram
Ab.	10.50	10.75	10.5	10.5	10.56	8	9	7.5	9.50	8.50	1 dram
Non-Ab.	4.25	5.25	5.25		4.91	4.50	4.50	4.25		4.41	2 drams
Ab.	10.25	9	7.25		8.83	9	9.25	8		8.75	2 drams
Ab.	11.25	11.25	10.25	9.5	10.56	10.50	10.50	11	8.50	10.12	2 drams
Ab.	15	10.5	13		12.80	13	10.50	12		11.80	2 drams
Ab.	9.25	10	25		9.75	8.50	8			8.25	4 drams
Ab.	6	6	5.75		5.91	5.25	4.75	4.75		4.91	4 drams
Ab.	16	15.5	15.75		15.75	14.75	14.50	15.25		14.83	4 drams
					93.75					85.38	

General average—9.375 before; 8.538 after."

Ten individuals were tested, eight abstainers and two non-abstainers. Thirty-three trials were made before the ingestion of alcohol and the same number after its ingestion. The average number of feet at which the letters could be read before taking the alcohol was 9.375, after taking it 8.538. Expressed in inches the difference was 10.044. This number represents that on the average the individuals tested, in order to see the letters distinctly, were obliged after taking the alcohol to approach 10.044 inches nearer to them than before taking it.

One of the individuals took ½ dram, two others 1 dram each, four others 2 drams each, three others 4 drams each. In the case of each individual the average of his tests showed that his vision was decreased in from fifteen to thirty minutes after taking the alcohol.

The average difference in the vision point before and after the alcohol doses in the majority of cases was not very large; indeed, in some of them it was quite small. In one it was more than two feet, which is 19.50 per cent. of the larger distance. The average of all the tests showed that it was necessary to shorten nearly 9 per cent. after taking alcohol the distance between the vision point and the letters before taking it. Derangement of vision, in the form of hallucinations, is recognized as an every-day occurrence in cases of acute alcoholic delirium, the sight of strange things and living creatures that can not possibly exist at the time within the range of vision.

The same experimenter, Dr. Ridge, tested the muscular sense of weight before and after the ingestion of small quantities of alcohol. He has thus described his method of procedure:

"The amount of muscular force required to overcome different resistances is measured by a special sense connected with the muscles but exercised by the nerves. Comparison between two weights requires the action of the judgment. The more acute the perceptive faculties are, so much the more readily will the judgment decide upon small differences between two weights. The effect of alcohol on this muscular sense was determined by an arrangement in which a weight was attached to a certain lever, and the person experimented upon was required to slide an equal weight along another lever exactly similar to the first until, in his opinion, the weights appeared to be the same. It is obvious that the position of the weights on each lever ought to be exactly the same and, therefore, the more sensitive the muscular sense is the nearer will the individual be able to place them before he ceases to detect any difference." The following table gives an exhibit of his results:

WEIGHT.

Ab. abstain'rs.	Distance between the weights, in millimeters before alcohol.				Distance between the weights, in millimeters, after alcohol.				Average.	Amount of absolute alcohol given.	
Ab.	14	8			11	7	20		13.50	1/2 dram	
Non-Ab.	22	10	16	18	16.50	18	20	22	20	1 dram	
Ab.	3	4	2	10	4.75	8	4	8	5.75	1 dram	
Ab.	4.5	7	9	7	6.90	13	11	12.5	13.50	2 drams	
Ab.	2	2	9	5	4	5	4	13	8	2 drams	
Non-Ab.	2	4	5	2	3.25	10	4	6	6	2 drams	
Ab.	2	2	5		2.25	1	7	4	3.75	2 drams	
Ab.	5	7	9		5.25	10	8	8	6.50	2 drams	
Ab.	9	1	11	1	4.40	3	8	11	8.20	2 drams	
Non-Ab.	2	3	4	1	2.50	6	6	8	5.75	4 drams	
									60.60		90 95

General average—6.060 before; 9.095 after.

Dr. Ridge thus sums up his tests upon the muscular sense of weight:

"From this table certain facts are apparent: 1, that in every case the average sensibility to weight and power of discrimination was decidedly diminished by small doses of alcohol, the general average indicating that the sensibility is diminished about one-third; 2, that single trials are not reliable, since many circumstances may unite to produce a fallacious result. Thus some of the trials after alcohol were actually more accurate than some of those before it, although the average of each individual conforms to the general average of the whole; 3, that non-abstainers are affected, as well as abstainers; 4, that small doses act in a similar way to large doses, and that the difference is only in degree, not in kind."

The deceptive nature of alcohol was observed in all these experiments. Each person tested was confident that his powers were equal to the accomplishment of more than scientific experiment showed was possible. This fact teaches that the alcoholic drinker's assertions as to the integrity of his special senses are not reliable. His organs of special sense may have lost a considerable portion of their natural powers and he may still be unaware of this condition.

Experiments made by Dr. Seougal upon the sense of hearing show that alcohol in small quantities affects this special sense in the same way as the other organs of special sense are affected by it.

Dr. T. D. Crothers has made simple tests of the sense of hearing and has arrived at similar conclusions.

In cases of alcoholic insanity the sense of hearing is frequently disordered. In this form of insanity the

occurrence of hallucinations of hearing has been noted often by those who have the care of the insane; unusual voices and sounds that at the time have been beyond the reach of normal hearing. Aural and visual hallucinations have led to many fatal assaults upon supposed enemies, the assailants believing that the false impressions received through the senses of sight and hearing were true.

Some observers have noted in cases of alcoholism that the special senses suffer occasionally in one half of the body; there is loss of sight of one eye, hearing of one ear, taste of one half of the tongue and smell of one nostril.

The results of these experiments declare in unequivocal language that alcohol in small or extremely moderate doses weakens the nervous supply of the organs of feeling, seeing, hearing and weight; that to a certain extent it paralyzes these special senses.

According to Dr. Ridge, "Dr. Lionel Beale long ago pointed out how it (alcohol) affected the protoplasm of cells and diminished the movements of amebae, to which leucocytes are apparently analogous." Dr. Ridge has found that the action of alcohol on leucocytes is injurious. His experiments with plants show that they do not thrive when watered with water which contains half of one per cent. of alcohol; that thus vegetable protoplasm is materially injured. The vegetable cell is not so very different from the animal cell as to prohibit the belief that if the protoplasm of the former is injured by minute doses of alcohol, that of the latter is affected in a similar manner.

Dr. Ridge has also discovered that alcohol in almost incredibly small quantities will promote "the growth and multiplication of microbes whose function is antagonistic to the protoplasm of organized beings." "In the presence of these minute quantities of alcohol decomposition goes on more rapidly and the micrococci and bacilli thrive and swarm more abundantly." He has thus shown that alcohol in the minutest quantities is injurious to "constructive protoplasm" and favorable to "destructive protoplasm."

Without doubt the protoplasmic nerve cells of the organs of special sense are as sensibly affected by alcohol as the cells of any other tissues of the body. Consequently the effect of minute quantities of alcohol on both vegetable and animal cells is a strong argument that it injures the constructive protoplasm and favors the destructive protoplasm of the organs of special sense.

Dr. Prout's experiments made more than eighty years ago proved that alcohol in a small or moderate quantity lessened the amount of carbonic acid exhaled from the system. More than a physiologic amount remained in the system to act as a poison upon the tissues and fluids. From this result the legitimate conclusion can be drawn that the special senses would suffer their share of injury.

It is a fact well-known that the long and excessive use of alcohol internally has a degenerating influence upon nearly all the solids and fluids of the body. This is quite noticeably true of the nervous and circulatory systems. Growing cells become deteriorated, tissues are hardened, blood loses a part of its vitalizing elements. It is not unreasonable to believe that as the whole system is burdened with this "genius of degeneration," alcohol, the organs of special sense must bear their proportion of the burden.

During the last few years railroad managers have

observed the injurious effect of alcohol upon their workmen when occupying positions that require delicacy of touch, keenness of vision and acuteness of hearing. Not long since a large railroad corporation investigated the conditions surrounding every accident that had occurred on its lines during the preceding five years. It was found that 40 per cent. of all accidents were due entirely or in part to drinking men. In 18 per cent. it was strongly suspected that the drinking habits of employees was the cause of the accidents. The company in a single year lost property to the amount of one million dollars through the incompetency of beer-drinking engineers and switchmen.

Michigan has passed a law which imposes a heavy penalty upon those railroad companies which employ men who are in the habit of using alcoholic intoxicants. Railroad managers, as practical business men, are recognizing the utility of employing total abstainers as a measure calculated to reduce financial losses on account of accidents.

Some railroad companies prohibit their employees from drinking any kind of intoxicants and from entering a drinking saloon during working hours; other railroad companies demand from their employees the signing of a total abstinence pledge which shall hold good for every hour of every day.

This action of railroad managers shows their appreciation of the doctrine that even small quantities of alcohol impair the organs of special sense, and that in order to do the best work in railroad business the workman must have eyes, ears and hands perfectly free from the poisonous touch of alcohol.

From the experiments and investigations herein detailed we are warranted in drawing the conclusion that alcohol in small quantities does not act upon the organs of special sense as a stimulant, but as a depressant; not as an energizer, but as a paralyzer. The claim that alcohol in any quantity strengthens and sharpens the vision, the touch, the hearing, has no defensible foundation for its support.

If these conclusions are reasonable concerning that part of the nervous system that supplies the organs of special sense, may we not assert with reasonable certainty that the same result obtains in other and, indeed, in all other parts of the body? Surely the nervous cells are not so very unlike in different parts of the organism as to forbid this conclusion.

Neither does alcohol in small doses differ in quality from alcohol in large doses. One drop of it has the same characteristics as a thousand drops. The large quantity produces a more powerful effect than the small quantity, but in kind the effect is the same.

In the study of this subject some of the thoughts which have been forced upon my attention are as follows:

1. Guided by the chief characteristic of alcohol, its paralyzing influence, is it not more appropriate to call it a depressant than a stimulant?

2. If alcohol becomes popularly known as a depressant, will it not be less frequently used by the laity in those physical conditions which are commonly supposed to demand stimulation?

3. Knowing that alcohol is a depressant even when given in small doses, ought not the medical profession to exercise great care in administering it in debilitated states of the system?

4. The use of alcoholics hypodermically in cases of heart failure or arrest of respiration caused by ether or chloroform narcosis is bad practice.

5. It is the duty of the medical profession of this country, clearly and fully comprehending not only the damage to the organs of special sense, but also the ravages upon all the important organs of the body caused by alcohol, to discourage by every laudable effort the habit of drinking alcoholic intoxicants, to the end that our national life may be characterized by physical and moral integrity, clear brains, steady hands and brave hearts.

DISCUSSION.

DR. G. W. WEBSTER, Chicago—I have yet to find any form of illness or sickness, or any condition of health, where alcohol in any dose acts as a stimulant, as we understand the word stimulant. Not that I wish to be understood as objecting to the use of alcohol in its proper sphere, but it is never, under any circumstances nor in any dose, a stimulant. There is not one particle of evidence with which I am acquainted based upon careful observations, that will for one moment justify us in stating that alcohol is, in any dose or in any sense, a stimulant. It is, in all doses and under all circumstances, a depressant, an anesthetic.

DR. YAGER, Kentucky—I speak now of this subject in a medical sense, and wish to endorse to a great extent what Dr. Grosvenor has said. While I give whisky in sickness, I have not touched a dram of it myself, but became its opponent from a moral sense.

DR. H. A. HARE, Philadelphia—If it is possible for anyone to say that there is no evidence that alcohol acts as a stimulant, it is perfectly possible for it also to be said that the world does not go round. Now, you may bring every citizen of Atlanta into this room who knows anything at all about the matter, and he will tell you that under some circumstances alcohol does act as a stimulant, and how it is possible for any physician who has used alcohol properly in the treatment of disease to say that under certain circumstances it does not act as a stimulant, is to me most extraordinary. I have had a very large hospital experience, and have had the opportunity of watching the use of alcohol, not only in my own hands and in the hands of my colleagues, but in the hands of the most celebrated therapeutists of the world, and I repeat that alcohol acts distinctly as a stimulant. Furthermore, I wish, in this connection, to call the attention of this Section to what I believe to be the great danger of medicine at the present time. We are too fond either of saying that a remedy will cure every case of a certain disease, or that it is absolutely useless in all cases of that disease. I do not want anybody to think it is my custom to teach that alcohol is always, under all circumstances, a stimulant; but on the other hand, I do not want it thought that I regard alcohol as a depressant at all times and in all diseases. Digitalis can not be used in every cardiac case, and the same is true of alcohol. The sensible doctor is rational in his therapeutics and fits his drug to the case.

DR. R. H. BABCOCK, Illinois—I believe that alcohol in appropriate doses is a cardiac stimulant; in too large doses, it is a cardiac depressant. My views upon alcohol are derived from my experience with it. Let me state an instance, the case of a physician whom I saw only last Saturday, who has a dilated heart, both right and left ventricles being dilated; has moderate arterial sclerosis, pulse ranges from fifty-two to sixty; who can not bear even small doses of digitalis, five drops producing shortness of breath and increased cyanosis. A moderate dose of whisky, in that patient, stimulates the heart to a pulse rate of seventy-two, the pulse becomes fuller and stronger, the color better, the patient feels exhilarated, and it is followed by no symptoms of depression. Now, if alcohol in moderate dose, the dose differs, of course, in individuals, stimulates that physician's heart to that kind of action, then I believe that alcohol in that case is a cardiac stimulant, not a depressant.

DR. JOHN A. OUCHTERLONY, Louisville—I can not say that I believe alcohol is a stimulant. I know it. Knowledge is always better than belief when we deal with matters which are capable of demonstration. I can not believe that all previous experience has been erroneous, that the great work quoted on narcotics and stimulants was a mass of nonsense. We can judge of the effects of alcohol as we judge of the effects of all other remedial agents that we are accustomed to employ in our efforts to cure disease. Alcohol in small doses, suitable to the patient, is undoubtedly a stimulant, and it is a very remarkable fact that the instincts of all nations have led them to bring forth from organic matters some form of alcoholic stimulant. That there should be universally such craving for an article which is absolutely injurious to the human economy, does not seem reasonable; on the contrary, I think that this very fact is an

indication that alcohol, according to the experience of all ages and of all nations, is a stimulant, capable of serving useful purposes, dietary and therapeutic.

DR. W. M. RICHARDS, Joliet, Ill.—I must endorse the Doctor's paper: as a stimulant, I have never yet ordered a dose of alcohol, nor have I seen an increase in the force of the heart. We do get a more rapid action of the heart, but it is simply from paralysis, not from stimulation. It simply paralyzes the capillaries, so that the heart can get rid of the blood which goes to it, and never stimulates. I have seen an athlete put up dumb-bells before taking alcohol, then wait a reasonable time after taking alcohol in order to get its effects, and try to lift them again, and he could not do it. You see a man come in cold: he takes a glass of liquor, and in a few minutes thinks he is warm. He is simply paralyzed, so that he is insensible to the effects of cold. He goes out under the influence of alcohol, feels that he is perfectly warm, sits down and freezes stiff. A man under the influence of alcohol thinks he is powerful enough to whip two men, but at the same time it requires two men to hold him up. Call that stimulation? He is simply paralyzed. I believe alcohol can be given in its place, just as you would use nitroglycerin, or any nitrite.

DR. MINOR, Ashville—I would ask the gentleman who has just sat down whether it is legitimate to draw conclusions as to the effects of alcohol from intoxicating doses. It seems to me it would be as justifiable to say, after observing the effects of eighteen grains of corrosive sublimate, that the action of mercury is always poisoning. It depends upon the amount of alcohol administered as to what effects will be produced. I see many who prescribe it indiscriminately, and I agree with those who deprecate such abuse.

DR. HARE, Philadelphia—I would like to call attention to a point of some importance, namely, the statement which has just been made that alcohol acts as a paralyzer of the capillaries; that it does not act as a stimulant; but that the increased rapidity of the heart is due to removal of pressure in front of the heart by paralysis of the capillaries. Now, I challenge that gentleman to present one jot or tittle of scientific evidence that his statement is correct. I refer again to the experiments of Cerna, of Castillo, and a number of foreign investigators as well as American, which prove beyond all doubt, as far as you can prove any scientific fact, that the administration of certain doses of alcohol, according to the size of the person or animal receiving it, produces a rise of arterial pressure and not a fall. And I can also prove by most careful scientific experiments that alcohol actually increases the quantity of heat which is manufactured in a man's body; that under its influence he will manufacture more units of heat in an hour than before he took the alcohol. And to show that I am not biased I may go on and say that at the same time alcohol increases heat production, when taken in overdoses it also increases heat dissipation, and the increase in heat dissipation is so much in excess of the increase in heat production that the temperature falls. It is not well to take an alcoholic stimulant and be exposed to cold, because, the blood goes to the surface of the body and carries with it a certain amount of warmth which is lost. When we expose our bodies to cold the peripheral capillaries become contracted, the blood rushes to the central vital organs to be kept warm by them, the subcutaneous tissue, and muscles. But in a warm room the blood again flows to the surface to carry heat with it. If we take alcohol before going into the cold, the blood which filled the inner vessels of the body, is driven out. It does not go there by paralysis of the capillaries. You do not see the peripheral capillaries congested by paralysis when a man dies. The peripheral capillaries are paralyzed by death, but does the surface become flushed and red? Not at all. It becomes white like marble. Why? Because the whole vascular system is paralyzed and the blood settles in the larger vessels. I would call the attention of the Section once more to what I claim is the fault in the whole study of therapeutics, namely, dogmatic treatment. In this instance the assertion has been made absolutely without citing a single authority, that alcohol does this or that: that alcohol paralyzes the peripheral capillaries in all diseases; that it lowers arterial pressure and acts like nitroglycerin. If the gentleman will produce facts to prove that, or if he can not, I want him to state that, in his opinion, that is the case, and not give it out as a definite scientific statement.

DR. HAINES, Ohio—It certainly has been shown, by all the gentlemen who have experimented and taught, that alcohol is a stimulant when given in proper doses and in the appropriate condition. I think we will find it has a stimulating influence, and one that can be safely relied upon in time of trouble.

DR. YAGER, Kentucky, stated that it was the universal use of alcohol which he was opposed to.

DR. JENKINS, Iowa—Whenever views on a medical subject are

expressed which are entirely antagonistic to all the experience and the teaching of the profession and of those out of the profession, there is certainly something wrong. According to clinical experience I do not believe a small dose of alcohol can be otherwise than stimulating. I can not believe that this notion advocated lately, that alcohol is a depressant, and that its action can be explained along that line is correct. I look upon alcohol, like upon many other drugs, as exceedingly dangerous, but I should hate to discontinue its use because it is capable of doing harm, just as I should hate to discontinue the use of such a remedy as strychnia, or even some of the opiates, because they are capable of doing harm. Used in proper doses, and under proper circumstances, they all do a great deal of good.

DR. HILL, Milwaukee—That alcohol is, as it has lately been called, a narcotic, I think Professor Wood, in his vast work, has outlined it sufficiently well that we may understand it; a difference of opinion regarding the physiologic action of this drug, as in many others, being due to a difference between its influence when used as a therapeutic agent and as a toxic agent. Investigations which have led to the view that it is a narcotic or a soporific have been based on its use in almost lethal doses, and not in therapeutic doses.

There is another law in therapeutics which should be borne in mind in this connection, that any remedy which stimulates any nervous center will by its continued or excessive use produce paralysis of the same center. With these two suggestions in mind, I think we can readily reconcile the statements of those who consider alcohol a stimulant with those who consider it a paralyzer or narcotic. I think this drug, as clinical observation of many years has proved, is a most valuable stimulant, because when used in toxic doses it does produce other effects, constitutes no reason why he should cease employing it as a stimulant. Of course it has other effects; it has toxic effects; it has other effects in sepsis. Its dosage can not be given in drams nor in grams, for it is one of the remedies upon whose use the disease and the immediate condition of the patient have a wonderfully modifying influence.

DR. GROSVENOR—My chief object has been to show that experiments have been made which, to my mind, prove conclusively that upon the organs of special sense alcohol in these very small doses produces paralysis. By small doses I mean from half a dram to two dram doses. I am open to conviction if there is a scientific basis on which to prove that alcohol is a stimulant. Just because alcohol has, by our forefathers and great forefathers, been regarded as a stimulant, is no reason why we should regard it as a stimulant to-day. We are living in a new generation, and this subject of the action of alcohol on the human system has been revolutionized by men who are competent to experiment upon it and to carefully note the results.

SOCIETY PROCEEDINGS.

American Neurological Association.

Annual Meeting held at Philadelphia June 3, 4, 5, 1896.

The President, DR. F. X. DERGUM in the chair.

THE PRESIDENT delivered an address entitled

THE FUNCTIONS OF THE NEURON.

He dwelt at great length upon the various views advanced by Nansen and quoted several abstracts from this well-known author's work. Speaking of naked axis-cylinders, Dr. Dergum stated that they are in all likelihood a physiologic impossibility in the cerebrum: for were they numerous, we can suppose nothing but a constant overflow of stimuli from one cell to another, and consequent incoördination, not only of thought but also of action. This is the view advanced by Nansen. The speaker stated that the question had arisen in his mind as to whether the neuron was not an absolutely fixed morphologic element, and whether it did not possess a certain, though perhaps limited, power of movement. Continuing, he said: "Realizing the practical value and the wide application of this idea, I have examined the literature to see whether a similar interpretation of nervous phenomena has occurred to others, and to gather such facts, if any, as could be brought forward in its support. I found that this thought had occurred independently to three observers, one in Germany and two in France." Ramon Cajal, however, opposes the theory of the mobility of the neuron, and maintains, on the other hand, that the neuroglia cells possess a great deal of mobility. He points out for instance that the neuroglia cells of the cortex are at times stellate and at others much elongated. Their processes have numerous short arborescent and plumed collaterals.

Two phases can be observed in them, first a state of contraction, in which the cell body becomes augmented, while the processes become shortened and the secondary branches disappear, and secondly a state of relaxation, during which the processes of the neuroglia cells are again elongated. Ramon Cajal further maintains that the processes of the neuroglia cells in reality represent an insulating or non-conducting material, and that during the period of relaxation they penetrate between the arborizations of the nerve cells and their protoplasmic processes and render difficult or impossible the passage of nerve currents. On the other hand, when the processes of neuroglia cells are retracted, the various nerve cell processes which they formerly separated from each other are now permitted to come into contact. To me it seems as though Ramon Cajal admits the very thing against which he contends. Turning our attention for the moment to the subject of hysteria, we will see what a flood of light may be cast upon this hitherto so obscure and mysterious subject. Take the simple example of an hysterical paralysis and see how easily it may be explained. The neurons of a certain area of the cortex, for instance, retract the terminal branches of the neuraxis to such an extent that the latter are no longer in contact, or sufficiently near to the neurons in the spinal cord which supply the muscles of the paralyzed parts. When power is suddenly reestablished in hysterically palsied limbs, it simply means that the terminal branches of the cortical neuraxes, previously retracted, are again extended so as to reestablish the proper relations with the spinal neurons. It would be interesting indeed to follow out the ideas here brought forward in their application to the various phenomena presented by hysteria. Turning to hypnotism, we can see what a ready explanation it affords for the phenomena presented, and leaving this field entirely, we can see what an enormous value this interpretation of cortical action is for normal mental phenomena, taking for example the familiar instance of sleep. Numerous other ideas also suggest themselves in relation with the view here advanced, but time will not permit of my further discussing it.

DR. JAMES PUTNAM, of Boston, read a paper on

HEMORRHAGIC ENCEPHALITIS.

The author first referred to the literature of the disease. The principal symptoms of which are, 1, those described by Wernicke as due to hemorrhagic softening occasionally confined to the neighborhood of the third ventricle; 2, those described by Streumpell and others as attending more diffuse lesion of the hemispheres; 3, those connected with hemiplegia in children, which may be due to a similar lesion involving the cortex, as Streumpell formerly suggested. Osler has reported a number of cases showing that however grave the symptoms of this disease the outcome may be favorable. The author's case was that of a young boy who was attacked, two weeks after being ill with mumps, with paralysis of motion, of both eyes, deafness, coma and double optic neuritis. At the end of three months, however, he had recovered except for slight double vision and impairment of hearing. Ever since the illness he has been suffering from epileptiform attacks of short duration, but these attacks are gradually becoming less frequent. Reference was made to another case reported by the reader in 1892, where beside other serious cerebral symptoms, including double optic neuritis, temporary loss of hearing had also occurred. The cases reported by Osler were given in outline and the interesting fact noted that the cases referred to were like the one mentioned by Dr. Putnam, in children.

DR. L. C. GRAY said he would like to know if there was any retraction of the head in the case reported. His reason for asking was that some years ago he procured a book which gave an excellent description of what is now called hemorrhagic encephalitis and the remarks therein impressed him very much. He stated that he saw during his first ten years of practice four or five cases, all of which terminated fatally. In many cases the diagnosis is difficult and the prognosis is unfavorable even when the cases have seemed to run such a subacute course that you might think they would get well. Many cases are not susceptible to diagnosis except at the autopsy.

DR. B. SACHS said that the recognition of this form of encephalitis constituted a distinct advance in neurology. During the past year or two he had seen four cases, two in private practice which had terminated fatally and two hospital cases which recovered. One of the cases was hard to diagnose as to whether it was meningitis or encephalitis, but the one point on which he decided the case was that there was no tendency to coma. Encephalitis is a milder disease than meningitis, but the symptoms will vary very much. One of the cases seen by Dr. Sachs was interesting for the reason that the cerebral symptoms appeared the same day with the fever, the

former lasting for four days. In the speaker's opinion many cases have doubtless been reported as meningitis which were really cases of encephalitis.

DR. PUTNAM said that the prognosis in these cases was often very difficult to decide, and this view had been expressed by Oppenheimer. Fürbringer had mentioned that meningitis may be present with the encephalitis, in which case the differentiation would be difficult. Although some of the most violent cases have recovered, yet the repeated occurrence of coma is an unfavorable sign. If meningitis is present, bacteria will probably be there and the system will be flooded with the toxins and a great deal depends on how much poison is absorbed. The significance of retraction of the head probably is not known. He referred to a case of influenza in an elderly person who subsequently presented the symptoms of Jacksonian epilepsy on one side and he died at the end of the third day. Microscopically no lesion could be discovered, but the brain was edematous and here and there were areas stained yellow.

Abstract of paper by Drs. Jas. H. Lloyd and Joseph Sailer on a

CASE OF RAPIDLY FATAL CEREBRITIS RESEMBLING CEREBRO-SPINAL MENINGITIS.

The writers called attention to the fact that fulminating cases of the infectious diseases such as smallpox, scarlatina, measles, typhoid fever and spotted fever occur in which the diagnosis is exceedingly obscure and the disease is usually quickly fatal. These cases as a rule have their most marked symptoms in the nervous system. There is delirium passing into coma with depressed cardiac and respiratory centers, with high fever, and in the cases of the exanthema, often a purpuric or hemorrhagic eruption not always characteristic. These cases demand especially two things, first the determination of the exact effects upon the nervous system, and second, the determination of the microbe or toxic agent at work in any given case. The writers could only attempt the former study as the paper was not intended to deal with the bacteriology of the subject. The patient was a man aged 24 years who was taken suddenly with a chill followed by fever and intense cephalalgia and radialis. The patient passed rapidly into a condition of delirium merging into coma. Third nerve paralysis supervened, and on the third day a copious purpuric eruption appeared. This eruption presented ecchymosis and on the hands lesions like erythema nodosum. Blood and pus were found in the urine and vomiting of blood occurred before death. The patient died on the sixth day. The autopsy revealed disseminated local lesions in the cerebrum, mid-brain, pons and post-oblongata. Some migrated leukocytes in the perivascular spaces, little involvement of the membrane and a diffused nephritis. From extensive microscopic research the writers were able to report a disseminated local cerebritis. The infection had invaded the brain by way of the connective tissue structures, blood vessels, etc., and the nerve tissues proper were invaded secondarily. From the clinical standpoint the case probably comes under the head of "spotted fever."

DR. OSLER regretted that there was not more detailed reference to the condition of the kidney and referred to the readiness with which the diagnosis in these cases may be made. He stated that only last year, had it not been for the correction of his former impression, he would certainly have made a diagnosis of cerebro-spinal meningitis in a case of typhoid fever.

DR. J. J. PUTNAM stated that we may get the symptoms without the meningitis, it is certainly an addition to our clinical knowledge. To reinforce this fact may be mentioned that in diphtheria, although the characteristic symptoms had been present, some of the most recent observers had failed to find any lesion.

PROF. B. G. WILDER, of Cornell University, read a paper on THE ECTAL RELATIONS OF THE RIGHT AND LEFT PARIETAL AND PAROCCIPITAL FISSURES.

The parietal and paroccipital fissures may be either completely separated by an isthmus, or apparently continuous. When so continuous ectally there may still be an ental and concealed vadum or shallow. Disregarding the vadum on the present occasion, the ectal relations of the two fissures may be designated as either continuity or separation. That continuity occurs more frequently on the left side, has been noted by Ecker, Cunningham and the writer. Hitherto, however, statistics have included unpaired hemispheres as well as mates from the same individual. The following statement is based upon the cerebrums of fifty-eight adults of both sexes and various nationalities and characters. The speaker has examined forty-eight; the other ten have been accurately recorded

by Bischoff, Dana, Jensen and Mills. The four possible combinations of right and left continuity and separation occurred as follows:

1, left continuity and right separation in twenty-seven, 46.5 per cent.; 2, right and left continuity in twenty-two, 38 per cent.; 3, right and left separation in eight, 13.8 per cent.; 4, left separation and right continuity in one, 1.7 per cent. When five groups are recognized the combinations are as follows: A. In eight moral and educated persons, combination 1, 62.5; 2, 25; 3, 12.5; B. In twenty-three ignorant or unknown, combination 1, 56.5; 2, 34.8; 3, 8.7. C. In twenty insane, combination 1, 40; 2, 35; 3, 20; 4, 5. D. In four murderers, combination 1, 0; 2, 75; 3, 25. E. In three negroes, combination 1, 33; 2, 67. So far as these fifty-eight individuals are concerned, the most common combination, viz, left continuity and right separation, is decidedly the rule with the moral and educated, less frequent with the ignorant and unknown, the insane and negroes, and does not occur at all in the murderers. The only instance of the reverse combination (left separation and right continuity) is an insane Swiss woman. The only two known to be left-handed presented the more frequent combination 1.

These statistics suggest many especial queries and problems, some of which were briefly indicated. But the speaker wished this to be regarded as a preliminary communication, and asked the coöperation of other members in the effort to obtain satisfactory records of larger numbers, particularly of brains of well-born, moral and educated persons. For this purpose a blank form was outlined.

DR. THEO. DILLER, of Pittsburg, read a paper on

A CASE OF PROGRESSIVE MUSCULAR ATROPHY OF SUDDEN ONSET.

He related the details of a case which came under his observation three years ago, and stated that the sudden onset of palsy followed by atrophy and the absence of sensory phenomena led him to diagnose the case as one of poliomyelitis adultorum. The beginning of the patient's trouble was in an ophthalmoplegia. After an absence of two years the man again came under the speaker's care, when the atrophy and loss of power in the muscles had markedly increased. The biceps, triceps, scapular and ulnar groups had become involved and the finer movements of the fingers were lost, as was also the power of supination. At this time the patient was unable to put on or take off his clothing unaided. There was marked decrease in the response both to galvanism and faradism in the paralyzed muscles. Dr. Diller considered the case could be fairly regarded as one of progressive muscular atrophy, for the progressive feature was for two years the most important feature of the case. Ophthalmoplegia as a symptom of progressive muscular atrophy must be rare, for but scant references are made to it in literature. Strychnin had a very marked effect in staying the progress of the disease.

DR. WM. BROWNING, of Brooklyn, read a paper on

PITTING ABOUT THE HAIR CUPS: ATROPHIC CHANGE IN THE SKIN IN CERTAIN NERVOUS DISORDERS OF CENTRAL ORIGIN.

The author described a presumably hitherto unrecognized alteration in the skin. From seven or eight observations of such cases, he was able to give the limits of its recurrence. So far it has been seen only in progressive muscular atrophy of spinal origin, or any cases complicated with atrophy evidently due to cortical disease. In other affections attended by atrophy, such as infantile spinal paralysis, neuritis, pseudo-hypertrophy, etc., it has not been found. It is hoped that it may prove a useful help in differential diagnosis, especially between the forms due to peripheral and central disease. The change consists of an areola-like faint depression, frequently oval in the direction of the lines of the skin, though it may be irregular or circular in form about the exit of each hair. Usually the depression is a trifle paler than the surrounding skin, resembling, but not really being, a minute scar. It is not observed especially in hairy regions, like the scalp, but only over the seat of muscular atrophy, notably on the leg and thigh, although also on the upper extremity. All the cases reported had reached or passed middle life.

A CASE OF SYRINGOMYELIA, LIMITED TO ONE POSTERIOR HORN IN THE CERVICAL REGION, WITH ARTHROPATHY OF THE SHOULDER JOINT AND ASCENDING DEGENERATION IN THE PYRAMIDAL TRACTS.

By Drs. F. X. DERCUM, Philadelphia, and Wm. G. SPILLER, Philadelphia.

Three years after a strain of the back the patient began to suffer from pains in the legs, a band-like pain about the lower part of the chest, weakness in the lower limbs and a spastic gait. Complete paraplegia with contractions, more marked on the right side, wasting of the lower limbs, paralysis of bladder

and rectum developed later. Cutaneous sensibility was lost in the legs and upon the trunk as high as the nipple on the right side and a little above the umbilicus on the left. The sense of temperature was absolutely lost over the right arm, the right shoulder and the right side of the neck, and also upon the adjacent portions of the right side of the trunk above the nipple line. There was some analgesia of the right arm.

The right shoulder joint began to swell, and from rupture of the capsular ligament cellulitis with redness and local heat was produced, but with little or no pain. In extension the humerus assumed the position of a subglenoid luxation. Death was caused by exhaustion. At the autopsy the capsule of the right shoulder joint was found much thickened and roughened on the inner surface. The head of the humerus had disappeared, the bone having been eroded to some little distance below the surgical neck. A cystic tumor was found in the axilla, containing a friable fatty material. The surface of the glenoid cavity was much eroded, roughened and porous; it was abnormally large, and extensive bony deposit had taken place along its edges. The coracoid process exhibited a thick and firm accretion around its entire edge. Sections were made in the Pepper Laboratory from the level of nearly every spinal root and from many spinal ganglia.

By the microscopic examination degeneration was found of the crossed pyramidal tract as high as the substantia reticularis of the second cervical segment and of the direct pyramidal tract as high as the motor decussation upon the right side, and for a short distance of the crossed pyramidal upon the left. This was believed to be ascending on account of the following facts: 1, absence of any microscopic lesion above the medulla oblongata; 2, degeneration of the crossed and direct pyramidal tracts on the same side of the cervical cord, intense in the lower cervical region near the lesion and diminishing gradually in intensity in the cervical segments and finally becoming very indistinct in the upper cervical region; 3, absence of all degeneration in the anterior pyramids; 4, long duration of a chronic process.

While certain associative fibers may be considered degenerated in these columns, the entire antero-lateral column contains such fibers and the degeneration was notably in the area occupied by the crossed and the direct pyramidal tract. This ascending sclerosis is probably in greater part due to destruction of motor fibers deprived of their function.

Degeneration of the direct cerebellar tracts and of the tracts of Gowers was traced as far as the inferior peduncle of the cerebellum. Intense pachymeningitis was noticed from the second lumbar segment to the exit of the third dorsal roots. The arthropathy of the right shoulder was not due to any special changes in the cord or spinal ganglia. The posterior roots were not affected even where the pachymeningitis was most intense; the anterior at one part of the dorsal cord were degenerated. In the entire cervical region as high as the second cervical segment the cavity was limited to the right posterior horn. The gliosis extended from the extreme end of the conus terminalis to the second cervical segment. The microscopic examination explained satisfactorily the symptoms observed in life.

DR. HENRY S. UPSON asked if the degeneration was in the lateral column. In his opinion the degeneration might be susceptible of examination in two ways, first, that the short fibers might be effected by a lesion, and, second, that the degeneration might be in consequence of or merely coincident with the syringomyelia. The particular point is whether this can be made out to be an ascending degeneration.

DR. JAMES HENRIE LLOYD referred to the ease with which a diagnosis of syringomyelia can now be made. He referred to a case reported by himself in 1892 in which there was distinct arthropathy of the left ankle joint and there was also some ascending degeneration of the lateral tract.

DR. B. SACHS referred to the great variability in the symptoms if the cases are watched for a considerable length of time and stated that during the further course of the disease a number of the sensory symptoms will disappear, so that sometimes cases of syringomyelia will exist in which there is almost complete cessation of sensory function.

DR. M. A. STARR—Although admitting the ease of diagnosis, he gave the details of a case under his own observation in which he was undecided whether the patient was suffering from syringomyelia or hysteria. Judging from the objective symptoms he thought she had syringomyelia, but other than that it seemed to be a clear case of hysteria.

DR. J. J. PUTNAM referred to an interesting case of syringomyelia in which the disease began in the dorsal region. The patient's condition was much improved by an operation performed by Dr. Keen at the request of Dr. Putnam under the impression that there might be a tumor under the cord. The

cord was found enlarged and discolored as though it had been the seat of a tumor, but no tumor was found. He referred to the difficulty often experienced in diagnosing the disease in children.

DR. HUGH T. PATRICK observed that the direct cerebellar tract was not traced as high as the pons and said he thought it would give a false inference if it was not mentioned, that it extended this high. Personally, he traced it to the corpora quadrigemina. He referred to a case of this disease which had gone the rounds of London hospitals for years as a case of hysteria. He also stated that the French have called attention to the fact that syringomyelia and hysteria are particularly liable to be combined and they have also described acromegaly combined with syringomyelia.

DR. SPILLER stated that the degeneration was distinctly marked in the direct and crossed pyramidal tracts. The degeneration was the most extreme near the lesion and decreased gradually in ascending so that at the upper part of the cervical region it could hardly be found. As to the loss of tactile sense the symptoms vary according to the parts destroyed. If the posterior columns are destroyed, the tactile sense must be destroyed also.

(To be continued.)

Medical Society of the State of Delaware.

One Hundred and Seventh Annual Meeting held in Newark, June 9, 1896.

The President, DR. JAMES T. MASSEY, occupied the chair and there were about fifty members present.

DR. H. G. M. KOLLOCK made the address of welcome and called the attention of those present to the many important discoveries of medical interest during the past year. He made special reference to the Röntgen rays and said he hoped this would be but the beginning of a practical method to view all the organs of the body.

DR. A. T. NEALE read a paper entitled:

CONTAGIOUS DISEASES OF THE LOWER ANIMALS AND THEIR RELATION TO THE HUMAN FAMILY.

The author called attention to the fact that under the revised code of the Delaware laws the Governor has the power to proclaim an epidemic of disease among cattle, to forcibly take and kill live stock and take every precaution to protect the lives and property of the public without any recompense to the individual loser. Severe as this law appears to be, it is almost inoperative, for the live-stock owner quietly removes his dead, suppresses his suspicions, and an epidemic is established upon his own and the adjoining farms. If the present laws are practically inoperative, from their failure to recognize the rights of individual sufferers, if this State can legally acquire and circulate the information which makes the recognition of said interest possible, then it is clear that the present laws should be so amended as to give permission to the Governor to employ State funds in the interest of the individual, just as he is now empowered to use them in the employment of the sheriff for the protection from such epidemics.

DR. BLACK believed that about 20 per cent. of milk cows are tuberculous and that many of the summer complaints of children were due to this cause. He advocated the sterilization of milk and stated that it should be brought to the boiling point a second time.

DR. NEALE in closing stated that out of 1,000 cows examined in one year, 19 per cent. were found tuberculous.

DR. JAMES H. WILSON read a paper on

THE SOURCE AND CAUSE OF THE IRREGULAR FORM OF MALARIA.

The author stated that the term is synonymous with swamp or ague poison. Aitken speaks of paludal and of animal malarial poison and says that this toxic poison is capable of inducing certain morbid phenomena, known as intermittent and remittent fevers. Thayer and Hueston have reached the conclusion that the tertian type of fever depends on the presence of a parasite in the blood, which passes through its cycle of existence in about forty-eight hours. In regard to the estivo-autumnal fever, the same authors conclude that it is due to the organism described by Marchafava and Selly, but the existence of this parasite has not been followed out in a satisfactory manner. The main seats of infection are the spleen, bone marrow and internal organs. Dr. Wilson believes that the mode of infection of irregular forms of malaria are identical with those of the regular forms and that the admission into the system is similar. The typhoid malaria referred to by Dr. Woodward during the late Rebellion was typhoid fever complicated with malaria and this affection has been placed where it properly belongs by the clinical thermometer. The two factors necessary to the production of malaria are water insatura-

tion with protracted heat. The speaker narrated an instance which proved that the malarial parasite existed in drinking water both pure and impure.

DR. JUDSON DALAND, in discussing this paper, stated that while many cases, and probably the majority, are transferred to individuals through water, unquestionably many are carried through the atmosphere. Out of sixty or seventy cases studied by the speaker, 80 per cent. were of the ordinary variety. The speaker believed that many cases of malaria were instances of double infection, at the time the malarial intoxication was acquired another parasite was also taken.

DR. WM. C. PIERCE of Wilmington read a paper entitled

MALARIA WITH SPECIAL REFERENCE TO SOME OF ITS IRREGULAR FORMS.

The author spoke of the geographic distribution of malaria in the United States and Europe. He referred to the effect of the soil in producing malaria and stated that several species of the plasmodium may coexist and produce the varying types of the disease. He called attention to two cases of malaria which developed many years after they were supposed to have been cured and one case was especially interesting from the fact that it occurred five days after the termination of labor, the woman having had no malarial symptoms for some years previous.

DR. C. M. ELLIS referred to the fact that malarial poison passes through cycles the same as many other diseases. He demonstrated this by mentioning localities and time of the recurrence of malaria.

DR. JUDSON DALAND referred to the few cases in Pennsylvania as compared with the number seen in Maryland and surrounding country. It has been proved by Dr. Thomson of New York that typhoid may be complicated by malaria. Referring to the question of malarial cycles, Dr. Alfred Stille of Philadelphia formerly said the same thing at the time the malaria was prevalent along the Schuylkill River years ago.

DR. R. G. ELLEGOOD stated that many years ago when remittent fever was prevalent he had seen eight or nine persons suffering at the same time out of a family of fifteen. None of the cases presented any typhoid symptoms, but were typical cases of remittent malaria.

DR. R. B. HOPKINS read a paper entitled

THE TREATMENT OF MALARIA.

The author said in his opinion the reasons for this disease not being as prevalent as formerly are due to atmospheric changes, improved condition of the soil, better drainage and purer water supply.

DR. DALAND in referring to the diagnosis of malaria stated that the one pathognomonic sign of this disease was the existence of the malarial parasite. It lives forty-eight hours and during this time completely changes its appearance. It will enter a red blood cell, feed upon the contents and increase in size at the expense of the stroma. Nothing resembles this appearance in health or disease and the diagnosis of malaria is complete so soon as this parasite is discovered. Dr. Daland then referred to the theory that the rupture and disintegration of this body in the blood is coincident with the occurrence of the chill.

DR. MARSHALL reported a

CASE OF PERNICIOUS ANEMIA.

In this instance the diagnosis was difficult to determine between leucemia, Addison's disease and pernicious anemia. The patient was a bank teller, 33 years of age, who had a pulse of 120 and a temperature of 102 degrees when Dr. Marshall was called. The blood count at this time showed 1 white to 235 red, the red then numbering about 1,300,000. The diagnosis of pernicious anemia being thus confirmed, the patient was placed upon red bone marrow and arsenic and in a few weeks the red blood corpuscles numbered 2,500,000. In two weeks the count showed 3,500,000, and two weeks later 3,800,000. Three months afterward the count showed 4,400,000. The man continued to improve and is now back attending to his duties in the bank.

DR. C. M. ELLIS read a paper entitled

OBSTETRICAL COMPLICATIONS.

The author called special attention to the great danger of the convulsions of pregnancy before term. His experience included eight cases, occurring at different stages of pregnancy and showed clearly that when a convulsion occurs before term, unless it is of systemic origin, immediate delivery is imperative, without regard to the presence or absence of uterine contractions or the condition of the os as to dilatation. If the convulsion begins early, the uterus should be emptied by the most expeditious method and all medicinal treatment should be secondary to this one great object. This is necessary for the reason that the percentage of fatality from eclampsia is fully

50 per cent. This high death rate is greatly exceeded when the delivery is not accomplished or if it is delayed until several convulsions have occurred or until uterine contraction and dilatation have supervened. Of the eight cases seen by the author, five died and three recovered. Of the five that died premature delivery was effected, one on the sixth day after the initial convulsion, one forty-eight hours after, one eighteen hours after the first convulsion, three others having followed and the patient being moribund at the time and one lay in convulsion three days without any attempt at delivery. The experience gained from these eight cases would certainly justify premature delivery.

DR. ELLIS had never seen a death occur before delivery after the operation had been initiated and he believed the uterus should be evacuated immediately after the first convulsion. When albumin appears in the urine the more imminent is the danger of eclampsia and if this accident is threatened, it may be necessary for the attending physician to hasten delivery without waiting for the convulsive seizure. The speaker denounced the indiscriminate use of morphia hypodermatically in cases like these.

DR. GEO. M. BOYD of Philadelphia—As to the treatment from a medicinal standpoint, he recommended chloral by the rectum. He believes the mortality depends largely on the kidney lesion, as many cases of eclampsia during labor are the result of interstitial nephritis before pregnancy.

DR. P. W. TOMLINSON of Wilmington, mentioned a case in which twenty-four ounces of blood were drawn and decided improvement followed.

DR. E. S. DWIGHT read a paper entitled

CARDIAC DISEASES AS ENCOUNTERED IN CENTRAL DELAWARE.

He said that frequently commencing heart lesions were evidently due to the absorption of some morbid product through the abraded service of the bladder. He believed the ulcerative endocarditis had been the cause of death in one of his cases of eclampsia and he is of the opinion that where ulcerative endocarditis can be recognized before embolism has occurred, it is important that the patient should be kept in a recumbent position and as quiet as possible.

DR. H. J. STUBBS of Wilmington read a paper entitled "Three Cases of Appendicitis, one of Unusual and Fatal Complication," in which he related the details of the three cases and stated that a pin had been found in the appendix of one of the cases. He strongly recommends prompt medical and surgical treatment.

WM. P. ORR of Lewes was elected president; WILLARD SPRINGER of Wilmington, vice-president; P. W. TOMLINSON of Wilmington, secretary; and WM. C. PIERCE of Wilmington, treasurer for the ensuing year.

The society adjourned to meet in Rehoboth in June 1897.

Medical Society of the State of Pennsylvania.

Forty sixth annual Session of the Medical Society of the State of Pennsylvania, held at Harrisburg, May 19 to 21, 1896.

(Concluded from page 1227.)

At the afternoon session Dr. Judson Daland of Philadelphia, read a paper illustrated with lantern slides, "Certain Forms of the Malarial Parasites."

DR. L. J. LAUTENBACH of Philadelphia, read a paper,

PHONO- AND PNEUMO-MASSAGE FOR SUPPURATIVE DISEASE OF THE EAR.

In cases of middle ear suppuration there are three aspects from which the subject of the treatment must be studied. The first of these is the prevention of the inflammation; the second which is to some extent included in the first, is the subjection of the inflammatory condition and the healing of the diseased parts, while at the same time stopping the ear discharges; the third, is to some save the hearing or to restore it when impaired. I hope in this paper to so present the subject of massage as applied to suppuration cases, that you will be convinced that in connection with our older and well tried remedies, it is a valuable aid in treatment, but there is a sphere which it more thoroughly fills than any other remedy or remedies. In all cases of suppuration, acute or chronic, it is necessary to cleanse the ear as thoroughly as possible of all retained secretions. There is no doubt that if the middle ear cavity were kept constantly clean, the inflammatory condition would often subside very quickly. To remove these discharges, I use my pneumo massage instruments in connection with wet or dry cleansing. I first treat the ear according to the present methods and when I consider it fairly clean, I use an exhaust apparatus with a pressure of from 2 ounces to 4 pounds per square inch for from 3 to 10 minutes, employing about 300 exhausts per minute. Then I again thoroughly cleanse the ear with cotton

and if I am at all suspicious of there being more suppuration present, I again apply the exhaust pump. After thus cleansing the ear, I use drying and stimulating preparations in the usual manner. Often in simple cases after cleansing the ear, I lightly plug with cotton using no other treatment. Pneumo or suction massage thus applied fulfills in part all three of the treatment indications, preventing the extension of the disease, favoring the subsidence of the inflammation and improving or saving the hearing. It accomplishes these three indications by the complete cleansing occasioned and in addition, the last of these by the thorough kneading movements produced in the conducting apparatus, preventing loss of functional activity and relieving pressure on the internal ear. We can by means of suction massage thoroughly applied (often and sufficiently long) break up these ankyloses, stretch and cause absorption of the bands, break the adhesions and often reduce the thickenings and growths of the mucous tissues and heal the ulcerations. By bringing about these results we succeed in restoring to the conducting apparatus its normal function. During this process we usually succeed at the same time in relieving the abnormal pressure on the internal ear. By the use of phonomassage we can, as elsewhere pointed out, stimulate the auditory nerve ends to renewed activity. I no longer tell my patients that as the discharge ceases the hearing will probably grow worse. I no longer find it to be so. I find the hearing almost invariably to improve as the treatment progresses. Of course, under the old method the hearing often did grow worse; no effort being made to prevent the organization of the exuded lymph; there was an entire lack of any treatment employed to overcome the bad effects of the abnormal healing processes; the ossicles became ankylosed, and adherent to adjacent structures; the drum head formed attachments; nothing was done to prevent the stapes being jammed into the oval window; no steps were taken to prevent adhesions, nor was it considered necessary in any way to normally stimulate quiescent auditory nerve endings. In fact, all that was done to soothe, cleanse and heal the ear was perhaps the occasional use of the Politzer inflation. My method provides for the relief of all these conditions and by a rational common sense treatment endeavors to overcome all, and I am satisfied that it does so measurably well, as my results to-day are infinitely better than before its introduction. The results both as concerns the cure of the suppuration, the length of time required therefor, as well as in the degree in which I succeed in restoring the hearing being conclusive proofs in this direction.

My conclusions are briefly as follows: Pneumo-massage aids in the prevention of extension of inflammation as well as in the subsidence of the inflammatory action through the aid it affords by thoroughly cleansing the middle ear of all the discharges, thus relieving the excessive tension, thus preventing infiltration and disintegration of ear structures with consequent extension to the internal ear or mastoid cells or both. Pneumo-massage preserves intact the normal sound conducting structures and restores them when ankylosed or abnormally attached or when restricted in their movements to a condition more nearly natural than can be attained by any other method. Pneumo-massage relieves the increased pressure on the internal ear so often observed as the cause of deafness in these cases. Phono-massage restores, at least in part, to the internal ear structures their normal receptiveness by occasioning a physiologic stimulation of the nerve endings and their connecting parts which had either from disuse or increased pressure been placed in a dormant or non-responsive condition.

DR. E. W. HOLMES of Philadelphia, read a paper, "Cerebral Concussion and Compression," with a report of a case trephined.

DR. ERNEST LAPLACE of Philadelphia, read a paper on "Surgical Treatment of Insanity," with a report of cases. Both these papers showed good results from the operative procedure.

The committee on the Jefferson Medical College Hospital reported that they had learned that the advertisement had been published without the knowledge of the gentlemen whose names appear and it was their belief that the matter having now come to their notice would be so arranged by them as to fully comply with the Code of Ethics. The committee deprecated the action of persons who by having copies of the advertisement printed and distributed in the hall of this Society had made it appear to have more the interest of the individual than the welfare of the Society. The report gave much satisfaction and was adopted with few dissenting voices.

DR. A. O. J. KELLY of Philadelphia, read a paper,

THE SIGNIFICANCE OF MURMURS IN THE DIAGNOSIS OF VALVULAR DISEASE OF THE HEART.

The study of the exact significance of murmurs in the diagno-

sis of valvular disease of the heart may not inappropriately be prosecuted by arranging our cardiac cases into three distinct classes: 1, cases in which the presence of a murmur assists in the diagnosis of some valvular lesion; 2, cases in which, despite the presence of a murmur, valvular disease may not be diagnosed; 3, cases in which valvular disease may be diagnosed without the detection of any murmur whatever. The actuating motive of the communication is therefore that a murmur alone, that is, without corroborative evidence, is never diagnostic of any valvular lesion of the heart. We must always precede our examination of the heart by a thorough physical examination of the lungs and pleurae. Considering murmurs we must determine the murmur to be of endocardial origin, eliminating all question of exocardial genesis. The so-called mitral systolic murmur at the apex is usually considered diagnostic of mitral incompetency. But a similar murmur in the same area may be due to anemia, or be of cardio-pulmonary origin. And the murmur of mitral insufficiency may be heard with greatest intensity up toward the pulmonary cartilage. The organic murmur, as well as the inorganic, is subject to postural influences and in certain conditions may be absent. The apical diastolic or presystolic murmur of mitral stenosis is neither as strictly localized to the apex, nor as pathognomonic of the condition as is generally supposed. A presystolic murmur at the apex may not only be due to a mitral stenosis, but may likewise owe its origin to an aortic incompetency or an adherent pericardium. A mitral stenosis may frequently be diagnosed without the detection of any murmur whatever, especially when there is heard a reduplication of the second sound at the apex and not at the base of the heart. Exercise care in the diagnosis of single lesions at the mitral orifice, they are of rather infrequent occurrence. The aortic diastolic murmur of aortic insufficiency may be mistaken for a transmitted bruit from the veins of the neck, and may often be absent, or if present be accompanied by an aortic systolic murmur without there being present any aortic stenosis whatever. An aortic systolic murmur is not diagnostic of aortic stenosis. In making a diagnosis of any valvular lesion we must demonstrate the physical signs other than the murmur which attend upon the lesion; hypertrophy and dilatation, accentuation or absence of the normal heart sounds at the apex and base, pulse, examination of the veins, auscultation of the arteries, etc. This pertains to valvular disease of the right as well as of the left side of the heart. Because of the complexity of the conditions in cases of combined valvular disease the diagnosis is more difficult, but is based upon similar principles. It is not the character of a murmur, nor its area of distribution, nor its direction of transmission, that determine its value in the diagnosis of valvular disease. These are subordinate to the time of its occurrence and the site of its production. Murmurs are usually present in cases of cardiac valvular disease, so also is albumin present in the urine in the event of nephritis, but neither is pathognomonic of the condition which they attend, they both require confirmatory evidence. We must devote more attention than is usually accorded to the other and important physical signs of valvular disease of the heart. The murmur is but one element in the diagnosis, the least important.

DR. W. T. ENGLISH of Pittsburg, read a paper,

THE ABUSE OF DIGITALIS.

A vague idea exists that this drug is a cure for heart disease, hence the abuse in its employment. Much variation exists as to the dosage owing to the variety of forms, now the tincture, now the infusion, the powdered leaf, etc. The tincture should be employed for its tonic effect. The infusion is a diuretic. Both may be combined. The objection to the leaves is that they are not readily assimilated. It is employed indiscriminately as a diuretic in Bright's disease. It is often forgotten that its effects are slow in coming as well as deliberate in leaving. It is fool-hardy to use it in chronic nephritis accompanied with high peripheral pressure. It is forgotten that in moderate doses it stimulates the musculo-motor portion of the heart, increases the action of the inhibitory apparatus, etc. In those whose vocation forces them to the extreme of exertion, the heart becomes muscular in proportion. Such use of digitalis is a sin against the heart, a goad to a loaded organ. In palpitation due to neurosis conditions its use may convert it into an incurable disease. One fault is to give it without telling the patient to abstain from exercise while under its influence. Such persons should live in perfect physical and mental quiet. In malformation it is contraindicated. In mitral regurgitation there is a time when it is valuable.

DR. W. REBER of Pottsville, read a paper,

THE CORRELATION BETWEEN THE IRIS AND THE PATELLAR REFLEX TENDON.

He considered the frequency of association of the iris and

the patellar tendon reflex, especially in tabes. It will reflect the different views as to the nature of the true primary lesion in tabes, thereby also considering the lesion that brings about joint and frequently coincident involvement of both these reflexes. In this way we hope to show that the original change is a vascular one, setting up a starvation process in consequence of which the cerebro-spinal activity is obtunded (a condition not infrequently observed in tabes), and abolition of the iris and patellar reflex naturally follows.

The President then thanked the Society for the many courtesies which had been accorded him while in the chair and appointed Drs. McCandless and Detwiler to escort the President elect to the platform.

DR. E. E. MONTGOMERY of Philadelphia, then assumed the chair as President and thanked the members for the honor done him in this election.

DR. B. A. RANDALL of Philadelphia, read a paper,

SIMPLE AND EFFICIENT TREATMENT OF CHRONIC CATARRHAL DEAFNESS.

These cases are the reproach of aural surgery. To many, ear diseases appear an unknown and unknowable land. These are one-third of the surgeon's work. In the majority decided gain will follow rational treatment, no elaborate apparatus is needed. The naso-pharynx from which the affection proceeds must be gotten into better condition. Vigorous spraying with an alkalin fluid as Dobell's in the hand, atomizer cleanses the vault, then mopping the region of the mouth tubes, etc., with the bent applicator charged with glycerole of tannin or of iodine. An oil spray can follow with advantage, say menthol-camphor 1 to 2 per cent. This gives a protecting coating to denuded surfaces and medicates the cavities with a stimulating disinfecting vapor and lubricates the nose for the easy passage of the catheter. Massage with the pneumatic speculum should complete the process. The possibilities of harm are at a minimum and a year will show decided benefit. Often patients with a record of no benefit, have gone ahead most flatteringly under this and he had found old cases of his own give evidence of its potency.

All the papers, of which there were quite a number which had been omitted for want of time, were on motion declared as read by title and referred to the committee of publication. Votes of thanks were adopted to all who had aided in making the meeting so enjoyable. A motion was adopted for a committee to report as to the advisability of meeting every 2nd or 3d year at Pittsburg, Philadelphia or Harrisburg and to found a museum and library for the State Society. The History of the Society ordered to be prepared last year by the secretary was called for and the secretary announced that it would be ready and be printed with the Transactions. The State Board of Medical Examiners asked permission to print its report of those licensed in the Transactions. Granted.

The President appointed to prepare the addresses for next year: On Medicine, Dr. W. E. Hughes, Philadelphia; on Surgery, Dr. J. Chalmers DaCosta, Philadelphia; on Obstetrics, Dr. J. M. Baldy, Philadelphia; on Hygiene, Dr. A. P. Brubaker, Philadelphia.

The Society then adjourned to meet in Pittsburg, third Tuesday in May, 1897.

Kentucky State Medical Society.

(Concluded from page 1232.)

Forty-first Annual Meeting, held at Lebanon, June 10-12, 1896.

FIRST DAY—EVENING SESSION.

The President, DR. JOHN A. LEWIS of Georgetown, delivered the President's annual address. He referred feelingly to the honor conferred upon him by his election to the presidency by his confrères, and extended a warm welcome to the brilliant audience assembled. He stated that while casting about for a subject for discussion he happened to read of that old-fashioned doctor in Bonnie Briar Bush, by Ion Maclaren, and he chose the "Prolongation of Human Life." Life must surely be lengthened by the right way of living. Three questions are to be propounded: 1. Is it desirable to prolong life? The "mugwumps" of life pity that class who answers, "No," to this question. Accompanied by decrepitude prolonged life would not be desirable. A most potent reason for desiring prolonged life is wisdom. William E. Gladstone is the best living example of this reason. When he speaks the world hears and profits. Emperor William I. of Germany, a magnificent personage, unified Germany by wisdom and arms and lived 91 years. Robert Louis Stevenson, the gifted fiction writer, whose young life went out in Samoa where he went for life, was glad to live for the living. A mind of treasure was lost with the

death of Pasteur. Whatever is true of all these may be true of everyone no matter how humble. Why is life so short? What a vast difference between the limit of Moses' time and our three score years and ten! We are violators of laws of health in ten thousand different ways. What part has disease played in shortening life? It is not sent by divine source to harass mankind. Nearly all are caused by man's own violation of laws. Specific diseases sprung from long existing unhygienic surroundings, and man is largely responsible for existence of disease. How far is heredity responsible for disease existing? Robust health is transmissible from father to son; on the other hand the tendency to tuberculosis, etc., being transmissible, is indisputable. Scarcely one of us can boast a clean bill of health and this is due to heredity alone. This can and should be prevented. It is beyond law, but not public opinion. Heredity should be talked of from pulpit and in the home; the iniquities of transmission to three and four generations. Can any agencies lengthen life? Man can do everything to prevent disease. Cleanliness surely is next to godliness. Pure air and water, employment and reaction, rest and exercise, are all essentials. Dead must be cremated, dwellings properly ventilated; people will live longer out of doors than in crowded dwellings. There is no health without pure water; it should be filtered. Live abstemiously. Man is a reckless eater; 80 per cent. eat twice as much as required to live. Whisky and tobacco are both to go. Our habits of life must be modified till men do not wear their lives out trying to live. Gospel of long life should be heralded by every means possible; by press, pulpit and people. Physical culture and physiology should be recognized in all schools. Our State Board of Health has done great work for our State health. Gladstone said: "Medicine is the most progressive science in the world." Physicians must mold sentiment, as such and as philanthropists, but must demand in return the support and confidence of the people.

DR. J. B. MARVIN of Louisville, delivered an address upon
CONTAGIOUS AND INFECTIOUS DISEASES.

There has been a steady progress upward and onward. We know more of hygiene than formerly. This is a microbe age; people are sick about them. The vast majority of microbes are harmless; many are of the greatest good. The few that are harmful can be counted on the fingers; but they are very harmful. They are not bugs; far from it. The newspapers have ridiculed germs under this name. The laity are to be instructed by the doctor in regard to the life history of germs, and in turn are of great help to the doctor. Seed, soil and season are necessary for the growth of all germs, the sum and substance of the teaching of modern medicine. In speaking of consumption he described the organism, the seed and the soil. The ladies can inaugurate a reform in the iniquitous habit of spitting. Stop promiscuous kissing of children; be a great help to the doctor. Bring public opinion to bear upon carriers, steamboats and railroads. Become nose breathers, for the nose is a great filter. Typhoid fever is an eminently preventable disease; what a source of evil is an infected water supply. Not so much bad air, but bad water is very frequently responsible for malarial fever. Diphtheria is frequently a disease of neglect. Proper inspection of throats, breakage of slates, stoppage of common drinking cups in schools, Sunday schools and public places. The best disinfectant is fresh air and plenty of it, and likewise sunlight. Like sin these organisms like darkness and flourish there.

SECOND DAY—MORNING SESSION.

DR. HENRY E. TULEY introduced the following resolution: WHEREAS, Resolutions concerning vivisection were passed by the AMERICAN MEDICAL ASSOCIATION at Atlanta, therefore be it

Resolved, That the resolutions mentioned and published in the JOURNAL of the AMERICAN MEDICAL ASSOCIATION express the sentiments of the Kentucky State Medical Society and that our secretary be requested to send copies of these resolutions to the senators and representatives in Congress from our State. On seconding by Dr. J. A. Larrabee this was unanimously passed.

Delegates from the Kentucky State Pharmaceutical Society were received and invited to a seat on the platform.

A communication was read from the secretary of the Mississippi Valley Medical Association, inviting the members of the State Society to the meeting of this Society at St. Paul.

A communication was received from Surgeon General Sternberg requesting action by the State Society on vivisection covered by the resolution offered by Dr. Tuley.

Committees were appointed by the President on Necrology and upon Legislation to influence the legislature in behalf of the anti-abortion law.

A report was received from the committee appointed at the last meeting to "Collect and Codify" the Constitution and By-Laws of the Society. On ruling of the President, as the Committee had revised the Constitution contrary to the resolution by which the committee was appointed last year, the discussion was deferred one year.

DR. W. H. WATHEN of Louisville, opened the discussion on hysterectomy by reading a paper on

VAGINAL HYSTERECTOMY.

In support of this method the following reasons were offered: 1. There is less shock and more rapid and complete convalescence, the patients usually sitting up within a week and walking a few days later. 2. In pelvic suppuration there is less danger of septic infection from soiling the peritoneum. 3. Absence of suture or mural abscesses and of sinuses following the use of drainage or infected ligature. 4. Immunity from ventral hernia. 5. A lower mortality, fewer post operative complications, and a more complete restoration to health in a relatively greater number of cases.

DR. A. M. CARTLEDGE of Louisville, read a paper on the opposite operation,

SUPRA-PUBIC.

Each method has its indications and limitations. The most perfect operation is that which the most perfectly removes the pathological condition, other things being equal. If to leave diseased ovaries and fragments of pus tubes, or one ovary or the shell of a diseased uterus after the heart has been dug out or cut is perfect surgery, and surgery that will stand the test of time, then statistics of vaginal hysterectomy show better results than the abdominal method. The combined method in many cases is indispensable. Abdominal hysterectomy finds its only objection in the fact that it entails an incision through the abdominal wall. In myomatous tumors amputation is done at the cervix. If infection is present the entire organ is removed. Drainage by the vagina. In case of growths, the small button of cervix is cauterized and dilated from above and a small strip of gauze carried through to drain the dead space resting between the closed peritoneum above and the otherwise closed cervix below.

DR. LOUIS FRANK of Louisville, read a paper on

OPERATIVE PROCEDURES FOR PELVIC INFLAMMATION.

In all operative work aim must be to obtain the best results to the patient, sacrificing as little as possible and to do this with the least possible danger. A thorough knowledge and appreciation of the pathologic processes which occur in the pelvis, with the changes resulting when these processes have run their course, is essential in order to properly appreciate the condition with which we have to deal. The operation of vaginal hysterectomy and vaginal celiotomy for pelvic disease has come to stay. With many it is a fad. The indications however for the vaginal operation should be and are secondary to those for abdominal section. A complete operation by the vaginal route is difficult as adhesions are left behind, portions of tubes, etc. Sacs fill up if left after this operation. When quick convalescence is spoken of it is only of surgical convalescence, never allow them to get up before end of second week. Sequelae more frequent after vaginal operation. More cases of fecal fistula and of vesical fistula; complications often go unseen. Ureters are often ligated and clamped. Hernia should not occur in properly closed abdominal wound, hernia do occur after vaginal operation, and which is easiest to treat. This operation is to be preferred in some cases, chief of which is the septic condition following puerperal cases. Other cases are best treated by combined method.

DISCUSSION.

DR. L. S. McMURTRY of Louisville—The correct position is midway between extremes. The pelvic operation is not a new one; Battey practised it in his first operations, and pelvic surgeons have never discarded this route as a mode of attack. This is especially true of severe cases which will not permit thorough operation by abdominal route; drainage is obtained through the vagina. It is necessary in pelvic surgery to do the operation by the method which obtains the best result; where there is the greatest preservation of structures compatible with good surgery; and to do that operation which will result in a complete cure not making it necessary to do an additional operation. The field for the vaginal operation is in conditions of inflammation of pelvic organs, not for fibroids; also in post puerperal cases where the uterus is septic and the surrounding tissues also, which is quick in development. The vaginal operation has been introduced into this country as a fad, and has been carried to an extreme as was the operation for ovariectomy when first introduced. The great advantage in pelvic surgery is knowing what has been done and to treat the convalescence

intelligently. No abdominal surgeon can indicate with precision what is the condition. When any organ is taken out by the vagina it is taken for granted that it is all out, that all pools of pus so often walled in by intestinal adhesions, are evacuated. Asepsis is more difficult to maintain as the field is between two sewers of the body and the bladder and rectum are more frequently injured. The majority of operators say that the abdomen had to be opened before the operation was completed. There is a field for the vaginal operation, but it is a narrow field.

DR. W. C. DUGAN of Louisville—If much fixation is present the abdominal route should be selected. Cannot tell where the adhesions are located when operation is done from below, one is working in the dark. Often have to leave an ovary or portion of one and the operation is not complete. The patient must be left for a second operation or a combined one done. The pus in ordinary gonorrheal pus tubes in 90 per cent. of cases is innocuous. The patient after any operation, either abdominal or vaginal, should stay in bed two or three weeks, and if this was insisted upon there would be fewer cases with an infiltration in the broad ligament. Time is not a factor and this argument should not be used. With the clamp, accidents do occur; they slip if put on high up.

DR. W. H. WATHEN said that two years ago he was as much opposed to vaginal hysterectomy as they who had opposed it in discussion. The same objections would not be urged if these men would do the operation. He had wounded the intestine above but once.

DR. A. M. CARTLEDGE stated that he expected to see the men retreat and the pendulum swing in the other direction. It is almost suicidal to allow these patients to get up in ten days after the operation. Fecal and urinary fistulae is much more common in vaginal operation because one can not see work done, it is in the dark.

DR. LOUIS FRANK said that none opposed the operation of vaginal hysterectomy, but it was to the indiscriminate use of it. In sub-peritoneal fibroids there is no use of doing a hysterectomy as it can be removed by doing a myomectomy.

DR. M. F. COOMES of Louisville exhibited a case upon which an operation of gastrostomy had been done, the tube being still in situ. The child had swallowed lye, a stricture resulting, for six days it had not swallowed anything. It was fed by rectum for twenty-four hours preparatory to operating. The valve operation was done and there never was any leakage until two weeks ago, when after playing violently the tube had been misplaced. The child can swallow milk and water, a little at a time now. No dilating of the esophagus has been done.

Here followed a paper by Dr. R. B. Gilbert of Louisville, on

THE CARE OF PREMATURE INFANTS.

Statistics show 20 per cent. of infants born at sixth month have survived; 35 per cent. at seventh month and at eighth month 85 per cent. It is too often the custom to turn premature infants over to old women, without any attention. A physician is inexcusable if he allows a premature infant to die from sheer neglect. To preserve their life especial attention must be paid to the maintenance of bodily temperature, proper feeding, prevention of injury by handling. Maintain temperature at 100 degrees, evaporation of moisture goes on from body no matter how closely wrapped in cotton or clothing. Incubator is best method of maintaining bodily temperature. The one recommended consists of two tin boxes, with two inch space between for warm water. Water heated by coal oil lamp placed under small copper water box connecting with water chamber by small pipes. The top of the box is open to allow infant air and light. Any tight box may be improvised. Feeding is important, mother's milk best; gavage may be used. A mixture which has proved successful in author's hands is as follows:

Sweet milk, fresh	$\frac{3}{4}$ ij	60
Cream, fresh	$\frac{3}{4}$ ij	90
Warm water sterilized	$\frac{3}{4}$ x	300
Sugar of milk	$\frac{5}{8}$ j	4
Common salt	9 j	130

Above diluted for premature infant. Anoint infant after birth with warm lard, vernix to be wiped off; no water used at first cleansing. Premature infant not washed until three weeks of age.

DR. ARCH. DIXON, Henderson, reported

A CASE OF PLACENTA PREVIA.

The patient was six months pregnant, had a severe hemorrhage, a placenta previa was found, the membranes being intact. She had had two previous attacks of bleeding. Membranes were ruptured, feet brought down and after coming head delivered by short forceps. The mother rallied and made a

good recovery. The fetus was living though asphyxiated. It was eleven inches long and weighed a fraction over two pounds. It was swathed in cotton and surrounded by hot water bottles. In lieu of an incubator it was placed in a wool bag containing hot water bottles, it was fed by dropper on mother's milk. The child thrived and grew and to-day is one of the prettiest babies in the State, at four months weighing eight and one half pounds.

DR. T. B. GREENLY of Meadow Lawn, read a paper upon

RESUSCITATION OF STILLBORN INFANTS.

In the practice of fifty years only three or four cases of still birth could be recalled, save those which had to be eviscerated. Cold water thrown on face of asphyxiated infant, placing in water, temperature of 115 to 120 degrees, and artificial respiration. Considerable time may be spent in latter. Marshall Hall's and Sylvester's methods recommended, retraction of tongue, wiping out mucus in mouth. Schultz's swinging method frequently successful.

DR. J. A. LARRABEE, Louisville—The remarkable tenacity of infants to life must be noticed at a time when resuscitation must be done. The best method is that of Credé. Marshall Hall's method is rarely properly applied, the artificial respiration being too often made.

DR. J. G. CARPENTER, Stanford—A method used which is of service is to take hold of tongue with forceps. Invert patient on head and employ artificial respiration.

DR. JNO. G. CECIL of Louisville—The case presented by Dr. Dixon is one of extreme interest, it was surrounded with the gravest complications and it should go down on the annals of obstetrics as simply wonderful. The subject of incubators is certainly interesting and this treatment has been much neglected. There are several reasons why children do not breathe promptly, it is frequently because they strangle from mucus in the mouth. All artificial respiration may fail if this is not removed. It can be removed by a catheter introduced into naso-pharynx and larynx and drawn out by mouth. A child delivered by forceps after long labor suffers from a congestive asphyxia and if the cord is cut and allowed to bleed the blood pressure is relieved.

DR. R. B. GILBERT of Louisville, in closing the discussion said that a tobacco smoker or user may kill child by blowing nicotin in air passages of child when insufflation is practiced. Dr. Dixon's case is remarkable.

AFTERNOON SESSION.

The following papers were read by title: "Eye Strain," by Dr. P. Richard Taylor of Louisville, and "Punctured Wounds of the Eye," by Dr. A. G. Blincoe of Bardstown. Dr. J. G. Carpenter of Stanford, read a paper upon "Appendicitis with Purulent Peritonitis."

DR. R. D. PRATT of Shelbyville, read a paper entitled

A STUDY IN APPENDICITIS.

He reported fifteen cases, twelve of which recovered without operation, three died, one without operation, two after. Only four cases were in females, age from eleven to sixty years. Recurrence occurred in four cases. All cases are not believed to be surgical. They may be so considered in larger cities, but not so in small towns or country. No one should go into cavity without special training. Surgical cases represented as those in which, 1. There is rapid destruction of appendix and quickly developing septic or purulent peritonitis. 2. Moderately severe onset in which the symptoms do not yield in few hours to treatment or gradually getting worse indicating peritonitis or sepsis. 3. Cases with initial symptoms which rapidly disappear, there persists a condition simulating a pyemia or septicaemia. 4. In the recurrent cases where attacks are getting more and more frequent. Saline treatment should always be used, never opium. But abscess may be ruptured by increased peristalsis.

DR. F. N. BAUGHMAN of Flat Lick—Nearly all surgeons tell too much about how to do the operation and leave too much for granted as to the after-treatment. Aristol is an excellent remedy to use to prevent re-adhesions when put over inflammatory surfaces. As to drainage, aseptic gauze is the best we have. To prevent hernia the Halsted woven wire suture should be considered.

DR. A. M. CARTLEDGE of Louisville—Appendicitis is evolved by series of lesions. Is a case well when abscess ruptures in intestine? They subsequently have trouble due to the appendix abscess filling up, giving a train of symptoms generally thought to be recurrent appendicitis.

DR. H. H. GRANT of Louisville—Too little is thought of appendicitis; in all cases of this trouble it is a foreign body inflammatory, suppurative and gangrenous. It is removed safely and easily if under favorable conditions and if instituted

early little harm can come, but it is generally fatal if there is neglect to do so.

DR. ARCH. DIXON of Henderson believes that appendicitis is an acute septic, infectious disease from the start. It is the duty of the physician as soon as diagnosis is made to call surgeon and do the operation. It is a surprise to see Dr. Hunter McGuire say that it is best to wait and see what the patient will do. Operate as soon as the diagnosis is made.

DR. J. G. CARPENTER of Stanford—Pus in the abdomen demands prompt surgery. Patients however do recover without operation. Conservative surgery is what is needed, not meddlesome surgery. No reason why the general surgeon should not operate. The drainage tube and gauze are both good as drainage.

DR. R. D. PRATT of Shelbyville stated that few general practitioners are capable of doing an abdominal operation; these should be relegated to the specialist. All cases of appendicitis are not surgical; of the twelve cases, twelve recovered with medicinal treatment, one case following rupture of abscess in intestine, and in three years had no recurring attack. Opium should never be given unless absolutely necessary.

A paper was read by DR. AUGUST SCHACHNER of Louisville, on "Transfusion, Infusion and Autofusion."

DR. J. C. CARRICK of Lexington, contributed a paper upon

GONORRHEA IN THE FEMALE AND ITS TREATMENT.

The discovery of the gonococcus has been a great help in study of this disease. Gonorrhea in female has a tendency to pass through rapidly acute stage into the chronic. These patients are generally sterile, they have great discomfort and pain and health is impaired. There is an exudative inflammation of the submucous connective tissue; blood vessels undergo abnormal enlargement. In treatment disinfect urethra, peri-urethral glands, Bartholin glands, vagina and uterus, with rigid antisepsis.

DR. C. B. SCHOOLFIELD of Dayton read a paper on
CHOLELITHIASIS.

The predisposing causes are invalidism child-bearing and abdominal tumors. They are formed in gall bladder and hepatic duct, principal composition is cholesterol and epithelium from mucous membrane and occasionally bilirubin. They may number one or a thousand. First intimation of gallstones is usually biliary colic, lancinating tearing pain located over right hypochondriac and epigastric region. Gastric symptoms usually most prominent, pain greatest when food passing from stomach into duodenum. Jaundice occurs in only about 50 per cent. of cases. Movable kidney difficult to differentiate. Kidney movable, pain follows ureter. Medical treatment give remedies which increase rapidity or flow of bile; course of treatment at Mineral Springs recommended. Surgical treatment, when demonstrated beyond a doubt; the case is not medical but becomes surgical at once. Before obstruction of ducts cholecystotomy is one of the easiest operations, and one of the most successful. If obstruction occurs it is difficult and dangerous. Preparation of patient same as recommended in other abdominal operations.

DR. A. M. CARTLEDGE of Louisville—In fifteen cases operated upon, jaundice was a symptom in only two. One was pronounced, obstruction being in common duct, and was the only death in the series. It is a most common affection, and is confounded with dyspepsia. In operating a misplaced kidney may be gone down upon, and it has been found that the symptom usually described, of tumor moving with the diaphragm is not a good one, and not a diagnostic symptom. Exploratory operation is the step to take to clear up the diagnosis. The operation promises to be the most successful of all abdominal operations.

DR. W. C. DUGAN of Louisville Jaundice rarely found, and when found can invariably tell patient that it is not in the cystic duct but in the hepatic or common duct. Removal from the cystic duct is easy, from the common duct very difficult. Local tenderness and muscular rigidity are important symptoms. The incision when operating must be made through the median line or the muscle. The greatest danger lies in the irrigation, this being either done too soon or allowed to flow too fast as to tear the anchoring loose. The water should flow out as fast as it flows in.

DR. C. B. SCHOOLFIELD in closing stated that the dyspeptic symptoms are the most prominent ones; the pain comes on some time after the ingestion of the food when it is passing from the stomach into the duodenum. Jaundice is seen but in a few cases.

DR. L. S. MCMURTRY of Louisville presented a paper upon "Modern Gastrostomy for Stricture of the Esophagus, with Report of Case." This paper will appear in the JOURNAL.

DR. J. A. STUCK of Lexington, presented a paper on

DISEASE OF THE ACCESSORY NASAL CAVITIES.

Far more frequent than formerly thought, many old catarrhal patients continued to suffer long after removal of all visible obstructive and diseased tissue in nasal and pharyngeal-nasal cavities: 1. Acute suppurative sinusitis with complete occlusion of normal outlet. 2. Chronic suppurative sinusitis with moderately obstructive openings. 3. Myxomatous or polypoid degeneration.

Transillumination with electric light is aid to diagnosis; it is not certain but enough to justify exploratory incision, with small burr attached to dental engine, small sharp curette or cutting forceps. Lamp is six-candle power. Frontal sinuses illuminated by using small one candle power lamp, over which is drawn a piece of rubber tubing, allowed to project about one-third of an inch beyond lamp. This free end is placed under the orbital plate of frontal bone near the inner canthus, the eye being kept closed. Several interesting and illustrative cases were reported.

DR. DUDLEY S. REYNOLDS of Louisville long since abandoned opening the antrum through the canine fossa; the teeth press up, carry the bone with them and as far forward as the canine fossa; the antrum is narrow and the cavity sets down below the line of the insertion. Best to open below this line through the second molar, using incision through soft parts and the bone, drill the opening large enough to permit good drainage and injection of disinfection fluid, peroxid of hydrogen and bichlorid of mercury; the latter, 1 grain to 1 ounce of water.

DR. T. C. EVANS of Louisville—Little was said about the fact that the greatest number of acute cases get well, if uncomplicated with polyps in nose or carious teeth, without operation or washing out through the maxillary sinus. The second molar tooth is best place for drainage, turning over to dentist to do operation and inserting gold tube.

TREATMENT OF TRACHOMA AND ITS COMPLICATIONS.

Subject of a paper by DR. T. C. EVANS of Louisville—Consideration limited to treatment of trachoma proper, embracing the medical and surgical treatment of essential lesion of disease, the true granulation or "sago," of complications embracing various forms of ulcerative keratitis, photophobia, pannus and eczema of lids; those sequelae embracing opacities, staphyloma of cornea, xerosis and cicatrices of conjunctiva, deformities of tarsus, ptosis, trichiasis and distichiasis of lids. Medical treatment consists in local application of escharotics, stimulants, astringents and antiseptics. Most common are sulphate of copper, bichlorid of mercury, ammonia, muriate, yellow oxid of mercury, tannin and boric acid. Bluestone oldest remedy. Thoroughness and duration of application important. Wash of boric acid in addition to copper. Time necessary to obtain cure is longer than usually supposed. Of surgical methods in use two may be mentioned: Excision of cul-de-sac and operation by expression or squeezing. In the latter operation the doctor should wear eye-glasses to protect his own eyes. The after-treatment should consist of ice cloths and proper antiseptic precautions for forty-eight hours; routine escharotic being resumed later. The ideal treatment is the combination of the medicinal and surgical, and the patient should be impressed with the fact that the operation will not be the end of his trouble. At best it is a dangerous disease and the treatment will be tedious.

DR. G. G. THORNTON of Gravel Switch followed with a paper on

THE SCIENTIFIC AND COMMON-SENSE TREATMENT OF TYPHOID FEVER FROM AN ETIOLOGIC AND PATHOLOGIC STANDPOINT.

If seen early the prognosis in cases that are not complicated from the beginning should be favorable and the mortality should be nil if given the proper treatment, medicinal and hygienic. There is not any doubt in anyone's mind as to the germ origin of the disease. The germ may pass in the dry state by inhalation into the fauces, by means of water and milk. The disease is primarily local, and is systemic only after the absorption of the typho-toxin. Its insidiousness is explained by the origin of the toxins. Typho-malarial fever is a misnomer in this section. An early diagnosis is of importance. The first thing after a diagnosis is made or a suspicion of one, we must insist on patient going to bed. Put system in the best possible condition for the battle with disease on one hand, and his powers of resistance on the other; $\frac{1}{2}$ grain of calomel every hour for three doses, then every two hours till good, free evacuation is produced; the diarrhea, if continued, control by opium and bismuth; to relieve the headache and backache, etc., acetanilid and salol. See that patient is kept quiet and free from annoyance by over-anxious friends. If sleep does not come naturally give chloral hydrate or tr. opii deod. By rendering the contents of the bowel aseptic by the use of anti-

septics, we make it unhealthy for any wandering germ to live. Salol, sulpho-carbolate of zinc and acetanilid are the best under the class of antiseptics.

Dr. JOHN G. CECIL of Louisville—It is not necessary to enter fully into the discussion of a subject on which we so entirely agree. However, acetanilid for the fever and headaches is not so good as other remedies. The same results can be accomplished without the depressing effect on the heart by the use of water. Brand's method is one of the most effectual methods of treatment and we can control the fever absolutely, or at least as much as we desire. No one claims that water depresses the heart, but this can not be claimed of acetanilid.

Dr. J. M. RAY of Louisville presented a paper on

OBSERVATIONS UPON EYE DISEASES AND BLINDNESS IN THE COLORED RACE.

The proneness of the negro race to develop thoracic diseases, tubercular manifestations, the acquired and inherited results of syphilis and their lessened powers of resistance to diseases of colder latitudes is familiar to every physician. The negro of this locality is not the negro of the cotton fields and sugar plantation of the extreme South. A tabulated report of 1,000 cases of eye diseases, exclusive of defects of refraction was presented. There is a great frequency of difference in eye diseases of two races. Of the series 140 cases of lid troubles were found; not a single case of trichiasis or entropion was found. Of phlyctenular variety of conjunctivitis a large percentage occurred in the negro race. One hundred and seven cases of corneal diseases were found. The form most rife is relapsing destructive ulceration characterized by phlyctenular strumosis. In iris diseases there is proneness to gummatous infiltration to accompany the inflammation. Fifty-three cases of crystallin lens disease occurred, twenty-two in negroes. Negro practically exempt from uncomplicated squint, and when present it was secondary.

Dr. DUDLEY S. REYNOLDS of Louisville—"Negro" is a very indefinite term; it is not the pure-blooded African who has these diseases, but the mulatto. Trachoma is not a local disease, is not contagious, but the manifestation of miasmatic infection. The mixed-blooded negro furnishes the large proportion of clinical material in our section.

Dr. J. N. BAUGHMAN of Flat Lick—The mulatto race in medicine as in surgery has very little resistance. This is a fact demonstrated long ago.

Here followed a memoir prepared by Dr. Lyman Beecher Todd of Lexington on Dr. Orin D. Todd of Eminence, deceased.

EVENING SESSION.

The following popular addresses were made: "Vigorous Childhood Essential to Green Old Age," by Dr. J. A. Larrabee of Louisville. "The X Rays, illustrated by Experiments and Stereopticon Views," by Dr. Samuel E. Woody of Louisville.

THIRD DAY—MORNING SESSION.

Dr. C. C. LEWIS of Stamping Ground read a paper on

COMPOUND FRACTURES.

Regardless of inconvenience an anesthetic should be administered. The important question of amputation can not be decided without an anesthetic, except were there is complete destruction. Before days of aseptic surgery efforts at saving limb proved disastrous, but this element is not considered now. The rules of cleanliness should be applied with all possible emergency and there are no other grounds of safety. The plaster dressing offers fewer objections than any other mode of dressing, and is ideal when it can be aseptically treated and hermetically sealed. If of large size the wound is properly prepared by trimming edges, cleansing, etc., and the Bavarian splint presents many advantages. Hemorrhage must first be stopped, bichlorid, soap, water and brush being used unsparringly, preparing the limb as for amputation. Remove dressing in seven or eight days and if drainage tube is used it can be replaced by absorbable bone drain. The elbow joint and maxillary bone, when subject to violence as to cause compound fracture, require the closest attention. In maxillary fractures interdental splints are necessary. Do not investigate without an anesthetic. Give patient every possible benefit of a doubt in the question of amputation. Select aseptic methods of treating the wound; use a dressing which will give the patient the greatest comfort, the plaster dressing.

The Nominating Committee submitted the following report, which was unanimously adopted: President, Dr. R. C. McChord, Lebanon; First Vice-President, Dr. H. C. Lassing, Union; Second Vice-President, Dr. Arch. Dixon, Jr., Henderson; Secretary, Dr. Steele Bailey, Stanford; Treasurer, Dr. J. B. Kinnard, Lancaster; Librarian, Dr. Frank Boyd, Paducah. Owensboro was selected as the next place of meeting.

A resolution of thanks was extended the railroads, the hotel, the ladies, and Mr. R. W. McElroy for the admirable entertainment and to Dr. J. A. Lewis, the President, and Dr. R. C. McChord, Chairman of the Committee on Arrangements, for their able administrative efforts.

On motion, the vote making disposition of the report of Committee on Codifying the Constitution was reconsidered and all save that part relating to the election of officers was adopted. The latter was made to lie over until the next meeting.

The Nominating Committee submitted a subsequent report nominating the following as a Board of Censors: Drs. B. L. Coleman, Lexington; John G. Cecil, Louisville; T. B. Greenly, Meadow Lawn.

Dr. JOHN MASON WILLIAMS of Louisville read a paper on

THE SCOPE OF COLOSTOMY IN CANCER OF THE RECTUM.

The operation should be considered only as an advanced palliative treatment. If seen early cancer of the rectum is subject to removal. The rational treatment of the train of symptoms which follow cancer of the rectum is colostomy. These symptoms which demand relief are hemorrhage and pain. Left inguinal and lumbar methods are the operations done; the former the best, the chief, because it is an easy matter to see every step of the operation and inspect the bowel before incising. The anus is in front and can be attended to easily.

The President appointed the following committees: On Publication, Drs. H. A. Cottell, Louisville; M. F. Coomes, Louisville; Henry E. Tuley, Louisville. On Public Policy, Drs. J. B. Marvin, Louisville; David Barrows, Lexington. J. N. Baughman, Flat Lick.

The following resolution was introduced by Dr. John G. Cecil and unanimously adopted:

WHEREAS, Many of the important life insurance companies have reduced the medical examination, and

WHEREAS, Doctors have very generally received scant remuneration for this responsible work, which taxes their skill and time, be it

Resolved, By this Society that on behalf of the members of the Kentucky State Medical Society and of the physicians of Kentucky, we protest against this reduction of the ordinary fee for examination of \$5 on the part of the insurance companies, and that we request all doctors of this Society engaged in making life insurance examinations to exact a fee of \$5 for each examination.

Upon motion and discussion this was finally adopted.

SOCIETY NEWS.

The Central Iowa Medical Association held its twenty-second annual meeting in Boone, June 19. Papers were presented by Drs. Wright, Nostrom, Allen, Ensign and others. The officers elected for the ensuing year are: A. A. Deering, Boone, president; F. E. Whitley, Webster City, vice-president; G. H. Stanges, Boone, secretary and treasurer. Ames was selected as the place for holding the next meeting.

The Delaware District Medical Society, Indiana, which was in session at Dunkirk, June 15, adjourned to meet next year at Anderson. The officers elected were: President, J. B. Garner of Dunkirk; vice-president, B. S. Hunt of Winchester; secretary and treasurer, Fred J. Hodges of Anderson. Professors Senn of Chicago, Parvin of Philadelphia and Klebs of Berlin, delivered addresses.

The Third District Branch of the New York State Medical Association held their twelfth annual meeting in Auburn, June 11. There were about forty in attendance, representing the counties of Broome, Cayuga, Chemung, Chenango, Cortland, Delaware, Madison, Onondaga, Otsego, Schuyler, Seneca, Tompkins and Tioga. The next meeting of the association will be held at Norwich.

West Virginia State Medical Society.—At the annual meeting of this society held at Wheeling, June 10-12, N. D. Baker, M.D., of Martinsburg, Secretary of the State Board of Health, was elected president for the ensuing year. The next annual meeting will be held in Charleston. The next regular meeting of the State Board of Health will be held in Charleston, about

the middle of July, for the examination of candidates for practice of medicine and other business.

The Medical Society of the County of Erie, N. Y., held its semi-annual meeting in Buffalo, June 9. The following papers were presented: "Acute Epiphysitis," Nelson G. Richmond of Fredonia, N. Y.; "Refraction without Mydriatics," R. H. Saterlee; "Early Treatment of Mental Disease," A. W. Hurd. Superintendent Buffalo State Hospital; "Forced Breathing and the Pneumatic Cabinet," J. H. Pryor.

The American Microscopical Society will hold its nineteenth annual meeting in the new Carnegie Library Building, Pittsburgh, Pa., Aug. 18, 19, 20 and 21, 1896. A hearty welcome will be extended to all interested in the microscopic sciences. Applications for membership and titles of papers to be read at the meeting should be addressed to A. Clifford Mercer, M.D., president, Syracuse, N. Y., or to Wm. C. Krauss, M.D., secretary, Buffalo, N. Y.

The British Medical Association Congress at Carlisle.—Dr. Henry Barnes of Carlisle has been appointed as acting president on account of the death of the president, the late Sir Russell Reynolds. The arrangements for the Carlisle meeting of the British Medical Association at the end of July are in a forward state and there is every reason to anticipate a successful session. Dr. Barnes is the physician to Cumberland Infirmary, and he has chosen one of his colleagues, Dr. Roderick Maclaren, to deliver the address in surgery. It is understood that Dr. Maclaren will devote one section of his address to some comments upon the new aid to surgery presented in the discovery of the X photographic rays. Of the nine sectional presidencies, four will be filled by local practitioners.

Pacific Coast Association of Insurance Examiners.—The second annual meeting of this association was held in Portland June 9. The president's address was delivered by J. B. Eagleson, M.D., of Seattle, Wash. The following officers were elected for the year, viz.: K. A. J. Mackenzie, M.D., Portland, Ore., president; Drs. W. J. McGuigan, Vancouver, B. C.; Benj. R. Swan, San Francisco, Cal.; C. L. Sweet, Boise, Idaho; J. M. Sligh, Granite, Mont.; W. F. Amos, Portland, Ore.; Samuel C. Baldwin, Salt Lake City; G. S. Armstrong, Olympia, Wash., vice-presidents for their respective States; Henry W. Coe, M.D., Portland, Ore., secretary. The next annual meeting will be held at Spokane in conjunction with the Washington State Medical Society, in May, 1897.

Massachusetts State Medical Society.—The one hundred and fifteenth annual meeting of the Society was held in Boston, June 9 et seq. There was a large attendance of members. The Shattuck lecture was delivered by Dr. W. W. Keen of Philadelphia, on "The Surgery of Typhoid Fever." He gave especial attention to the subject of gangrene. That typhoid fever had important surgical relations was now recognized by the profession. English and American authors had not in the past given the necessary attention to the appearance of gangrene after typhoid. The chief knowledge of it came from French authors and from a few English and American publications. Gangrene was possible in both mild and severe cases, yet it was happily of rare occurrence—at the rate of four cases annually for the past fifty years. Officers were elected for the ensuing year: President, H. P. Walcott of Cambridge; vice-president, A. Wood of Worcester; treasurer, C. M. Buckingham of Boston; secretary, F. W. Goss of Roxbury; recording secretary, C. W. Swan; librarian, Edward H. Brigham; orator, Z. B. Adams of South Framingham.

Oregon State Medical Society. The 23d annual meeting of this Society was held at Portland, June 9 and 10. The following papers were read and ably discussed, viz.: Address of Welcome, by A. C. Smith, Portland; "The Family Sponge and How to Clean It," by O. H. Beckman; "Some of the Phases of Criminal Abortion," by Richmond Kelly; "Varicocele," by M. Fried; "Slight Ailments," by J. A. Geisendorfer;

"Cases of Appendicitis," by A. C. Panton; "The Roentgen Rays and their Application in Medicine and Surgery, with a Demonstration," by J. C. Perry, U. S. M.-H. S.; "Mechanism of the Knee Joint," by R. Nunn; "Surgery of the Gall Bladder," by K. A. J. Mackenzie; "Double Castration for Hypertrophy of the Prostate," by David H. Rand; "Inflammation of the Iris and the Ciliary Body," by W. L. Wood; "Treatment of Septicemia, with Report of Cases," by C. J. Smith; "Infantile Mortality due to Impure Milk," by Otto S. Bismwanger; "Suppurative Osteo-myelitis," by F. Cauthorn. The president's annual address was delivered by O. D. Doane.

BOOK NOTICES.

A Manual of Physiology with Exercises. By G. N. STEWART, M.A., D. Sc., M.D., Edin., D. P.H. Camb., of Downing College, Cambridge; Professor of Physiology in the Western Reserve University, Cleveland, etc., etc., with numerous illustrations including five colored plates. London: Bailliere, Tindall and Cox, 1895. 8vo, pp. 796.

In the gradual change now going on in medical education in this country, this physiology is especially welcome. It is a carefully prepared series of exercises illustrating the more important problems of physiology with special reference to their bearings upon the future study of clinical medicine and diagnosis. The book shows how it was prepared and gives one to understand at once that no great effort has been made to follow the customs or prejudices of American medical teaching. Its only concession in this direction seems to be the order of the material of each chapter. The descriptive portion comes first and somewhat resembles an old text book, then follow directions for laboratory exercises. The true pedagogic order would seem to be the laboratory exercises then the descriptive portion. These exercises are practical and every one significant. They have evidently been chosen after experiment with a class of students, in an American medical college. A few of these exercises require apparatus which some colleges could not easily obtain. For the most part the apparatus is simple and could be constructed by the students themselves in an ordinary laboratory workshop. Indeed this preparation of apparatus is very desirable. This book can be recommended to any teacher of physiology as a work likely to give him that necessary guide which will permit a change from the old lecture system to the laboratory method of teaching physiology. The smaller medical schools have a decided ally in this book in their effort to rival the larger metropolitan schools in instituting better and more effective methods of teaching.

Transactions of the Royal Academy of Medicine in Ireland, Vol. XIII, 1894 and 1895, 464 pages. Edited by WILLIAM THOMSON, M.A., F.R.C.S., General Secretary, Surgeon to the General Hospital, Dublin, Ireland. Printed by Fannin & Co., Limited, Grafton Street, Dublin. The contents includes lists of officers and members, etc.

The sections of medicine, surgery, etc., contains forty-nine papers. H. C. Tweedy, M.D., F.R.C.P., reported a case of argyria on account of its comparative rarity, the prolonged use of nitrate of silver in locomotor ataxy having declined. The patient first came under his observation in 1871, suffering with well marked ataxic symptoms. He was ordered $\frac{1}{8}$ grain nitrate of silver three times daily. This treatment was continued at intervals till 1876. In 1882 he again appeared at Steevens Hospital, when the change in his complexion to a dull slaty blue was noticed for the first time. The ataxic symptoms had, however, disappeared.

Injuries of the Thumb, by Edward H. Bennett, M.D., F.R.C.S. He described the various dislocations of metacarpophalangeal joint and submitted an example of complete dislocation inward of the phalanx which he believed to be the only case yet observed.

Arthur Benson, M. A. University Dublin, F.R.C.S., submitted report of cases of acromegaly with ocular complications. The papers are carefully prepared and, of general interest.

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INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, JUNE 27, 1896.

CLOSE OF VOLUME TWENTY-SIX.

With this issue we close twenty-six volumes of the JOURNAL OF THE ASSOCIATION—covering a period of twelve years of American medical literature—and comparing the volume just closed with its predecessors, we can freely say that the improvement has been steady from its commencement. Indeed, the growth of the JOURNAL in the last year has been phenomenal; the current volume contains about three hundred pages of reading matter more than any of its contemporaries, and double the number of pages of reading matter found in some of the weekly journals. That the ASSOCIATION can maintain a first-class medical weekly is therefore self-evident, and its wonderful growth in the last year must be taken as simply a prelude to the development that is to come in the near future. Its broad pages teem with brilliant suggestions not only from the members of the ASSOCIATION, but from the keenest observers throughout the medical world.

The next volume will begin with an enlarged JOURNAL—eight pages of reading matter each week will be added—and without boasting of future performances, we can only promise that the material in the enlarged issue will be equal, if not superior, to that published during the last three years.

We have one satisfaction in this work, and that is the sincere sympathy, kindly forbearance and the hearty encouragement the present editorial management has received from the ASSOCIATION itself, and it is cer-

tainly true to-day, as never before in the history of the ASSOCIATION, that the ASSOCIATION is alive to the necessity for enlarging and extending the power and usefulness of the organization, and the considerable increase in members that has taken place in the last year should serve as an incentive to renewed exertions and harder work on the part of each and every member of the ASSOCIATION. There is no reason why the AMERICAN MEDICAL ASSOCIATION should not have fifty thousand members. There is no reason why the power and influence of the ASSOCIATION should not be felt in all matters of National legislation, even more in the future than in the past, and we should strive by all legitimate means to enroll every worthy member of the profession under the banner of the great National organization. Let us all work to that end.

Let us have a Department of Public Health.

AN EXPLANATION IS IN ORDER.

At the recent sparsely attended National Conference of State Boards of Health, held in Chicago June 10-12 inst., one of the topics for discussion was the necessity for a "National Department of Public Health," the topic being proposed by the State Board of Health of Alabama and the discussion, according to the program, was to have been opened by Dr. J. N. McCORMACK of the Kentucky State Board of Health. In Dr. McCORMACK's absence the discussion was opened by Dr. JEROME COCHRAN of Alabama, who spoke at considerable length in advocacy, not of a National Department, nor even of an independent Bureau of Public Health, but of a sub-bureau of the Marine-Hospital Bureau, with its chief officer to be appointed by the Supervising Surgeon General of the Marine-Hospital Service.

Naturally there was considerable surprise among such of the delegates as had given the subject thoughtful consideration and Dr. HENRY B. BAKER of Michigan rose to reply with the intent to bring the discussion back to the topic proposed, to-wit, the desirability of a National Department of Public Health. So much time, however, had already been consumed in setting forth the claims of the proposed sub-bureau that Dr. BAKER was requested to be very brief and, as a matter of fact, no discussion in opposition was permitted. Dr. COCHRAN, being again awarded the floor, asked that each State Board of Health appoint a committee to act with himself as Chairman of the whole, to labor for the creation of this sub-bureau. On a motion to adopt the recommendation of Dr. COCHRAN, Dr. BAKER moved as a substitute that the Conference appoint a special committee to co-operate with the committee of the AMERICAN MEDICAL ASSOCIATION and with the similar committee of the American Public Health Association. This substitute was rejected by a vote of 8 to 5 and Dr. COCHRAN's plan was then adopted—presumably by the same vote,

that is, eight delegates out of a total of some forty-odd who should have been present.

DR. BAKER and the other four delegates who voted with him were careful to state that they had no desire to oppose any movement that promised advancement in public health administration by the National Government and that there was no objection, *per se*, to the elevation of the Marine-Hospital Bureau to the dignity of a Department of Public Health; but they condemned the proposition to place the public health affairs of a continent in charge of a *sub-bureau* or division as belittling the whole movement.

The JOURNAL trusts that it has been misinformed as to the facts and that a mere majority of this baker's dozen of delegates has not assumed to commit the health boards of forty-five States and the Canadian provinces to this retrograde action. A telegram to the Secretary of the Conference requesting a copy of the proceedings elicits the fact that he is on a vacation. We forbear further comment until after a perusal of DR. COCHRAN'S argument.

Let us have a Department of Public Health.

THE BACTERIOLOGIC AND CHEMIC TESTS OF DRINKING WATER.

It is probably correct to assume that at the present time there is a strong tendency amongst physicians to overestimate the importance of bacteriologic diagnosis as compared with that by other long-used methods, and this tendency finds expression not only in common practice, but is encouraged to some extent by the writings of high authorities. The term "overestimate" is here used advisedly because, with all its value, the discovery of actual germs is not everything in itself and is, moreover, often difficult or impracticable while other methods are available.

Within the past few months or a year, there have been several papers and memoirs published that have a bearing on this question. An English authority, PROFESSOR HANKIN, sent out a pamphlet the object of which was largely to magnify the importance of the bacteriologic over the chemic tests in the examination of drinking water, and on the other hand, DR. DUPRE in England and MR. W. P. MASON in this country, have in their publications upheld the importance of the chemic analysis. FLUGGE in Germany, and THRESH in England, rightly insist that neither the microbic nor the chemic examination of samples is sufficient without attention to the sources of the supply and all its surroundings. This, however, does not do away with the use of either of the two methods, and in case of suspected sources of drinking water, such as wells or springs, the question still remains: On which shall dependence be placed? Some time since, the London Board of Public Works sent out to several chemists samples of water purposely infected with typhoid germs for analysis, and as in each case

the water was reported as pure, this has been used as an argument against the value of chemic examinations. It is possible that a still later examination microscopically might have also failed to detect the introduced germs, for chemically pure water is a poor culture medium, and according to good authorities, bacterial life will not thrive in it. At any rate, the experiment proves nothing without this test and, with it, would still be inconclusive.

The chemic examination of drinking water demonstrates the possibilities of its infection by morbid germs, and therefore, as DR. DUPRE and MR. MASON have shown, enables us to anticipate danger even if it may not be actually present. It is moreover, in its simpler forms, generally practicable and available and, so far as it goes, covers the whole ground, while it is not certain that we have yet discovered all the germs and the methods of their detection in water-borne disease.

Notwithstanding the great advances that have been and are constantly being made in the bacteriologic examination of water, we are not yet prepared to do without the careful chemic analysis in estimating the dangers of its pollution. And, inasmuch as prevention is better than cure, the discovery of the conditions that favor bacterial growth in water is of more importance than waiting till the actual appearance of the germs of disease, in forming a judgment as to its safety.

It must not be understood that the use of bacteriologic tests is here decried. Their value is beyond question, but with our present knowledge and methods they can not entirely supplant, and can indeed often only supplement, the well tried methods of chemic analysis. Each method has its special value, but the chemic test has still in some respects the widest utility. Let us have a Department of Public Health.

ANTITOXIN.

We will next week publish in full the report on antitoxin of the American Pediatric Society, as prepared by a committee and adopted by that body. The subject is full of interest, whether one agrees with the report or not.

Let us have a Department of Public Health.

CORRESPONDENCE.

Did He Sham On The Gallows? A Review of the Windrath Case.

CHICAGO, June 22, 1896.

To the Editor:—Joseph Windrath, a German 29 years of age, married, three children, an expert machinist, was hanged in Chicago June 5th last for the murder of a very popular man, the cashier of the West Chicago Street Ry. Co., when committing a robbery with an accomplice. The sentence set the execution for May 15th, but a reasonable doubt of his sanity being established since the date of sentence a respite was granted for a trial on that score, as the law of Illinois does not

permit the execution of a lunatic. The State charged that he was shamming insanity and presented six medical witnesses, viz: Drs. N. S. Davis, Sanger Brown, Archibald Church, Walter Kempster, James Lydston and Dr. Fortner who is the jail physician, all of whom testified that he was both sane and shamming. On the other side Drs. Florence Hunt, O. S. Waters and myself testified that he was insane.

I first examined Windrath at the instigation of his attorney on April 30 in a private room in the jail in the presence of a keeper and was introduced to him as Dr. C— sent by his attorney. The examination lasted an hour. He was prompt, pertinent, coherent, distinct, fluent and comparatively composed throughout the interview. He had frequent slight twitchings of the face at different points and a very peculiar facial expression at moments, varying somewhat with the subject of conversation, and evidently an involuntary product, for although inexpressive of any normal emotion it was too spontaneous to be deliberate. In my questioning I drove him "hard and gentle," and attempted to mislead him by suggestions, but all to no purpose. I discovered no delusion excepting the perpetual motion idea, which he had entertained ever since a school boy and was still working upon. When I asked him why he killed his victim he instantly denied the charge and his eyes flashed a most peculiar and strong glare, by which more than any other one thing I recognized latent insanity—a centric instability—a deep seated neurotic state. His pulse was not normal in tone nor febrile nor inflammatory, and therefore was neurotic. I may state here that I have been fifteen years in general practice and ought to know the pulse. Such a thing as a neurotic pulse was denied by some of the experts for the State. Otherwise, as regards his physical condition and moral disposition, there was nothing worth mentioning. He was freely communicative. A few minutes after this general examination I made a visit to the prisoner's cell, unexpected by him, and asked to see his drawings of his perpetual motion machine. He promptly handed them to me and I found them very artistic drawings of a rather complicated and ingenious mechanism. His entire manner had changed and he took a very lively interest, speaking much more rapidly than before, explaining the modus operandi, minus, of course, initial motion and compensation.

As a result of this first examination I did not make a positive report of insanity, but as having the insane diathesis and being so unstable as to be liable to break down into unquestionable insanity at any time. In reality I believed him insane then.

At my second examination some ten days later I stepped to the side of the door of his cell, unknown to him, and watched him a few moments. He was pacing too and fro, but not noisy, though talking to himself or calling to imaginary objects. When I stepped in front of the cell door and called him by name he seemed for a moment to hesitate about coming to the door, but did so and obeyed my request to extend a hand through the bars that I might feel his pulse. His whole body was in a tremor and clammy. His pulse was 120 and neurotic. His face had a wild, confused stare, and he was partially irrelevant to questions, rambling and incoherent in speech, at times talking to voices or imaginary objects. He was stupid to some questions, but to others pertinent.

My third and last examination was ten days later, lasting only a few moments, the morning before I testified in court. He was in bed, but sat up and replied to questions, in a half stupor but more or less pertinent. On being questioned he said his wife and children had disturbed his sleep and he spoke of one or two other vagaries. His breath was distinctly neurotic, smelling somewhat like urine slightly tinged with feculent matter, and which I have never observed except in intensely neurotic cases. Even in such cases it is not always noticeable. It is most noticeable in cases of acute insanity, especially mania and melancholia. I probably would not have noticed it

this time had he not forcibly breathed into my face at my request. At my previous examination I had neglected this observation.

From his wife I learned that dating from about two years after marriage he began to act strangely at times, coming home somewhat intoxicated, she thought, when he would sit moodily for a considerable period and talk to himself and laugh and "work his face." In some of these spells he would be silent, only "working his face" as she called it. I examined Mrs. Windrath very carefully, as I was aware she had strong motive to falsifying. For instance I suggested that "he would sometimes come home insanely quarrelsome" but she promptly denied this, and many other suggestions I made to trap her. He also had hallucinations of hearing, at times, dating back several years, when he would charge his wife with calling to him on the street and other places while she was remote from him. I do not doubt these being facts.

Windrath's rather queer look at best would readily suggest to the ever suspecting police that he was a crook, especially if known to be idle or loafing, and it may be that he has been charged with more than is just. From my inquiries of the police authorities in regard to stories of other crimes I find them without any substantial foundation. Up to the close of the World's Fair, at which he was employed, he had been pretty regularly engaged at his business, but at the close of the Fair he fell into enforced idleness and bad company, soon got into the hands of the police on a charge of robbery, which was not fully sustained; and a month or so later was sent to the County Insane Asylum with acute melancholia. He remained at the Asylum about four and one-half months, where he has a clear record of mania and melancholia with delusions of sin, etc. He was discharged *improved*.

I witnessed his execution, but I can hardly do better than give the description of it by the *Daily News*: "The murderer made no struggle, as had been anticipated. He was led out a few minutes before noon, his arms tightly pinioned to his sides. With rolling eyes and blanched face the man presented a terrible sight, his closely cropped hair adding to his strange appearance. He shouted incessantly as the short preparations were being made, his cries being unintelligible. It sounded like 'han up! bishua.' Then his voice would deepen and he would mumble on: another change and he would seem to be trying to sing. Even after the white cap had been drawn over his head the cries continued and sounded muffled. Jailer Whitman tightened the noose about the man's neck, and his cries were slightly checked. A second later and he shot to his doom. The general opinion was that the man was hopelessly insane."

The experts for the State substantially said he was shamming because, 1, he presented symptoms of two forms of insanity, viz: melancholia and dementia, which they alleged never coexist; and 2, because his condition and conduct were perfectly natural under the circumstances, which, they said, he fully realized.

As regards the first reason, I will say that it is quite in conflict with my own asylum and private practice observations. Let us hear the recent words of one or two first-class authorities on this point. In the *British Medical Journal* of Sept. 28, 1895, page 760, Dr. Henry Rayner, editor of the *Journal of Mental Science* and lecturer on mental diseases, St. Thomas' Hospital College, London, England, says: "Clinically the pathologic unity of insanity is demonstrated by transitions from mania to melancholia or stupor (dementia), by sudden alternation of these states, by their occasional and *partial coexistence in the same case*, and in many other ways. Pathologically, owing to the recent advances in the histology of the cerebral cortex due to Golgi, Raymon y Cajal, Bevan Lewis, Hodge, Batty, Tuke, Andriezan and others, the close relationship of these conditions has become still more obvious."

In the *Lancet* (Lond.) of Jan. 4, 1896, Sir William Broadbent, Bart., President of the London Neurological Society and physician for the Queen, gives a case of "inability to recall the name of the most familiar objects presented to his sight, while he conversed intelligently, employing a varied and extensive vocabulary, making few mistakes, but occasionally forgetting names of streets, persons and objects." Along the same line Maudsley says: "Persons may be very defective (aberrant) intellectually, but very proper in conduct."

The experts for the State alleged that Windrath pretended to forget some of the most familiar things, but answered promptly about others.

As to the realization of acts and circumstances by the insane, if it is simply a question of knowing one thing from another, it must be admitted that they commonly realize about as much as most people. But if the question is as to the proper relationship of things the answer has to be in relative terms, according to the delusional state.

The experts for the State made their examinations of Windrath when his condition of greatest perturbation had subsided, and thus probably found him in a comparatively rational state. Dr. Florence Hunt, examining him about the same time, found his pulse 60 and so testified. Dr. Fortner, a witness for the State, found his pulse 120 a week or so before, when he was most disturbed. The other witnesses for the State said they found his pulse about normal when they examined him. He had no inflammatory or febrile condition whatever at any time, unless during his spell of greatest cerebral disturbance.

Among the peculiar features of the trial was the testimony of an expert ophthalmologist, which in substance was that blindness would affect the brain so as to stunt the development of the mind and preclude intellectual distinction. Had he never heard of John Metcalf, the distinguished mechanic, blind at 6 years of age; John Stanley, the eminent musician, blind at 2 years of age; the noted Helen Kellar, blind at 18 months; the famous Laura Bridgeman, blind at 2 years of age, and our own Dr. Babcock, blind at 9 years of age? This expert testified that Windrath's eyes were healthy and that the eyes of the insane rarely were so. This is something new, and I was not aware that the health of Windrath's eyes had been in question.

Another expert for the State defined insanity quite briefly but rather comprehensively as "a disease of the brain affecting the mind." Thus a headache is insanity. The same expert stated that Windrath spoke of imagining he heard certain voices, and said that a person with a real hallucination would not say he imagined he heard it, but that he *did* hear it. How is it when the hallucinations are gone and the subject realizes they were only imaginings? Will he still say that he hears them? Windrath did not have hallucinations when this expert examined him.

When Windrath was arrested a police inspector asked him if he was going to play his insanity game this time and told him if he was, to hurry up with it. This inspector informs me that he made him confess that he (Windrath), was no more insane than he (the inspector) was. A very natural, or at least usual, confession for a lunatic.

The State had able counsel, but the counsel on the other side was inexperienced in such cases and did not use any medical adviser. However, the jury held out for eight hours and at one time five favored a verdict of insanity.

It must be quite evident that a pure shammer would go to the gallows evincing either cowardice, bravado or repentance. Windrath, as the *Evening Post* stated, went "raving to the very last."

J. SANDERSON CHRISTISON, M.D.

Origin of Our Code of Medical Ethics.

NEW YORK CITY, June 17, 1896.

To the Editor:—Dr. Robert T. Morris of New York City, a member of the AMERICAN MEDICAL ASSOCIATION tells me that I can get a copy of the ethical code by preferring the request to

you. If the JOURNAL can do me this favor I should esteem it a great kindness.

And may I ask the further favor of a reference to some history of origins of the ethical code? The high standard of honor, and disinterested spirit, and devotion to mankind that animates physicians has always excited not only my admiration, but my curiosity as to where it came from. A profession is a means of livelihood, but their principles of honor are constantly in the way of doctors making money. It is as if the profession in early days had been a religious order. Knowing this now to have been the case my wonder was excited as to the history of the ethical code.

Begging pardon for thus trespassing on your time, I beg you to believe me.

Respectfully yours,

A. D. SAVAGE, M.D.

ANSWER:

The National Medical Convention, which assembled in New York in May, 1846,

Resolved, That it is expedient that the medical profession in the United States should be governed by the same code of medical ethics, and that a committee of seven be appointed to report a code for that purpose, at a meeting to be held at Philadelphia, on the first Wednesday of May, 1847.

At that meeting (Philadelphia, June, 1847); the committee, appointed under the sixth resolution adopted by the convention which assembled in New York in May last to prepare a code of medical ethics for the government of the medical profession of the United States, respectfully submit the following code:

JOHN BELL,	} Philadelphia.
ISAAC HAYS,	
G. EMERSON.	
W. W. MORRIS, Dover, Del.	
T. C. DUNN, Newport, R. I.	
A. CLARK, New York.	
R. D. ARNOLD, Savannah, Ga.	

Philadelphia, June 5, 1847.

Dr. Hays, on presenting the report, stated that justice required some explanatory remarks should accompany it. The members of the convention, he observed, would not fail to recognize in parts of it, expressions with which they were familiar. On examining a great number of codes of ethics adopted by different societies in the United States, it was found they were all based on that by Dr. Percival, and that the phrases of this writer were preserved, to a considerable extent, in all of them. Believing that language that had been so often examined and adopted, must possess the greatest of merits for such a document as the present, clearness and precision, and having no ambition for the honors of authorship, the committee which prepared this code have followed a similar course, and have carefully preserved the words of Percival wherever they convey the precepts it is wished to inculcate. A few of the sections are in the words of the late Dr. Rush, and one or two sentences are from other writers. But in all cases wherever it was thought that the language could be made more explicit by changing a word, or even a part of a sentence, this has been unhesitatingly done; and thus there are but few sections which have not undergone some modification; while, for the language of many, and for the arrangement of the whole the committee must be held exclusively responsible.

On motion of Dr. L. P. Bush, of Delaware, the whole of the report, including Dr. Bell's introduction, was adopted.

Scrumptox.—The *North American Practitioner* has the following definition that will not be found in the dictionaries; "Scrumptox" is the English school boy's name for the severe form of impetigo occurring among the forwards of Rugby football teams. The "scrum," or "scrimmage," with its close commingling of heads, arms and legs in indiscriminate confusion, undoubtedly offers ideally favorable conditions for the communication of this disease, which is usually confined to the head and face, and often results in severe suppurative dermatitis, with glandular enlargement.

PUBLIC HEALTH.

Tuberculosis in Germany.—The Imperial Health Officer at Berlin is reported as stating that he has found evidence of tuberculosis in the body of every third person between the ages of 15 and 60 years examined by him.

Dangerous Spread of Cholera in Egypt.—Since the appearance of cholera at Damietta last October it has gradually been spreading, until now there are several localities where it is prevalent, and a panic exists at Alexandria and Cairo to such an extent that people are leaving in large numbers, even those in responsible positions. Eight of the twelve members of the Municipal Council have already fled from Alexandria. The *Semaine Médicale* of June 6 considers this flight of the residents of Egypt a serious menace for Europe, and urges the necessity of immediate quarantine measures. The gravity of the situation is shown by the fact that the authorities of Alexandria have at last commenced, since May 21, to add to their sanitary bulletins the statement that "Cholera exists in Egypt."

The Imperial Health Office of Germany.—According to the *Medical Press and Circular* considerable change in the personnel of the Institute have recently been effected. It is now just twenty years since the Institute was opened with two members—one for the medical and one for the veterinary department. Since then the number of members has steadily increased. There are now eight ordinary members, beside a number of associates. Another member is provided for, however, in next year's estimates, as the present staff is quite inadequate for the work demanded. The new member will undertake the department of public health, so far as it relates to injurious callings and adulteration of food stuffs prejudicial to health. He will also take in hand the testing of drugs in the interests of the new pharmacopœia. Dr. Josefo Brandl, Privat Docent in Munich, has been called to the new post and nominated an Imperial Regierungsrath. Dr. Brandl qualified in 1890, has studied chemistry, was several years assistant to Professor Tappeiner at the Pharmacological Institute, Munich, and is author of several contributions in his department of science.

Fixing Population by Resolution. After figuring its death rate for some eighteen months on a basis of 1,600,000 Chicago has resolved, through its city council, to cut down the rate by adding 150,000 to its population. The following is the text of a preamble and resolution to that effect adopted by that body at its meeting on the 22d inst.:

WHEREAS, A recent enumeration by the United States postal authorities shows that there are 202,511 habitations in the city of Chicago, exclusive of stores, office buildings, factories and other places not used for dwelling purposes: and

WHEREAS, The United States census authorities in 1890 found the average number of persons in each such habitation was 8.6; and

WHEREAS, It is desirable for certain municipal purposes that the population of the city be fixed and declared: therefore, it is hereby

Resolved, That the minimum population of the city of Chicago for the current fiscal year 1896 be held to be that determined by the above factors—that is to say, in round numbers, 1,750,000.

Probably this is as good a way as any to guess at what should be a matter of exact determination by a careful enumeration: but our whole system of census-taking, from the national inventory down to the census taken by the police force, is exasperatingly defective. No vital statistics based on such figures can possess any value or command any credence. Chicago, for example, on this officially resolved figure of population, will have a death rate of about 13.5 per thousand for the current year. The only thing which is absolutely certain concerning the city's mortality is that there have been a few less deaths so far this year than there were during the correspond-

ing period of last year. Between January and May, inclusive, in 1895 there were 10,436 deaths; this year there were 9,879 deaths. As deaths are reported with substantial accuracy, these figures may be accepted, but whether the deficit of 557 deaths this year is due to a loss of population or to more favorable seasonal conditions, is purely conjectural.

It is regrettable that our large cities do not adopt some such system of census taking as obtains in the large cities of Europe. Until this is done, our figures of population and death rates based thereon will continue to be looked at askance.

Epidemic of Smallpox in the Island of Guernsey in 1895.—In the *British Medical Journal* for May 2 Dr. Ernest L. Robinson of St. Peter Port treats of a variolous epidemic in that island, in 1894 to 1895. His testimony of the efficiency of vaccination is in a line with all other properly reported results where the health officers act promptly and energetically. He well says that to the great energy of the authorities in pushing vaccination is due the fact that the disease was stamped out in sixty days. It further appears from his report that not a single properly and timely revaccination was followed by the taking of the disease. And yet there are those among his and our fellow-citizens who ask us to throw away this grand prophylactic measure. He further says:

"Guernsey has been peculiarly free from smallpox for some time, there not having been an epidemic of this disease for about seventeen years. The epidemic began early in December, 1894, and the last case notified to the authorities appeared on Feb. 17, 1895. The disease was evidently imported from St. Malo, where a severe epidemic was raging at the time, by French people, as the first cases in the island were found among some women of that nationality, living in a low quarter of St. Peter Port. Before the disease had existed more than a few days, an ordinance was framed and published whereby compulsory vaccination was ordered and enforced in all parts of the island, the consequence being that by the middle of January, 1895, nearly half the population had been vaccinated or revaccinated. To the great energy of the authorities in enforcing these measures, with scarcely a delay of one day, is to be attributed the fact that the disease was eradicated in about two months from its first appearance, and that only forty-one persons out of a dense population of considerably over 35,000 were attacked. There were altogether forty-one cases; two of these were attended by a medical man who died shortly afterward, so that all that I can say about them is that they were both mild, and that both recovered. Of the remaining thirty-nine I have collected the following facts: Four deaths occurred; three of these victims were unvaccinated and the fourth (a prostitute worn out by various excesses) was only vaccinated some three days before the initial fever. Of the whole thirty-nine cases, twenty-four were unvaccinated (these latter including seven who were vaccinated during the period of incubation of the fever), and fifteen were vaccinated. I may add here that of the seven cases vaccinated during the period of incubation one died, as before mentioned, and the remaining six suffered mild attacks (discrete) only, showing that vaccination, even when performed so late in the day, is still very efficacious.

"There were seventeen cases of confluent smallpox, fifteen of these being unvaccinated, and two vaccinated, whose ages were respectively 34 and 15; the last had not even a trace of his old marks.

"There were twenty-two cases of discrete smallpox (all returned as mild cases), of which thirteen had been vaccinated in infancy. Of the remaining nine six had been vaccinated during the period of incubation of the fever, leaving only three absolutely unvaccinated.

"There was not a single case of a revaccinated person catching the disease with the exception of one person, who was revaccinated during the period of incubation.

"The ages of the thirteen mild cases among the vaccinated patients were 30, 24, 19, 35, 31, 4 (only two marks), 35, 30, 22, 18, 26, 13 (only two marks), 16. Thus only one of these was under 10 years of age, namely, a child of 4, with only two very indistinct marks."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, May 1 to 31, 25 deaths; June 6 to 13, 5 cases, 2 deaths; Shreveport, June 6 to 13, 6 cases.

SMALLPOX—FOREIGN.

Dublin, Ireland, May 31 to June 6, 1 case.
 Bologna, Italy, May 31 to June 6, 1 case.
 Bombay, India, May 12 to 19, 25 deaths.
 Calcutta, India, May 2 to 9, 3 deaths.
 Cardiff, Wales, May 31 to June 6, 1 case.
 Cerunna, Spain, May 16 to June 6, 5 deaths.
 Genoa, Italy, May 31 to June 6, 2 cases, 1 death.
 Gibraltar, May 24 to 31, 1 case.
 Licata, Italy, May 23 to 30, 3 deaths.
 Madrid, Spain, May 24 to June 2, 15 deaths.
 Montevideo, Uruguay, May 9 to 16, 3 cases.
 Moscow, Russia, May 9 to 23, 4 cases, 1 death.
 Naples, Italy, May 31 to June 6, 5 cases, 3 deaths.
 Osaka and Hiogo, May 2 to 24, 55 cases, 21 deaths.
 Palermo, Italy, May 23 to 30, 2 cases.
 Prague, Bohemia, May 23 to 30, 2 cases.
 St. Petersburg, Russia, May 23 to 30, 34 cases, 3 deaths.
 Southampton, England, May 30 to June 6, 1 case.
 Tuxpan, Mexico, May 23 to 30, 4 deaths.
 Warsaw, Russia, May 9 to 30, 4 deaths.
 Yokohama, Japan, May 8 to 15, 1 case.

CHOLERA.

Alexandria, Egypt, May 7 to 13, 125 deaths.
 Bombay, India, May 12 to 19, 16 deaths.
 Cairo, Egypt, May 7 to 13, 5 deaths.
 Calcutta, India, May 2 to 9, 177 deaths.

YELLOW FEVER.

Lagua la Grande, May 31 to June 6, 17 cases, 3 deaths.
 Havana, June 4 to 11, 17 cases, 9 deaths.

NECROLOGY.

J. F. POTTS, M.D., of consumption, at Detroit, Mich., June 8, aged 59 years. He was a student at Illinois College, Jacksonville, graduated from Union College, Schenectady, N. Y., then entered Jefferson Medical College Philadelphia, graduating there also. He served during the civil war in the Seventh Rhode Island cavalry.

CHARLES M. NES, M.D., at York, Pa., June 12, aged 69 years. Dr. Nes was one of the three commissioners appointed by General Grant to represent the State of Pennsylvania at the Vienna Exposition in 1873. He was the inventor of the Nes Silicon method of converting iron ore into steel, the discovery of which he made by noticing the peculiar action of electricity upon iron. On a visit to a patient who had been struck by lightning he noticed that the barrel of an old army musket which stood in a corner of the room and had felt the effects of the bolt, had been converted into a particularly high quality of steel. Acting upon the suggestion, he experimented with magnetic ore until the results obtained justified him in obtaining letters patent in the United States, Great Britain, France and Belgium.

EDWIN D. RAMSDALL, M.D. (Medical Department of the University of the City of New York, 1855), of pneumonia, at New York city, June 12, aged 66 years. He was a member of the Medical Society of the City and County of New York, which membership he held for twenty-five years. Until recently he was a member of the Academy of Medicine.

JOHN L. ROBINSON, M.D. (Harvard University Medical School, Boston, Mass., 1859), at Manchester, N. H., June 13, aged 61 years. He served during the war as a surgeon of the Eighth Massachusetts Volunteers, was a member of the Massachusetts and New Hampshire Medical Societies and one of the vice-presidents of Harvard Medical School Alumni Association.

MICHAEL H. MCGOVEN, M.D. (College of Physicians and Surgeons, Baltimore, Md., 1884), of apoplexy, at Pen Yan, N. Y., June 10, aged 38 years. Emer C. Hoover, M.D. (Medical College of Ohio, Cincinnati, 1878), of apoplexy, at Dayton, Ohio, June 13. — H. H. FERGUSON, M.D. (University of Louisville Medical Department, 1867), at Jeffersonville, Ind., June 15, aged 51 years. Egbert B. Henion, M.D. (College of Physicians and Surgeons, Baltimore, Md., 1882), at Sweden, N. Y., June 11. A. T. CLASON, M.D. (University Medical College, New York, 1886), at Danbury, Conn., June 16, aged 56 years. — Horace Hoyt, M.D. (University of Buffalo Medical Department, Buffalo, N. Y., 1848), at East Aurora, N. Y., June 17, aged 73 years.

MISCELLANY.

New York Polyclinic Medical School and Hospital.—Dr. W. W. Van Valzah has been elected Professor, and Dr. J. Douglas Nisbet, Adjunct-professor in the Department of General Medicine at the New York Polyclinic Medical School and Hospital. Their lectures will be devoted to "Diseases of the Blood and Digestive Organs."

Fraudulent "American" Potted Meats made in Europe.—According to the *Progrès Médical* of May 2, there are at Rotterdam and Antwerp large and important factories which import worn omnibus horses from London, and make them up into excellent potted meats, labeled as if they came from America and widely sold all over Europe. They dispose of 26,000 horses a year.

Acromegalia and Gigantism.—Brissaud considers these the same disease, the difference between them being merely a question of age. If it commences before the bones have attained their growth, they lengthen and produce the malformations known as gigantism, while they grow "cubically" in an adult, when it is called acromegalia—*Gazette Médicale de Paris*, May 16.

Decision that Venereal Disease is Sufficient Cause for Divorce.—The *Semaine Méd.* states that the Paris Court of Appeals recently decided that the fact of marrying before being cured of a venereal disease, and knowingly communicating it to the other party in the marriage, is sufficient cause alone to allow a divorce.

Yale Annual Address in Medicine.—The annual address in medicine of the Medical Department of Yale University was delivered by Ex-Col. Geo. E. Waring, Jr., June 23. In the evening a card reception to Col. Waring was given at the house of Prof. Charles A. Lindsley by the Medical Faculty of the University.

Anti-Streptococcus in Operating on a Diabetic Patient.—Boucheron recently removed a cataract from a patient, 70 years old, in an advanced stage of diabetes, complicated by the streptococcus affection, lymphangitis of the foot and limb. The operation was successful, the wound healing by first intention. He ascribes his success to the fact that he administered 20 grams of Marmorek's serum, which attenuated the streptococci, before he began operations.—*Gazette Médicale de Paris*, May 16.

Cerebral Hemorrhage in Whooping Cough.—A case is described in the *Deutsch. Med. Woch.* for April 23, in which the symptoms of cerebral hemorrhage, convulsions, hemiplegia, word-blindness, stupor, etc., suddenly appeared in the course of an attack of whooping cough. They gradually passed away after six days, until none were left by the end of three weeks. The writer adds that this is the eighth case on record of this complication, and in this case the patient, a lad of 8 years, had been instructed by his father to hold his hand over his mouth and nose to suppress the paroxysms, which may possibly have been the cause of the rupture of the blood vessel in the brain.

Five Months Fetus Developed in the Abdomen of a Young Man.—A strange case was reported at the meeting of the Académie de Médecine, May 5. A young man was operated upon for what was supposed to be a large abdominal tumor. It proved however to be a dermoid cyst, containing a female fetus as large as is usual at five months. The ovum in the cyst had probably lain latent until puberty or some traumatism had started it to grow. The young man did not long survive the operation, and died ignorant of the existence of a little sister in his supposed tumor. The *Jour. de Méd. de Paris*, for May 31, contains more details than are given in the *Bulletin* of the Académie.

Second Pan-American Medical Congress.—Dr. H. L. E. Johnson, Chairman of the Transportation Committee of the first Pan-American Medical Congress is arranging with the Passenger

Association for reduction in transportation for those who will attend the second Pan-American Medical Congress to be held in Mexico City in November next. The fare will in all probability be one and one-third rate on the certificate plan, but he hopes to secure a one fare rate for the round trip. An estimate will also be submitted for a special train, via Boston, New York, Philadelphia, Baltimore, Washington, Cincinnati, St. Louis, Laredo or Eagle Pass, to the City of Mexico and return. A full report will appear in the *JOURNAL* at an early date.

The Koch Institute of Berlin.—According to the *British Medical Journal*, May 16, the Koch Institute is not to be transferred to Dahlem after all. The Prussian government has decided to buy a plot of land close to the ground on which the new fourth Municipal Hospital is to be erected, in the See Strasse, and to build an enlarged and improved Koch Institute upon it. The decision, simple as it seems, has been arrived at only after long and wearisome negotiations. Now it is hoped that this knotty point once solved, the rebuilding and enlargement of the Charité Hospital will be attacked in earnest. The ground at present occupied by the Koch Institute is required for the hospital, but until the future of the Institute itself had been definitely settled, it was impossible to begin work. A new museum for the pathologic collections is urgently needed, as Virchow is terribly cramped in the Pathologic Institute. It is said that 1896 is to see this building begun, but delays have been so frequent in this Charité business that it is best not to prophesy.

One Death in 3,600 Cases.—The New York Institute for the Deaf and Dumb is creditably managed. For the last nine years one death has occurred, and this was from diphtheria contracted outside during vacation. Average number of pupils annually, 400; ages $2\frac{1}{2}$ to 18 years; average age, 8 years. This remarkable record is attributed to the diet of beef and mutton with few foods from the vegetable kingdom, as wheat, potatoes, etc. Obviously this is an institution for health as well as deaf mutes, and its methods are worth copying by those who have persons of like ages in charge. If there are other like cases they should be known. This report reflects great honor on all concerned, specially on Prof. Currier, the principal. Indeed, the Institute is a glory of New York!

Closing Scene in the Kitson Playfair Litigation.—A compromise has been reached in this case, and an appeal will not be undertaken by Dr. Playfair. On the day when the appeal was to have been moved, it was announced by the counsel for the defendant that the case had been settled on terms which had been agreed upon between the parties, and that therefore the court would not be troubled in the matter. The court assented to this course being taken, and thus the Kitson v. Playfair case reached its termination. No details were divulged respecting the terms of the settlement, and consequently upon this subject the natural curiosity of the public will have to remain unsatisfied. We are, however, in a position to state that the amount of the settlement agreed to was £9,200, to include costs incurred by Mrs. Kitson, and that of this sum £8,000 were to be invested for the benefit of Mrs. Kitson and her children.

King's Daughters' Hospital for Staunton, Va.—An act was passed at the 1895-6 session of the general assembly of Virginia incorporating the "King's Daughters' Hospital of Staunton, Va." It is empowered to maintain, at Staunton, a hospital for the medical and surgical aid, treatment and cure of persons who are sick, deformed or suffering from bodily injuries, and to instruct and train suitable persons in the duties of nurses for the sick. It is further provided that the corporation shall have full power to exclude such forms of disease or sickness as it may be deemed unsafe, improper or impracticable to admit to its hospital. It is also given power to collect fees for medical and surgical treatment and incidental expenses, and to

remit the same at its pleasure. The consolations of religion may be extended to the patients in the care of the corporation in whatever forms the patients may desire; but no influence shall be exerted within the hospital in the special interest of any particular sect or denomination.

Serum Treatment of Urinary Infection.—Albarran and Mosny produce a serum to combat urinary infection from the coli bacilli, by alternately vaccinating animals with the products of filtration and then infecting them with virulent cultures. This new alternate method produces a very active serum, while the animal retains his health and strength. An animal will survive a fatal injection of virulent culture if it is inoculated twenty-four hours before with one-twentieth cubic centimeter of this serum. More than this, the guinea pig, which is especially susceptible to urinary infection, will be protected against it, if one drop of the serum is added to a fatal dose of the culture. If two centigrams are injected two hours after a dose of the culture that kills in twelve hours, the animal does not succumb. Albarran and Mosny announced at the meeting of the Académie des Sciences, May 4, that this serum will not only effectually cure urinary infection, but will prevent it.—*Gaz. Méd. de Paris*, May 16.

Medico-Literary Notes.—The New York *Polyclinic* states that Empedocles of Agrigentum, may rank among the fathers of sanitation, inasmuch as he did, as long as 2500 years ago, make public an observation to the effect that the epidemic of puerperal fever had been caused by the influence of escaped sewer gas. *The Scalpel*, although a new claimant for the favor of the reading medical public, is really the *Provincial Medical Journal* under a new name. The latter journal departed its life at the end of last year, but the editor decided to raise out of its remains another journal, to which he has given the name of *The Scalpel*. The first number of the venture is before us. It appears in an attractive cover, and its contents are similar to those of its predecessor. The hand book of therapeutics, edited by Professors Penzoldt of Erlangen, and Stintzing of Jena, is making slow progress toward completion. Twenty-five fasciculi have now been issued, yet, owing to the unbusiness-like way in which the parts appear, only the first three volumes are as yet complete, and the conclusion of the third was contained in a fasciculus issued last month. In the prospectus the publisher expressed the hope that the whole work would be issued by the end of 1894, or, at the latest, by the spring of 1895.

John Arden or John of Arden on "Ye Goode Chirurgeon."—A very old code of ethics for surgeons is contained in the following citation that has been hunted up by the editor of the *Medical News*, who says: One of the interesting characters of the fourteenth century, was the sergeant surgeon of Edward III, in 1346, John of Arden. He gives a "Description of ye qualities which ought to be in ye surgeon that performeth any operation in chirurgery: First, that he be devout; secondlie, charitable to ye poor; thirdly, to use few words; fourthly, to avoid drunkenness; fifthly, to be chaste both in words and gesture, as well as to fear ye not; sixthly, not to undertake an incurable disease."

American Degrees Recognized in England.—A decision of the Queen's Bench Division of the High Court of Justice of England, according to a recent cablegram, lays down the dogma that an American practitioner having *bona fide* diploma is at liberty to pursue his calling unmolested so long as he does not claim to be a registered member of the British Medical Association. The decision, which was rendered by Justices Grantham and Collins, two of the most eminent judges of the High Court, was the finale of proceedings instituted against an American physician named Bridgewater, who was charged with having unlawfully, willfully and falsely represented himself to be a doctor of medicine, contrary to section 40 of the

medical act. It was shown that Dr. Bridgewater, in writing the words "M.D." after his name, invariably added "U. S. A.," and that hanging in his office were diplomas from New York and Philadelphia medical colleges of international reputation. The judgment of the court set forth that having used the letters "U. S. A." after his title there was no intent to defraud, and consequently no cause for prosecution. The Medical Defense Union is further mulcted in the costs of the litigation and the defendant's attorney's and other fees amounting to an aggregate of nearly \$4,000.

Quarantine for Convicts.—The 1895-6 general assembly of Virginia passed a law authorizing the governor, upon the application of the superintendent of the penitentiary, when requested in writing so to do by the physician at said institution, to have removed from the penitentiary any felon or prisoner serving a term of imprisonment who has contracted any contagious or infectious disease dangerous to the public health, to some place to be designated by the governor. When any such prisoner is so removed, he is to be safely kept and treated for such disease, and as soon as he recovers his health be returned to the penitentiary, unless his term of imprisonment has expired during his quarantine, in which event he shall be discharged, though not until all danger of his spreading contagion has passed. The judges of the county and corporation courts of the commonwealth are likewise authorized and empowered to have removed from the jails of their respective counties and cities, upon the application of the keeper of the jail, when requested so to do in writing by the physician doing the practice at the jail in question, all felons or prisoners serving terms of imprisonment in such jail and all persons who may be confined therein awaiting trial, who have contracted any contagious or infectious disease dangerous to the public health, to some place designated by the judge of the county or corporation court, where they shall be kept and cared for similarly to the provision made for the penitentiary prisoners.

To Protect the Children.—A law has been passed in Virginia which provides, among other things, that it shall be unlawful for any person, including in this term corporations, partnerships, companies, and associations, employing or having the custody of any child, willfully to cause or permit the life of such child to be endangered, or the health of such child to be injured, or willfully to cause or permit such child to be placed in such a situation that its life or health may be endangered, or to cause or permit such child to be overworked, cruelly beaten, tortured, tormented or mutilated. It is also made unlawful for any person having the care, custody, or control of any child under the age of fourteen years to sell, apprentice, give away, let, or hire out, or otherwise dispose of such child to any person in or for the occupation, service, or purpose of rope or wire walking, begging or peddling, or as a gymnast, contortionist, rider, or acrobat in any place whatsoever, or for any obscene, indecent or immoral purpose, exhibition, or practice whatsoever, or for or in any business, exhibition or vocation injurious to the health or morals or dangerous to the life or limb of such child, or cause, procure, encourage or permit any such child to engage therein.

A Definition of "Natural Labor." In the *British Medical Journal*, Dr. Robert R. Rentoul, of Liverpool, asserts that no clear notion is given in the laws regulating midwifery practice as to what the term "natural labor" means and includes. He proposes the following definition: "Labor at the ninth calendar month in a woman free from organic and functional disease of the heart, lungs, kidneys, brain, and other internal organs, and from all fever diseases; when there is no impediment in the maternal passage of either soft or hard nature to the passage of the child; when there is only one child in the womb; when the vertex of the child alone presents in either the first or second occipito anterior position; when labor is completed

within twelve hours from the commencement of labor; when a living child is born; when neither instrumental nor manual operations have been required; when the afterbirth comes away without the use of manual operation within twenty minutes after the birth of the child; when there is no laceration of any portion of the parturient structures; and when the mother does not die within thirty-one days after confinement, and when there is no puerperal fever."

Bicycle Racing Not Presumed Injurious.—The case of *Keeffe v. National Accident Society of New York*, decided by the appellate division of the supreme court of New York, April 14, 1896, was brought to recover on an accident policy of insurance for injuries sustained while riding in a bicycle race. The policy contained a provision that it should not extend to or cover injury resulting from voluntary over exertion, either voluntary or unnecessary exposure to danger, or to obvious risk of injury. The defendant contended that an injury sustained while riding in such a race was within the above exception, and moved for a nonsuit on that ground. The trial court denied the motion, and, on that subject, submitted to the jury the question whether the plaintiff was injured by his voluntarily or unnecessarily exposing himself to danger, or to the obvious risk of injury. This was, the appellate court thinks, a correct disposition of the question raised. It can not be said, as a matter of law, declares the court, that the plaintiff was overexerting himself, nor that he voluntarily exposed himself to danger by entering into the race. Different and equally intelligent and unbiased men might fairly differ in opinion as to whether or not, by taking part in such a race, any risk of injury was necessarily incurred, and therefore the trial judge was right in leaving the decision of that question to the jury.

An American Physician Highly Honored in China.—From the *Medical News* we learn that "Dr. Boudinot Currie Atterbury, medical missionary of the Presbyterian church to China, has been honored by the Emperor of China with the Imperial Order of the Double Dragon, Second Degree, a distinction never before conferred on any foreigner, excepting, perhaps, the ruler of some friendly power. This mark is in recognition of the notable services rendered by the American physician in connection with the work of the Red Cross Society, during the late war. Dr. Atterbury was born in New York City, and comes of a family long prominent in New York. He studied at Yale College, and took his medical course in this city, under the direction of Dr. Frank H. Hamilton. After he was graduated in medicine from Bellevue Hospital Medical College, of the class of 1877, he went to China under the auspices of the Presbyterian Board, and was assigned to missionary duty in the city of Peking. He there assisted in the establishment of the Ah Ting Hospital. While there, his work was brought to the attention of the emperor and the royal family. He afterward went to Tientsin, where he is at present."

Metals in the Blood.—Kobert has been studying the rôle played by the red blood corpuscles when neutral metals are injected. He finds sixteen metals that combine with the hemoglobin: Zinc, iron, silver, lead, mercury, etc. They form a metal-hemoglobin which must be regarded as a chemie entity. Injections of the bichlorides of different metals into the undissolved corpuscles, either in or outside of the body, lead to the formation of these metal-hemoglobins, but the saturation of the corpuscles in the body is not so great as outside. Acute iron poisoning is therefore to be considered as an "internal choking" resulting from the transformation of the hemoglobin of the blood into this metallic hemoglobin. Death follows intravenous Hg. injections long before the hemoglobin becomes saturated with the metal, but as there is already more or less of this "internal choking" in advanced life, transfusions of human blood should be made in cases of intoxication, or at least transfusions of alkalies, carbonate or bicarbonate of sodium, to realkalize the blood, accompanied by inhalations of pure oxygen.—*Centralblatt f. Chirurgie*, April 11.

Hospital Notes.

The United States Marine Hospital at Chicago, Ill., is to have an addition of an operating amphitheater, with all the latest appliances for aseptic work. The structure will cost \$6,970.

Bangor General Hospital, Bangor, Maine. At a meeting of the hospital corporation June 15 it was voted to change the name of the institution to the Eastern Maine General Hospital. The following officers were elected for the ensuing year: President, Charles Hamlin; Vice-President, Edward Stetson; Secretary, Charles H. Bartlett; Treasurer, Charles D. Crosby.

Presbyterian Hospital, New York City.—The management of the Presbyterian Hospital has issued a "Medical and Surgical" report under the editorship of Andrew J. McCosh, M.D., and Walter B. James, M.D. In the preface to Vol. 1, January, 1896, the commendable object of the publication is stated as follows: The management of the Presbyterian Hospital issues this, its first medical and surgical report, believing that a permanent record should be made of the valuable and interesting scientific material that is found in the hospital. The first duty of a hospital is to care for the sick. Its next duty is to advance in every possible way the knowledge of the nature and treatment of disease. It is proposed that this shall be the first of a series of reports to be published annually.

In addition to tabular statements of diseases and injuries treated it contains full reports of unusual and interesting cases. Dr. Francis P. Kennicut reports a case of "General Tubercular Infection, including the Testes, etc., in Child 2½ years old." F. Alden Brown reports two successful cases of amputation at the hip joint. "Tuberculous osteo-arthritis of hip. Amputation at the hip-joint by a new method, through an antero-external incision. T. D., age 27. Female. Preparation for amputation consisted in a brief massage of the leg and thigh while held perpendicularly. At the same time one jaw of a specially made clamp was passed through the existing incision, guided by the finger, under the sartorius and under the femoral vessels close to Poupart's ligament, the other jaw being outside the wound and bearing upon the cutaneous surface overlying the vessels. As the clamp was moderately tightened and the limb lowered, pulsation of the femoral below the clamp could not be felt by the finger in the wound. The handle of clamp rested upon the abdomen, where it lay parallel with the flare of the pelvic brim.

"The application of the clamp to the vessels was a simpler matter than I anticipated. It required but a moment or two to force the finger under the sartorius and under the sheath of the vessels as it lay upon the psoas, and through this short space, along the upper side of the finger, was slipped one blade of the clamp, the tip of which was gloved with rubber tubing, a possibly unnecessary precaution against injury to the vessels.

"It was presumed that the anterior crural nerve would lie just to the outer side of the clamp compression, and in the same fenestrum of the instrument as that surrounding the sartorius. The patient's pelvis was now brought to the end of the table. The left leg was supported by an assistant, while the right thigh was flexed upon the pelvis and secured to the abdomen and table. The existing incision was extended along the outer border of the rectus downward to the bone, and through this deep incision the remaining attachments to the joint and femur were mainly stripped off. A circular skin cuff was cut and turned back. The femoral clamp was tightened one point before severing the muscles with a circular sweep to the bone. Some of the small branches of the sciatic system required the application of pressure forceps, but the femoral vessels and their branches were absolutely dry on the proximal side. It remained only to turn backward the open muscular cuff, raise through it the femur, and sever the posterior part of the capsular ligament, when the head of the bone was turned outward by my assistant and the round ligament cut. The femoral was ligated with silk, all outer vessels with catgut. Gradual loosening of the femoral clamp by stages permitted an excellent opportunity of seizing the bleeding points in regular order of their importance, and the clamp afforded a simple method of quickly starting or closing the blood current in the main channel.

"The rather extensive muscular portions concerned in the abscesses and sinuses had been cut away with scissors before ligation of the vessels. The diseased portion of the acetabulum was curetted and the wound flaps united by interrupted silk-

worm gut, then more accurately adjusted with a continuous suture of fine black silk. Drainage by iodoform gauze was provided at the uppermost part of the wound, and through the large sinus formerly behind the trochanter. As all preparation had been made to utilize saline venous infusion at some time during the operation, one and a half liters were now thrown into the median cephalic vein by Dr. Hartwell while the wound was being sutured. The beneficial effect of this infusion was at once manifest and the patient left the table with a fuller and slower pulse than she had had since admission to the hospital."

Practical Notes.

The Topic Action of Salacetol.—Ricchetti announced in 1894 that salacetol has the advantage over other combinations of salicylic acid, that it is a fine antiseptic for the intestinal canal without occasioning any toxic effects, even when taken into the stomach in large doses. Also that it has no effect on the soluble ferments, while it retards and arrests the figured ferments, and that it prevents the development of the cholera and typhoid micro-organisms and also of the coli bacillus. Mosso of Genoa has been recently studying its effect in local applications, with equally favorable results. He finds that applied externally, the temperature of the body and a slightly alkaline liquid, favor its separation into its two components, salicylic acid and acetol, and it produces immediately its antiseptic effect without irritating the tissues. The same amount by weight contains more salicylic acid than salol. It does not require, like salol, several hours to produce its effect; and the products of its separation into its elements are not toxic. Mosso experimented with it in the form of a powder, a salve (20 grams salacetol to 100 grams ung. sim. or vaselin). And in liquid form (4 grams salacetol in 50 grams water and glycerin).—*Gazzetta degli Ospedali e delle Cliniche*, April 14.

Injections of Hot Water in the Treatment of Chronic Diarrhea.—Pollatschek of Carlsbad, has found that small, repeated injections of hot water are very beneficial in the treatment of chronic diarrhea. He uses only enough water at 104 to 109 degrees as will be retained and absorbed by the intestines, beginning with 100 grams. The effect is similar to that produced in vaginal and uterine troubles, relieving the congestion and calming the nerves of that region. The hot water also stimulates the peripheral centers that control the peristaltic movements of the bowels, and chronic diarrhea is often permanently cured by this method. Helles, of Lyons, has also recently published a paper on this subject. He recommends the decubitus dorsal position to retain the injection, and uses much hotter water, from 113 to 130 degrees.—*Semaine Médicale*, May 13, and *Journ. de Méd. et de Chir.*, May 25.

Influence of Hot and Cold Baths on the Chemic Changes of the Blood and Urine.—Strasser announces that cold baths seem to increase the amount of alkali in the blood and diminish the amount of acidity in the urine. Hot baths, on the other hand, seem to increase the amount of acid in the urine, while diminishing the amount of alkali in the blood. This result is the more surprising as both hot and cold baths increase the amount of chemic changes. He explains it by the fact that hot baths produce rather an organic dissociation than an oxidation, while cold baths produce the opposite effect. Kapper has shown that the urine becoming alkaline with a vegetable diet will become acid under the influence of cold baths. Strasser ascribes the alkalinity of the urine to the excess of alkaline carbonates, and as cold baths increase the elimination of carbonic acid through the lungs and the skin, the urine thus ceases to be alkaline.—*Le Semaine Médicale*, May 13.

Diffuse Multiple Neuritis in Secondary Stage of Syphilis.—The patient was a young butcher with pronounced chancres and eruptions; eyebrows, mustache and beard dropping out, complete atrophy of many of the muscles and partial paralysis, with absolute inability to walk or move the extremities. Feet turned in like a paralytic. No pain was felt spontaneously, but pressure on the calf was very painful. There was no

sensibility to a prick or touch on the foot or right limb, while it remained normal to heat. The vesical and rectal sphincters were normal in their action. This last fact and the marked predominance of the paralysis in the extremities, with the differences in sensibility, all spoke against myelitis. The symptoms were those of Leyden's peripheral multiple neuritis, motor form, and its etiology was determined by the presence of the syphilitic symptoms. The treatment was a weekly injection for three months of thymol, and acetate of mercury, and the patient was restored to comparative health. Essential lesions of the peripheral nervous system, due to syphilis, are quite rare. In most cases they are limited to certain localities, sciatic, facial, &c. There are only two descriptions on record that coincide with this case, and they were attributed to myelitis.—*Annales de Derm. et de Syph.*, April.

Oxygen Antidotal to the Sequelae of Etherization.—The *American Therapist*, May, quotes Dr. Theophilus Parvin as being a convert to the views of Professor Landau, of Berlin, as to the use of oxygen after ether anesthesia. Dr. Parvin further observes that Landau is one of the few Berlin operators who prefers ether to chloroform as an anesthetic: and he has found by a very large experience, that as soon as the operation is ended, if the patient immediately inhales oxygen freely for a few minutes, she does not subsequently suffer from headache or nausea and vomiting. The immediate effects of inhaling oxygen are: The dusky hue of the face disappears, and the pulse becomes fuller and slower: there is, too, a more rapid recovery of consciousness. He had many opportunities of witnessing these results at Dr. Landau's hospital. The day subsequent to operations, Dr. Parvin several times visited these patients, at the doctor's request, asking them as to the freedom from vomiting and pain, and the invariable reply was that they had neither. The *Medical and Surgical Reporter* is the source of the *Therapist's* quotation.

Migraine.—The legion of proposed remedies for the cure of migraine, indicate the difficulty of hitting upon a rational treatment. Seguin advises as a prophylactic treatment, Indian hemp at the dose of one-fifth grain given three times a day in pills, associated with iron and arsenic; it should be continued for some time. The best treatment for the attack, when depending on nervous causes, is cafein and antipyrin, cafein 2 grains, antipyrin 10 grains, to be renewed in an hour if necessary. Salicylate of soda at the dose of $\frac{1}{2}$ dram is almost a specific where the headache is derived from a gouty or rheumatic diathesis. Bromid of potassium was believed by Charcot to be the remedy, *par excellence*, of the ophthalmic form. A writer in the *Press and Circular* closes up an article on this subject with the following hint: Many medical men prescribe with success exalgin as follows:

R	Exalgin	06
	Rum	30
	Syrup	30
	Water	120

Misce. A tablespoonful three times a day.

Tannalbin.—This name has been given by Gottlieb in an article in the *Deutsche Medicinische Wochenschrift* to an albuminate of tannin rendered insoluble in the gastric juices by being heated for five or six hours at a temperature of between 100 and 120 degrees C., and yet slowly soluble in the alkaline intestinal secretions. The preparation appears as a pale yellow powder, quite tasteless, and containing about 50 per cent. of tannic acid. Its clinical utility has been tested by Engel, who employed it in forty cases of various forms of intestinal disturbance, catarrhal and diarrheal conditions, and found it to be an efficient intestinal astringent, possessing the usefulness of a tannic acid preparation without any ulterior influence upon the functions of the stomach. The drug was administered in powder form to adults in doses of $7\frac{1}{2}$ grains, three or four times a day, and preferably at intervals of an hour or two.

Value of Silver as an Antiseptic.—It may be some consolation to the silver men to learn that science has recently found an important use for silver, as announced at the Berlin "Chirurgencongress" by Crede, of Dresden. If a plate of metal is placed on a culture of staphylococcus aureus, a sterile zone soon forms around it, while the metal itself is affected by the secretions of the microbes, which produce lactic acid, forming a lactate of the metal. Thallium is the most powerful in this respect, and silver next, but as the lactates of thallium and of silver are very poisonous, Crede experimented chiefly with the carbonate of silver, impregnating with it silks, catgut and drains, and using it on gauze in a fine powder or in leaf sheets. It proved exceedingly effective as an antiseptic for wounds where a prolonged action was desired, while never causing pain nor irritating the tissues. He found it still antiseptic even after remaining on a wound eight days. He has also administered it hypodermically in five cases of acute infection, such as erysipelas, with success and no unpleasant results. In one case the solution contained one gram of lactate of silver. He speaks from seven months' experience.—*Semaine Médicale*, June 3.

Lithiasis of the Gall Bladder.—The last five meetings of the Paris Société de Chirurgie have been devoted to this subject, and have brought out descriptions of 42 new cases. We note in the reports published in the Paris medical journals for May, that one point to remember in differentiating lithiasis of the gall bladder from a wandering kidney, is that when pressed with the finger it stays, while the latter slips away from under the finger. The most difficult diagnosis of all is when these two are combined, or when the gall bladder is forced so low down by the enlarged liver that it is mistaken for an appendicitis. Tuffier described one case operated upon which proved to be an old extra-uterine pregnancy, the more remarkable as the patient had recently passed through a normal child birth. In Routier's eight cases hepatic colic was present, but this was not the case with most of the rest. In regard to the operation, that known as "Ideal Cholecystostomy" was generally denounced, although two very successful cases were reported, with removal of 233 gallstones in one. Tuffier prefers cholecystectomy when it is easily performed, when the reservoir is not infected and the bile duct is permeable. In short, he extirpates in good cases, and performs cholecystostomy in bad cases, which seemed to be the general practice. Schwarz insists upon the importance of a double ligature of the pedicle and the use of the thermo-cautery. In some cases a correct diagnosis was impossible at first, until the affection had progressed further. The fistula left afterward often seems to benefit the general health, and can be closed later at any time, and often heals of itself. When the pedicle can stand ligating, draining is not necessary. In removing the gall bladder, it is easy to avoid injury to the parenchyma of the liver, by cutting it away with small snips of the scissors in the fibrous tissue enclosing the bladder, rather than in the tissue of the liver. It does not bleed, and leaves a bed of fibrous tissue under the liver which can be closed up by fastening together the two lips of fibrous tissue adhering to the liver.

Louisville.

HOSPITAL COLLEGE OF MEDICINE AND DENTISTRY.—The joint commencement of these institutions was held at the same place on the 18th inst., the graduating classes wearing caps and gowns. There were thirty-one graduates of the dental department and forty-nine of the medical. Addresses were made on behalf of the faculties by Prof. P. Richard Taylor, Dr. Peaybody, Dr. Jno. A. Larrabee, President of the College, and Col. Bennett H. Young on behalf of the Board of Censors.

ALUMNI.—The annual meeting of the Alumni of the Hospital College of Medicine was held in this city on the 18th inst. about 100 members being present. Dr. E. C. Underwood is president, Dr. T. E. Converse, vice-president and Dr. Philip F. Barbour, secretary.

MEDICO-CHIRURGICAL SOCIETY.—Dr. S. G. Dabney was recently elected president of this society and Dr. Thos. Hunt

Stucky was made secretary. The society was the guest of Dr. Lewis S. McMurtry at the Kenton Club on the 19th, the title of the essayist's paper being "The Development of the Modern Aseptic Surgical Technique."

HEALTH OFFICER'S REPORT.—For the past week there have been sixty-one deaths and six stillbirths. Consumption caused eleven, and only two of the deaths occurred at the City Hospital.

PHARMACISTS.—The State Pharmaceutical Society held its annual session at Estill Springs, and the following officers were elected for the coming year: President, J. M. McFarland, Henderson; vice-president, J. C. Hearn; secretary, J. W. Gayle, Frankfort; treasurer, C. S. Morris, Louisville.

Washington.

WEEKLY REPORT OF THE HEALTH OFFICER.—The report of the Health Department for the week ended June 13, is as follows: Number of deaths (stillbirths not included) 91; death rate per 1,000 per annum 17.2; death rate per 1,000 per annum corresponding week last year 13.7. There were 38 deaths of children under 5 years of age, of which 8 were of a diarrheal nature.

MEDICAL SOCIETY.—At the meeting of the Society held on the 3d inst., Dr. Belt reported cases of sponge grafting in socket for artificial eyes and presented patient showing results. On the 10th inst. Dr. Kerr reported two cases of the rupture of the bladder.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the meeting held on the 5th inst., Dr. E. L. Tompkins read a comprehensive paper on chorea. A full discussion followed. At the meeting held on the 19th inst., Dr. Fry read a paper entitled "Manual Rectification of Faulty Head Presentations." The next meeting will take place in October for the election of officers and presidential address.

ARTESIAN WELLS FOR THE DISTRICT.—The District appropriation bill contains an item of \$4,000 for the construction of fifteen wells which will consist of a six-inch casing driven to a depth of about three hundred and fifty feet through the solid rock formation. The driving of these wells will mark the beginning of a new drinking water supply for Washington, for as soon as they are established all of the shallow wells will be done away with.

BOARD OF MEDICAL EXAMINERS APPOINTED.—The Commissioners under the recent law have appointed the following physicians to constitute the Board of Medical Examiners for the District of Columbia: For the regular school, Drs. C. H. A. Kleinschmidt, G. Wythe Cook, J. S. McLain, G. C. Ober and C. B. Purvis (colored). For the homeopathic school Drs. J. B. G. Custiss, S. S. Stearns, W. R. King, Z. B. Babbitt and T. L. McDonald. For the eclectic school, Drs. Robinson, Geddis, Julihn, Heiser and one yet to be named.

Philadelphia.

UNIVERSITY OF PENNSYLVANIA.—Last week was commencement week at the University of Pennsylvania. The exercises of the 140th annual commencement marked the 156th year of the university's existence. The standard of scholarship has been raised in all the departments this year, and serious complaint was made, especially by members of the Dental class of the severity of the examinations. The standard of the entrance examinations will also be higher in future and, at each session, will be gradually raised until the fall of 1899, when it is expected that a degree in arts, or its equivalent, will be required of every matriculant in the medical department. It is to be remarked that this department is becoming more closely connected with the other departments of the University than it was formerly, an illustration being furnished by the fact that the salaries of the members of the medical faculty are fixed and are independent of the income received from medical students and unaffected by the size of the class. A pleasant

feature of the commencement week was what was called "Alumni Day," when there was a general meeting of the alumni of all departments and the annual meeting of the general Alumni Society. The latter was held at noon, June 10, at Houston Hall and was followed by a lunch in the library. A reception was tendered to the provost, Dr. Harrison, in the afternoon and banquets by the alumni of the medical and dental departments were held in the evening. The commencement or the medical department was held June 11 at noon, as usual at the Academy of Music, the degrees being conferred upon eighty-eight candidates.

A NEW DEAN AT THE MEDICO-CHIRURGICAL COLLEGE.—Dr. Isaac Ott has been elected Dean of the Medico-Chirurgical College as the successor of Dr. Laplace, who resigned in order to devote his whole time to the duties of the chair of surgery. Dr. Ott is also professor of physiology in the Medico-Chirurgical, a position which during the last two sessions he has filled very acceptably to the students, among whom he is very popular. He has recently been elected consulting neurologist to the State Hospital for the Insane at Norristown.

PHILADELPHIA HOSPITAL.—The results of the examinations for the positions of resident physician at the Philadelphia Hospital have been made public. The examining board consisted of Drs. H. C. Chapman, J. M. Anders and Judson A. Daland. There were sixteen vacancies, which were filled by the Board of Charities in accordance with the recommendation of the examining board, by the election of six University men, five Jefferson men and five from the Medico-Chirurgical.

FRESH AIR CHARITY FOR CHILDREN.—One of the most useful of the medical charities of the city is the Sanitarium at Red Bank, on the Delaware River several miles below the city, which opened on June 4 for its eighteenth season. During the seventeen years, of which careful records have been kept, 1,409,402 persons, mostly children, have been carried to and from the sanitarium and without a single serious accident. Last year the total number of admissions were 174,481. The association owns two commodious steamboats and an enclosed park of over eighty acres, with administration buildings, temporary hospital and other appropriate structures, the latest of which is the Simon Muhr Memorial Building, which has just been opened and which will be devoted to the preparation of diet. The sanitarium is especially designed to afford opportunity to poor children during the hot weather to escape from the streets and alleys of the city and enjoy a trip on the river and a day at the grounds where an abundant supply of milk, soup and sandwiches are provided, with tea and coffee for the caretakers. Tickets are distributed among physicians, who give them to those deemed worthy. Especial care is taken that children suffering with contagious diseases shall not be taken.

SMALLPOX AND VACCINATION IN THE PUBLIC SCHOOLS.—The Board of Health of the city has made the rule absolute that no child shall be permitted to enter the public schools without having been vaccinated, or protected by a previous attack of smallpox. They have further notified all private schools and also the Sunday schools that they must comply with this rule and refuse to receive any pupil who is not provided with a certificate of vaccination. The latter requirement has been pronounced impracticable, although many of the persons most concerned by it entirely approve of it in principle.

THE AMERICAN NEUROLOGICAL ASSOCIATION MEETING.—The twenty-third annual meeting of the American Neurological Association assembled June 3 at the College of Physicians and during this and two following days held very profitable meetings under the direction of Dr. F. X. Dercum, president; Drs. C. E. Riggs of St. Paul, and G. J. Preston of Baltimore, vice-presidents, and Dr. G. M. Hammond of New York, secretary and treasurer. The next session will be held at Washington, with the Congress of American Physicians. Dr. M. A. Starr

of New York was elected president: Drs. H. R. Stedman of Boston and H. S. Upson of Cleveland, vice-presidents, and Dr. Hammond was re-elected secretary. Receptions were given by the Philadelphia Neurological Society at the Philadelphia Medical Club which were largely attended.

THE COUNTY MEDICAL SOCIETY.—At the meeting of the Philadelphia County Medical Society, held on the 11th inst., Dr. Ernest Laplace read a paper on the "Surgical Treatment of Insanity," in which he reported four cases of acute insanity with delusions, which had come under his notice. They all suffered with headache and had histories of injuries to the head, although there was no evidence of injury sufficiently severe to produce fracture having been inflicted. In each of these four cases he had used the trephine and in three had made a linear craniectomy along the coronal suture, or in front of it, to the extent of some three inches, and had introduced a flat instrument to separate the dura mater from the skull over both cerebral hemispheres as far back as he could go. In the last case, that of a man of 26 years of age, who for eleven months had had melancholia and delusions of persecution, and who was steadily getting worse, Dr. Laplace operated as above stated, and noted the fact that there was considerable hemorrhage during the operation. As soon as the operation was over, the patient was found to be absolutely sane and free from all delusions and even without remembrance of those which had annoyed him for months. He had remained perfectly well since and was presented at the meeting although the operation had only been performed May 29. There was a recent scar several inches in length on the vertex, wound having entirely healed. The patient had no more headache and was cheerful and apparently perfectly well. Dr. Laplace said that the free hemorrhage in this case might have brought about the result, but he gave most of the credit to the relief of pressure by the operation. It was certainly remarkable that these were the only cases of insanity that he had been called upon to treat and that in each case such good results should be obtained by opening the skull. At the same meeting, Dr. R. Meade Bolton, Superintendent of the Bacteriological Laboratory of the City Board of Health, reported the results of the examination of cultures from cases of suspected diphtheria from May 30, 1895, to June 1, 1896. The total number of examinations were 3,363, of which 1,421 were of primary cases and 1,942 secondary. A diagnosis was given of diphtheria in 557 cases and it was confirmed by the attending physician in 507 cases, or in 90.2 per cent. The diagnosis of not diphtheria was given in 148 cases and confirmed in 108. The total number in which the diagnoses was given by the department was 705 and it was confirmed in 615 cases, or in 86.4 per cent. This was regarded as a very satisfactory result for the first year's work of the new department, which under Dr. Bolton's able management is working harmoniously with the other departments and the profession. Dr. Edward Jackson read a paper on "The Profession, the Optician and the Public," in which he defended the view that the examination of the eye and the measurement of refraction can only be done properly by those who have a medical training and special experience. The optician represents the pharmacist and should confine himself to filling the prescriptions and should not assume the responsibilities of the ophthalmologic physician. A report of a case of varicella gangrenosa was read by Dr. J. P. Crozer Griffith, who also exhibited photographs of the case, which terminated fatally.

COLLEGE OF PHYSICIANS. At the June meeting of the College of Physicians, Dr. Joseph Leidy read a "Note on Infantile Scurvy" and reported several cases. The symptoms were liable to be mistaken for rheumatism. He believed that sterilized milk was a potent cause of this form of nutritive disorder which is generally promptly ameliorated by an improved diet. Dr. Oscar H. Allis read a paper entitled: "The Mechanism of the Dislocation of the Shoulder and Hip Deduced from Their Accidental Restorations," and presented specimens. The following were elected to Associate Fellowship at this meeting: Sir George Murray Humphry, Bart., Cambridge, England;

Professor Jaccoud, Paris, France; Dr. George M. Sternberg, U. S. A., Washington, D. C.; Dr. Phineas Sanborn Conner, Cincinnati, Ohio; Dr. L. McLane Tiffany, Baltimore, Md.; Dr. William T. Lusk, New York.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from June 13 to June 19, 1896.

Capt. W. Fitzhugh Carter, Asst. Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending June 20, 1896.

Surgeon R. Whiting, detached from the "Monterey," ordered home and granted three months' leave.

Surgeon C. T. Hibbert, detached from the "Bennington" and ordered to the "Independence."

Surgeon H. T. Percy, detached from board of examiners, Washington, D. C., July 1, and ordered to the "Monterey."

Surgeon W. A. McClurg, ordered as member of medical examining board, Washington, D. C.

P. A. Surgeon J. W. Baker, detached from board of examiners, New York, June 22, and ordered to the "Bennington."

P. A. Surgeon C. F. Stokes, ordered as recorder of medical examining board, New York, June 22.

Surgeon A. C. Russell, detached from board of medical examiners, New York, July 5, and granted leave until August 7, with permission to go abroad.

Asst. Surgeon M. K. Johnson, detached from the "Franklin" and ordered to the "New York."

Asst. Surgeon F. C. Cook, detached from the "New York" and ordered to treatment at naval hospital, New York.

Asst. Surgeons W. N. Wheeler and R. S. Blakeman, ordered to instruction at naval laboratory, New York.

P. A. Surgeon J. W. Baker, ordered to delay reporting until July 18.

Change of Address.

Bell, G. Franklin, from Williamsport to Newberry, Pa.
Burroughs, Sam. R., from Raymond to Buffalo, Texas.
Bonner, C. A., from 33 S. High St. to 28 S. Perry St., Dayton, Ohio.
Bulkley, J. W., from 805 12th St. N.W. to 1723 N St. N.W., Washington.
Bassett, L. A., from Chicago to Jefferson, Iowa.
Corley, H. N., from St. Louis to St. Paul, Mo.
Dobson, S. J., from Jefferson to Edna, Kan.
Durant, G., from New York, N. Y., to Branford, Conn.
DeHart, J. N., from Brooklyn to Round Lake, N. Y.
Edmondson, Geo. J., from Chicago to Moroa, Ill.
Fortier, J. J., from 123 Blue Island Ave. to 318 New Era Bldg., Chicago.
Givens, Jno. W., from Baltimore, Md., to Los Angeles, Cal.
Hobday, W. A., from Biwabik to Halted, Minn.
Jordan, J. D., from Chicago to Madisonville, Texas.
Ketcham, L. Y., from San Diego to Esccondido, Cal.
Kimball, H. H., from Medical to Dayton Bldg., Minneapolis, Minn.
Maxey, S. B., from St. Louis, Mo., to Sherman, Texas.
Marr, W. L., from 61 N. State St. to 5451 Lake Ave., Chicago.
Mulholland, J. F., from Jordan, Minn., to Manitowoc, Wis.
Paine, H. M., from West Newton, Mass., to 67 N. Forsyth St. Atlanta, Ga.
Quigley, J. M., from Portland, Ore., to 41 6th St., San Francisco, Cal.
Rubuck, S. H., from Chicago to Lyle, Minn.
Star, J. W., from Liberty Center to Lacona, Iowa.
Yemans, H. W., from New York, N. Y., to 307 Walnut St., Philadelphia.

LETTERS RECEIVED

Albright, J., Grand Rapids, Mich.; Abbott Alkaloidal Co., Chicago;
Armstrong, J. E., National Home, Wis.
Boehringer, C. F., & Soehne, New York, N. Y.; Bates, X. T., Poughkeepsie, N. Y.; Bishop, W. T., Derry Station, Pa.
Close & Cone, Chicago; Chamber, J. H. & Co., St. Louis, Mo.; Castle, Wilmot & Co., Rochester, N. Y.; Cordell, E. F., Baltimore, Md.; Coe, H. W., Portland, Ore.; Connor, Leartus, Detroit, Mich.
Davidson Rubber Co., Boston, Mass.; Daniel, John B., Atlanta, Ga. (2);
Dolliver-Goodale Co., Boston, Mass. (2);
Emsinger, S. L., Crawfordville, Ind.; Eagleson, J. B., Seattle, Wash.
Foote, A. E., Philadelphia, Pa.; Frost Co., Geo., Boston, Mass.; Foster, Eugene, Augusta, Ga.; Fyke, E. E., Centralia, Ill.; Ferguson, R. G., Duluth, Minn.
Gardner, R. W., New York, N. Y.; Gallion, E. M., Harriman, Tenn.; Gorsuch, John C., Washingtonville, Ohio; Gould, Frank J., Chicago.
Hall, W. W., Springfield, Ohio
Jones, S. N., Louisville, Ky.; Journal of Experimental Medicine, The, Baltimore, Md.
Kindred, Jos. J., Stamford, Conn.; Kreider, G. N., Springfield, Ill.; Krause, W. C., Buffalo, N. Y.
Lord & Thomas, Chicago (3); Lehn & Fink, New York, N. Y. (2);
Merz Capsule Co., Detroit, Mich.; Merrick, M. B., Passaic, N. J.; McMurtry, L. S., Louisville, Ky.; Maltine Mfg. Co., New York, N. Y.; Mills, H. B., Philadelphia, Pa.; Modern Medicine Publishing Co., Battle Creek, Mich.; McCassey, J. H., Dayton, Ohio; Maclean, Donald, Detroit, Mich.; McCutcheon, P. B., New Orleans, La.; McDonald, W. G., Albany, N. Y.
Newton, R. C., Montclair, N. J.
Ott, Isaac, Philadelphia, Pa.; Oakley, J. H., San Francisco, Cal.
Potts, C. S., Philadelphia, Pa.; Prudential Insurance Co., Newark, N. J.; Prentiss, Spencer B., Washington, D. C.; Paquin, Paul, St. Louis, Mo.; Prewitt, T. F., St. Louis, Mo.; Peterson, Reuben, Grand Rapids, Mich.
Reed, R. Harvey, Columbus, Ohio; Russell, F. C., Joliet, Ill.; Rogers, G. A., New York, N. Y.; Ray, J. M., Louisville, Ky.
Starkey, H. M., Chicago (2); Seymour, F. E., Fort Dodge, Iowa; Steam Gauge and Lantern Co., Syracuse, N. Y.; Stevens, B. F., London, England; Schering & Glatz, New York, N. Y.; Sherer, J. W., Philadelphia, Pa.; Souchon, Edmond, New Orleans, La.; Schleffelin & Co., New York.
Tasche, J. C., Sheboygan, Wis. (2); Tyler Rubber Co., Andover, Mass.; Thomas, John D., Washington, D. C.
Volga de America, Rio de Janeiro, Brazil.
Watts, R. F., Millersburg, Iowa; Wenz, Elbert, Chicago; Wilkinson, Co., The Chicago; Winslow, Chas. E., Los Angeles, Cal.; Walker-Gordon Laboratory Co., The, Chicago.

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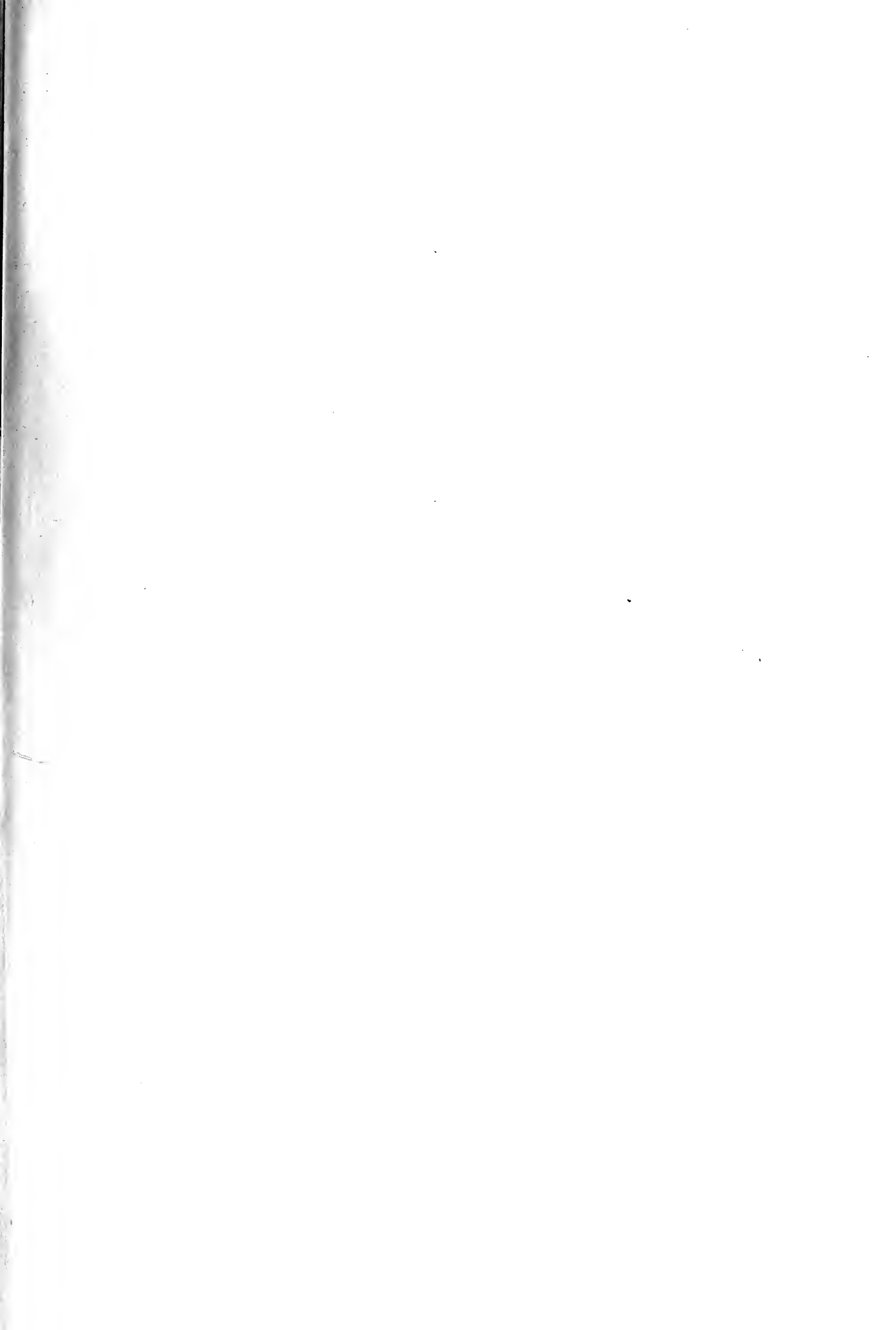
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